

**Support for the Use of Technology and the  
Implementation of Research Activities in the  
Undergraduate Education of Future Teachers**

2018–2020

**Editors:**

Eduard Hofmann

Hana Svobodová

**Authors:**

Useful Science – We Study the Landscape around us (Češková, Frýzová)

Frýzová Iva, Češková Tereza, Jireček Miroslav

**Useful Science – A Key to Sustainable Development (lower secondary school)**

Hofmann Eduard, Svobodová Hana, Durna Radek

**Healthy Lifestyle and Spring Stays in Nature**

Trávníček Marek, Vrbas Jaroslav

**Healthy Lifestyle and Winter Stays in Nature**

Vrbas Jaroslav, Trávníček Marek

**Integrated Language and Methodological Course**

Editors: Světlana Hanušová, Ailsa Randall

Autors: Světlana Hanušová, Ailsa Randall, Jaroslav Suchý, Alena Dobrovolná, Pavla Buchtová, Zuzana Kršková, Ondřej Krahulec, Filip Pultar, Ondřej Vitula, Marek Antal

**Methodology Course on the Development of Personal and Social Education**

Soják Petr



EVROPSKÁ UNIE  
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## INTRODUCTION

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The teaching material “Support for the Use of Technology and the Implementation of Research Activities in the Undergraduate Education of Future Teachers” is the outcome of the project OP VVV *Development of the process of undergraduate education at PdF MU: thorough preparation for good practice*.<sup>1</sup> One of the outcomes of the project was the preparation of innovative educational materials and courses. Its goal was to create and pilot new training courses. The courses were to reflect the educational areas within the updated Framework Educational Programme. In their content, there was to be a maximum connection of teaching with the use of cross-curricular topics. In the course of these, modern strategies for managing learning activities were to be adequately included.

The first reason for choosing outdoor education is the fact that in many countries it is considered not only a suitable organizational form of teaching for the implementation of cross-curricular links, but especially a strong teaching strategy (Lambert & Balderstone, 2010; Gilbertson, Bates, McLaughlin, & Ewert, 2006) which allows a more comprehensive understanding of the real world. Gilbertson, Bates, McLaughlin a Ewert (2006) also state that outdoor education takes on a new dimension for pupils by requiring them to step out of the comfort zone to which they are accustomed from classroom teaching. Thus, this form of teaching becomes a strong experience for pupils, and many authors claim that in this way pupils remember the curriculum even better (Entwistle & Ramsden, 1983; Biggs, 1999). At this point, it should be noted that teachers must also step out of the comfort zone of well-established forms of teaching.

The second reason for choosing outdoor education is the fact that working in the field is never about developing knowledge, skills and attitudes from one field, but it is an overlap into other fields which are taught in all types of schools, either intentionally or in many cases covertly, without all actors in this form of teaching or strategy being aware of it in their teaching (e.g. even during monothematically focused field teaching, a certain form of movement is always present, it takes place in a selected area, etc.).

When creating new courses, we used the traditions of outdoor education at all types of schools in the Czech Republic and abroad. We took into account the findings of the basic research project GAČR 16-00695S *Outdoor education as a strong teaching strategy* and a follow-up applied research project TAČR TJ01000127 *Outdoor education system for primary and lower secondary schools*, the results of which point, among other things, to the fact that that in most of the monitored schools within both projects various forms of outdoor education were and are applied, but they have a very weak cross-curricular overlap and do not follow each other. The results of these projects were used as a basis for the presented teaching material, specifically within the following publications:

Svobodová, H. (2019). *Outdoor Education in Geography: A Specific Educational Strategy*. Brno: MuniPress, 198 s. ISBN – 13 978-80-210-9521-2.

Svobodová, H., Mísařová, D, Durna, R., Češková, T., & Hofmann, E. (2019). *Koncepce terénní výuky pro základní školy na příkladu námětů pro krátkodobou a střednědobou terénní výuku předmětů Člověk a jeho svět a Zeměpis*. Brno: MuniPress, 110 s., ISBN – 13 978-80-210-9246-4

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<sup>1</sup> Development of the process of undergraduate education at PdF MU: thorough preparation for good practice. Code MU: CZ.02.3.68/0.0/0.0/16\_038/0006952.

Innovated courses of outdoor education were created in cooperation with university teachers across the Department of Geography, Biology, History, Physical Education and Health Education, Social Pedagogy, and English at the Faculty of Education, Masaryk University. The key concepts that were reflected in the form of the innovated courses were: constructivism, research teaching, experiential pedagogy, case studies and the CLIL method. The individual courses were created in response to the relevant educational area in accordance with the current Framework Educational Programme for Basic Education from 2017. For the primary and lower secondary school, these are: People and their world, People and Health, Foreign Language, Personality and Social education, People and Nature, People and Society. We are aware of the fact that at the time of the implementation of the project (2018–2021), revisions of the current curriculum are taking place. These revisions aim for greater integration and interconnection of subjects at all levels of schools.

The publication consists of seven parts. The introductory part acquaints the reader with the concept of outdoor education and its integration in teaching at the Faculty of Education of Masaryk University. The following six parts present methodological materials for individual courses of outdoor education:

- **Useful Science - We Study the Landscape around us (primary school, Jedovnice):** integrates the fields of Geography, Natural History, History, Physical Education, English language, and the cross-sectional topic of Personal and Social Education.
- **Healthy Lifestyle and Spring Stay in Nature (primary school, Moravec):** they integrate the fields of Physical Education and Health Education, Geography, Natural History, English language, and the cross-sectional topic of Personal and Social Education.
- **Healthy lifestyle and Winter Stay in Nature (primary school, Herlíkovice):** they connect the fields of Physical Education and Health Education, Geography, Natural History, English language, and the cross-sectional topic of Personal and Social Education.
- **Useful Science – A Key to Sustainable Development (lower secondary school, Jedovnice):** integrates the fields of Geography, Natural History, History, Physical Education, English language, and the cross-sectional topic of Personal and Social Education.
- **Integrated Language and Methodological Course (lower secondary school, Fryšták):** connects the English language with the fields of Geography, Natural History, History, Physical Education and the cross-sectional topic of Personal and Social Education.
- **Methodology Course on the Development of Personal and Social Education (school and extracurricular leisure activities, Lipnice nad Sázavou):** connects the cross-sectional topic of Personal and Social Education with the fields of English language, Geography, Natural History, History and Physical Education.

At the end of the teaching material, there are appendices to individual methodologies, of which the most important is the **Atlas for outdoor education and activities**.

The mentioned courses are planned for 5-7 days. The professional content of the courses was created and verified by university teachers from the Faculty of Education, Masaryk University. It was also consulted with teachers of faculty primary schools and practitioners who are involved in outdoor teaching. The teaching materials were finally completed on the basis of the evaluation result from the course of piloting and will be included in studies at PdF MU. The presented material serves as a methodology for the preparation of long-term courses for new and existing academic staff and for students who are being prepared for their future teaching profession.

The establishment of an **Academic Centre for Integrated Field Teaching (abbreviated ACTIV or the Centre)** is planned within the project. The centre will serve mainly as a coordination platform for the mentioned long-term courses. It will publish on its website a semester overview of various forms of outdoor education at the Faculty of Education, MU, and further information about its guarantors, place and date of the event, focus and necessary material equipment. Thus, the course guarantors should have an opportunity to use the innovated and advanced material equipment of the departments participating in the project. The centre will have an overview of material equipment, which will be available to all participating departments, and information about what course is currently using the material.

Considering the nature of the offered courses, in time they should be used as a tool for obtaining new graduate qualifications: 1. **outdoor teaching coordinator** (Svobodová, Mísařová, Durna, Češková, Hofmann, 2019: 51) at all levels and types of schools; 2. **organizer of leisure activities** also for extracurricular facilities. These qualifications should be achieved only by those students who completed all forms of the above-mentioned innovated courses during their studies. Courses should be open for further education of pedagogical staff as well.

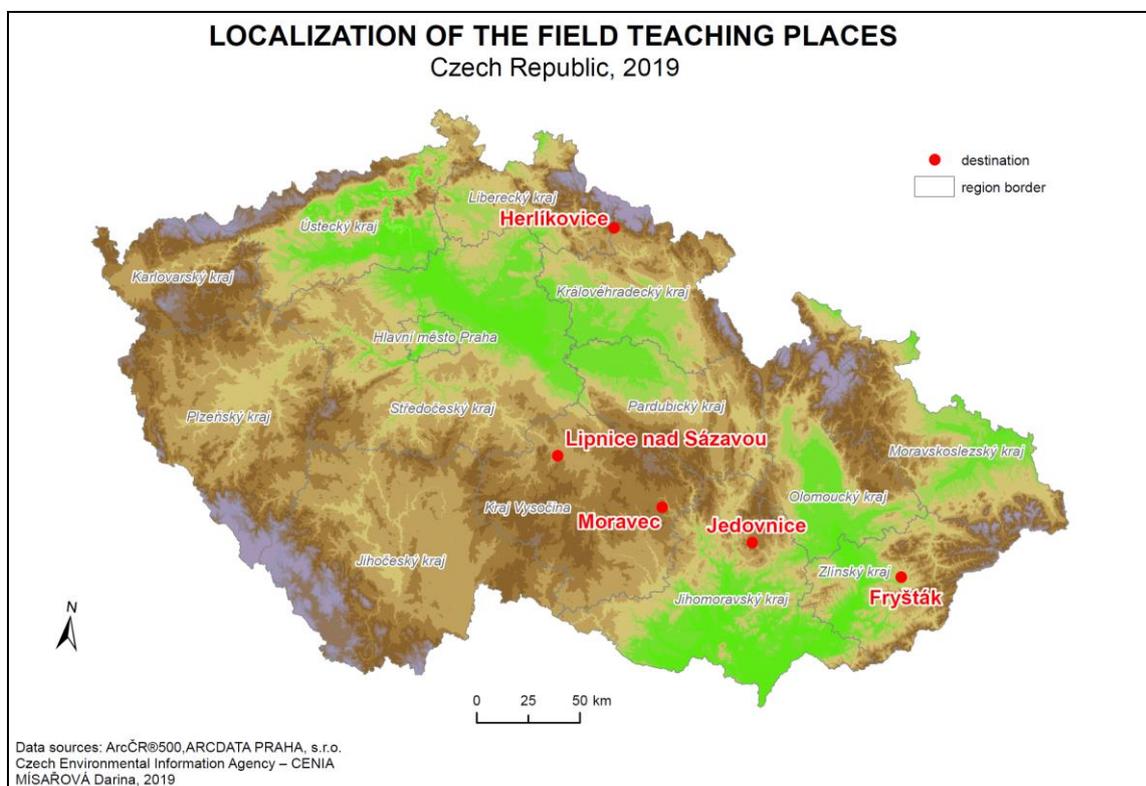
# 1. OUTDOOR EDUCATION AND ITS INCLUSION INTO TEACHING AT PDF MU

Outdoor teaching is definitely not a product of nowadays. It has appeared in the school curriculum of several subjects for more than 100 years. The presented methodology does not primarily deal with the name origin of that teaching form, and thus we define it for the purposes of the presented publication as follows (Hofmann et al., 2003, p. 7, Svobodová et al., 2019):

***“Outdoor education can be defined as an “integrating” term denoting various forms of education with the outdoor setting of their common unifying feature. Outdoor education can take various organisational forms, from a walk, a field excursion or field exercise to a several-day school trip or residential outdoor school. Depending on the objectives and used teaching methods the pupils can be passive listeners and observers as well as researchers actively collecting and processing information from primary and secondary sources, with the help of research methods and aids offered by the individual science disciplines.”***

Outdoor education develops cooperation not only between related subjects of a scientific character, but it also cooperates with social-science subjects, education and can also be a suitable form for teaching a foreign language. Teaching outside school is planned for various purposes, such as adaptation, movement, teaching or relaxation courses.

Departments at the Faculty of Education, MU, participating in the implementation of the OP VVV project, try to prepare students for a long-term form of outdoor education which corresponds to the system of the proposed innovated courses. The courses take place in various localities of the Czech Republic.



## 1.1 EXAMPLES OF TRANSDISCIPLINARITY WITHIN OUTDOOR EDUCATION

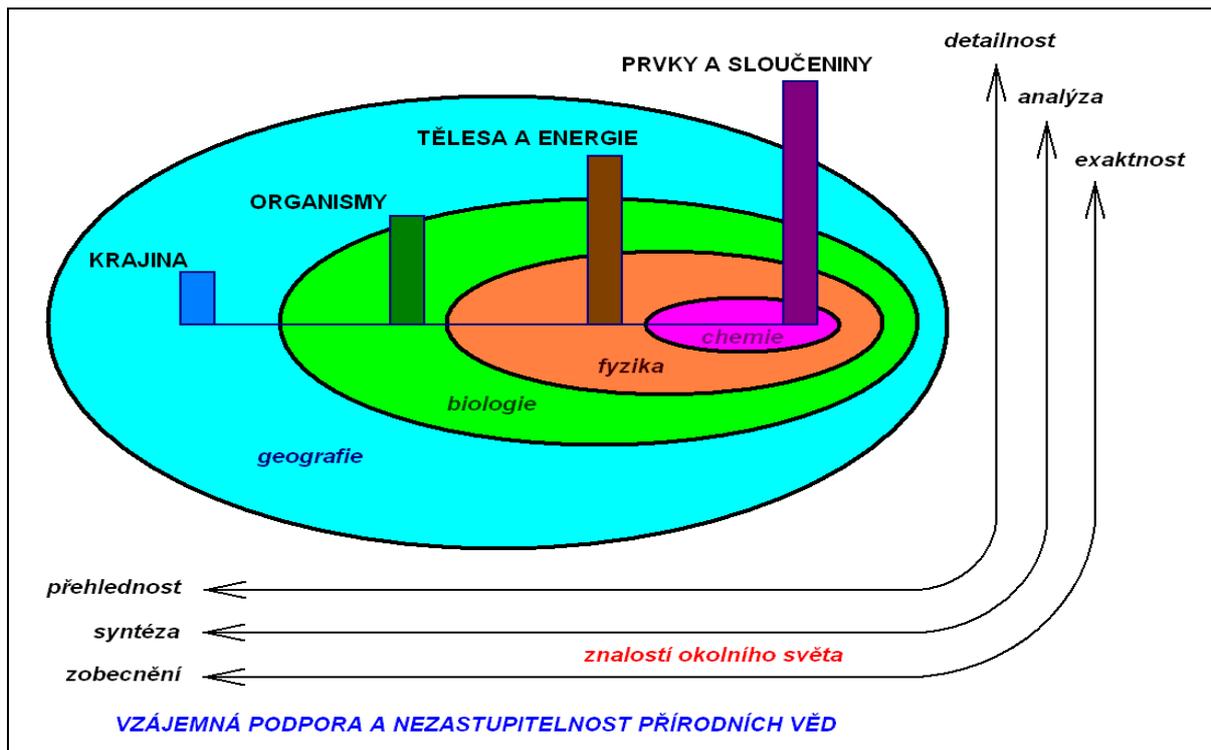
The **transdisciplinary** concept of outdoor education can be identified with the concept of integrated outdoor education, which is an "**interconnected**" teaching model that ideally follows disciplinary and interdisciplinary activities. We understand **integrated teaching** in the sense of connecting the content of the curriculum of various subjects into one thematic teaching unit with the aim of gaining comprehensive knowledge usable for practical life (adapted from Podroužek, 2002).

For the purposes of the GAČR project - "Outdoor education as a strong teaching strategy" and subsequently for the project OP VVV a further division of outdoor education **according to focus** was created – see Fig. 1. According to this division, outdoor education can be focused on **subject skills** (focus on the subject matter of individual subjects), **movement skills** (sports training courses, see above), and **interpersonal relationships** (adaptation and teambuilding courses).

Outdoor education focused on subject skills	Outdoor education focused on movement skills	Outdoor education focused on interpersonal relationships
<ul style="list-style-type: none"><li>•Geography</li><li>•Natural History</li><li>•History</li></ul>	<ul style="list-style-type: none"><li>•summer training course</li><li>•winter training course</li></ul>	<ul style="list-style-type: none"><li>•adaptation course</li><li>•teambuilding courses</li></ul>

**Fig. 1: Division of outdoor education according to focus (adapted from Svobodová, 2019)**

**Outdoor education focused on subject skills** allows for the creation of natural cross-curricular links (see Fig. 2). It is natural because the actors of individual disciplines are often not even aware of them, as this teaching takes place outdoors and not in the classroom or in a specialized laboratory. Most pupils cannot concentrate on a certain section of the landscape on their own, but they perceive the landscape comprehensively, that is, they see its natural components as well as human activities which change it, and all this together is the subject of research in various disciplines. Staying in an outdoor environment is also closely linked with movement.



**Fig. 2: Hierarchy of relationships of individual subjects to look at today's world (Kolejka, 2008)**

It is clear from the picture that geography is a complex subject that deals with the entire landscape and uses knowledge from other scientific disciplines to examine it more closely.

The significance of geography for a variety of innovative courses has primarily a supporting character, which consists in the selection and subsequent recognition of places which are suitable for the focus of the course. Various geographical skills associated, for instance, with orientation in a field according to a map and compass or according to GPS are the basis for many activities which then subsequently use other fields to diversify their activities.

An even broader view of the interdisciplinarity and complexity of outdoor education is provided by Priest's model of outdoor education (Priest, 1986 as cited in Gilbertson, Bates, McLaughlin, & Ewert, 2006, p. 5). The model shows outdoor education as "a method of teaching and learning that emphasizes the direct, multisensory experience taking place in the outdoor environment and uses an integrated approach to learning that includes the natural environment, the environment of the municipality (community) and the individual set in it. Through staying outside, outdoor education aims to increase the physical, emotional, cognitive, social and spiritual level of the individual. ... Feeling the sun, wind and rain or watching wild animals ... are new experiences for many people in today's urban environment. ... Seeing a bison at the zoo will evoke different feelings than seeing a herd of bison grazing on the prairie... "

**Field teaching focused on movement skills takes place again** in a particular real environment which is selected according to the character of physical activities (knowledge from physical geography will be applied here). These can be various forms of hiking, orienteering and running sports, and outdoor games. Its actors, as well as actors in field outdoor education, should learn to move safely in the field, which again requires cross-curricular knowledge, especially in geography and biology. They should learn to perceive various natural indicators that will signal certain risks that they may encounter when moving and staying in the outdoors. This may include weather conditions or bioindicators that alert them to potential hazards. Historical and cultural attractions related to the visited localities are a suitable addition for various forms of

tourism and leisure time which are brought by geographical sub-disciplines (cultural and historical geography).

The importance of movement skills as an integral part of all innovated courses is briefly summarized in the following quotations: "However, movement can be largely integrated into the teaching of most subjects and into the overall management of the school. Sitting at school desks is often considered to be a major intervention in the child's organism. Some schools compensate for this by allowing pupils to move around during breaks, and some teachers combine the content of their subjects with physical activity. It is necessary to arouse teachers' interest in connecting appropriate teaching with movement and to build in them the skill of implementing this idea." (Mužík, Krejčí 1997)

**The goal of outdoor education focused on interpersonal relationships** is usually to support the emergence of new groups in individual classes and interest groups of people. At school, for example, it is a matter of acquainting pupils with each other and with class teachers (e.g. during the transition of pupils from primary to lower secondary school). Pupils have the opportunity to get to know each other better, get closer and establish new relationships. All this in the form of interesting activities and games, which can also have a popular professional content and there is no lack of physical activities. Due to the environment where teaching takes place, the above-mentioned subject skills from scientific or social-science disciplines are also strengthened. The support of a school psychologist is usually expected.

When implementing outdoor education at various levels of schools, we may sometimes encounter the reluctance of teachers to implement its longer forms. The main reason is usually "missing out on" the curriculum of other subjects. This happens especially in schools where there is no comprehensive concept of outdoor education in the school curriculum. If teachers are involved in the creation of the school curriculum, then by mutual agreement they will understand that, for example, in the implementation of outdoor education of science subjects, fields such as mathematics, mother tongue or foreign language are not left behind. This area includes, for example, the **CLIL method**, which is represented in the project through the content of courses organized by the Department of English.

Across human society, we can see how integration replaces fragmentation. Mehisto (2008, p. 7) states that this process creates a mixture of areas that have been completely separated in the past. CLIL is an example of the process. It allows teachers to break free from the fragmentation through which we treat subjects as separate areas. It also creates a mix between content and language across subjects and supports independent and cooperative learning. This process has significant added value for language learning. (Štíhlová, 2013)

CLIL is an acronym for the English expression "Content and Language Integrated Learning". This term is translated into Czech as "integrovaná výuka cizího jazyka a neязыkového předmětu." This is one of the types of bilingual education. The method uses a foreign language to teach the content of a vocational subject, but at the same time uses a vocational subject for teaching a foreign language. This method is very successful for improving the learning of foreign languages and other subjects and is more meaningful and interesting for students (Hanušová & Vojtková, 2011, In. Štíhlová, 2013), therefore, the six methodological manuals presented in the following chapters are in English.

## 1.2 BIBLIOGRAPHY

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- Biggs, J. (1999). *Teaching for Quality Learning at University*. Buckingham: Society for Research into Higher Education and Open University Press.
- Entwistle, N., & Ramsden, P. (1983). *Understanding Student Learning*. London: Croom Helm.
- Gilbertson, K., Bates, T., McLaughlin, T., & Ewert, A. (2006). *Outdoor education: Methods and strategies*. Champaign, IL: Human Kinetics.
- Hofmann, E. (2003). *Integrované terénní vyučování*. Brno: Paido.
- Lambert, D. & Balderstone, D. (2010). *Learning to Teach Geography in the Secondary School*. London: Routledge.
- Mísařová, D, Svobodová, H., Durna, R., Češková, T., & Hofmann, E. (2019). Koncepce terénní výuky pro základní školy na příkladu námětů pro krátkodobou a střednědobou terénní výuku předmětů Člověk a jeho svět a Zeměpis. Brno: Munipress.
- Mužík, V., & Krejčí, M. (1997). *Tělesná výchova a zdraví*. Olomouc: Hanex.
- Podroužek, V. (2002). *Integrovaná výuka na základní škole v teorii a praxi*. Plzeň: Fraus.
- Priest, S. (1986). Redefining outdoor education: A matter of many relationships. *The Journal of Environmental Education*, 17(3), 13–15.
- Svobodová, H. (2019). *Outdoor Education in Geography: A Specific Educational Strategy*. Brno: Munipress, 198 s., ISBN – 13 978-80-210-9521-2.
- Svobodová, H., Durna, R., Mísařová, D., & Hofmann, E. (2019). Komparace formálního ukotvení terénní výuky ve školních vzdělávacích programech a její pojetí na modelových základních školách. *Orbis Scholae* 13(2), 95–116.
- Svobodová, H., Mísařová, D., Durna, R., Češková, T. & Hofmann, E. (2019). *Koncepce terénní výuky pro základní školy na příkladu námětů pro krátkodobou a střednědobou terénní výuku předmětů Člověk a jeho svět a Zeměpis*. Brno: Masarykova univerzita, 110 s., ISBN – 13 978-80-210-9246-4.
- Štíhlová, K. (2013). *Výuka zeměpisu v angličtině*. Bakalářská práce. Brno, Masarykova univerzita, 49 s.

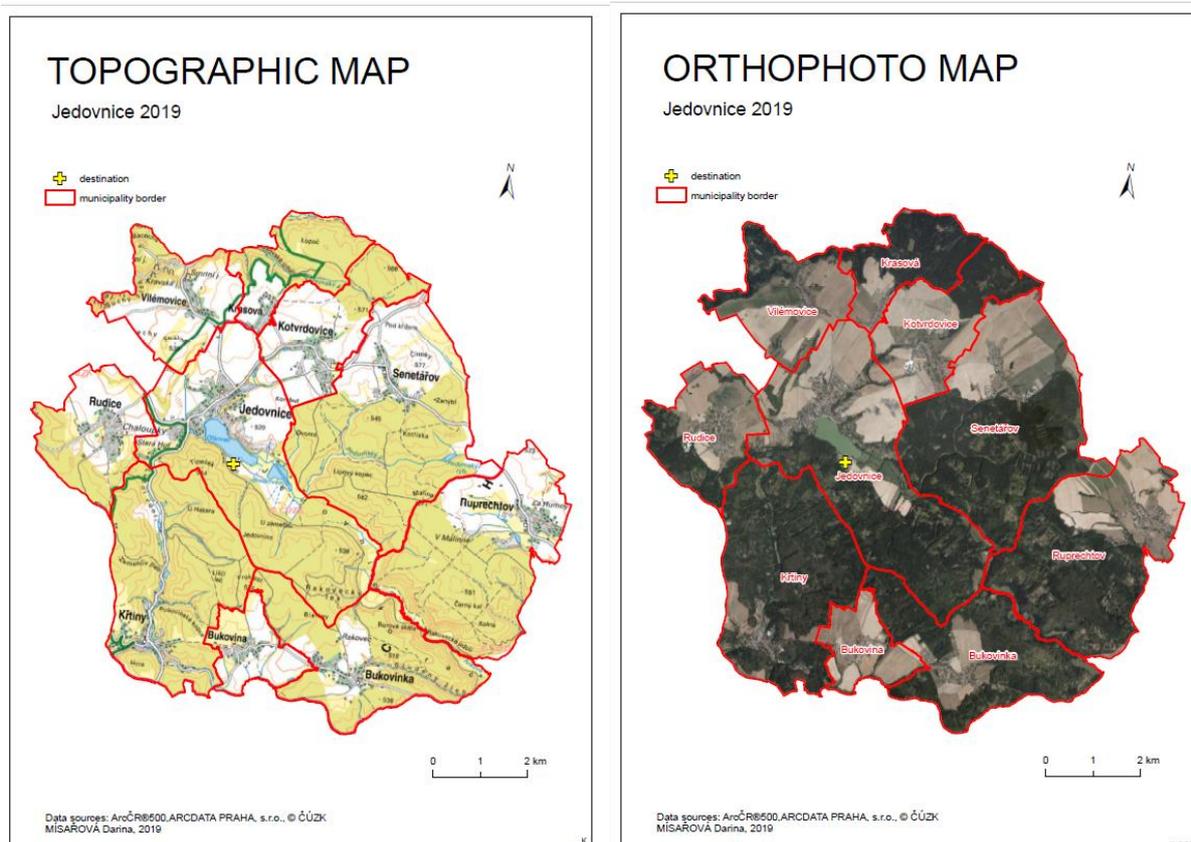
# **CHARACTERISTICS OF INNOVATIVE COURSES OF OUTDOOR EDUCATION**

## 2. USEFUL SCIENCE – WE STUDY THE NATURE AROUND US

The course takes the form of a five-day course and is designed as a transition from field-oriented subjects Integrated Science and Social Studies base 1-4 to field didactics. The aim of the course is to acquaint students with outdoor education as a specific teaching strategy, which should not replace ordinary teaching, but should, on the contrary, supplement and deepen the curriculum of individual disciplines in relation to the region. The emphasis of the course is placed on the possibility of implementing outdoor education in the curriculum of the educational area People and their world. During outdoor education, theoretical knowledge and skills are applied in the field of Geography, Geology, Biology, Ecology, Chemistry, Physics, History, Physical and Art education in exploring the place, in this case the unique environment of the Moravian Karst Protected Landscape Area.

### 2.1 LOCATION OF OUTDOOR EDUCATION – JEDOVNICE

Coordinates: 49°20'26"N 16°45'33"E



The market town (městys) of Jedovnice is located in the South Moravian Region in the Blansko District. It is approximately 25 km northeast of the South Moravian metropolis of Brno. The area of the cadastral territory is 14.2 square kilometres and the population is 2 808 inhabitants (as of 31 December 2018). The altitude of the market town is 465 m. The first written mentions of Jedovnice date back to 1251 and 1268. At that time, Jedovnice became the starting point for the colonization of a large area of the Dražanská Highlands, belonging to the lords of Ceblovice. In

January 23, 2007, Jedovnice was returned the title of a market town (městys) by the Parliament of the Czech Republic.

Due to its geographical location, the attractiveness of the Moravian Karst Protected Landscape Area and the good tourist infrastructure, Jedovnice is an important centre of recreation, tourism, and water sports. A significant benefit is the good availability of services and other public amenities. The main dominant features are the church of St. Peter and Paul and the Olšovec pond. The area is mostly forested with a large number of tourist attractions available for hiking and biking.

The geographical location at the junction of five geomorphological districts gives the landscape of the Jedovnice and its surroundings a specific character. The ponds Olšovec, Budkovan, Dymák and others, into which water from surrounding platforms is supplied by natural watercourses, were built in the tectonic break of the Jedovnice-Račice depression. The depression is limited from the NE by the elevated relief of the Kojálská Plain, the most significant dominant of which is a 320 m high telecommunication transmitter. From the southwest, the break is limited by the northeastern slopes of the Mokerská Highlands, on whose wooded slopes there are single trails for mountain biking. Northwest of the Jedovnice municipality there is a relatively elevated relief of the Suchdol plateau (north) and the Rudická plateau (west). The landscape of the Suchdol plateau is largely used for agriculture (fields and cultural meadows), with the exception of forested gullies (Suchý, Pustý). The Rudice plateau is used for agriculture only in its northern and southern parts, and the central part is forested. There are a large number of karst formations on the territory of both plateaux – sinkholes, gullies, blind and semi-blind valleys with dives (Demek et al., 2014). On the Rudická plateau you can find some remains after mining activities (mining pits, dumps), after all, the mining of iron ore was reflected in the very name of the Rudice municipality. An important landscape element of the Rudice plateau is the kaolin quarry Seč with colourful Rudice layers (clays, sands).

Due to its uniqueness and accessibility of the university city of Brno, the whole area is also used for educational purposes. That is why we pay considerable attention to it in terms of outdoor learning. The area is elaborated in detail in a separate appendix entitled Moravian Karst and surroundings, Atlas for outdoor education and outdoor activities.

## 2.2 COURSE CONCEPT

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Due to the absence of clearly laid out outcomes from teacher training for the field of outdoor teaching, we were forced to look for inspiration abroad during the actual innovation of this subject. In the United Kingdom, for example, one of the outcomes of teacher training is the acquisition of a key skill: "creating an effective and safe teaching environment conducive to pupils' learning and identifying opportunities for pupils to learn outside school" (TDA 2007). This outcome is considered insufficient by many researchers (Kendall et al., 2006; Dillon et al., 2006; Glackin, 2019) and broadly interpretable. Based on research aimed at mapping the state of training of future teachers in the use of outdoor education (or rather teaching outside the classroom), Kendall and her team (2006, p. 22) set out 9 sub-aims which should be focused on in undergraduate training in connection with the teaching strategy. Within their undergraduate training future teachers should learn to:

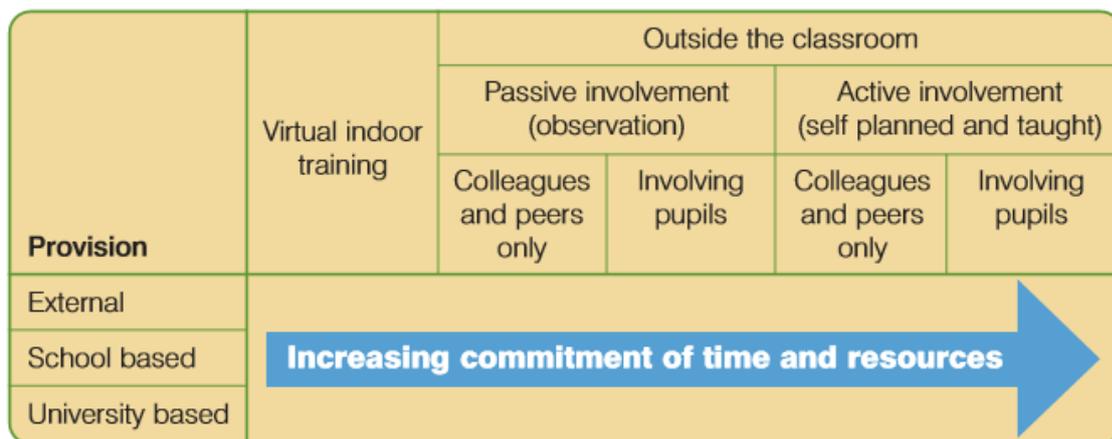
- 1. carry out activities with the pupils in the environment outside the classroom;**
- 2. maximize students' learning in the out-of-class environment;**
- 3. prepare classroom activities prior to activities undertaken outside the classroom;**

4. assess and prevent potential risks associated with teaching outside the classroom;
5. realize the advantages and disadvantages of the education carried out outside the classroom;
6. follow up teaching outside the classroom by classroom teaching;
7. measure/estimate the quality of activities performed outside the class;
8. assess the impact of out-of-class teaching on pupils;
9. experience how pupils behave in various environments.

According to the results of the survey by Kendall et al. (2006) teacher training, in connection with outdoor education, most often focuses on the first three goals and the research participants themselves from the ranks of university teacher identify them as the main ones. Other goals are then referred to as minority goals.

Within the creation of an innovative course, we reflected internally on its current form and tried to consciously incorporate individual learning tasks and activities that are carried out during our own outdoor practice, as well as in other subjects focused on field didactic preparation of future teachers. Apart from the last of the outcomes, "experience how students behave in various environments", which has not yet been implemented into the innovated form of the educational course due to organizational complexity, the above formulated outcomes are taken into account both in partial fields-of-study days and mainly in the final diagnostic-reflective days.

The actual form of the course, i.e. a five-day stay outside the university environment, is based on and supported by the conclusions of research. Tilling and Dillon (2007) looked for connections in the impact of different forms of teacher training on the use of out-of-class teaching in subsequent teaching in schools. They compiled a scale (see Fig. 3) that shows the relationship between the form of teaching and its effectiveness. The authors' conclusions clearly show that the more future teachers are actively involved in individual activities, the greater the impact on the subsequent use of the outdoor education strategy in their own teaching is.



**Fig. 3: The relationship between the form of preparation of students for field teaching and the impact on their further teaching**

Source: Tilling a Dillon (2007, s. 4)

The authors of the study (Tilling & Dillon, 2007) therefore recommend that students have a repeated opportunity to encounter the issue of outdoor education in different forms and in

different environments. Then they expressed the optimal state using a table, where they propose a combination of different forms of teaching in different environments so that students gain experience both during university training and in practice at school (Fig. 4).

Quality					
Provision	Virtual indoor training	Outside the classroom			
		Passive involvement (observation)		Active involvement (self planned and taught)	
		Colleagues and peers only	Involving pupils	Colleagues and peers only	Involving pupils
External				✓	
School			✓		✓
University	✓	✓			✓

✓ Compulsory    ✓ Desirable

**Fig. 4: Recommended composition of training of future teachers in the field of outdoor education**

Zdroj: Tilling a Dillon (2007, s. 14)

The presented course therefore exactly fits into the necessary but neglected area of active teaching in a natural out-of-school environment, in which students can try out the individual activities themselves and reflect with regard to their future profession.

### 2.3 COURSE CHARACTERISTICS

Throughout the course, students will go through four integrated thematic blocks, in which the topics of individual scientific disciplines are suitably supplemented, in order to point out the various teaching methods applicable during outdoor education. The last day is devoted to the diagnosis, reflection and evaluation of this form of teaching and the context of teaching at a regular elementary school (see the end of this chapter for more details). The field content of individual days is summarized in the following overview:

#### **Geographical and historical themes: Exploring the local landscape**

- work with GPS device, orientation on the map, application of geographical tasks in practice in the field (locating the directions, estimating distances, panoramic sketch, geological attractions and historical-cultural aspects of the region in local names, traditional occupations, agriculture, industry, tourism, etc.).

#### **Historical and geographical themes: Past and present of Jedovnice and its surroundings**

- medieval settlement in the region and its current documentation, sacral buildings from the Baroque period (Křtiny as a specific place of pilgrimage), Výpustek Cave and the impact of the Second World War on the local part of the Moravian Karst.

### Biological-geographical themes: Habitats close to nature

- geographical location of the place, representation of tree species depending on the height level, comparison of different types of forest with respect to natural native and non-native tree species according to the height level, human influence on the landscape, small-area vs. large-scale territorial nature protection, human impact on the landscape.

### Biological-environmental themes: Biotopes significantly influenced by people

- causes of landscape changes, transformation of natural landscape into cultural landscape, observation and knowledge of organisms in these biotopes: field, cultural meadow and pond, food relations in ecosystems.

## 2.4 COURSE METHODOLOGY

The following pages describe in detail the methodology of individual teaching days.

### 2.4.1 GEOGRAPHICAL AND HISTORICAL THEMES – NATURAL CONDITIONS AND THEIR INFLUENCE ON HUMAN ACTIVITIES IN THE LANDSCAPE

<b>Length of activity</b>	The activity is done by walking using "Geocaching". The duration is 6 to 8 hours with a lunch break.
<b>Used forms; methods</b>	Group work, conversation between a teacher and a class; work with the map, observation, work with historical images, work with GPS station, sketch creation, field measurements, work with facts, sampling.
<b>Aims of the activity, field goals:</b>	After the activity, students will be able to: <ul style="list-style-type: none"><li>- be familiar with the basic functions of the GPS station, save a point in it, find their way and reach the point safely, use basic functions such as distance measurement, compass to search for the altitude of a given point, etc.</li><li>- independently search for prepared locations in the field - especially according to the GPS station, or maps in a mobile phone and with the use of a tourist map, a basic map of 1: 10,000 or a plan;</li><li>- observe the surrounding nature and, in connection with historical photographs and maps, consider how important it may have been for the locals in the distant past and how its form and function have changed over time to its present form;</li><li>- they measure distances on a map, estimate distances in reality, and measure sections of a road by stepping and using available equipment;</li><li>- describe how to behave and how and why not to behave in a protected landscape area;</li><li>- using samples in the geopark, they identify the most significant igneous and sedimentary rocks they have observed in the area;</li><li>- using a map and observations characterize the monitored area in terms of relief, subsoil, soils and biota and describe the cause of differences in these characteristics in the area of the Sinkhole in Kolíbky</li><li>- describe the peculiarities of the observed landscape and the circumstances of their origin (lakes on a limestone bedrock, coloured layers in the Seč quarry)</li><li>- leave an art message to future visitors (Land Art);</li><li>- create an emotional map of the route and reflect on how the individual parts of the landscape affect them;</li></ul>

		<ul style="list-style-type: none"> <li>- create a short video summarizing some of the attractions of the area.</li> <li>- Alternatively: They are familiar with selected geographical terms in English, they perform simple tasks on the basis of an assignment in English.</li> </ul>
<b>Field goals:</b>	<b>Didactic</b>	<p>Students:</p> <ul style="list-style-type: none"> <li>- reflect on the possibilities of didactic use of completed activities in teaching;</li> <li>- describe the objectives of the completed tasks, with regard to them as students of teaching and with regard to pupils;</li> <li>- propose accurate and relevant field didactic modifications of completed tasks for primary school pupils</li> <li>- propose correct field didactic tasks that precede and follow outdoor education so that they make the best use of its potential</li> <li>- know the principles of safety education and movement in the outdoor environment with pupils.</li> </ul> <p>Sub-aims are directed towards the concept of "How nature affected the activities of people in the visited area", and vice versa, "How people influenced the landscape character in that area."</p>
<b>Aids</b>		basic map 1: 10,000, tourist map, geological map, soil map, historical images, orthophotos (see appendix), mobile phone (with map applications and GPS or specialized GPS station), field diary, stationery, crayons, shovel, bags for sampling.
<b>Outcomes</b>		elaborated tasks, photographs, presentations, and short videos
<b>Prologue</b>		<p>The southern part of the Blansko district (which also includes a large part of the monitored area) is one of the industrially important areas of the Czech Republic. When using the historical method to analyse the influence of localization factors of industrial plants, we come to manifestations of a typical <b>geographical inertia</b>. It is a matter of preserving the character of industrial production while changing the efficiency of localization factors in connection with technological development, the inability of industrial buildings to change their location due to changes in natural localization factors (e.g. depletion of raw material deposits), economic localization factors (e.g. changes in the market, changes in production technology), and socio-economic factors (e.g. military-political situation, the need for a certain qualification structure of the population). This lead either to the destruction of the object or to the preservation of its existence with a certain transformation. Although the importance of the original localization factors decreased in the region (iron ore, waterpower, beech-oak forests suitable for the production of charcoal, limestone, etc.), the inertia of iron production manifested itself (geographical inertia) as well as the ability to transform it into engineering production. The current economic activities were so strong that, together with the production tradition, they influenced the development of engineering production to which the construction of the Brno - Česká Třebová railway line significantly contributed and thus conditioned the emergence of the "Posvitavy industrial agglomeration". The present day is again characterized by a change in human activities and we are in a post-industrial period, when there are again changes in the focus of the region.</p>

<b>Inter-subject relations</b>	<p>Geography: movement in the field, use of maps, getting to know the types of landscape, their form and connection with human activity, creating plans and sketches</p> <p>History: historical development of the landscape, history in the landscape, history of the landscape</p> <p>Social sciences: value orientation, building a relationship to the region and subsequently to the homeland</p> <p>Movement and health: movement in the field, principles of safe movement, increasing physical condition</p> <p>Biology: the connection between natural conditions and fauna and flora</p> <p>Czech language: reading comprehension of assigned tasks, information materials, educational boards, etc.; formulation of answers, creation of poems and advertisements</p> <p>Art: aesthetic feeling expressed by movement, photography and one's own work</p> <p>English language: understanding of tasks assigned in a foreign language, vocabulary</p>
<b>Note</b>	<p>A broader framework for this activity is provided by the preparation in the classroom (landscape elements, work with a map, etc.) and subsequent activities, which summarize the outcomes and place them into a broader context.</p>

### Course of activities:

We start the day by practicing working with a GPS station. Each group moves independently across the landscape with the help of a map and GPS navigation and performs the assigned tasks which lead to the above-mentioned concept at individual locations. It is a more modern analogy of the "traditional" tracking.

The individual groups come in 10-15 minutes intervals. At the beginning of the route, the GPS coordinates of the 1st station are obtained. In order to use all the time, each group has two more "B tasks" (see below), which they perform while waiting to leave (if the group is not the first one) and upon arrival at the destination (unless the group is the last one).

If the group does not find a box with tasks or someone accidentally finds and destroys the boxes, each group has an envelope in their folder with the coordinates of the individual stations. If they do not know where to go, they can unpack the help and go to the place according to the map.

Students will pass through a total of 6 stations, and at the 6th station is Rudický mlýn, where there is a meeting, a break for a snack and excursions. Then all groups continue together with the teacher. The evaluation of the developed tasks takes place in the Seč quarry before the last, land-art, task.

They will prepare a field diary, writing and drawing supplies to complete the tasks, and they also have all the maps, photographs (see appendix) and other aids needed to complete the assigned tasks in their folder.

The attached assignments are not in full, they rather serve as topics for possible tasks (associated with the place given by GPS coordinates) and their specific form must always be adjusted according to the conditions of the place.

Notes for the organization: It is recommended that students already know how to work with a GPS station (i.e. to try working with it in class in advance). Before the activity itself, it is necessary to repeat the skills and verify that everyone can work sufficiently with GPS. Even so, it is possible to let

the pupils go alone only in safe places and it is necessary that the supervision either goes with each group (but lets the students lead) or happens as densely as possible on the route. The shorter the distance between sites, the less supervision is required (but it depends on the safety of the surroundings) and also the intervals between the groups have to be bigger to avoid groups meeting.

**Entering the position of the 1st station:**

**You enter the coordinates in advance into the GPS station:**

**N 49° 20.256', E 016° 45.193'**

---

**Hint for the 1st station: From the starting station, take NW direction.**

---

1. Use the GPS station to determine the altitude, the width of the water object in front of you, etc.
2. Take photos or collect small samples of rocks that you see along the way.

**Entering the position of the 2nd station**

**coordinates in GPS: N 49° 20.265', E 016° 44.977'**

---

**Hint for the 2nd station: From Post 1, take the path on the left side of the stream and head west or follow the GPS device.**

---

Context of task 1: It is good to include tasks where students repeat the work with the GPS station at the beginning.

Context of task 2: At the end of the journey there is a geopark, in which they can compare their own collected rock samples or their photographs with the exhibits.

**Station no. 2**

**Aids: information boards of the nature trail, tourist map, basic map 1: 10 000, GPS station**

1. According to the nature trail board, determine what the name of the protected landscape area you are heading to is derived from and draw pictograms and / or write short rhymes on how to behave in the area.
2. Try one of the forms called Guerrilla geography :) – during your journey to the next station, take a picture every 100 m of something that interests you in the countryside. In your free time at the mill, then draw an emotional map, i.e. a map of the road, based on the photos (Yes, it's still a map, so at least have the basic essentials of a map□), in which interesting places will be captured, with a genius loci, evoking various feelings, places where there is something you do not understand, etc.

**Entering the position of the 6th station**

**coordinates in GPS: N 49° 19.965', E 016°44.324'**

---

**Hint for the 3rd station: You move SW in the direction of the green tourist sign.**

Context of task 1: It is appropriate to use the boards of the nature trail where they can be linked with the curriculum.

Context of task 2: Guerilla geography is an excellent means of exploring and focusing attention on otherwise inadvertently perceived surroundings. The resulting emotional map will allow a retrospective reflection of places, evoke geographical questions and the practice of creating a map.

### **Station no. 3**

**Aids:** tourist map, basic map 1: 10 000, GPS station

1. Estimate the distance between ..., verify the estimate by stepping and then using a GPS station.
2. Estimate the distance you have travelled so far and then find out from the GPS station.

**Entering the position of the 4th station: GPS: N 49° 19.992', E 016° 44.021'**

---

**Hint for the 4th station: Continue along the green tourist sign.**

---

Context of the tasks: Estimates are an important and underestimated area that needs to be developed in primary school. It is related to the development of cognitive functions and the development of abstraction and spatial orientation at a given age. At the same time, it is necessary to verify your estimates in various ways (regularly) so that they can be gradually improved.

### **Station no. 4**

**Aids:** tourist map, basic map 1: 10 000, GPS station, historical picture of Rudice Sinkhole (see educational board)

1. Compare the landscape around you with its appearance at the beginning of the 20th century. What changes have occurred and what was their cause?
2. Explain how the name of the place you are in came about. Describe where the watercourse you are looking at is flowing to.

**Entering the position of the 5th station**

**GPS: N 49° 20.009', E 016° 44.107'**

---

**Hint for the 5th station: It is located only 300 m from the 4th station uphill in the S direction.**

---

Context of task 1: The task uses a part of the educational board (photography) to highlight the context associated with the transformation of the landscape during the last 100 years (associated here with a different need for wood). Pupils come up with some aspects on their own, then we have to lead them with questions (why, for what ...) to explain the observed phenomena.

Context of task 2: The task uses basic geographical questions aimed at knowing the place in context (The Jedovnice stream dive is the largest and deepest karst sinkhole in the Czech Republic).

### **Station no. 5**

**Aids:** tourist map, basic map 1: 10 000, GPS station, geological map, soil map

1. Describe the natural characteristics of two different places – Sinkhole (place you've just been through) and Kolibky (place where you are). Describe the characteristics of the differences

between the two places and how this is reflected in the vegetation (and therefore the animal species) in the location.

2. Take a photo in ... so ...

#### **Entering the position of the 6th station**

**GPS: N 49°20.026', E 016° 43.684'**

---

**Hint for the 6th station: Go in the NW direction again based on your aids.**

---

Context of task 1: The task again uses the local landscape. The two places are close to each other, and at the same time contrast a lot so they are a good representative of the influence of different natural conditions on the biota - here by way of example a Sinkhole of the Jedovnice stream which is in the valley and there is shade-loving and moisture-loving vegetation (and therefore animals), which cannot stand direct sunlight, vs. thermophilic, arid vegetation up to steppe nature (on limestones) in Kolíbky, which are at higher altitudes.

Context of task 2: The task combines movement and creativity.

#### **Station no. 6**

**Aids:** tourist map, basic map 1: 10 000, GPS station, orthophotos, geopark boards

1. Compare the photos of the rocks you saw along the way with the rocks located in the geopark and name them.
2. Identify the elements that give the monitored landscape its character from the perspective (i.e. the basic landscape-creating elements) and mark them in the attached map.
3. From the educational board find out ...

#### **Entering the position of the 7th station (all together)**

**according to GPS coordinates: N 49°20.104', E 16°43.287'**

---

Context of task 1: The task uses the collected material and allows its comparison with samples in the geopark.

Context of task 2: The task aims to realize the specifics of the landscape, the description of landscape elements and further aims to develop mapping skills.

#### **Station no. 7**

**Aids:** tourist map, basic map 1: 10 000, GPS station, local educational board

1. Explain why there are lakes on the Rudická karst plateau when the limestone is permeable.
2. Using the information board, explain (local interest) ...

#### **Entering the position of the 8th station (all together)**

**GPS: N 49°19.989', E 16°43.059'**

---

Context of the tasks: The tasks use basic geographical questions aimed at knowing the place in context. Conversely, if something is unusual or isolated in a given place, it can help to clarify or realize what is regular, common.

### Station no. 8

**Aids:** tourist map, basic map 1: 10 000, GPS station, HDPE bags (plastic/microtone bags)

1. Around us we see a "landscape" modelled from sand. Use contour lines to sketch the relief you see.
2. Suggest the use of this place to...
3. Take samples of coloured sands, clays and rocks in microtone bags and create a land-art object in the lower part of the quarry.

**On the way back: Find the shortest way back on the map. Find the ATC destination coordinates in your GPS.**

Context of tasks: The quarry surroundings can be used as a "model" of the landscape, which can be captured (surface drawing), described or completed (land-art). It is only necessary to pay attention to increased security measures.

B1: Design (and then dramatically depict) an ad for the region you are located in. The trailer should target families with children / newlyweds on their honeymoon / seniors / teachers / teenagers. You can either play the ad at the end of the trip or play it from the videorecording.

Context of the task: The task allows students to realize the specifics of the region. At the same time, students can apply creativity and their communication and even technical skills.

B2: From the viewpoint ... / from the dam ... see the landscape. Compare its present form with the historical image. **Identify what has changed and why, and, on the contrary, what has not changed and why** (e.g. change in relief shapes, in the river network, in the distribution of water areas, municipalities - number, decrease, new municipalities, growth of municipalities, names, trails, paths, roads - the relationship between old paths and roads, forests - area and size, increased, decreased, agricultural land - method of management, etc.). **As part of the answers, use all these terms in any form: function, quality, movement, cause, consequence, change, space, time, relationships.**

Context of the task: The task allows students to specifically reflect the changes of the local landscape (with the help of prescribed concepts). This task is quite complex, so it should be preceded by a task with a forest, which will tell students the way of thinking. Moreover, the interdisciplinary relationship with the Czech language will be strongly applied here as well.

#### Table of the most frequently used technical terms:

Concept and brief characteristics in Czech	Concept and brief characteristics in English
<b>krajina</b> – část zemského povrchu s charakteristickým reliéfem, tvořená souborem funkčně propojených ekosystémů a civilizačními prvky	<b>landscape</b> - part of the earth's surface with a characteristic relief, consisting of a set of functionally interconnected ecosystems and elements of civilization
<b>chráněná krajinná oblast</b> – velkoplošné	<b>protected landscape area</b> – a large protected

chráněné území nižšího stupně ochrany	area with a lower degree of protection
<b>GPS</b> – globální polohový systém, jenž umožňuje pomocí družic určit přesnou polohu jakéhokoliv místa na Zemi.	<b>GPS</b> - a global positioning system that enables satellites to determine the exact location anywhere on Earth.
<b>lom</b> – povrchový důl, který slouží k těžbě nerostných surovin nebo hornin	<b>quarry</b> - a surface mine used for the extraction of minerals or rocks

**Didactic reflection on the teaching day:**

For each task, describe what seemed to be its goal.

For each task, explain why it was included in the course - what we could show in it.

Adjust the individual assignments so that they are suitable for primary school pupils (in the 2nd period).

For each task, suggest (a) what the pupils need to be taught before outdoor education and (b) tasks connected with outdoor education which can be used in the school afterwards to have the best possible effect.

Evaluate other aspects of the described topics (especially the organization of the day) and suggest a way they could be organised for primary school pupils with regard to their safety, staffing, aids, etc.

## 2.4.2 HISTORICAL AND GEOGRAPHICAL DAY: PAST AND PRESENT OF JEDOVNICE AND ITS SURROUNDINGS

**M. Jireček, E. Hofmann, R. Durna, H. Svobodová<sup>2</sup>**

Note: this activity is very detailed and also serves for students to stay in the course Useful Science - the key to sustainable development.

<b>Length of activity / day</b>	The duration of the activity is around 9 hours with a lunch break. You can move by hiking, Nordic walking, cycling or using public transport.
<b>Used methods, forms</b>	Group work, work with a map, observation, sketch creation, teachers talk with students, visit monuments (especially the baroque church of the Name of the Virgin Mary (Jména Panny Marie) in Křtiny, the extinct village of Bystřec and Výpustek Cave, including the local exhibition Cave and People
<b>Aims of the activity, field goals:</b>	<p>After the activity, students will be able to:</p> <ul style="list-style-type: none"> <li>– find locations suitable for teaching in maps and in the field;</li> <li>– describe the location of places suitable for outdoor education and explain the broader context of their historical development;</li> <li>– prepare their own teaching in the selected region using the historical component of teaching;</li> <li>– based on the use of regional history, describe important events in our national history related to the monitored locality;</li> <li>– explain what events in history have affected the monitored place;</li> <li>– when moving in the field, describe the human interventions that affected the place;</li> <li>– move in the field using a tourist map and a orienteering map;</li> <li>– take photo documentation;</li> <li>– create a plan for a specific place;</li> <li>– create a panoramic sketch;</li> <li>– record the route on a paper map and by using GPS;</li> <li>– actively contribute to the protection of the landscape;</li> <li>– they select the most important geographical terms and translate them into English.</li> </ul>
<b>Field Didactic goals</b>	<p>Students:</p> <ul style="list-style-type: none"> <li>- reflect on the possibilities of didactic use of the completed activities in teaching;</li> <li>- describe the objectives of the completed tasks, with regard to them as students of teaching and with regard to pupils;</li> <li>- propose field didactic accurate and relevant modifications of completed tasks for primary school pupils;</li> <li>- propose field didactic accurate tasks which precede and follow outdoor education so that its potential is put to the best possible use;</li> <li>- know the principles of safety education and movement outdoors with</li> </ul>

<sup>2</sup> Zpracováno podle studijních materiálů P. Vyhňáka, K. Mrázkové a M. Jirečka.

	<p>pupils.</p> <p>Sub-aims are directed towards the concept of "How nature affected the activities of people in the visited area", and vice versa, "How people influenced the landscape character in that area."</p>
<b>Aids</b>	Worksheets, field diary, mobile phone with map applications, writing implements, tourist maps, maps on OB.
<b>Outcome</b>	Sketches, photo documentation, record from the field diary, presentation of the whole activity.
<b>Prologue</b>	<p><b>Selection of locations</b></p> <p>While walking through the local landscape, you will learn many interesting things from the teacher regarding the origin of the name of the local villages, the colonization of the local region, the tradition of pilgrimages, etc. You will pass a number of small church buildings, but also models of the solar system or an educational orchard at the school in Křtiny. However, the basis of our journey will be a visit to three important historical sites – the defunct medieval settlement of Bystřec, the Výpustek Cave and the town of Křtiny with the Church of the Name of the Virgin Mary (chrám Jména Panny Marie). A number of tasks are prepared for you for each of these locations. The places have been selected to create a coherent and varied route and offer a range of different historical sites, all of which are significant not only from a regional point of view, but also have a significant impact on national history.</p>
<b>Note</b>	In the vicinity of the village Jedovnice and in the wider area there are a number of historical and natural monuments, which are recorded in the Atlas of Outdoor Activities.
<b>Inter-subject relations</b>	<p>Geography: movement in the field, use of maps, getting to know the types of landscape, creating plans and sketches</p> <p>History: learning about the regional and national history, historical development of the region and landscape, protection of monuments</p> <p>Social sciences: value orientation, building a relationship to the region and subsequently to the homeland</p> <p>English language: the ability to translate important terms into English</p> <p>Movement and health: movement in the field, orienteering, overcoming obstacles, increasing physical condition</p> <p>Biology: movement in the forest landscape, fauna and flora, educational orchard, planetary system</p> <p>Czech language: ability to formulate their opinions in written form within the answering of tasks, reading texts in visited localities (exhibitions, notice boards, information boards), evaluating the relevance of information</p> <p>Art: ability to make drawings of observed facts</p>

### Medieval settlement Bystřec

As part of medieval colonization, a number of villages were established in the area of the Dražanská Highlands and the Moravian Karst. Some of them have survived to the present day, while others have disappeared over time. Of the defunct municipalities, thanks to research in the field and popularization activities, the most famous is the village which was called Bystřec.

Your task here is to answer the following questions and complete the following tasks. Read all assignments in advance. You will need a tourist map of Jedovnice to complete the tasks. You will find the answers to the questions on the route on the information panels or in the teacher's explanation.

1. Find the defunct medieval settlement Bystřec on the tourist map. Describe the location of the settlement. Describe the geographical conditions in which the village was established. Use both tourist maps and direct observation in the countryside. State the reasons that led the settlers of that time to choose this place. Verify your thoughts with the help of the nature trail boards.
2. Create a plan for the current appearance of the Bystřec settlement. Use the map or GPS station to determine its distance from the small town of Jedovnice, the municipalities of Bukovinka and Křtiny.
3. The surroundings of the defunct village are equipped with a number of information boards. The information in them, together with the teacher's explanation, will help you to complete the following text:

The settlement Bystřec was originally named ..... . This name probably means in translation ..... . It was built on the estate of the lords of..... . The village existed in ..... . The local colonists apparently came from ..... . The man who stood at the birth of the villages by recruiting the colonists and usually becoming the first reeve was called ..... . The Bystřec settlement consisted of ..... homesteads, but most of them existed ..... at a time. It was about..... homesteads with ..... foundation. For building houses, materials were used like (..... and ..... . The village was moved to the south side of the valley, because here after ..... slopes, the ..... took place. At the time of its heyday, between ... and ... Inhabitants lived there. The village was gone in ..... probably during the wars between the Moravian margraves of the Luxembourg dynasty ..... and .....

Not far from here also lay the medieval village of Hamlíkov, originally called ..... in German. It is possible that the legend of the Rat-Catcher of Hamelin who apparently took children out of the town of ..... refers to it (it could have been a man who took away the new colonists and founded the village of Hamlíkov with them).

4. Based on the drawings in the information boards, sketch and describe what the local homesteads looked like.

### **Výpustek Cave**

There are a large number of caves in the Moravian Karst Protected Landscape Area. Among the most famous accessible caves are The Punkva Caves, Catherine's Cave, Balcarka Cave and the Sloupsko-šošůvské Caves. Each of these caves is different and has a rich history, which is associated not only with their discovery, but the caves also played a role in the settlement of the entire area of the Moravian Karst.

A specific accessible cave is Výpustek, which is the largest cave system in the southern part of the Moravian Karst. However, the research into cave spaces was interrupted during the Second World War, the cave was rebuilt into an underground factory and from the 1960s it served as an underground shelter for the command post in case of war.

Your task here is to answer the following questions and complete the following tasks. Read all assignments in advance. You will find the answers on a tour of the cave, both in the explanation of the guide, in the information boards or through your own observations. A tour of the exhibition - Caves and People, which is part of the complex, will also help you answer the

questions. Here you will find many interesting things, such as the fact that the wolverine is not a bird (as one popular band sings), but a marten or that the siphon is not just a once popular sparkling drink.

1. In the exhibition Caves and People you will find information that will help you correctly assign what makes individual caves (not only) in the Moravian Karst stand out:

1.	the richest animal skeletal remains	A	The Bull Rock Cave
2.	the longest cave	B	The Kůlna Cave
3.	the richest decoration, the largest colony of bats	C	The Výpustek Cave
4.	the oldest human remains, the largest entrance	D	The Hranice Abyss
5.	the deepest abyss	E	The Amateurs Cave
6.	the deepest underground lakes	F	The Bozkov Dolomite Caves
7.	the oldest cave drawings	G	The Javoříčko Caves

Correct answers:

1. 2. 3. 4. 5. 6. 7.

2. What is the name of cave research science?

3. From which rock is the Výpustek cave and other caves in the vicinity?

4. Describe the origin of cave systems in the Moravian Karst and state which watercourses formed the caves.

5. Find out the names of the most important personalities associated with the Výpustek Cave (scientists, archaeologists, etc.) Describe how they contributed to the research into the karst.

6. What were the bones of prehistoric animals found in the Výpustek Cave used for?

7. What was mined in the cave? What was this material used for?

8. For what purposes did the German army use the Výpustek Cave? Describe traces of this activity.

9. For what purposes did the Czechoslovak People's Army use the Výpustek Cave?

10. What was the equipment in the cave with when it was used by the Czechoslovak People's Army?

11. The remains of which animals were found in the Výpustek Cave?

12. In which of the caves of the Moravian Karst did Jindřich Wankel dig a large number of human skeletons in 1872?

13. In which of the caves of the Moravian Karst were the skeletal remains of Neanderthals found?

14. Based on the findings presented in the exhibition, describe the difference in human subsistence in the Paleolithic and Neolithic periods.

### **Church of the Name of the Virgin Mary in Křtiny**

Another important monument that significantly influenced this area is the Church of the Name of the Virgin Mary (and the churches that preceded the construction of this church) located in the small town of Křtiny (about 800 inhabitants). Although the small town is not big, tens of

thousands of people are attracted to it every year. It is one of the most important Marian pilgrimage sites in Europe and one of the oldest in the Czech Republic. This is thanks to the Church of the Name of the Virgin Mary, which is a national heritage site. Not only pilgrims come to this place about 15 km from Brno to pay their respects to the Virgin Mary, but also tourists who admire this baroque pearl and one of the most beautiful works of the architect Jan Blažej Santini-Aichel. (viz <http://www.toulejse.cz/>.)

Your task will again be to answer the following questions and complete the following tasks. Read all assignments in advance. You will find the answers on a tour of the church.

1. In what century was the church built?
  2. Looking at the pilgrimage church, can you describe some typical features of the Baroque style?
  3. Find and draw typical shapes of this style.
  4. What was the name of the architect of the church?
  5. Provide other buildings of the architect (for help, see the chapel of saint Anna).
  6. Why has Křtiny become an important place of pilgrimage?
  7. Describe what led (leads) the pilgrims to the pilgrimage.
  8. Find out when the biggest pilgrimage took place and why was it at this time?
  9. Do you know any other places of pilgrimage (in the Czech Republic and abroad)?
  10. What is the nickname of the church in Křtiny?
  11. What is a cloister?
  12. How many bells does the local carillon count?
  13. One of the bells is dedicated to St. Cyril and St. Metoděj. Find out if, according to tradition, they had something to do with the Křtiny valley.
  14. Look at the votive paintings located in the cloister by pilgrims. What was the significance of placing these images here?
  15. Which church order operated in Křtiny and is operating again today?
  16. What is a fresco and how is it created?
  17. Find out what makes one of the angels in the church specific? (hint: look for the inscription ET TIMORIS in the interior of the church, the angel is located near this inscription)
  18. Take a look around the temple and find the local elementary school. Can you find some common features with the Church in Křtiny?
- (Answer the following two questions only if you have taken an ossuary tour).
19. Find out what variants of painted Křtiny skulls are given?
  20. Try to draw a skull and reproduce the ornaments drawn on it.

Other questions concern the surroundings of the temple, or the route to the village:

21. A memorial plaque commemorating an important philosopher, politician and one of the founders of Scouting is placed on the chateau building. Write his name (hint: not forester Vincenc Hlava):
22. In the forests around Křtiny, monuments of important forest personalities are installed, the so-called "Forest Pantheon". We will pass one of the monuments on the way between Křtiny and Jedovnice. Write his name:

23. Rudolf Těsnohlídek set the beginning of his significant novel (fables) in the former travellers' inn (near the village centre, behind the inn at Farlíků). Look for a plaque to find out which work it is.

The transfer to ATC Jedovnice is based on the map for orienteering and GPS stations.

On the first lookout over the village of Křtiny, draw a panoramic sketch of the view of both Křtiny landmarks. The creation of a panoramic sketch is described in the appendix.

**Table of the most frequently used technical terms**

<b>Pojem a stručná charakteristika česky</b>	<b>Concept and brief characteristics in English</b>
<b>kolonizace</b> – osídlování nových území	<b>colonization</b> – settlement of new territories
<b>lokátor</b> – osoba, která měla na starosti založení nové obce (zajišťoval osadníky, stával se rychtářem v nové obci)	<b>locator</b> – a person who was in charge of founding a new village (provided settlers, became the reeve in a new village)
<b>speleologie</b> – věda zabývající se výzkumem jeskyní	<b>speleology</b> – the science of cave research
<b>mariánské poutní místo</b> – poutní místo, kde je uctívána Panna Maria	<b>Marian pilgrimage site</b> – a place of pilgrimage where the Virgin Mary is worshipped
<b>Baroko</b> – umělecký a kulturní směr převládající v Evropě v 17. a 18. století	<b>Baroque</b> – artistic and cultural direction prevalent in Europe in the 17th and 18th centuries
<b>národní kulturní památka</b> – nejvýznamnější kulturní památky národa. O jejich zařazení rozhoduje vláda. Podléhají zvláštní ochraně.	<b>National Cultural Heritage</b> – the most important cultural monuments of the nation. The government decides on their inclusion. They are subject to special protection.
<b>ambit</b> – krytá chodba okolo poutních kostelů. Sloužila mimo jiné jako přístřešek pro poutníky.	<b>cloister</b> – a covered corridor around pilgrimage churches. Among other things, it served as a shelter for pilgrims.
<b>votivní obrazy</b> – děkovné obrazy věnované poutníky	<b>votive paintings</b> – Thanksgiving paintings dedicated to pilgrims

#### **Didactic reflection on the teaching day:**

What needs to be ensured in advance when organizing a similarly focused outdoor education day?

What would you do (better) as organizers of similar outdoor education?

In your opinion, what should be especially explained and shown in the places visited in terms of teaching at primary school (4th and 5th grade)?

If you would like to use these places as locations for outdoor education of primary school pupils (4th and 5th grade), how would the lessons need to be adapted?

#### **The following literature was used to create worksheets for the historical - geographical day:**

Belcredi, L. (2006). Bystřec: o založení, životě a zániku středověké vsi: archeologický výzkum zaniklé středověké vsi na Dražanské vrchovině 1975–2005. Brno: Muzejní a vlastivědná společnost v Brně ve spolupráci s Moravským zemským muzeem.

Kavička, K. (2014). Poutní a farní chrám Páně Jména Panny Marie ve Křtinách. Brno: Kartuziánské nakladatelství.

Polívková, H. (Red.). (2010). Křtiny. Santiniho perla Moravy. Výstava v kryptě katedrály sv. Petra a Pavla v Brně 29. dubna – 19. září 2010. Brno: Diecézní muzeum.

Zajíček, P., & Hromas, J. (2008). Jeskyně Výpustek. Průhonice: Správa jeskyní České republiky.

Educational trail near the settlement Bystřec - Rakovecké údolí (prepared by the civic association Barvínek).

### 2.4.3 BIOLOGICAL-GEOGRAPHICAL TOPICS: HABITATS CLOSE TO NATURE

<b>Length of activity</b>	After a short preparation in the classroom, the whole day is carried out outside the campsite using the Arboretum of Mendel University of Forestry and Agriculture in Křtiny for a total of 8 hours, including a lunch break. Teaching is focused on learning about tree species and forest communities, which uses a rapid sequence of different types of forest (spruce monoculture, deciduous forest close to natural) along the forest road over the hill Tipeček, but also the presence of unique trees in the arboretum. In addition to the issue of forest communities, the block pays attention to territorial nature protection.
<b>Used forms; methods</b>	Group work; work with a map, recognizing birds by sound, observation with a magnifier and binoculars, work with identification keys and atlases, didactic game, discussion.
<b>Aims of the activity, field goals:</b>	<p>After the activity, students:</p> <ul style="list-style-type: none"> <li>– compare different types of forests, determine the degree of human intervention in the forest ecosystem,</li> <li>– select suitable and safe locations for observation and knowledge of living organisms in the field,</li> <li>– with the help of identification keys and atlases, determine selected species of woody plants, approximately determine the height and age of solitary tree species,</li> <li>– select model plants of the given ecosystem, propose a methodically correct procedure for observing and recognizing plants,</li> <li>– provide suitable catching and determination aids for observation and knowledge of living organisms in the field,</li> <li>– implement a safe hunt for invertebrates then determine them and assign them to selected taxa</li> <li>– identify vertebrates occurring in forest habitats on the basis of residence characteristics and with the help of professional literature,</li> <li>– recognize the boundaries of a small-scale specially protected area in the countryside and abide by the rules of behaviour in that area,</li> <li>– propose activities and learning tasks that should precede outdoor education aimed at familiarizing pupils with forest ecosystems,</li> <li>– propose activities and learning tasks that should follow up on outdoor education aimed at forest ecosystems.</li> </ul> <p>Alternatively:</p> <ul style="list-style-type: none"> <li>– Selected plants and animals are named in English; simple tasks are performed on the basis of assignments in English.</li> </ul>
<b>Field Didactic goals:</b>	Students: reflect on the possibilities of didactic use of the completed activities in

	<p>teaching;</p> <p>describe the objectives of the completed tasks, with regard to them as students of teaching and with regard to pupils;</p> <p>propose field didactic accurate and relevant modifications of completed tasks for primary school pupils;</p> <p>know the principles of safety education and movement in the outdoor environment with pupils.</p> <p>Sub-aims are directed towards the concept of "How nature affected the activities of people in the visited area", and vice versa, "How people influenced the landscape character in that area."</p>
<b>Aids</b>	<p>For groups: tourist map of Jedovnice and immediate surroundings, 2x binoculars, 2x identification key (Ptačí sousedé: klíč k určování ptáků. (2017). Lipka – ediční centrum.?, garden shovel, plastic bowl, 3x cup magnifier, 1x magnifier, 1x entomological tweezers, 2x identification key for identification of soil invertebrates TILLING, Steve, John BEBBINGTON a Anne BEBBINGTON. Klíč k určování půdních bezobratlých. Brno: Rezekvítek, 2017), publications for determining the traces and residence marks of animals (e.g. Leutscher, A. (1996). Stopy a značky zvířat. Mladé letá. Laußer, M. (2014). Stopy zvířat. Svojtka &amp; Co.), atlas of forest animals (e.g. set Expedice příroda – 50 našich lesních zvířat), keys for determining dichotomous woody plants (e.g. Rezekvítek: Klíč k určování dřevin podle listů; Hudcová, A. Klíč k určování stromů) or with numerical references (Dobrylovská, D: Klíč k určování stromů; Martinovský, J., Pozděna, M.: Klíč k určování stromů a keřů), dice – ideally larger sizes with individual sides distinguished by colour (colours used white / yellow / pink / purple or blue-violet / red).</p> <p>Worksheets: Before you set off on a route, Common forest birds or everyone sings differently, pictures of chaffinch, great tit, black-headed warblers, lesser woodpeckers, bunting and song thrush glued to the worksheet, Vertebrate forest record card, Tree knowledge note card, note card Trees, Flower crayons.</p> <p>For teachers: audio recordings of birds singing (available at <a href="https://temata.rozhlas.cz/priroda/ptaci">https://temata.rozhlas.cz/priroda/ptaci</a> or <a href="http://www.nasiptaci.info/">http://www.nasiptaci.info/</a>), photos of selected forest vertebrates (e.g. red deer, red squirrel, wild boar, forest marten, badger, shrew, shrub, dormouse, great spotted woodpecker, barn owl, wood hawk, brown frog, salamander, viper), envelopes , stapler, coloured paper cards, laminated cards with numbers.</p>
<b>Outcomes</b>	elaborated tasks, exhibitions of observed plants and animals
<b>Prologue</b>	The forest is one of the basic habitats which are included in the curriculum of the primary school. Many forests or their species composition are significantly altered by human intervention, either by planting non-native species for the area or exotic species. In the southwestern direction from the Olšovec pond to Křtiny over the Tipeček hill, along the forest paths, there is a coniferous monoculture, which gradually turns into a deciduous forest with a predominance of beech and hornbeam, i.e. a forest natural to the area.

<b>Inter-subject relations</b>	<p>Biology - getting to know selected organisms, getting to know selected communities, working with identification keys and atlases, practical hunting of animals</p> <p>Geography – orientation using cardinal directions, work with a map</p> <p>History – People and time - historical development of the landscape, history in the landscape, history of the landscape</p> <p>Social sciences – value orientation, building a relationship to the region and subsequently to the homeland</p> <p>Movement and health – movement in the field, principles of safe movement, increasing physical condition</p> <p>Czech language – reading comprehension of assigned tasks, information materials, educational boards, etc., formulation of answers</p> <p>Art – aesthetic feeling expressed through plants</p> <p>English language – understanding of tasks assigned in a foreign language, vocabulary</p>
<b>Note</b>	<p>A broader framework for this activity is provided by preparation through teaching in the classroom (plant morphology and systematics, taxonomy of animal species, selected communities of the Czech Republic) and subsequent activities that summarize the outcomes and place them in a broader context.</p>

### Course of activities:

#### 1. We get to know nature on a map

Learning task context: Before the actual expedition to the field, it is advisable to get acquainted with the local conditions. On the one hand, this activity helps to prepare for situations that may arise (uphill route, route length), but also to form an initial idea of the landscape and nature, during the stay in the field, to confront these ideas with reality, look for contradictions or agreement between the idea and the actual state and thus get feedback on the level of students' skills in working with a map.

Aids: tourist map of Jedovnice and its immediate surroundings, worksheet. Before you set off on the route (see appendix).

Procedure:

- 1) We will give the groups a tourist map and a worksheet. The students' task is to find information related to the natural conditions of Jedovnice and its surroundings with the help of a tourist map.
- 2) After the end of the predefined time, we jointly check the individual facts about the region and briefly discuss the uniqueness of the nature of the Moravian Karst.
- 3) We will draw students' attention to the presence of small specially protected areas in the region and explain the system of their marking on access roads and beyond. When moving in the field, we pay attention to these markings.

Notes for the organization: The issue of vegetation altitudinal zonation and the issue of special territorial nature protection was the content of previous education; here it is followed up and the issue is applied to a specific location. If students do not have an active knowledge of the concepts, they can find them with the help of information sources.

## 2. Recognition of birds by sound

The context of the learning task: in forest covers, it is relatively difficult to see birds by sight beyond the foliage; however, it is possible to use their vocal expressions to appoint the songbirds' representatives. Because this skill is relatively demanding, we focus only on selected individuals who are dominant in the biotope.

Aids: sound recordings of birds singing (available at <https://temata.rozhlas.cz/priroda/ptaci> or <http://www.nasiptaci.info/>), for groups: Common forest birds worksheet or everyone sings differently (see appendix), pictures of common chaffinch, great tit, eurasian blackcap, common chiffchaff, yellow hammer, and song thrush for gluing onto a worksheet, 2x binoculars, 2x identification key (*Ptačí sousedé: klíč k určování ptáků.* (2017). Lipka – ediční centrum.).

Procedure:

- 1) Based on the text in the worksheet, students recognize the form of individual songbirds and stick their picture in the appropriate place on the worksheet.
- 2) After a short joint check, they listen to individual samples of selected songbirds, and students confront the heard form with a textual recording of the birds singing.
- 3) They then set off into the field, whenever there is an opportunity, it is possible to try to identify songbirds by voice. We check the identification visually using binoculars and an identification key.

Notes for the organization: The first part of the task takes place in the classroom, and the actual observation of birds by sound happens continuously throughout the thematic day.

## 3. Observations of forest invertebrates

The context of the learning task: Invertebrates occur in forest biotopes at all layers, with most representatives present in the litterfall. The thicker the layer of litterfall, the more diverse representatives can be observed in the habitat/biotope. Therefore, it is appropriate to compare at least two different types of localities and evaluate both the number and species diversity of the invertebrates present.

Aids: for groups - garden shovel, plastic bowl, 3x round bug viewer with magnifier lid, 1x magnifying glass, 1x entomological tweezers, 2x identification key for the identification of soil invertebrates (např. Tilling et al. (2017). Klíč k určování půdních bezobratlých. Brno: Rezekvítek, 2017.)

Procedure:

- 1) Twice during the journey through the forest we stop at different forest biotopes (spruce monoculture, deciduous forest) and we ask students to use a garden shovel to pick up the litterfall into a plastic bowl and try to use a magnifying glass and tweezers to find invertebrates. They place the individual representatives in a round bug viewer for further observation.
- 2) With the help of the identification key, they then find out which taxa are located in the given locality, they record their findings and take photos of the catches before releasing them.
- 3) Once students have obtained both records, they compare the results of their research with each other and briefly discuss their observations and the conclusions from these observations: *In which biotope was there a greater species diversity of the observed invertebrates? In which biotope was there a large number of invertebrates? What can cause these differences?*

4) They confront the conclusions of their discussion with the text *The food cycle of deciduous forest and the role of invertebrates litterfall*, which is part of the Identification Key for the identification of soil invertebrates.

Notes for the organization: It is also possible to use sliding nets to catch invertebrates of different forest layers. However, the vast majority of these animals are not decomposers.

#### **4. Vertebrates of the forest**

The context of the learning task: The forest as such provides its inhabitants with sufficient shelters, so it is quite difficult to observe vertebrates in their natural environment in a large group. During the observation of forest vertebrates, we therefore focus on their habitats, or we help ourselves with photographs of these animals, as presented in the learning task.

Aids: For the group - publications for determining animal footprints and residence traits (e.g. Leutscher, A. (1996). *Stopy a značky zvířat. Mladé letá.* Laußer, M. (2014). *Stopy zvířat.* Svojtka & Co.), atlas of forest animals (e.g. sada Expedice příroda – 50 našich lesních zvířat), Forest Vertebrates record card (see appendix); photographs of selected forest vertebrates (e.g. European deer, red squirrel, wild boar, wild marten, badger, common shrew, bush mouse, dormouse, great spotted woodpecker, little owl, wood hawk, brown frog, spotted salamander, viper)

Procedure:

- 1) During the day, whenever there is an opportunity to do so, we observe the residence features of animals (faeces, feathers, pellets, swallows, footprints). With the help of professional literature, we try to identify them and deduce which vertebrates live in a given habitat.
- 2) We will prepare a section on the road in advance, where we will visibly place laminated photographs of animals along the road at a height that is natural for the animals - (e.g. mice, shrews, vipers on the ground, birds, marten, squirrel dormouse on branches, etc.). The task of the group is to reveal as many animals as possible, identify them (with the possible help of determination literature) and add their names to the Vertebrates card, including simple characteristics.
- 3) After a brief review of the names and characteristics of forest animals, we briefly discuss forest vertebrates - activity during the day, positive / negative impact on forest habitats, the role of top predators in the forest ecosystem.

#### **5. Empty envelopes - exploring the woody plants using an identification key**

Context of the learning task: The learning task is based on practicing the identification key skill with immediate feedback that helps to improve that skill.

Aids: envelopes, stapler, coloured paper cards, keys for determining tree dichotomous (e.g. Rezekvítek: *Klíč k určování dřevin podle listů*; Hudcová, A. *Klíč k určování stromů*) or with numerical references (Dobrylovská, D: *Klíč k určování stromů*; Martinovský, J., Pozděna, M.: *Klíč k určování stromů a keřů*)

Procedure:

- 1) In advance in the locality - in a defined section of the forest or along a forest path - we choose the woody plants that we want to observe with the pupils. Each of these woody plants is visibly marked with an envelope, which we attach to the bark of trees using a stapler.

2) At the beginning, we will carry out a joint briefing, during which we will explain to students the principle of operation of a specific key for determining tree species. For instruction, we choose a lesser-known tree species so that students are forced to follow the procedure and do not know the result without the use of a key.

3) We give the groups coloured cards (each group has its own colour) and explain to them that in the defined area they have the task to look for trees with an envelope. They are supposed to name the tree using the identification key, write the name on the card, fold it over and put it in the envelope.

4) After the allotted time is over, we go around the individual tree species together and check how many groups found the marked tree species and whether they named them correctly. If the tree is identified incorrectly, we repeat the procedure of determination with the help of the key together and look for which identification mark is incorrectly evaluated.

Comment on the organization: The task is especially suitable for situations where pupils / students can move independently in a defined area, which can be a forest, but also a city park or biotope school garden. The second advantage is that everyone can work at the same time, so there are no delays. Last but not least, this task makes it possible to work directly by the observed plant while checking the correctness of the tree species determination.

In the arboretum:

## **6. Tree species on the route - exploring the tree species using an identification key**

Context of the learning task: After the lunch break, when the individual groups finish with lunch, it is possible to use this time and focus on learning about trees on the selected route, i.e. on the way through the arboretum from the main entrance to the meadow at the bottom of the arboretum.

Aids: laminated cards with numbers, stapler, work card Recognition of woody plants (see appendix), work card Woody plants, keys for determining dichotomous woody plants (e.g. Rezekvítek: Rezekvítek: Klíč k určování dřevin podle listů; Hudcová, A. Klíč k určování stromů) or with numerical references (Dobrylovská, D: Klíč k určování stromů; Martinovský, J., Pozděna, M.: Klíč k určování stromů a keřů)

Procedure:

1) In advance in the locality - along the forest road (or on the route through the forest marked by jute rope), we choose the woody plants that we want to observe with the students. Each of these woody plants is visibly marked with a serial number, which we attach to the bark of the woody plant using a stapler.

2) At the beginning, we will carry out a joint briefing, during which we will explain to students the principle of operation of a specific key for determining tree species. For instruction, we choose a lesser-known tree species so that students are forced to follow the procedure and not know the result without using a key.

3) We distribute record sheets to the groups and release them on the route at regular intervals. The task of the groups is to stop at the trees which are marked with a number and determine their name with the help of an identification key. They should write the name into the record card, including accompanying information.

4) We can assign one tree to each group, creating a card for the tree directly at the observation site. The Tree card includes a separate sheet of paper for wrapping the bark and glued pieces of

double-sided adhesive tape for gluing the leaf and the fruit. (To avoid individual groups slowing down or overtaking, it is important to allocate trees for card creation from the last numbers).

5) Students who are the first to complete the route can stretch strings between the trees at the finishing line, on which incoming pairs or groups gradually hang their filled tree cards. We check the correctness of the additions on the tree cards continuously as the groups come.

6) After the arrival of the last group, we check the correctness of the determination of individual tree species together with the help of the tree cards. The organization of tree identification in a defined area and the tree identification along a specific route is briefly discussed.

Notes on the organization: This type of task is suitable for implementation where we cannot freely enter the stand, but rather move along the road, for example when moving from place to place. The specificity of the task is that the individual groups set off gradually, so it is necessary to entertain both the pupils waiting at the start and at the finish of the route. At the same time, the correctness check takes place only at the finish, i.e. without direct contact with the observed tree species. (If we do not use the possibility of checking using tree species cards, it is advisable to collect one twig from each tree species along the way and use them at the finishing line during the actual checking).

## **7. Recognition of ornamental shrubs according to a black and white image**

The context of the learning task: at the turn of May and June, the arboretum is characterized by the flowering of a large number of ornamental shrubs. Thanks to their distinctive coloured flowers, they attract the attention of visitors. Therefore, it is appropriate to use this interest to get acquainted with selected species.

Aids: Worksheet Ornamental shrubs (Arboretum Křtiny), coloured pencils, information about individual tree species available from online information sources (e.g.

Procedure:

1) Students walk along the route (learning task described above), where they will meet flowering ornamental shrubs, which are depicted on the worksheet. The task of students is to find these woody plants and colour their flowers and leaves according to reality.

2) Pupils can then look for the autumn form of shrubs in electronic information sources. The students' task is to compare viburnum with elderberry.

3) The third, last part, with the help of available information, is to find out the possible toxicity of the depicted ornamental shrubs.

4) During the joint checking, we discuss the health risks of teaching in the forest, specifically poisonous trees and herbs. Students should conclude that the fruits of shrubs and herbs are often poisonous, as they are easily available to herbivores and omnivores. The content of the poison therefore prevents them from being eaten. On the contrary, the fruit on tall trees is completely safe.

## **8. Colour cube - colours of flowers**

The context of the learning task: At the bottom of the arboretum there is a meadow with flowering herbs, which can be used for artistic and creative activities, which are the opposite of the previous learning tasks working with the key and atlas.

Aids: dice – ideally larger size with colour-coded sides (used colours white/yellow/pink/purple or blue-violet/red)

Procedure:

- 1) The teacher or chosen student rolls the dice. Depending on the colour that falls, the other groups try to find and bring flowers of the appropriate colour as quickly as possible. The flowers are not discarded but arranged in a row at the selected location.
- 2) We repeat the whole procedure several times, students bring flowers of other colours, when repeating an already thrown colour they must bring a flower of a different plant. If they cannot find a flower of the appropriate colour, after a few minutes we will end their search and continue with another throw.
- 3) We collect all the plants that the students have found and the individual groups show each other their flowers. They observe whether others brought identical flowers or different ones.
- 4) Short discussion about the colour of flowers: *Which colour of flowers is the most common here? What colours of flowers did you have trouble finding? Why are most flowers white or yellow, or pink and purple, and the least number of flowers are red?* Students should conclude that the colour must be attractive to the insects that pollinate them. Because insects best distinguish between white and yellow, most flowers have this colour. On the contrary, the most difficult for insects is to distinguish red, i.e. there are the fewest plants with this colour of flowers.

Notes on the organization: We choose this learning task if we can let students pluck a large number of flowers, for example, in a meadow or lawn before it is mowed.

## 9. Floral coloured pencils

The context of the learning task: This learning task follows on from the previous task, as it allows the use of gathered plants.

Aids: worksheet Floral coloured pencils (with glued double-sided adhesive tape in marked squares), the key to identifying herbs (např. Dobrylovská, D. (2008). *Klíč k určování bylin: 333 nejběžnějších bylin na území ČR*. Kupka).

Procedure:

- 1) We will give students worksheets instructing them to get natural coloured pencils. The students' task is to test the colour trace left by different types of flowers. Plants that they evaluate as suitable for drawing are pasted into the marked fields (coloured pencils and make a coloured mark in the circle in front of the coloured pencil). In this way they create their own set of coloured pencils. They add the name of the plant to the individual coloured pencils, which they determine with the help of an identification key.
- 2) At the end of the allotted time, we will invite the groups to show their coloured pencils and inspire each other. (We can give them some more time to complete their coloured pencils.)
- 3) In the end, we leave students enough time to collect more flowers and draw a picture of their choice, or a picture according to the teacher's assignment.

Notes on the organization: The task requires the teacher to have relatively good knowledge to determine flowering herbs. For simplification, it is possible to use the variant where the sample book with plants is the same for everyone with pre-glued (teacher-selected) samples of plants and pupils are looking for plants based on this template.

**Didactic reflection on the teaching day:**

For each task, describe what seemed to be its goal.

For each task, explain why it was included in the course - what we could show thanks to it.

Adjust the individual assignments so that they are suitable for primary school pupils (in 2nd term).

Design for each task (a) what students need to learn before outdoor education (b) tasks connected with the outdoor education which can be used in the school afterwards to have the best possible effect.

Evaluate other aspects of the described topics (especially the organization of the day) and suggest how to organise it for primary school pupils with regard to their safety, staffing, aids, etc.

## 2.4.4 BIOLOGICAL-ENVIRONMENTAL DAY – HABITATS SIGNIFICANTLY INFLUENCED BY HUMANS

<b>Length of the activity:</b>	The day is divided into two separate 3 to 4-hour blocks. The morning block is spent by the Budkovan and Vrbový ponds, ending at noon in the classroom. The lunch break is followed by a block focused on steppe ecosystems implemented in the fields and meadows between the Olšovec and Budkovan ponds.
<b>Used methods, forms</b>	Group work; practice of catching techniques, observation with a magnifying glass and binoculars, work with identification keys and atlases, didactic game, discussion
<b>Aims of the activity, field goals:</b>	<p>After the activity, students:</p> <ul style="list-style-type: none"> <li>– select suitable and safe locations for observation and learning about living organisms in the field;</li> <li>– provide appropriate catching and determination aids for observation and learning about living organisms in the field;</li> <li>– implement safe catching of invertebrates, then determine them and assign them to selected taxa;</li> <li>– select model plants of the given community, propose a methodically correct procedure of observation and cognition of plants;</li> <li>– distinguish didactic games in nature focused on motivation, fixation and exposure of the curriculum, suggest their appropriate inclusion into the context of exploring the area;</li> <li>– characterize selected habitats in five points - habitat functions, habitat plants, habitat animals, food relations in the habitat, human interventions in the habitat;</li> <li>– diagnose the effectiveness of individual learning tasks in the field using appropriate methods;</li> <li>– suggest activities and learning tasks that should precede outdoor education aimed at familiarization with selected communities;</li> <li>– suggest activities and learning tasks that should follow the outdoor education focused on familiarization with selected communities;</li> <li>– alternatively: Selected plants and animals are named in English; simple tasks are performed on the basis of assignments in English.</li> </ul>
<b>Field Didactic goals:</b>	<p>Students:</p> <ul style="list-style-type: none"> <li>– reflect on the possibilities of didactic use of completed activities in the classroom;</li> <li>– describe the objectives of the completed tasks, with regard to them as students of education and with regard to pupils;</li> <li>– propose field didactic accurate and relevant modifications of completed tasks for primary school pupils</li> </ul>

	<p>– know the principles of safety of teaching and movement in the field with students.</p> <p>Sub-aims are directed towards the concept of "How nature affected the activities of people in the visited area", and vice versa, "How people influenced the landscape character of that area."</p>
<b>Aids:</b>	<p>Due to the number of aids, each group will receive a "field backpack" at the beginning of the block, which contains a complete set of aids for the group.</p> <p><b>Field backpack for the morning block:</b> 2x colander, 1x plankton net, 5x magnifying glass, 3x binoculars, 2x Key for identifying invertebrates (Petřivalská, K. (2010). <i>Klíč k určování vodních bezobratlých živočichů</i>. Rezekvítek.), 2x Key to identifying amphibians (ex. Pešková, B. (2005). <i>Chvíli na souši, chvíli ve vodě: (nejen) klíč k určování obojživelníků</i>). Praha: Sdružení Tereza.; set of photographs with individual stages of development of the jumper, set of photographs of eggs of various amphibians, Atlas of the Fauna of the Czech Republic (Anděra, M. (2018). <i>Atlas fauny České republiky</i>. Academia, set of photos of pond fish (carp, silverfish, grass carp, perch, zander, bream, roach, perlin, pike, catfish, eel - all fish ideally on a similar background), the key to identifying pond fish, notebooks of one colour. Set of worksheets - POND PLANTS, POND BIRDS.</p> <p>Aids for teachers: Another life of tadpole set, Human interventions in the habitat of the pond cards, a rope to define the area of the "pond".</p> <p><b>Field backpack for the afternoon block</b></p> <p>3x sliding net, 3x net for catching flying insects, 10 epruvete, 3x entomological tweezers, ball of jute rope, folding rule, 2x scissors, 3x Key for determining meadow invertebrates (Dvořáková, K. (2018). <i>Klíč k určování lučních bezobratlých živočichů</i>. Rezekvítek.); 3x identification key for identifying herbs (Dobrylovská, D. (2008). <i>Klíč k určování bylin: 333 nejběžnějších bylin na území ČR</i>. Kupka.) 1x worksheet <i>Field crop observation</i>, 6x worksheet <i>Plants in the meadow - grasses</i>, 6x worksheet <i>Plants in the meadow - colourful flowering herbs</i>,</p> <p>Aids for teachers: 2x breeding cage for butterflies, strings with paper tags without names, set of 20 pictures of selected steppe animals (images from the series <i>Expedice příroda</i> published by Mindok can be used), 20 wooden pins, 2x set of tops for baby food with the names of machines and tools used in the field (spade, hoe, sickle, scythe, plow, rake, tractor, blade, harrow, harvester, baler), 2x game sheet with a depiction of the machines and tools.</p>
<b>Outcomes</b>	elaborated tasks, exhibitions of observed plants and animals
<b>Prologue</b>	In the cadastre of the village Jedovnice there are biotopes presenting artificial communities, such as ponds used for recreational and breeding purposes, but also fields and cultural meadows. The proximity and easy availability of individual habitats allows not only quick movement among

	individual localities, but also the possibility of mutual comparison of individual habitats in terms of size, abiotic conditions, and with regard to the purpose or level of human use as well.
<b>Inter-subject relations</b>	<p>Biology - selected organisms cognition, cognition of selected communities, working with identification keys and atlases, practical hunting of animals</p> <p>Geography - orientation using the compass</p> <p>History - historical development of the landscape, history in the landscape, history of the landscape</p> <p>Social sciences - value orientation, building a relationship to the region and subsequently to the homeland</p> <p>Movement and health - movement in the field, principles of safe movement, increasing physical condition</p> <p>Czech language - reading comprehension of assigned tasks, information materials, educational boards, etc., formulation of answers, folklore</p> <p>Art - aesthetic feeling expressed by plants</p> <p>English language - understanding of tasks assigned in a foreign language, vocabulary</p>
<b>Note</b>	A broader framework for this activity is provided by preparation in the classroom (plant morphology and systematics, taxonomy of animal species, selected communities of the Czech Republic) and follow-up activities that summarize the outcomes and place them in a broader context.

### Course of activities

Education in both blocks consists of several consecutive learning tasks, which form a logically interconnected whole leading to the basic five-point characteristics of the monitored habitat or community, i.e. FUNCTIONS of biotope / community, PLANTS of biotope / community, ANIMAL biotope / community, FOOD RELATIONS in biotope / and HUMAN INTERVENTIONS INTO THE BIOTOPE / COMMUNITY. In each of the blocks, various didactic methods and types of learning tasks are used to achieve the goals tied to individual points, which are based on the possibilities of individual habitats, available didactic resources and, last but not least, the abilities of students in the target group. At the end of the day, students are guided to compare the teaching potential of individual blocks, synthesis of acquired didactic experience and anchoring the algo-heuristic approach to learning about individual communities, both in the field and in the classroom.

### MORNING BLOCK

#### 1. Pond function

Launch of the teaching block on the dam of the Budkovan pond - a short discussion on the question "What is the function of this pond for humans / nature / for the landscape?"

#### 2. Pond habitat plants - knowledge of herbs according to black and white drawing (group, observation)

*The context of the learning task:* "There are many species of plants around the pond, but not all of them are tied to this environment. In this case, it is important to focus on those species that are associated with the pond habitat. In the case of pond plants, it is suitable to distinguish how strong the connection to the aquatic environment is, i.e. whether the plants grow directly in the water, in a waterlogged shore or on a raised shore. "

*Aids:* worksheet POND PLANTS (with glued double-sided adhesive tape in place of marked squares).

*Procedure:*

- 1) Students walk along the dam of the Budkovan pond and then between the Budkovan and Vrbový ponds, looking for the plants shown on the worksheet. If they find one of the depicted plants, their task is to observe and record whether it grows directly from the water surface (W) / from the muddy waterlogged bank (M) or on the dry bank of the dam (D).
- 2) As the students work, it is appropriate, with regard to the need for immediate feedback, to walk among students and, if necessary, help them with determination. At the same time, we take one sample (twig or part of the plant) from each plant.
- 3) At the end of the route (at the point of encounter of the Budkovan, Vrbový and Dubový ponds) there is a joint check of the information found about the pond plants, including a demonstration of individual samples and additions with brief characteristics of individual model plants. (samples should be labelled and then placed in the classroom)

Notes on the organization:

This task makes it possible to point pupils' attention to all the plants growing around the pond to the plants that are characteristic of that habitat. The task can be supplemented by gluing leaves or parts of plants to the worksheet to the depicted plants.

### **3. Invertebrates of the pond habitat - catch and determination**

*The context of the learning task:* Pond invertebrates are relatively abundant and easy to catch with simple tools such as a colander and a plastic bowl, possibly supplemented with a magnifying glass, which will suffice for observation. To determine them, simple dichotomous identification keys can be used, which also contain brief information on the life cycle of these animals, or their binding to the aquatic environment (lifelong / only at the larval stage).

Aids: for group – 2x colander, 1x plankton net, 5x round bug viewer with magnifier lid, 2x key to identifying invertebrates (Petřivalská, K. (2010). Klíč k určování vodních bezobratlých živočichů. Rezekvítek.)

Procedure:

- 1) Perform the task on the dam at the point of collision of Budkovan, Vrbový a Dubový ponds. We will provide instruction on the technique of catching aquatic invertebrates with the help of a colander and with the help of a plankton net. Subsequently, the students work independently, depositing the caught animals in round bug viewers.
- 2) We will instruct students to work with the dichotomous identification key and then the students will determine the caught animals in groups, and at the same time they determine the degree of binding of the given animal to the aquatic environment.
- 3) In the end, each group will present their caught animals, unique samples can be viewed by each student. The caught material is returned in live form to the pond.

Notes on the organization: For the needs of further work in the classroom, it is possible to fix one piece of each type using technical alcohol in the marked epruvete.

#### 4. Pond Amphibians - Catch and life cycle

The context of the learning task: Amphibians are mainly associated with the aquatic environment in their larval stage, in the spring and early summer months, it is thus possible to observe different species of amphibians and their unique life cycle.

Aids: for group – 1x a colander, 1x a round bug viewer with magnifier lid, 2x key to identifying amphibians (e.g. Pešková, B. (2005). *Chvíli na souši, chvíli ve vodě: (nejen) klíč k určování obojživelníků*). Praha: Sdružení Tereza.; Vlašín, M. (2008 reprint). *Klíč k určování obojživelníků a plazů*. Rezekvítek.), a set of photos with individual stages of development of the common frog, a set of photos of eggs of different amphibians, for everyone – Another life of tadpole set.

Procedure:

- 1) Perform the task on the dam at the point of collision of Budkovan, Vrbový a Dubový ponds. As they capture invertebrates, students usually also catch amphibian larvae, or they may catch them at the beginning of this activity.
- 2) First, students obtain a set of photographs of the eggs of individual amphibians and their task is to determine which amphibians the eggs belong to, with the help of an identification key. A brief discussion about the appropriate period for observing amphibian eggs and the possibility of determination at this stage follows.
- 3) Furthermore, students compose photographs of the development of the common frog in a circle in a logical sequence and they also use a round bug viewer with the caught tadpoles. Using the information in the identification key, they find out and explain what has already happened in the life of this tadpole and what will happen in its life.
- 4) Finally, we have the students draw a small paper from a set of other life tadpoles. The students' task is to find another person (tadpoles) who will have the same fate. Individual pairs will present their fate – briefly discuss the relationship between the number of eggs – tadpoles – adults and how we humans can help amphibians survive.

#### 5. Pond birds - observation of behaviour using binoculars

The context of the learning task: Birds are the most easily observable group of animals in open water areas throughout the year. In addition to the actual observation of the appearance and determination of individual species of waterfowl, it is also possible to observe their behaviour in a pair or in a group, possibly specific behaviour when hunting for food.

Aids: for group – 3x binoculars, worksheet Pond birds, Atlas of the fauna of the Czech Republic (Anděra, M. (2018). *Atlas fauny České republiky*. Academia.)

Procedure:

- 1) Students prepare binoculars and, on the way, back along the dam from the pond to the camp they observe and determine individual species of birds. They can use the silhouettes of birds and their descriptions in the worksheet to identify individual species, possibly animal atlases.
- 2) In a place suitable for observing ducks, they stop and purposefully observe the appearance and behaviour of a mallard and a tufted duck with the help of binoculars. They record their findings on a worksheet.
- 3) We will check the record on the worksheet and compare the two species of ducks directly on the dam – questions for comparison – *Which species of duck is larger? What is the difference between a male and a female? Why are males significantly more colourful than females? How many ducks are currently moving along the surface of the pond? Why do they form pairs? Will*

*they move like this throughout the year? How are the ways of duck and tufted duck hunting different? How will the way these birds hunt affect the composition of the food they eat?*

4) Finally, we will synthesize knowledge about water birds based on the observation of their behaviour and subsequent discussion. We will remind students of the importance of this last step, thus, a certain generalization of the knowledge they have found using the primary methods of obtaining information, which is observation.

Notes on the organization: In recent years, semi-wild ducks from artificial breeding have been planted on ponds in the Jedovnice cadastre, which move on the surface in large flocks of contemporaries. If we come across such a group of birds, it is appropriate to discuss with students the meaning of these artificial breedings (it is not a return of the duck to the landscape, but an increase in the numbers for autumn game reduction hunting, behaviour of these ducks from the hatchery (they lose their natural behaviour, they cannot learn from their parents) and the impact of these numerous flocks on the pond ecosystem.

## **6. Fish without a pond**

The context of the learning task: Observing fish in a pond with a group of students / pupils is impossible without active cooperation with a local fishing organization, because without official permission, fish cannot be fished out from the pond. At the same time turbid water in the pond (unlike some rivers) prevents good observation of fish below the water surface. For these reasons, it is appropriate to replace getting to know fish with activities using photographs or pictures of fish.

Aids: for group – set of photos of fish in pond (common carp, crucian carp, grass carp, perch, sander, common bream, common roach, common rudd, esox, catfish, common eel – all fish ideally on a similar background), The key to identifying fish in Jedovnice (in Hofmann, E. (2003). *Integrované terénní vyučování*. Paido.); rope to define the "pond" area.

Procedure:

1) A representative of each group will place a set of photographs of the fish in the space delimited by the rope. Individual groups choose a place "on the shore" of this pond. When instructed, one member of the group always inhales and enters the pond area with his/her breath held, where his/her task is to take and bring to his/her group one photo from a set of fish. In this way, the members of the group take turns until they get all the photos from the set. If they bring a photo they already have, they have to return it to the pond in the same way, which is a waste of time.

2) Once all groups have their set, they can turn their fish into points, but only if they name the individual fish. To do this, they use an identification key using which they can identify individual fish species.

3) After the game, we discuss the real goal of the game and the didactic process in the background – when "hunting" for photographs they focus on the body shape and fin distribution, characteristic of individual fish, without having to describe them verbally. Subsequently, when working with the key, these individual characters are verbalized and categorized. The result is not only knowledge of the name of the fish, but especially the identification features essential for determining the fish of the pond.

4) We also discuss the possibilities of adapting this didactic game and working with the identification key for the category of primary school pupils while maintaining an algoheuristic procedure – nonverbal comparison, verbalized comparison, name. It is possible to replace

photos with drawings of the identification key used with a simpler dichotomous identification key with a limited number of items, possibly by reducing the number of known representatives.

Notes on the organization: this learning task can be realized in a shady place under the dam of the Budkovan pond, or in any area in the camp.

### **7. Food relations of the pond biotope - food chain**

Context of the learning task: when students / pupils obtain sufficient information about plants and animals living in a given biotope, they can group these organisms according to food relationships and preferences, without guessing or interconnecting the organisms of unrelated biotopes. The simplest type of food relationship is the food chain, which represents the possible flow of energy through the ecosystem.

Aids: Notes from previous learning tasks.

Procedure:

- 1) Students get together in working groups. Their task is to use their notes from previous learning tasks to design one food chain, which will start with the Sun and further contain at least 3 living organisms.
- 2) Once students have thought about it, everyone in the group will become one part in the food chain. The group stands up, holding hands in the correct order (the Sun - .... – top predator) and introduce their food chain to the others (e.g. I am the Sun and I am the source of energy. – I am an alga and I take energy from the Sun. – I am a tadpole and I gain energy by eating algae – I am a snake and I gain energy by eating tadpoles.) In this way, all groups present their food chain.
- 3) The following is a discussion of the representatives most frequently mentioned in the food chain (they are usually the ones they have had the opportunity to observe), the need to list more food chains (realizing that the food chain is not the only way, but one of the possible ways), understanding the concept of the food chain (a common misconception is that it starts with a top predator).

### **8. Human intervention in the pond habitat**

Context of the learning task: In order to complete the last point, i.e. human interventions in the given habitat, it is necessary to have sufficient insight into the issue, which students usually lack. The reason may be that they have never thought about the issue of the habitat in terms of a longer time horizon or interventions in the landscape, or they do not have enough personal experience with that issue. For this reason, it is not possible for students to generate examples of positive and negative human impact on a given habitat, but they should rather discuss individual human interventions.

Aids: cards Human interventions in the habitat of the pond, notebooks of different colours

Procedure:

- 1) There are cards on the tables presenting human interventions in the pond. The task of each group of students is to read the example of the intervention given on the card and decide whether the intervention is positive or negative. They express their opinion by marking a smiley or sad face in a notebook of their colour and attaching it next to the card with the picture facing down. This is how they evaluate all types of interventions.

2) If all groups have expressed themselves, one card after another is gradually taken, the number of positive and negative votes is compared, and the type of intervention is briefly discussed. Finally, the statements on the bottom of the card are read.

3) Finally, there will be a short joint discussion summarizing the findings of the partial discussions - that is, each intervention can have both positive and negative effects, depending on how it is implemented, how it will affect the landscape and nature, and that human interests and profits should not always be in the foreground.

## **AFTERNOON BLOCK**

### **1. Field and meadow functions**

Context of the learning task: Since the Neolithic, the field and meadow have been an important source of livelihood for the vast majority of the population living in the Czech Republic. Therefore, it is significantly reflected in folk literature. That fact is used by the described learning task for the introductory motivation to the topic and deduction of the function of field and meadow habitats.

Aids: Sheet of paper for a group

Procedure:

1) Within their group students are invited to write as many songs, poems and rhymes as possible, in which the names of field crops or activities related to work in the field or meadow appear.

2) After the end of a predetermined time interval, the members of the individual groups gradually enumerate the names of songs, poems and rhymes that correspond to the set rule. Each group reads out the samples they have listed. In the case of a lesser-known work, the point can be counted only if the group sings or recites the passage.

3) The evaluation is followed by a short discussion of why the topics of fields, field crops and activities associated with work in the field and meadow appear in so many songs and rhymes. Finally, the functions of the field and meadow, i.e. the first point of the five-point characteristic of the given habitat, are derived together.

Notes on the organization: The presented learning task should be performed in the classroom before the actual journey to the meadow and field habitats.

### **2. Field crops - observation**

Learning context: Nowadays, the majority of students do not have the opportunity to observe field crops during the growing season. Thus, the task focuses more on the knowledge of field crops than on the observation of the morphological structure of the field crop and its distribution in a defined part in the field.

Aids: for groups - jute string 4 m long, folding rule, Field crop observation worksheet.

Procedure:

1) After arriving at the edge of the field (on the way between the Olšovac and Budkovan ponds), the students use a string to define an area of one square metre and on the basis of observations and with the help of a folding rule, fill in the gaps in the text in the worksheet.

2) This is followed by a joint check of what they have filled in, and students may encounter some difficulties, such as whether it is spring or winter (knowledge of how to grow field crops, but

also specific habitat), determining the height of the field crop (highest plant or average), or ignorance or inability to identify weed species. We briefly discuss these issues and the students suggest how they would solve them with their pupils.

Notes on the organization: The second part to be completed can be used for comparison with the time lag, or for another field crop growing in another part of the field.

### **3. Weeds - bartering with plants**

Context of the learning task: Unlike field crops, weeds growing in the field can be picked in larger quantities and simultaneously used in the observation of plant morphology. At the same time, the learning task follows the algo-heuristic training procedure of the cognition and determination of plants - non-verbal comparison, verbalized comparison, title.

Aids: strings with paper tags without names.

Procedure:

- 1) On the way to the site, the teacher picks up a selected number of plants (weeds growing along the way) that are common on the site.
- 2) In the first round, each pair or group of students is assigned one or more plants with the instruction to find, pick and bring the same plant they received. They will check if they found the relevant plant correctly together.
- 3) In the second round, the teacher invites students to exchange their two plants of one species with their classmates for another so that they have two different plants. Then students repeat the procedure and look for two other plants present at the site according to the pattern.
- 4) In the third round, they continue to exchange - they exchange 2x2 plants for different ones, ideally ones they haven't had before. Subsequently, they look for the appropriate pair for their four plants.
- 5) Then we ask the groups to make bouquets of plants that, in their opinion, belong to the same species. We check the bouquets of individual plant species together, while letting students describe what helped them in determining that it was the right plant - such as the colour and shape of the flowers, the shape of the leaves, or the type of stem. If a plant is misclassified, we let students explain why it does not belong to the group and how it differs.
- 6) After checking each group of plants, we will specify the name of the relevant plant together. We tie bundles of individual plants using a string with a tag, and we add the name to it. We transfer it (in a plastic bag) to the classroom, where we can create an exhibition from the brought and marked plants or dry them.

Notes on the organization: We choose this learning task if we can have pupils pick a large amount of plants, for example in a meadow or lawn before mowing, for example, weeds from ditches or field edges are ideal.

### **4. Grasses - definition of terms based on morphology**

Context of the learning task: This learning task is primarily based on the derivation of the term grass, which is often misused for all plants growing in the meadow. At the same time, it leads to an awareness of diversity within this group of plants, without the need to determine the individual names of the observed grasses.

Aids: for pairs or individuals: worksheet Plants in the meadow - grasses (with glued double-sided adhesive)

tape in place of marked squares, (sheets of white paper), scissors

Procedure:

1) At the place (meadow between the Olšovec and Budkovan ponds) we ask students to walk across the meadow and always pick one piece from other grasses they find. We do not instruct the students more.

2) After a while, we convene the students and check if they really only have grasses - plants with brightly coloured flowers should not appear among the samples. We explain to students that the common term grass refers to herbs that have a hollow stem with knees, narrow long leaves and inflorescences of inconspicuous colouration. We let students evaluate which plants are not grasses and remove them from their bouquets. (If they remove most of the herbs, we will leave them again for a while to complete the bouquet with examples of grasses).

3) Again, we convene the students and ask them to lay only one type of grass they have found on sheets of paper / or hand them over to selected individuals. We continuously check the sheets and help with the inclusion of plants. Then we look at the samples and calculate how many species of grasses occur in the meadow.

4) We briefly discuss how individual grasses differ - type of inflorescence or fertility / end of carcases / shade of colour / different surface /... We will explain that all these features are important for determination of individual types of grasses.

5) Finally, we ask students to use the collected grasses to create a record of grasses - on a worksheet, where they glue the cut parts of grasses and create their own card defining this group of herbs.

Notes on organization: if there is sufficient time, it is possible to try to identify individual types of grasses using the identification key (Unar, J., Unarová, J. (1998). *Naše nejhojnější trávy – NENÁPADNÉ, ALE VÝZNAMNÉ*. Rezekvítek.)

## 5. Blooming herbs of meadow

Context of the learning task: In addition to grasses, dicotyledonous herbs are part of meadow communities, which add colour to this environment, which, on the other hand, diverts attention from other morphological features of these plants. The learning task therefore connects the knowledge of the morphology of dicotyledonous meadow herbs and their colour.

Aids: For individuals or pairs: worksheet Plants in the meadow - colourful flowering herbs (with glued double-sided adhesive tape in place of marked squares, Dobrylovská, D. (2008). Klíč k určování bylin: 333 nejběžnějších bylin na území ČR. Kupka.

Procedure:

1) We will give students worksheets with instructions to walk across the meadow looking for the plants shown on the worksheet. If they find one of the plants, their task is to glue the flowers of the found plant into the appropriate field. This creates a colour sample.

2) As the students are working, we walk among them, check and help them identify plants. It is not always possible to find all the plants, but they should be able to find most of the listed plants. At the same time, we will pick a few pieces from each type of plant for final checking.

3) When the given time is over, we will meet together and let the students check their samples – whether the flowers differ in colour.

4) In the end, we check the plants found together, evaluate which of the plant species were easy to find (tall, distinctly coloured), which were difficult to find (e.g. lady's mantle – small, green flowers), which ones there were a lot of and which, on the contrary, there were not many of.

Notes on organization: The specific worksheet is linked to the Jedovnice site, specifically the meadows between the Olšovec and Budkovan ponds, for the turn of May and June. Herbs to choose from must always be adapted to the location and date.

## **6. Invertebrates of a field and meadow**

Context of the learning task: Invertebrates are strongly represented in meadow communities and with the help of simple catching techniques it is easy to get enough representatives for observation. Subsequently, they can be determined at different taxonomic levels with the help of simple identification keys. Due to the number and diversity of representatives, the basic characteristics of individual taxonomic groups are fixed, but also the role of invertebrates in meadow communities is realized.

Aids: for group – 3x sliding net, 3x net for catching flying insects, 10 epruvete, 3x entomological tweezers, 3x The key to identifying meadow invertebrates (Dvořáková, K. (2018). *Klíč k určování lučních bezobratlých živočichů*. Rezekvítek.); together for all groups – 2x rearing cage for butterflies.

Produce:

1) We start the learning task by giving instructions about the catch with the help of sliding net and net for catching flying insects. We will also demonstrate the safe and gentle transfer of caught animals into the epruvete and into the rearing cage.

2) Subsequently, we will give students enough time to try catching techniques using both types of nets and to obtain samples for further determination.

3) With some short instructions, we will remind them of the determination procedure with the help of the identification key and give the students enough time to determine their caught samples.

4) At the end of the learning task, students present their caught samples and briefly discuss the frequency and diversity of invertebrates in the meadow community and compare species diversity between the meadow habitat and the field habitat.

Notes on organization:

Also, in case of rainy weather, it is possible to implement the learning task, but only with the use of sliding nets.

## **7. Animals in fields and meadows and food relations between them**

Context of the learning task: in the case of vertebrates, it is very difficult to observe large numbers of vertebrates when moving in the open landscape of field and meadow habitats, as they tend to escape to safety quickly in front of a larger group. For this reason, the learning task uses pictures of animals of steppe communities, with a list of their food provided on the other side.

Aids: set of 20 images of selected steppe animals (you can use pictures from the Expedition Nature series publishing house Mindok), 20 wooden pegs, 2x ball of jute rope, 4x scissors)

Procedure:

- 1) In the delimited space on the meadow, we place pegs with fixed pictures of steppe vertebrates.
- 2) Students are divided into two groups and form two lines. The task of the first student from the line is to run to the area where the pins are, and find the representative appointed by the teacher. Only one of the groups always gets a pin with a picture of the given animal.
- 3) Once all the pegs have been collected, the students are given the task to make a circle, then they stick the pegs, with their animals, into the ground and using the information on the back of the cards they connect the individual animals together into a food web.
- 4) Students from both groups look at each other's food networks and discuss the concept of the food network and the number of interconnections.
- 5) At the end, we ask students what would happen if one of the animals in their food web disappeared / became extinct. We pull out the pin with the animal and this part of the food web begins to collapse. Gradually we pull out more and more pins with animals. Together, we conclude that the loss of one or two links in the food chain may not be a problem, but the more organisms from the chain, the more fragile and vulnerable the food chain itself is.

Notes on organization: if there is no mown grass in the meadow, we can carry out the learning task in another locality, for example on the grassy areas in the camp, in order to avoid unnecessary damage to the grasslands in front of the haymaking.

## **8. Human interventions in the field and meadow**

Context of the learning task: in connection with the activities in the field, meadow or garden, various machines and tools are used, which the pupils usually identify and often also know their purpose. The learning task uses the depiction of these machines and tools to evoke a discussion of human intervention in steppe communities.

Aids: 2x set of lids from baby food with the names of machines and tools used in the field (spade, hoe, sickle, scythe, plough, rake, tractor, blade, harrow, harvester, baler), playing board depicting mentioned machines and tools.

Procedure:

- 1) In a defined area, for example on a dirt road, sets of lids are laid out in separate places with text facing the ground.
- 2) Students are divided into two groups standing in a queue, placing a playing board so that they can see the pictures and their order on the playing board.
- 3) When instructed, the first person out of the queue runs to the lids, turns one and reads the name of the machine or tool. If the name of the machine or tool is in order, the person takes it to the group and places it on the playing board. If not, the person returns without the lid and the next person in the crowd continues. The game ends when they collect and assign all the lids with the names to the pictures.
- 4) The teacher invites students to turn the lids into two groups, i.e. machines and tools/assign machines and tools that are used for the same activity/that are typically used in spring, summer, autumn.
- 5) At the end, each of the students will take one of the tops and come up with one sentence in which the term from the top will appear and at the same time will express information about the activity in the field or meadow.

At the end of the 2nd teaching block, or after dinner, we discuss with students the possibility of using learning tasks in primary school teaching and their possible adaptation in the school garden. Furthermore, the possibilities of diagnosing the effectiveness of individual learning tasks in the field of cognitive, affective, social-interpersonal and physical-behavioural are discussed.

**9. Didactic reflection of the teaching day:**

For each task, describe what its goal seemed to be.

For each task, explain why it was included in the course - what we could show in it.

Adjust the individual assignments so that they are suitable for lower secondary school pupils.

For each task, suggest (a) what the pupils need to be taught before outdoor education and (b) tasks connected with the outdoor education which can be used in the school afterwards to have the best possible effect.

Evaluate other aspects of the described topics (especially the organization of the day) and suggest a way of their organization for primary school pupils with regard to their safety, staffing, aids, etc.

## 2.4.5 DIAGNOSTIC-REFLECTIVE DAY

The final day, or half a day, is devoted to diagnostic methods and reflection on a long-term form of outdoor education, which is a described outdoor exercise. Teaching on this day is carried out in the camp, using both the background of the classroom and the outdoor areas of the camp. Activities during this day presuppose the preparation of students from previous days and the fulfilment of tasks that were assigned to them throughout the outdoor education.

<b>Length of the activity</b>	3–4 hours
<b>Used forms, methods</b>	Frontal teaching; discussion, dramatization, didactic game
<b>Aims of the activity, Field goals</b>	This focus of the last teaching day does not follow the field goals, but the field didactic goals.
<b>Field Didactic goals</b>	<p>Students:</p> <ul style="list-style-type: none"> <li>– reflect on the impact of (long-term) outdoor education on the cognitive, affective, socio-personal and psychomotor area of the child's personality;</li> <li>– compare the specifics of outdoor education and classroom education;</li> <li>– design tasks for outdoor education so that they follow up, deepen and supplement the curriculum taught in the classroom, the outdoor education is suitably followed by further education in the school so as to ensure the impact of field teaching in these areas is maximised;</li> <li>– propose diagnostic methods by which the effectiveness of field teaching in these areas can be monitored;</li> <li>– with regard to safety aspects, suggest their own form of outdoor education for pupils of the target group.</li> </ul> <p>Sub-aims are directed towards the concept of "How nature affected the activities of people in the visited area", and vice versa, "How people influenced the landscape character in that area."</p>
<b>Aids</b>	For the group: record sheet for the final (control) game, stamp, ink pad
<b>Outcomes</b>	Mental maps, continuous records of partial reflections on individual days, procedures and photo documentation of partial control tasks
<b>Prologue</b>	During the four field-oriented teaching days, students get to know nature, the landscape in Jedovnice and its surroundings, gain a lot of information about this unique environment, and acquire many practical skills focused on working with primary resources. Although there are partial reflections on learning tasks and activities during the individual days, for many they only remain at the level of pleasant or unpleasant experiences. The last day allows these immediate experiences to be understood, reflected on, connected with theoretical concepts of outdoor education, and thus transformed into a form of field didactic knowledge, usable and transferable to future teachers' own didactic practice (and independent of where they were acquired).

Diagnosis and evaluation within individual blocks of activities is presented at the end of the chapters described above.

## **1. Draft of a didactic task**

Context of the learning task: Students were given the task during the last teaching day to design a control task for other groups, which would test the knowledge or skills acquired during that day. For this purpose, they could gather the tools needed to carry out the learning task or coordinate their ideas with the teacher of the block to avoid duplication of topics.

Aids: for the group - record sheet for the final (control) game, stamp, ink pad

Procedure:

- 1) The individual groups arrange and prepare their partial control tasks in the defined area. Two members of the group stay at the station, organize and stamp the fulfilment of the learning task of the others. The rest of the group members become students. Students can change their roles during the implementation of this activity.
- 2) Upon the instruction, the "pupils" go to the stations of other groups and perform the tasks assigned there. They will receive confirmation of their successful completion with a picture stamp in the record sheet. Once they have a predetermined number of stamps, they can end their activity.
- 3) Finally, all the groups will meet in the classroom. Here it is possible to highlight the most innovative learning tasks, briefly discuss the organizational demands of this activity and its effectiveness in terms of diagnosing knowledge and skills (cognitive component), which were the content of outdoor education.

Notes on the organization: it is appropriate if one of the competition teams appoints a teacher and, like students, completes tasks and obtains stamps. In this way, they will gain an overview not only of the types of learning tasks that students have used, but also of their ability to organize these learning tasks.

## **2. Presentation of mental maps**

Context of the learning task: At the beginning of the course, students are given the task of making a mental map during all 4 teaching days, in which they would capture the experiences and events of each day.

Aids: a sheet of paper in A1 format, other aids depend on how the map is processed

Procedure:

- 1) Individual groups gradually present their mental maps to others.
- 2) At the end of the presentations, there will be a brief reflection on both mental mapping as a diagnostic method and the content of information that they communicated through the mental map or its presentation. They should conclude that they describe mainly what they did in the given places, the interactions among the members of the group or other people, and how they felt, the impact of outdoor education on the affective and socio-personnel component.

Notes on the organization: it is appropriate, if there was a predetermined time limit for the presentation, to unify the conditions of individual groups and not unnecessarily prolong this activity.

### 3. Discussion on methods and forms of outdoor education and possibilities of their use

Context of the learning task: At the end of each teaching day, students fill in a reflective sheet in which they reflect specifically on the didactic aspects of the methods and forms they have tried out during the outdoor education on a given day.

Aids: reflective sheets (see appendix)

Procedure:

1) In a joint discussion in smaller groups, there is a structured reflection on the individual methods and forms, their specifics, advantages and disadvantages, and especially the possibility of their use in short-term, medium-term and long-term outdoor education.

Discussion scenario:

Prologue: List all forms of teaching outside of school that you have completed in your previous studies. Remember their short-term forms to long-term ones. For individual forms, list the fields that were covered by the teaching.

1) What do you understand by the term integrated outdoor practice. Which forms, and shapes can it take? - *Do not forget that it gives us a unique opportunity to show the world in context.*

2) What is the goal of integrated outdoor practice? - *Do not forget the social area and key competences.*

3) What are the main advantages of outdoor education, or what are the possibilities of teaching outside the classroom? - *Remember that outdoor education is not intended to replace classroom education, but it should complement and expand it.*

4) What are the main disadvantages of teaching outside the school, or what are the limits of outdoor education? - *Do not forget that it is much more efficient to go through the area in advance and prepare tasks "tailored" to the area.*

5) What preparation must precede outdoor education? - *Do not forget to think about the appropriate content of teaching, time classification into the thematic plan (so as not to teach about the meadow in February, because it works out in the textbook), adaptation to climatic conditions, continuity with teaching in the classroom, safety...*

6) What legal norms apply to outdoor education? What to think about, what to prepare, what to report, what to bring along, what are the requirements for teachers, health professionals, supervisors...? - *Discussion supported by the publication of Svobodová et al. (2019).*

Epilogue: Based on reflections for each day, assess the specifics, advantages and disadvantages of (a) classical excursions led by both the teacher and experts of the workplace, (b) individual group work according to the teacher's instructions, (c) group work with continuous teacher control, (d) shorter blocks of individual learning tasks with a high degree of control and immediate feedback from the teacher. How to transform what you have experienced here into schools?

## 2.5 CONCLUSION

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The educational course presented above is implemented in a form that is considered desirable (see the studies described above) - teaching takes place outside the university classroom and includes the activity of both students and teachers. Returning to the partial goals of vocational training in the field of outdoor education, as described by Kendall et al. (2006), the methodology presented above takes into account almost all objectives:

1. to implement activities in the environment outside the classroom - during the individual days through the presentation of model learning tasks;
2. to maximize the learning of pupils in the environment outside the classroom - each of the teaching days ends with a reflection focused, among other things, on didactic aspects of individual learning tasks that enable students to realize the potential and pitfalls of their implementation with pupils;
3. to prepare activities in the classroom preceding the activities carried out outside the classroom - it takes place in the discussion on individual learning tasks as well;
4. to evaluate possible risks associated with teaching outside the classroom and prevent them - it takes place in the discussion on individual learning tasks as well;
5. to realise the advantages and disadvantages of teaching outside the classroom - it takes place in the discussion on individual learning tasks as well;
6. to follow-up teaching outside by teaching in the classroom - it also takes place in the discussion on individual learning tasks;
7. to measure/estimate the quality of activities performed outside the class - it takes place within the diagnostic block on the fifth day;
8. to assess the impact of out-of-class teaching on pupils - it takes place within the diagnostic block on the fifth day;
9. and to experience how pupils behave in different environments - the absence of the opportunity to experience outdoor education is (though not fully) replaced by the opportunity to experience how specific tasks are implemented and experienced by students who enter the role of pupils (*simulated modelling*). This experience is one of the sources that strengthen confidence in mastering the given skill (self-efficacy), in this case, the implementation of outdoor education with primary school pupils (cf. Palmer, 2006).

In the course, we purposefully proceed inductively, i.e. on the basis of the personal experiences of students with individual learning tasks and their subsequent reflections. That enables both the background for outdoor teaching formed over many years in cooperation with ATC Olšovec, and an experienced team of teachers from the university environment with practical experience in outdoor education with both students and pupils of the target group. Thanks to that this individual field didactic experience is further transformed and connected with the theoretical basis of pedagogy and psychology.

## 2.6 REFERENCES

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- Demek, J., & Mackovčín, P. (Eds.). (2014). *Zeměpisný lexikon ČR: hory a nížiny*. Mendelova zemědělská a lesnická univerzita v Brně.
- Dillon, J., Rickinson, M., Teamey, K., Morris, M., Choi, M.Y. & Sanders, D. (2006). The value of outdoor learning: Evidence from research in the UK and elsewhere. *School Science Review*, 87(320), 107–110.
- Glackin, M. (2019) 'It's more than a prop': Professional development session strategies as sources of teachers' self-efficacy and motivation to teach outside the classroom, *Professional Development in Education*, 45(3), 372–389.
- Kendall, S., Murfield, J., Dillon, J., & Wilkin, A. (2006) *Education Outside the Classroom: Research to Identify What Training Is Offered by Initial Teacher Training Institutions*. National Foundation for Educational research.
- Palmer, D.H. (2006). Sources of self-efficacy in a science methods course for primary teacher education students. *Research in Science Education*, 36(4), 337–353. doi:10.1007/s11165-005-9007-0
- Svobodová, H., Mísařová, D, Durna, R., Češková, T., & Hofmann, E. (2019). *Koncepce terénní výuky pro základní školy na příkladu námětů pro krátkodobou a střednědobou terénní výuku předmětů Člověk a jeho svět a Zeměpis*. Munipress.
- TDA (2007). *Professional standards for qualified teacher status and requirements for initial teacher training*. London: Training and Development Agency.
- Tilling, S., & Dillon, J. (2007) *Initial Teacher Education and the Outdoor Classroom: Standards for the future*. ASE and FSC.

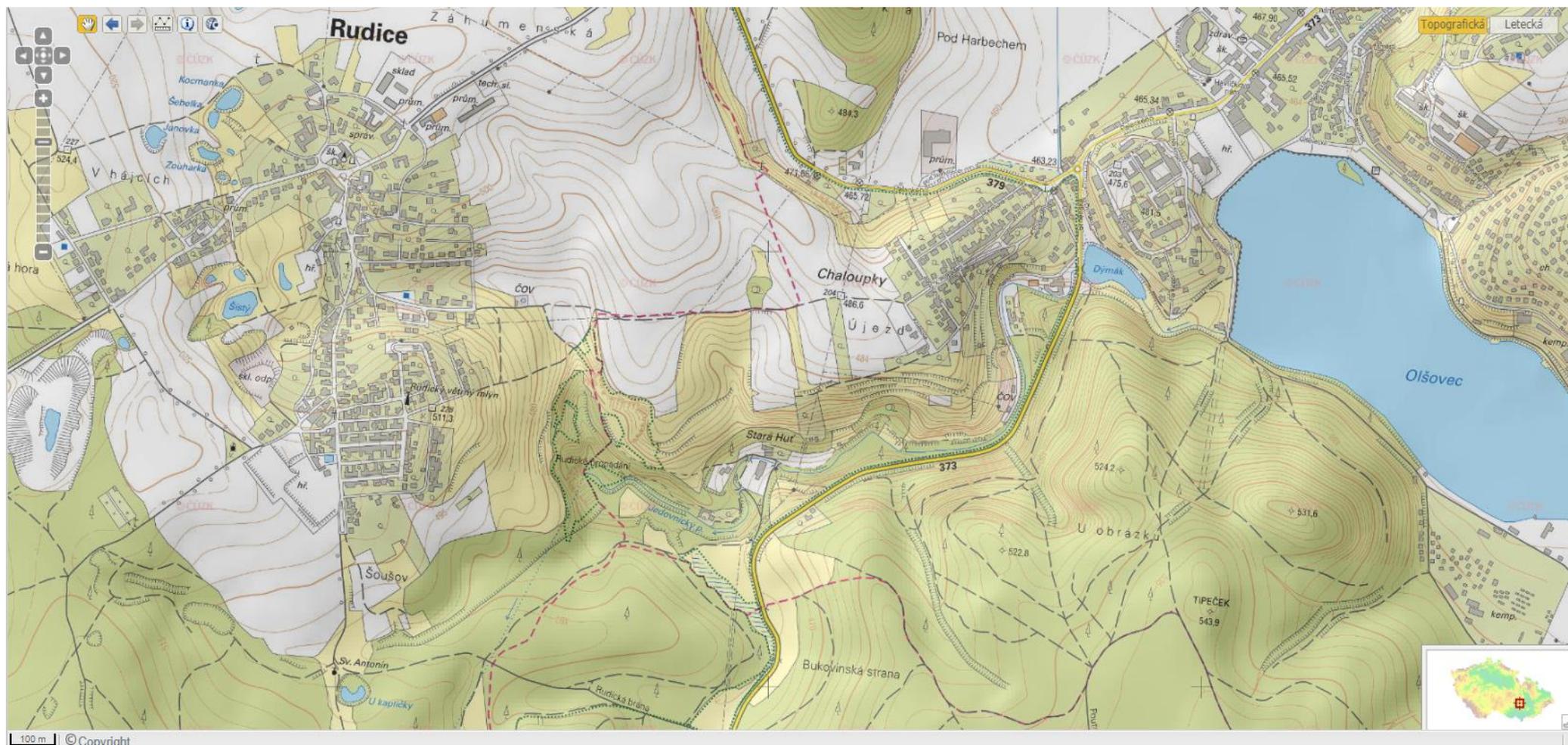
## 2.7 LIST OF APPENDICES

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- Appendix 1: Maps and photographs for the geographical-historical day
- Appendix 2: Worksheets for biological-geographical themes
- Appendix 3: Worksheets for biological-environmental themes
- Appendix 4: Reflective sheets for individual days

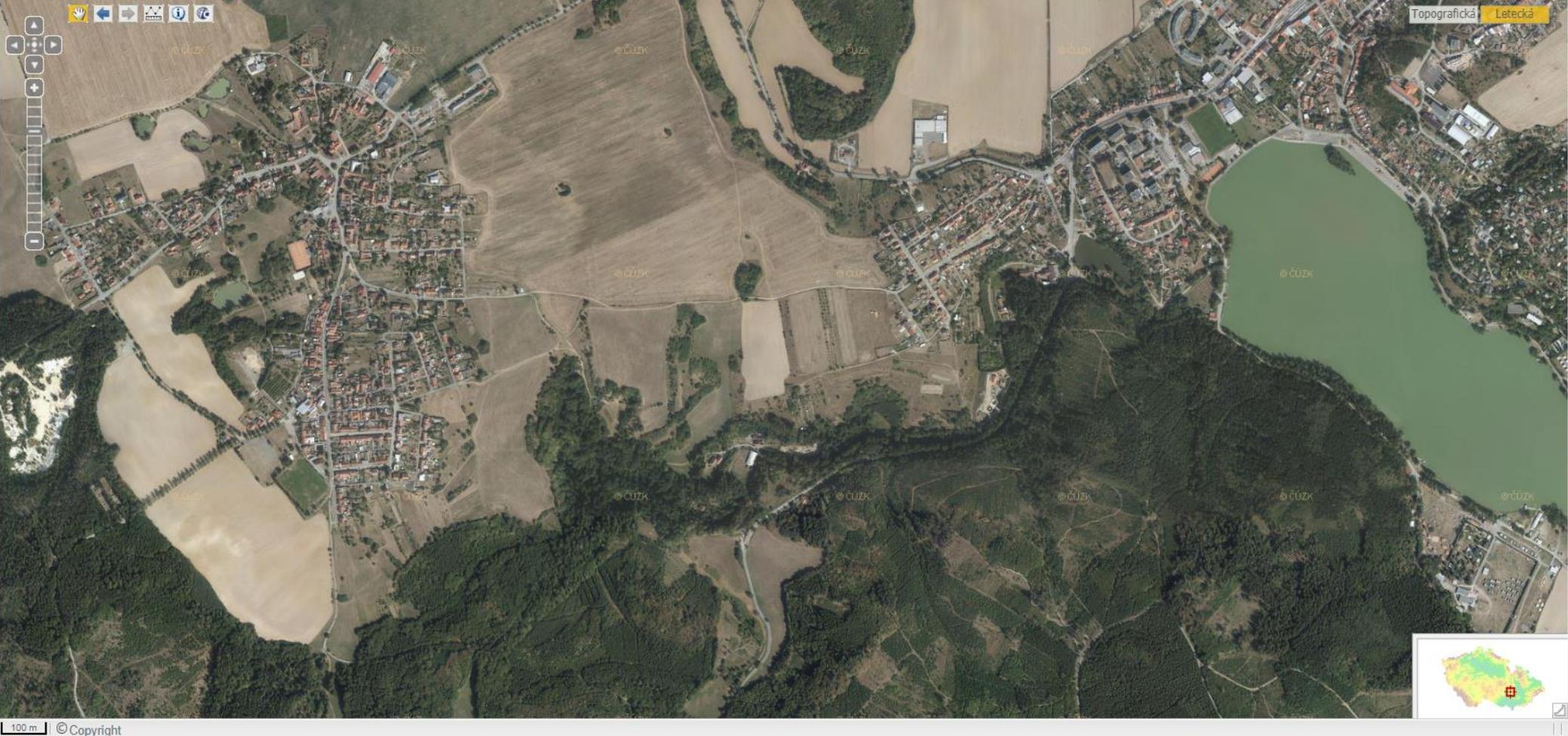
## Appendix 1

### Rudice and Jedovnice, topographic map current



Source: [geoportal.gov.cz](http://geoportal.gov.cz)

Rudice and Jedovnice, orthophotomap current



Source: geoportal.gov.cz

Rudice and Jedovnice, orthophotomap of the 50s



Source: [geoportal.gov.cz](http://geoportal.gov.cz)

Rudice and Jedovnice, topographic map, 3rd military mapping



Source: [geoportal.gov.cz](http://geoportal.gov.cz)



Jedovnice, 1910



Jedovnice, 1912



## BEFORE YOU HIT THE ROAD

**Despite its relatively small area, the territory of the Czech Republic has a very diverse nature. ALTITUDE is a significant factor influencing this diversity.**

- a) Find the following information on the tourist map:

ALTITUDE of the camp: \_\_\_\_\_

ALTITUDE of Tipeček hill: \_\_\_\_\_

NAMES OF MUNICIPALITIES BASED ON THE NAMES OF TREES

\_\_\_\_\_

- b) Based on the altitude of Jedovnice and its surroundings, find out to which it belongs:

ALTITUDINAL GEOGRAPHICAL ZONATION - \_\_\_\_\_

ALTITUDINAL VEGETATIONAL ZONATION - \_\_\_\_\_

and which woody plants are typical for this vegetation stage:

\_\_\_\_\_

- c) Explain how the local names of some municipalities are related to the vegetation stage of this area.

\_\_\_\_\_

\_\_\_\_\_

**Jedovnice is located in a karst area, which is characterized by many typical karst formations, but also by the occurrence of endangered species of plants and animals.**

- d) Use the map to find and list names of SPSA (specially protected small area) located within a radius of 5 km from Jedovnice.

**SPSA in the territory of**

**SPSA out of the territory of**

**PLA Moravian karst**

**PLA Moravian karst**

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

- e) For SPSA, which you visited or will visit during our stay, briefly add the reason for their protection.

\_\_\_\_\_

\_\_\_\_\_

## Common forest birds or Everyone sings differently.

Birds are often not seen in the forest, but their singing assures us that they are present.

- a) Read the description of our most common forest songbirds and paste the appropriate picture on them.
- b) Listen to the voices of these songbirds and try to remember them.
- c) On the route from the camp to the arboretum, listen and record if you see or hear them.

### Common chaffinch

The most common forest bird, male with **grey** head, **rusty** breasts and belly, in the wing and tail a striking **white stripe**. Female fainter colour (more grey). Seed-eating adults (conical beak), the chicks in the nest are fed by both parents with insects and spiders. Partly migratory.

**Bird singing:** pink pink rrajčák

**Seen:** \_\_\_\_\_ **Heard:** \_\_\_\_\_

### Great tit

All tree cover, conspicuous **black** breast (and belly) **stripe** on a yellow background. Black cap, white cheeks. Adults and young in the cavities, insectivores (caterpillars and others). Settled. Tallow in winter.

**Bird singing:** spring **ci ci bé**, later **si-tuit**, when scared (interrupted) **dzedzedzedze**

**Seen:** \_\_\_\_\_ **Heard:** \_\_\_\_\_

### Eurasian blackcap

Inconspicuously grey male with **black**, females (and young) with brown **cap**. Nests relatively low even in parks and groves. Mostly insectivorous (slender beak) with a small proportion of fruit. Migratory.

**Bird singing:** rapidly chirping tones end in flute tone

**Seen:** \_\_\_\_\_ **Heard:** \_\_\_\_\_

### Common chiffchaff

**Inconspicuous** green brown (olive) coloured small tree bird s with **black eye patch over the eye**. Spherical nest in the grass. The offspring are mainly taken care of by females. Insectivorous (slender beak), migratory, arriving soon.

**Bird singing:** repeated **cilp,calp,cilp,calp** (nezaměn.)

**Seen:** \_\_\_\_\_ **Heard:** \_\_\_\_\_

### Yellowhammer

(Gold) yellow head and underside of the body with brown stripes, **rusty**. Females coloured less

colourfully. Nests build in grass or shelter low above the ground. Mostly seed-eating (conical beak), partly also insects, spiders and "worms". Settled bird. In winter, they form small flocks, which we come across on the outskirts of towns.

**Bird singing:** from elevated places ringing **tititi-dý** (Symphony No. 5, Osudová). Lure **cik, cikcirrr**

**Seen:** \_\_\_\_\_ **Heard:** \_\_\_\_\_

### **Song thrush**

**The largest** of these birds, grey-brown, speckled chest, sings as high as possible in parks and gardens. The nest is made of mud. The young are cared for by both parents, fed with "worms", slugs, insects and berries. migratory, in town they can stay.

**Bird singing:** repeated flute **huidýb, huidýb**, when disturbed **gik-gik-gik**

**Seen:** \_\_\_\_\_ **Heard:** \_\_\_\_\_

## Vertebrates in the forest

- a) On the route, observe the **RESIDENCE SIGNS** of the animals. E.g. bitten cones, droppings, nests or burrows, etc. Write down which features of residence signs you saw during your trip.
- 
- 

- b) Observations of vertebrates can be mediated through images. In the delineated area, look for pictures of vertebrates living in the forest. Write their names in the table and fill in the missing information.

NAME OF ANIMAL	MOVES IN/ON	BELONGS AMONG ...	ACCORDING TO FOOD ...
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE
	THE TREETOP THE GROUND	MAMMALS / BIRDS REPTILES / AMPHIBIANS	CARNIVORE HERBIVORE OMNIVORE

## Woody plants

- a) Walk along the delineated area in the road until you come across woody plants marked with numbers. Identify these trees in the species and write their names in the table. (If you are unsure, use the identification key). At the end of the observation, add information about these woody plants.

	Name	It is ...	The leaf is...	The seeds protect ...
<b>1.</b>		TREE / SHRUB	ACICULAR (NEEDLE-LIKE) SIMPLE LEAF COMPOUND LEAF	CONE PULPY FRUIT DRY FRUIT
<b>2.</b>		TREE / SHRUB	ACICULAR (NEEDLE-LIKE) SIMPLE LEAF COMPOUND LEAF	CONE PULPY FRUIT DRY FRUIT
<b>3.</b>		TREE / SHRUB	ACICULAR (NEEDLE-LIKE) SIMPLE LEAF COMPOUND LEAF	CONE PULPY FRUIT DRY FRUIT
<b>4.</b>		TREE / SHRUB	JACICULAR (NEEDLE-LIKE) SIMPLE LEAF COMPOUND LEAF	CONE PULPY FRUIT DRY FRUIT
<b>5.</b>		TREE / SHRUB	ACICULAR (NEEDLE-LIKE) SIMPLE LEAF COMPOUND LEAF	CONE PULPY FRUIT DRY FRUIT
<b>6.</b>		TREE / SHRUB	ACICULAR (NEEDLE-LIKE) SIMPLE LEAF COMPOUND LEAF	CONE PULPY FRUIT DRY FRUIT
<b>7.</b>		TREE / SHRUB	ACICULAR (NEEDLE-LIKE) SIMPLE LEAF COMPOUND LEAF	CONE PULPY FRUIT DRY FRUIT
<b>8.</b>		TREE / SHRUB	ACICULAR (NEEDLE-LIKE) SIMPLE LEAF COMPOUND LEAF	CONE PULPY FRUIT DRY FRUIT
<b>9.</b>		TREE / SHRUB	ACICULAR (NEEDLE-LIKE) SIMPLE LEAF COMPOUND LEAF	CONE PULPY FRUIT DRY FRUIT
<b>10.</b>		TREE / SHRUB	ACICULAR (NEEDLE-LIKE) SIMPLE LEAF COMPOUND LEAF	CONE PULPY FRUIT DRY FRUIT
<b>11.</b>		TREE / SHRUB	ACICULAR (NEEDLE-LIKE) SIMPLE LEAF COMPOUND LEAF	CONE PULPY FRUIT DRY FRUIT
<b>12.</b>		TREE / SHRUB	ACICULAR (NEEDLE-LIKE) SIMPLE LEAF COMPOUND LEAF	CONE PULPY FRUIT DRY FRUIT
<b>13.</b>		TREE / SHRUB	ACICULAR (NEEDLE-LIKE) SIMPLE LEAF COMPOUND LEAF	CONE PULPY FRUIT DRY FRUIT

## WOODY PLANTS CARD

Name of the woody plant: \_\_\_\_\_

It is a **TREE / SHRUB**

Leaf – **COMPOUND / SIMPLE**

The seeds protect a **CONE/DRY FRUIT/PULPY FRUIT**

GLUE LEAF

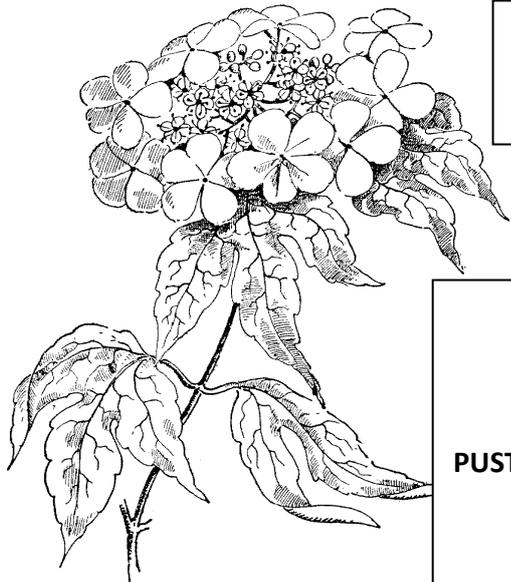
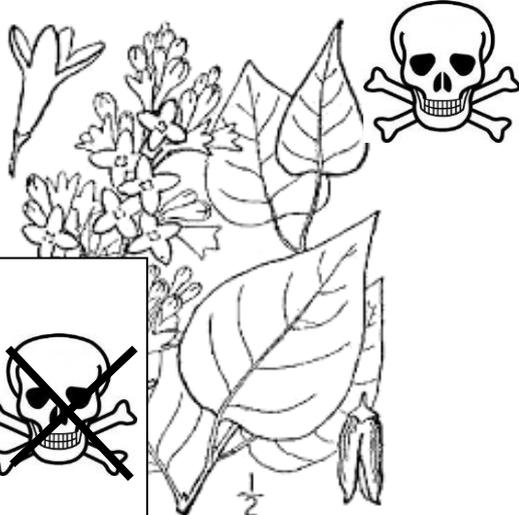
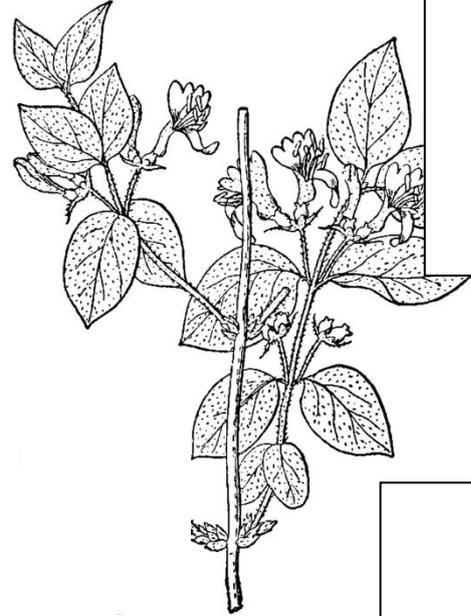
GLUE FRUIT

The colour of the bark is ... \_\_\_\_\_

**Create a frottage of a bark on a separate sheet of paper.**

## Ornamental shrubs (arboretum in Křtiny)

1) Look at the flowers of the shrubs and colour them according to reality.

 <p><b>VIBURNUM</b></p>	 <p><b>SYRINGA</b></p>
 <p><b>HONEYSUCKLE</b></p>	 <p><b>ELDERBERRY</b></p>

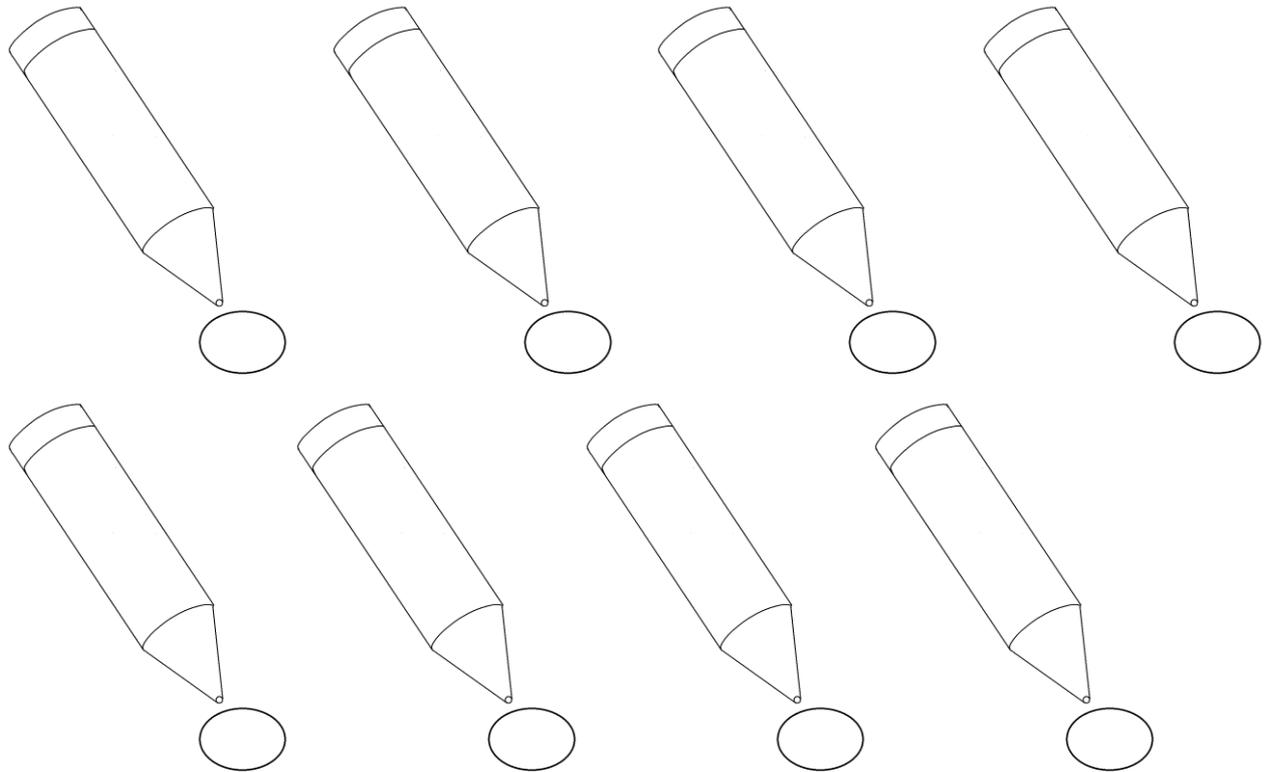
2) Compare the characters of these two shrubs with each other.

	(BLACK) ELDERBERRY	VIBURNUM (guelder-rose)
The colour of the flowers		
...		
Number of flower petals ...		
Flowers in inflorescences	SAME / DIFFERENT	SAME / DIFFERENT
...		
Fruit colour ...	RED / BLACK	RED / BLACK
Leaves ...	SIMPLE / COMPOUND	SIMPLE / COMPOUND
Stem ...	HOLLOW / FILLED	HOLLOW / FILLED

3) **Locate and use the symbol to depict shrubs to see if they are poisonous or safe.**

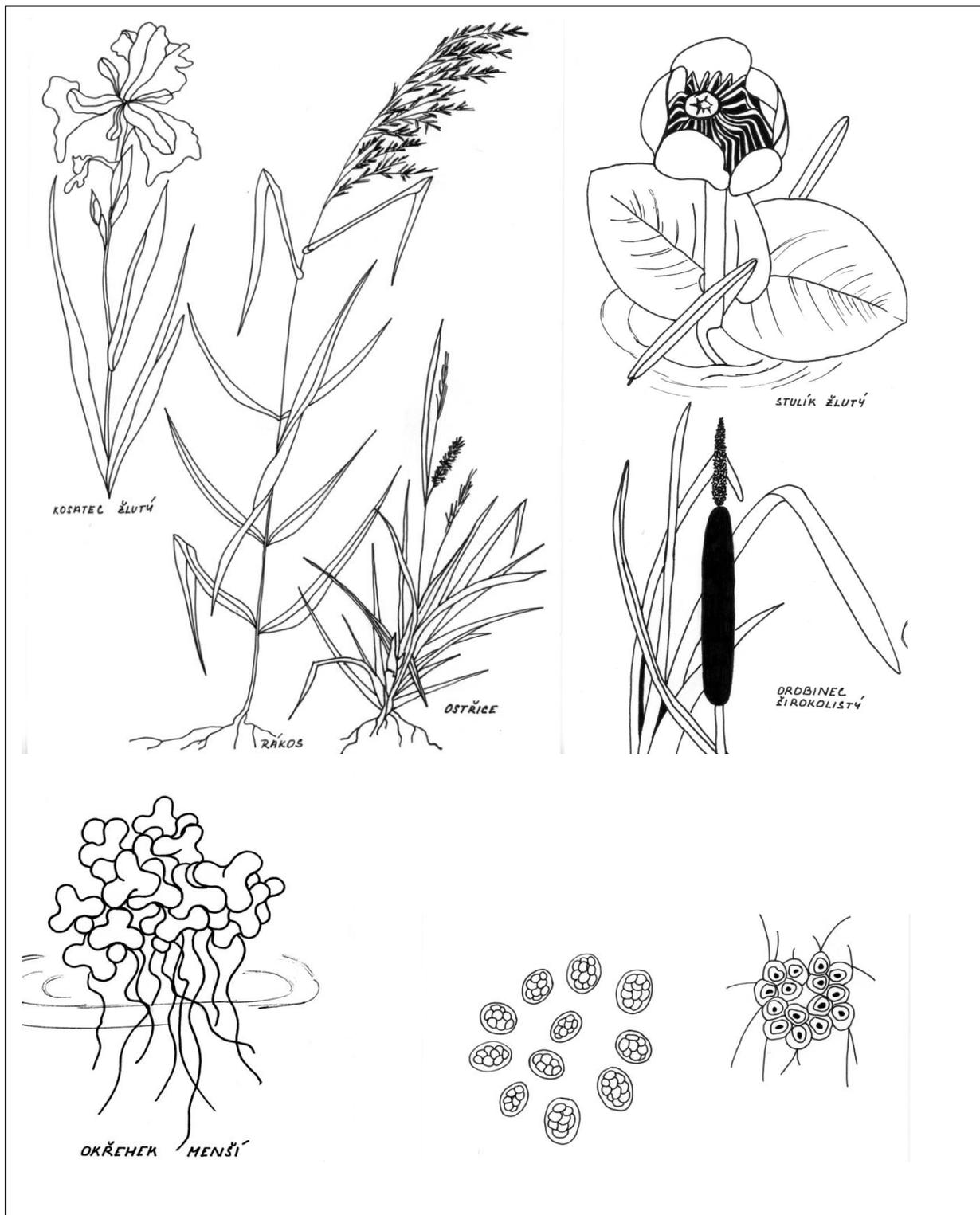
Appendix 3: Worksheets for biological-environmental themes

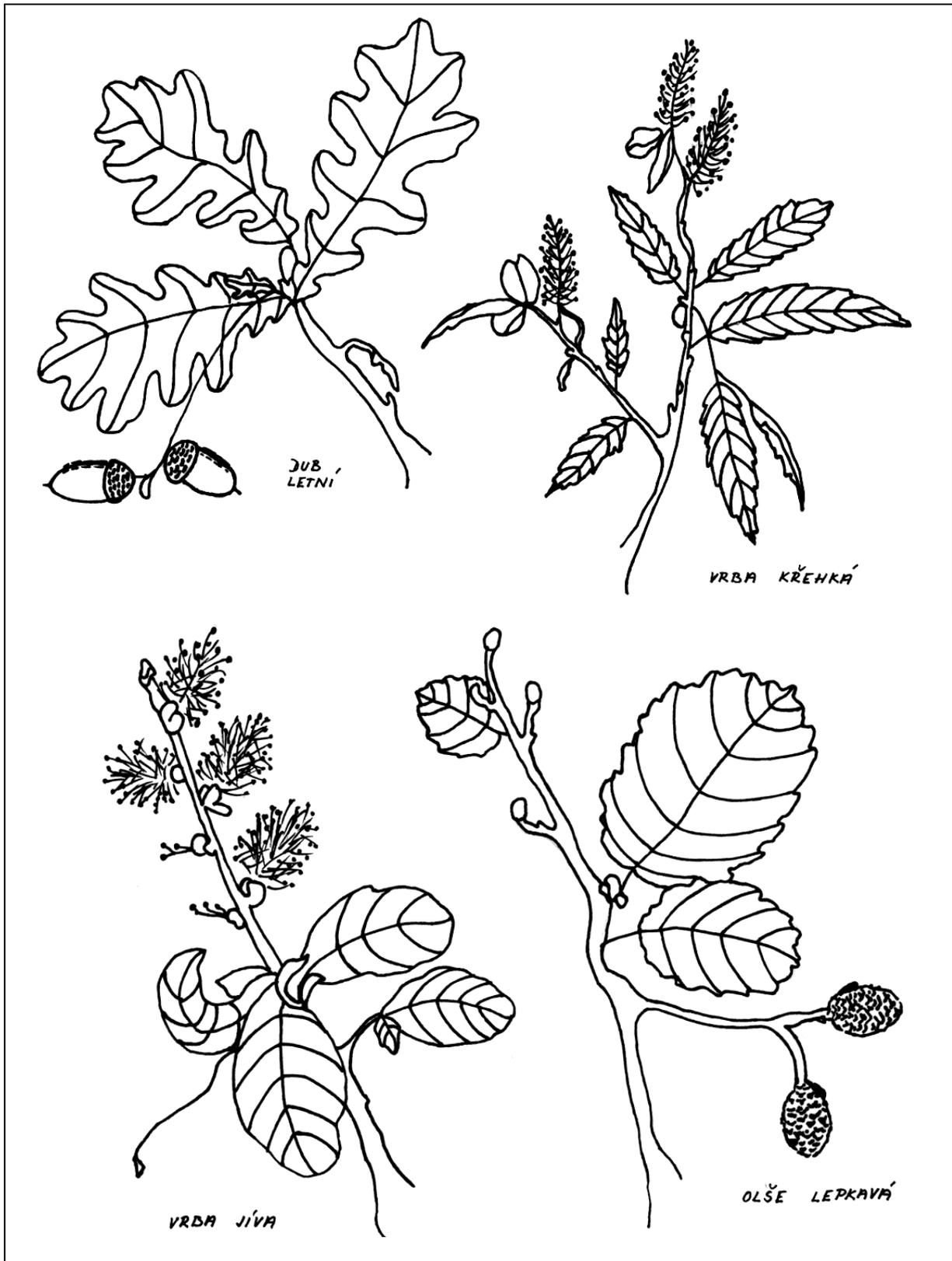
## FLORAL COLOUR PENCILS



## Pond plants

a) Observe the plants growing on the shores of the pond and in the water. If you see any of the plants shown, write the letter **V** (if they grow in water), **B** (if they grow in a muddy shore), **S** (if they grow on a dry shore) next to their names.





b) Use the atlas or the plant identification key to name other plants growing in and around the pond and write down their names.

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Appendix č:  
Another life of tadpole:

even as a small tadpole, a great diving beetle's larva will eat you	even as a small tadpole, a great diving beetle's larva will eat you	a car will run you over during migration	a car will run you over during migration
as soon as you come out on land, a heron will eat you	as soon as you come out on land, a heron will eat you	the children will take you home in a glass and you will die due to warm water and inappropriate food	the children will take you home in a glass and you will die due to warm water and inappropriate food
as soon as you come out on land, a stork will eat you	as soon as you come out on land, a stork will eat you	more rainwater gets into the water from the fields after the rains, which poisons you	more rainwater gets into the water from the fields after the rains, which poisons you
even as a small tadpole, a grass snake will eat you	even as a small tadpole, a grass snake will eat you	vandals will drain the dam and you will die without water	vandals will drain the dam and you will die without water
even as a small tadpole, a coot will eat you	even as a small tadpole, a coot will eat you	your native pool, where you wanted to reproduce, was dried up and brought in the soil	your native pool, where you wanted to reproduce, was dried up and brought in the soil
even as a small tadpole, a duck will eat you	even as a small tadpole, a duck will eat you	the fishermen put too many fish into the pond, you just didn't have a chance to escape	the fishermen put too many fish into the pond, you just didn't have a chance to escape
even as a small tadpole, a larva of a dragonfly will eat you	even as a small tadpole, a larva of a dragonfly will eat you	you grew up healthy, found a suitable pool and successfully reproduced	you grew up healthy, found a suitable pool and successfully reproduced
a perch ate you as a tadpole	a perch ate you as a tadpole		

## BIRDS OF THE POND

a) Observe and compare the appearance and behaviour of the mallard and the tufted duck

### THE TUFTED DUCK

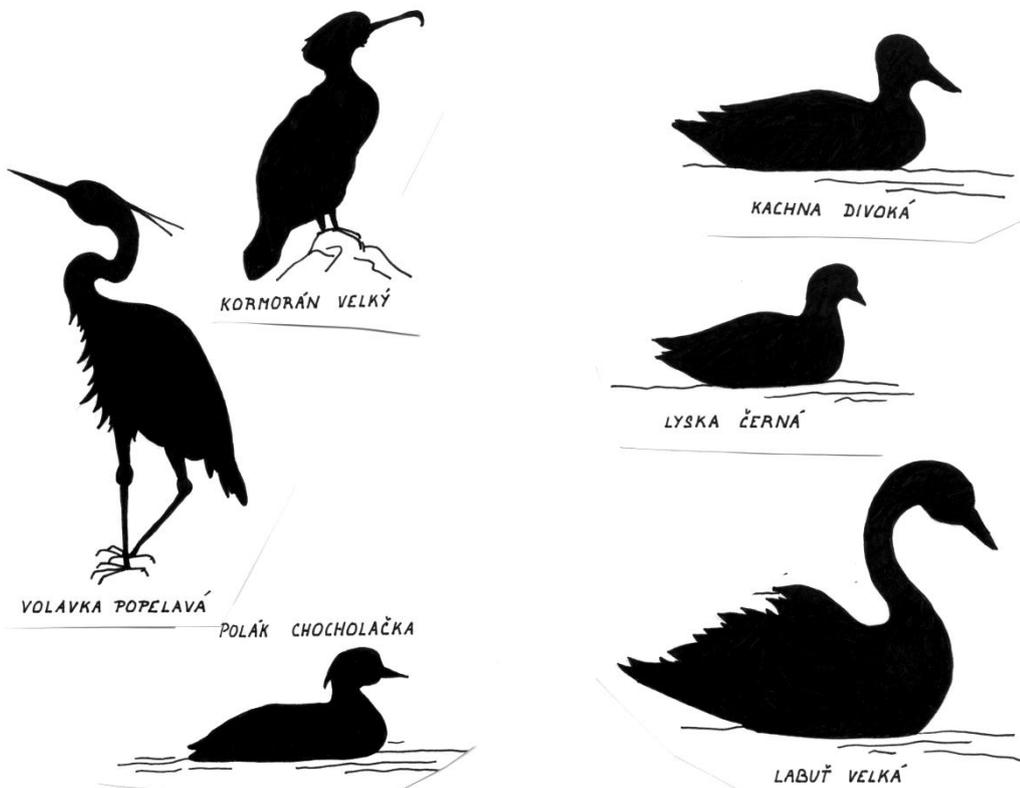
- female colour: \_\_\_\_\_
- male colour: \_\_\_\_\_
- swim...  
**individually – in pairs – in a flock**
- sink for food...  
**whole – just the head**
- stay below the surface \_\_\_\_\_s  
(measure with a stopwatch)

### THE MALLARD

- female colour: \_\_\_\_\_
- male colour: \_\_\_\_\_
- swim...  
**individually – in pairs – in a flock**
- sink for food...  
**whole – just the head**
- stay below the surface \_\_\_\_\_s  
(measure with a stopwatch)

b) Use binoculars to observe the birds of the pond and its immediate surroundings.

c) Name the birds you saw using the silhouettes in the picture.



d) Assign the names of individual birds to the characteristics.

<p>A black duck-sized bird with a typical white beak and a white spot on its forehead. It has legs with long green toes with floating skin hems.</p> <p>It requires dense aquatic vegetation, muddy bottoms and open water areas with floating plants. It feeds on aquatic plants, insects and molluscs. It sinks to the roots of plants even to greater depths.</p> <p>Some fly to the south for the winter, some stay with us all year round.</p>	<p>The male is angular black with white hips and he has a flowing tuft on his head. The female is dark brown, and the tuft is only indicated.</p> <p>It builds its nest mostly in swampy stands immediately surrounded by water. It sinks into the depth for food (molluscs, insects and larvae, crustaceans and small fish, seeds and small fruits, less common are the green parts of plants). It stays with us even in winter.</p>
<p>It is a relatively large bird, mostly grey in colour, the base of the body is lighter, and the wingtips are black. It has a typical tuft on his head, its neck sagging. It nests on trees in colonies.</p> <p>Its food consists mainly of fish (about 15 cm), amphibians, reptiles, small mammals, insects, crustaceans and molluscs. Northern populations are largely migratory, wintering south of the nesting sites, ours mostly in the Mediterranean.</p>	<p>We can easily distinguish males from females - the male has a green head with a white band around his neck, his body is brown spotted, the female is all brown spotted.</p> <p>The nest is located on the ground near the water and covered with grass.</p> <p>It feeds on plants, snails, worms, tadpoles and frogs. It looks for food on the surface or under water (at most they sink their head below the surface and lift their buttocks vertically upwards). It winters on non-freezing bodies of water.</p>
<p>It is a relatively large bird, black in colour, with a thin bent at the tip and a bald throat sac. It rests on stones or trees by the water in an upright position with its wings often outstretched.</p> <p>It nests in large colonies on deciduous trees. It feeds exclusively on fish with a size of 10 to 20 cm. It is a partially migratory bird, sometimes it winters here.</p>	<p>It is one of our largest birds, with a long, curved neck and an orange beak with a bump at the root of its beak. The colour of the body is white. Its nest is built of wicker and reeds.</p> <p>Its food consists of aquatic plants. It is a partially migratory bird.</p>

## Human intervention in the habitat of the pond

<b>POND BUILDING ...</b>	... it benefits the landscape because it retains water that would otherwise drain away, creating an environment for aquatic plants and animals.
	... it can damage the landscape if the pond is built insensitively, for example, instead of a wetland where moisture-loving organisms lived, water from the surroundings is drained into it, which is dried in this way.
<b>STOCKING A POND WITH FISH ...</b>	... they have a positive effect, because fish prevent the pond from overgrowth with plants, they are a natural part of the aquatic community.
	... if there are too many fish, or only certain species predominate, the whole community collapses. The fish must then be fed in the same way as other livestock.
<b>KEEPING DUCKS ON A POND ...</b>	... if this is done by building nest boxes and promoting natural rearing and adequate numbers, these interventions have a positive effect, increasing the diversity of the community.
	... in the case of the release of a larger number of semi-wild ducks into the pond, there is a rapid loss of food, which is food not only for ducks, but also for other animals.
<b>REGULAR DRAINING OF PONDS ...</b>	... it is driven by an effort to eliminate weeds, which are replaced by purposefully bred species, i.e. there is higher efficiency and higher yields from the pond.
	... on the other hand, many species of plants and animals associated with the aquatic environment can be irreversibly damaged as a result of too much interference with their environment.
<b>POND ADJUSTMENTS FOR RECREATIONAL NEEDS ...</b>	... they attract more tourists, who will get acquainted with the locality, both the landscape and the nature in it. At the same time, exercise in the outdoors is healthy for humans.
	... an increased number of visitors can have a negative effect on animals that do not have the peace to breed. Adjustments for the needs of recreation are often related to the strengthening of shores and the removal of riparian plants, i.e. significant interventions in the pond community.

## Observations of field crops

a) Look at the nearest field and, based on your observations, write down the information about the field crop grown in that field.

The cultivated crop - \_\_\_\_\_ was planted in (spring - autumn).  
Today \_\_\_\_\_ (date) it is \_\_\_\_\_ cm high, (it has – has not) formed  
flowers / inflorescence, it is - it is not in the flowering season. The colour of the  
vegetative parts is \_\_\_\_\_ and the colour of the flower - the fruit is  
\_\_\_\_\_.

This field crop is used for production...

\_\_\_\_\_.

In the marked part (1m<sup>2</sup>) – grow(s) \_\_\_\_\_ different species of plants. Apart from  
the intentionally grown crop, these are weeds like

b) Look at the nearest field and, based on your observations, write down the information about the field crop grown in that field.

The cultivated crop - \_\_\_\_\_ was planted on (spring - autumn).  
Today \_\_\_\_\_ (date) it is \_\_\_\_\_ cm high, (it has – has not) formed  
flowers / inflorescence, it is - it is not in the flowering season. The colour of the  
vegetative parts is \_\_\_\_\_ and the colour of the flower - the fruit is  
\_\_\_\_\_.

This field crop is used for production...

\_\_\_\_\_.

In the marked part (1m<sup>2</sup>) – grow(s) \_\_\_\_\_ different species of plants. Apart from  
the intentionally grown crop, these are weeds like

Many grasses grow in the meadow. We can easily recognize them by the typical structure of their body.

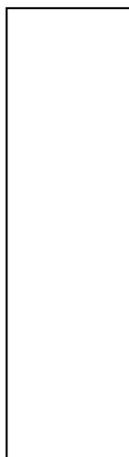
stonek STĚBLO (herbaceous stem)

(stem with knees)

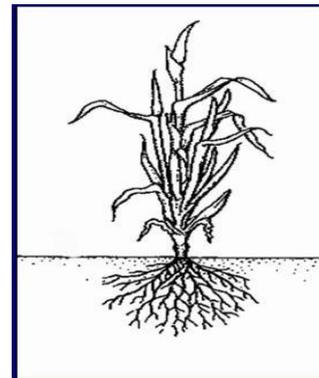


leaf with veins roots

Souběžnou (parallel)



kořeny SVAZČITÉ (Fibrous roots)



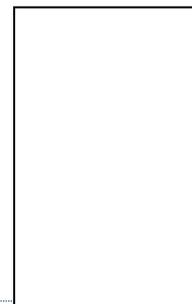
flowers always in INFLORESCENCE of two different types

fruit is CARYOPSIS

PANICLE



EAR



Appendix no.

### Plants in the meadow - colourful flowering herbs

PEAVINES	LYCHNIS	CLOVER	ALCHEMILLA
			
FIELD SCABIOUS	BUTTERCUPS	BELLFLOWER	SORRELS
			
		85	MOUSE-EAR

CINQUEFOILS	SPEEDWELL	MEADOW-RUE	CHICKWEED
 <p>A detailed botanical drawing of a cinquefoil plant. It features a central stem with several finely divided, fern-like leaves. At the top of the stem is a cluster of small flowers. To the left, a single flower is shown in profile, highlighting its five distinct petals. Below the main plant, a separate drawing shows a single flower with its five petals clearly visible.</p>	 <p>A botanical drawing of a speedwell plant. It shows a central stem with several pairs of opposite, heart-shaped leaves. The flowers are arranged in a dense, upright cluster at the top of the stem. To the right, a single flower is shown in profile, illustrating its two-lipped structure.</p>	 <p>A botanical drawing of a meadow-rue plant. It features a central stem with several large, deeply lobed leaves. The flowers are arranged in a dense, upright cluster at the top of the stem. To the left, a single flower is shown in profile, highlighting its five distinct petals. Below the main plant, a separate drawing shows a single flower with its five petals clearly visible.</p>	 <p>A botanical drawing of a chickweed plant. It shows a central stem with several pairs of opposite, narrow, lanceolate leaves. The flowers are arranged in a dense, upright cluster at the top of the stem. To the right, a single flower is shown in profile, illustrating its five distinct petals. Below the main plant, a separate drawing shows a single flower with its five petals clearly visible.</p>

Appendix 4: Reflective sheets for individual days

**DIDACTIC THINKING FOR A GEOGRAPHICAL-HISTORICAL DAY**

Please answer these questions after the geographical day.

1. Specify what is characteristic of outdoor exercise based on **independent work of groups** (without continuous checking by the teacher).

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2. How should a teacher like you prepare for similarly focused outdoor education (outdoor exercise based on independent group work) before the actual implementation (what to know, ensure, what to watch out for, etc.)?

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3. Decide what (dis)advantages it brings when a pupil (group of pupils) works independently according to **pre-given instructions of the teacher**:

- advantages: \_\_\_\_\_

- disadvantages: \_\_\_\_\_

4. Suggest how it would be possible to **diagnose** (verify) the effectiveness of a similar outdoor exercise and what you would focus on in the next **evaluation** of students.

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5. Decide, in which part of the **curriculum** these could be used for:

a visit to the Rudice Sinkhole - \_\_\_\_\_

implementation panoramic sketch - \_\_\_\_\_

a visit to the mill in Rudice - \_\_\_\_\_

movement in the landscape with the help of GPS navigation - \_\_\_\_\_

6. In your opinion, how can outdoor education at primary school **complement** school teaching?

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7. What attracted you to the geographical part of outdoor education? What for you is the benefit? What would you change?

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## REFLECTION ON HISTORICAL-GEOGRAPHICAL DAY

Please answer these questions after the historical day.

### QUESTIONS IN GENERAL ON THE FORM OF EDUCATION

1. Specify what characterizes the outdoor education that you experienced during the historical day; **EXCURSION GUIDED BY AN EXPERT?**

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2. How should a teacher like you prepare for a similar excursion with pupils before the actual implementation (what they need to know, ensure, what to look out for, etc.)?

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3. Decide what benefits it brings when a student (group of students) is given questions and tasks:

- in advance: \_\_\_\_\_
- during the excursion: \_\_\_\_\_
- at the end of the excursion: \_\_\_\_\_

4. Suggest how it would be possible to diagnose (verify) the effectiveness of a similar excursion and what you would focus on in the following assessment of pupils.

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### QUESTIONS ON A SPECIFIC IMPLEMENTED DAY

5. Decide what part of the curriculum could be assigned to:

- a visit to the church in Křtiny- \_\_\_\_\_
- a visit to the Výpustek Cave- \_\_\_\_\_

6. What do you think primary/lower secondary school pupils should take away from visiting these places? (knowledge, experiences, etc.)

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7. What attracted you to the HISTORICAL part of the outdoor education? Was it a benefit for you? What would you change?

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## DIDACTIC THINKING OF BIOLOGICAL GEOGRAPHICAL DAY

Please answer these questions at intervals after completing the biological-geographical day.

### QUESTIONS IN GENERAL ON THE FORM OF EDUCATION

**1. Specify what is characteristic of the outdoor education you experienced during the biological day; OUTDOOR EXERCISE based on CONTINUOUS WORK OF GROUPS (with continuous checking by the teacher)?**

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**2. How should form-oriented outdoor education (field exercise based on ongoing group work) be prepared by a teacher like you before the actual implementation (what they need to know, ensure, what to look out for, etc.)?**

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**3. Decide which benefits it brings when the pupil (group of pupils) works independently according to the teacher's pre-given instructions:**

- advantages: \_\_\_\_\_

- disadvantages: \_\_\_\_\_

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**4. Suggest how it would be possible to diagnose (verify) the effectiveness of a similar outdoor exercise and what you would focus on in the next evaluation of pupils.**

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### QUESTIONS ON A SPECIFIC IMPLEMENTED DAY

**5. Decide what part of the curriculum could be assigned to:**

identification of woody plants using a key - \_\_\_\_\_

drawing with natural products - \_\_\_\_\_

recognizing birds by voice - \_\_\_\_\_

comparing deciduous and coniferous forests - \_\_\_\_\_

**6. What do you think primary school pupils should bear in mind from visiting these places? (knowledge, experiences, etc.)** \_\_\_\_\_

**7. What attracted you to the BIOLOGICAL part of outdoor education? Was it a benefit for you? What would you change?**

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## **REFLECTION ON BIOLOGICAL-ENVIRONMENTAL DAY**

Please answer these questions at intervals after completing the biological-geographical day.

1. For which year it would be possible to implement similarly conceived teaching - outdoor education connected with observation, catching and determining model organisms of a given habitat.

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2. Decide what the advantages and disadvantages are of searching for and determining natural products according to predefined working materials.

- **ADVANTAGES:** \_\_\_\_\_

\_\_\_\_\_

- **DISADVANTAGES:** \_\_\_\_\_

\_\_\_\_\_

3. Decide what the advantages and disadvantages are of catching invertebrates and identifying them with the help of an identification key.

- **ADVANTAGES:** \_\_\_\_\_

\_\_\_\_\_

- **DISADVANTAGES:** \_\_\_\_\_

\_\_\_\_\_

4. Decide what the advantages and disadvantages are of didactic games implemented during field teaching?

- **ADVANTAGES:** \_\_\_\_\_

\_\_\_\_\_

- **DISADVANTAGES:** \_\_\_\_\_

\_\_\_\_\_

5. In your opinion, what should primary school pupils take away from a visit to a pond, field and meadow? (knowledge, skills, experiences, etc.)

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6. How should a teacher like you be prepared for a similar lesson with pupils (what I need to know, ensure, what to look out for, etc.)?

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7. What attracted you to the biological part (forest) of outdoor education? Was it a benefit for you? What would you change?

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viburnum: <http://www.supercolouring.com/colouring-pages/viburnum-opulus-or-guelder-rose>

honeysuckle: <http://www.namethatplant.net/plantdetail.shtml?plant=2501>

mock-orange image source: [https://cs.wikipedia.org/wiki/Pustoryl\\_nevonn%C3%BD](https://cs.wikipedia.org/wiki/Pustoryl_nevonn%C3%BD)

lilac: [https://www.anpc.ab.ca/wiki/index.php/Syringa\\_vulgaris](https://www.anpc.ab.ca/wiki/index.php/Syringa_vulgaris)

elderberry: <http://www.i-flora.com/en/the-smartphone-apps/iflora-baeume/species/art/show/sambucus-nigra-1.html>

IMAGE SOURCE: Sorrel:

<http://www.i-flora.com/en/fact-sheets/search-for-species/art/show/rumex-acetosa-1.html>

PEAVINES:

[http://web2.mendelu.cz/af\\_211\\_multitext/systematika/ucebni\\_text/system/krytosemenne/dvoudelozne/bobovite/Lathyrus\\_pratensis.html](http://web2.mendelu.cz/af_211_multitext/systematika/ucebni_text/system/krytosemenne/dvoudelozne/bobovite/Lathyrus_pratensis.html)

TREFOIL::

[http://web2.mendelu.cz/af\\_211\\_multitext/systematika/ucebni\\_text/system/krytosemenne/dvoudelozne/bobovite/obrazky\\_CB/Trifolium\\_pratense.jpg](http://web2.mendelu.cz/af_211_multitext/systematika/ucebni_text/system/krytosemenne/dvoudelozne/bobovite/obrazky_CB/Trifolium_pratense.jpg)

LYCHNIS:

[http://web2.mendelu.cz/af\\_211\\_multitext/systematika/ucebni\\_text/system/krytosemenne/dvoudelozne/hvozdikovite/Lychnis\\_flos-cuculi.html](http://web2.mendelu.cz/af_211_multitext/systematika/ucebni_text/system/krytosemenne/dvoudelozne/hvozdikovite/Lychnis_flos-cuculi.html)

COMMON LADY'S MANTLE:

[http://web2.mendelu.cz/af\\_211\\_multitext/systematika/ucebni\\_text/system/krytosemenne/dvoudelozne/ruzovite/Alchemilla\\_vulgaris.html](http://web2.mendelu.cz/af_211_multitext/systematika/ucebni_text/system/krytosemenne/dvoudelozne/ruzovite/Alchemilla_vulgaris.html)

BUTTERCUPS:

<http://www.fotodoma.cz/rostliny-plantae/pryskyrnik-prudky/>

BELLFLOWER:

<http://www.i-flora.com/en/fact-sheets/phylogenetic-tree/art/show/campanula-rotundifolia.html>

field scabious:

<http://www.i-flora.com/en/fact-sheets/search-for-species/art/show/knautia-arvensis-1.html>

cinquefoils:

<https://commons.wikimedia.org/wiki/File:Nsr-slika-376.png>

speedwell:

<http://www.i-flora.com/steckbriefe/stammbaum/art/show/veronica-chamaedrys.html>

meadow-rue:

<http://www.i-flora.com/steckbriefe/suche-nach-arten/art/show/thalictrum-flavum.html>

mouse-ear chickweed:

[https://plants.usda.gov/java/largeImage?imageID=cear4\\_001\\_avd.tif](https://plants.usda.gov/java/largeImage?imageID=cear4_001_avd.tif)

### 3. USEFUL SCIENCE – THE KEY TO SUSTAINABLE DEVELOPMENT

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#### 3.1 USEFUL SCIENCE – THE KEY SUSTAINABLE DEVELOPMENT

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The title of the subject "Useful science – the key to sustainable development" reflects not only the overlap of educational areas, but also a shift from exploring the landscape to solving problems in the landscape using the knowledge and skills of individual disciplines, various forms of outdoor education, which lead to a common conclusion – sustainability. This course is designed for teaching for the lower secondary school and lower grades of multi-year grammar schools in combination with the field of geography. Geography is taught at PdF MU in combination with biology, mathematics, civics, history, foreign languages and physical education. This course is a continuation of the course: Useful Science in many activities – we explore the landscape around us, which is intended for teaching for the primary school. Some activities overlap and it is possible to show the continuity and progression of individual activities, which reflect the specifics of the age peculiarities of pupils at the lower secondary school.

Both courses are focused on long-term forms of outdoor education in terms of time. Students who study at the Department of Geography, Faculty of Education, Masaryk University, have also included in the study program short-term and medium-term forms of outdoor education and together with long-term forms, it forms a comprehensive system of outdoor education in a way that could work in primary and lower secondary schools as well. Field practices in the bachelor's study of geography at the Faculty of Education, Masaryk University are focused on individual geographical disciplines, follow each other and complement each other appropriately. E.g. cartographic knowledge and skills practiced in the field practice in the first year of study use all the following field practices in physical and socioeconomic geography. Linking the knowledge of all practices leads to complex practices in the regional geography of foreign countries and the Czech Republic. In the case of complex practices, we logically get to the connection of knowledge and skills from other natural sciences and social sciences and education.

For this course, there are selected locations that are located not far from Brno. It is the environment of the Dražanská Highlands (Dražánská vrchovina), which also includes the Moravian Karst (Moravský kras) Protected Landscape Area.

The subject **Useful Science – the key to sustainable development** appropriately continues the didactics of geography in the master's study. At the professional workplace of the Faculty of Education, Masaryk University, students learn how to work in the landscape, in this case the unique environment of the Dražanská Highlands, the Moravian Karst Protected Landscape Area and the surroundings of Brno. The presented innovative teaching material concerns complex field teaching in a selected locality, which is didactically focused, and students learn how to **plan, organize and complete** this field teaching in the environment of primary and secondary school. During field teaching, theoretical knowledge is applied in the field of geography and other scientific and social science disciplines, physical and art education, personal development and the English language. The Atlas of the Moravian Karst and its surroundings was also prepared for the entire locality and teaching needs. This is an Atlas for outdoor education and outdoor activities. Students of the Faculty of Education, Masaryk University and pupils of individual levels of schools can work with individual map sheets of the mentioned atlas during the program. At this point, it is necessary to note that **the transdisciplinary outdoor education** conceived in this way is intended to **connect the subject curriculum and supplement it and not to remove or fully replace it**.

### 3.2 TEACHING ORGANIZATION

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The program of the field course is designed so that the individual activities complement each other. The purpose of the field geographic teaching course is, in addition to practical training of individual methods of work, also a demonstration of how it is possible to supplement and deepen the curriculum taught at school through field teaching. During the first day, it is mainly about observation, reconnaissance and documentation of various localities suitable for outdoor education in the area of Dražanska Highlands. Students observe the landscape in a real environment, on maps, take photo documentation and keep a field diary, in which they record observations and measurements for the entire duration of the field course. At the end of the course, they reflectively present the completed teaching methods and activities of individual days. Outputs in the mother tongue will be supplemented by English annotations.

The afternoon and evening program are dedicated to the repetition of activities that pupils and students should be able to do from earlier, especially short-term forms of outdoor education. It is about automating the basic skills that they will use during the course, especially for independent research activities. In terms of geography, these are mainly different ways of orientation in the field according to different types of maps, work with a compass, GPS station, recording the route, taking photo documentation, keeping a field diary, etc. When moving to different locations, they will also use detailed orienteering maps for orientation in the field. They use GPS stations in activities that assess the actions of people in the monitored area. From other map skills, they will practice map reading, map analysis and map creation through thematic maps and aids, which they record in their diaries to get a basic idea of what needs to be provided for the implementation of outdoor education. Let us also take into account the fact that any fieldwork is associated with the use of interdisciplinary links. These do not always have to be particularly emphasized by the teacher, as they result from being away from school.

### 3.3 FRAMEWORK PROGRAM

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#### **1<sup>st</sup> day:**

08.30 – meeting in front of the Poříčí 9 building

09.00 – 16.00 – guided excursion – Brněnská, Dražanska Highlands, Moravian karst

Brno–Útěchov–Adamov–Josefov–Olomučany–Blansko–Těchov–Veselice–Sloup u Macochy–Šošůvka–Helišova skála–Holštejn–Baldovec–Kojál–Krásensko–Podomí–Senetářov–Kotvrdovice–Jedovnice.

17.00 – 17.30 – accommodation

18.00 – dinner

18.30 – 19.30 – acquaintance with the purpose of the field workplace, handover of materials, preparation for the next day.

19.30 – 20.30 – Geocaching – acquaintance with the surroundings of ATC Olšovec.

#### **2<sup>nd</sup> day:**

8.00 – breakfast

9.00 – 15.00 – the influence of the landscape on humans (and vice versa) - work with GPS – individual work

15.30 – 18.00 – orientation in the field according to the map for orienteering

18.00 – dinner

18.30 – 19.15 – sports early evening – demonstration of non-traditional games

19.15 – 20.00 – assembly of materials – photo documentation, worksheets, video sequences, presentations

**3<sup>rd</sup> day:**

8.00 – breakfast

9.00 – 17.00 – historical-geographical part – Křtiny, Výpustek - transfer by bus.

Výpustek – Křtiny – Bystřec – move according to the map for orienteering, route recording (map, GPS, mobile).

18.00 – dinner

18.45 – 19.30 – sports early evening

20.00 – assembly of materials – photo documentation, worksheets, video sequences, presentations

**4<sup>th</sup> day:**

8.00 – breakfast

Group A

9.00 – 15.00 – solution of case studies (topic will be specified on the spot)

15.00 – 18.00 – Completion of materials, preparation of presentation of results.

Group B

9.00 – 15.00 – solution of case studies (topic will be specified on the spot)

15.00 – 18.00 – Completion of materials, preparation of presentation of results.

Group C

09.00 – 15.00 – solution of case studies (topic will be specified on the spot)

15.00 – 18.00 – Completion of materials, preparation of presentation of results.

18.00 – dinner

18.45 – 20.00 – preparation for a social evening

20.00 – team building – social evening

**5<sup>th</sup> day:**

8.00 – breakfast

9.30 – leave the accommodation

10.00 – 12.00 – final presentations of individual groups, reflections on the completion of outdoor education

**Comment:**

Do not forget to bring with you the geographer's equipment for field work (own maps for the visited area, compass or other orientation equipment, stationery, equipment for photo documentation...). Install suitable map applications on your phones (Mapy.cz with downloaded offline map of South Moravia) and Clinometr/Snow safe. Others will be specified during the stay. Wi-Fi is available in the area.

### 3.4 WORKSHEETS FOR OUTDOOR EDUCATION

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#### 3.4.1 MORAVIAN KARST AND SURROUNDINGS - PLACES FOR OUTDOOR EDUCATION

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<b>Length of activity</b>	Terrain reconnaissance with a break for lunch, bus / walk, total length of the activity 8-9 hours. Route processing - 2 hours Evening - geocaching - familiarization with the place of stay.
<b>Used methods,</b>	During the course - frontal interpretation, individual work - making notes,

<b>forms</b>	photo documentation, recording the route, following map sheets from the Moravian Karst Atlas and its surroundings. Processing of the whole activity - group work
<b>Aims of the activity, field goals</b>	After the activity, students: - submit a route record using GPS and maps, including a suitable application on a mobile device; - take photo documentation and written notes during activities; - add information from maps, atlases and available publications to worksheets; - on the basis of the above-mentioned records, describe the wider space where the outdoor education will take place in terms of natural, historical and socio-economic characteristics - using a mind map; - select the most important geographical terms and translate them into English;
<b>Field Didactic goals</b>	Students - compile a mind map, scheme, in order to use the various parts of the visited area for various activities in the context of outdoor education
<b>Aids</b>	Worksheets, field diary, mobile phone with map applications, stationery, Atlas Moravian Karst and surroundings.
<b>Outputs</b>	Photo documentation, brief commentary in the field diary, route recording. Mind map, diagram. Presentations from documentary materials, eg ppt presentations - commentary in English.
<b>Prologue</b>	For PdF students, this activity is always included at the beginning of the stay. The surroundings of Brno - "Drahanská vrchovina" upland and the Moravian Karst are extremely interesting from the point of view of outdoor education and the location of the MU Faculty of Education, both in terms of nature and history. It is an open book that you need to learn to read from. This skill can then be used anywhere in the Czech Republic and beyond. Due to the attractiveness of that area, which is largely filled by the Moravian Karst Protected Landscape Area, facilities for individual and mass recreation have been built in many places. These facilities are then suitable for long-term outdoor education, whether in the form of field trip, school trips or research teaching. The first activity is focused on knowledge of this area. PdF MU chose a facility in the village Jedovnice - ATC Olšovec as a place to stay for outdoor education. It provides enough space not only for accommodation, but also for classrooms or storage of the necessary material for various forms of outdoor education.
<b>Note</b>	The whole area of interest is processed in the form of the Atlas of outdoor activities and outdoor education. It allows participants of outdoor education to add notes and is used to interpret the visited sites.

**Table of the most frequently used technical terms for translation into English:**

<b>Concept and brief characteristics in Czech</b>	<b>Concept and brief characteristics in English</b>
<b>město</b>	
<b>venkov</b>	
<b>urbanizace</b>	
<b>suburbanizace</b>	
<b>Drahanská vrchovina</b>	

<b>monofunkční město</b>	
<b>restrukturalizace průmyslu</b>	
<b>železniční koridor</b>	
<b>cestovní ruch</b>	
<b>terénní výuka</b>	
<b>Brno – město průmyslu</b>	
<b>průmyslová aglomerace – Adamov, Blansko</b>	
<b>CHKO Moravský kras</b>	
<b>vápenec</b>	
<b>Býčí skála</b>	
<b>povrchové krasové jevy – krasové údolí, vyvěrání</b>	
<b>podzemní krasové jevy – jeskyně, propadání</b>	
<b>hutnictví</b>	
<b>speleologie</b>	
<b>outdoorové aktivity – lanové centrum</b>	

### 3.4.2 LANDSCAPE LANGUAGE

<b>Length of the activity</b>	It depends on whether we continuously include this activity among other activities, because it is essentially an observation of the landscape. Or we can choose it as the main activity, for example, to explore a selected area based on the study of sheets in the Atlas map for outdoor education and outdoor activities. The result can then be the addition of interesting point, line or area elements to the map sheet of the atlas, which say something about the landscape. In that case, the activity takes up the entire teaching day.
<b>Used methods, forms</b>	Group lessons.
<b>Aims of the activity, field goals</b>	After the activity, students: <ul style="list-style-type: none"> <li>- will submit a route record using GPS and maps, including a suitable application on a mobile device;</li> <li>- take photo documentation and written notes during activities;</li> <li>- they add information from the field to the worksheets, where they notice important landscape elements, both of natural and human origin;</li> <li>- based on the above records, it will supplement the map sheet with significant point, line and area elements;</li> <li>- they discuss how to handle selected landscape elements further or how they will continue to develop themselves;</li> <li>- identify important indicators in the landscape and describe them;</li> <li>- based on the description of the indicators, they will explain why they occurred in the landscape;</li> <li>- they use the mind map to select the most important geographical terms and translate them into English;</li> </ul>
<b>Field Didactic goals</b>	Students <ul style="list-style-type: none"> <li>- will compile a mind map, diagram, in order to proceed with the identification of landscape elements and landscape indicators in the landscape;</li> </ul>
<b>Aids</b>	Worksheets, field diary, mobile phone with map applications, stationery, Atlas Moravian Karst and surroundings.
<b>Outputs</b>	-Completed worksheets - cards with individual landscape elements and indicators in the landscape.  Photo documentation, map recording.
<b>Prologue</b>	See text below the table.
<b>Note</b>	To practice this activity, we can choose, for example, the observation of landscape elements and indicators on a map sheet 1:20 000, page. 67, where Pustý žleb is located. A large number of landscape elements are mapped in the map sheet. We can combine the activity with a visit to the Punkva Caves (Punkevní jeskyně). You can then select a map sheet 1:20 000, which is not so rich in mapped landscape elements and we can verify whether there are any interesting ones in fact, and which would be appropriate to record in the map sheet.

#### Opening text

Every country speaks to us and it only depends on us whether we will listen to it and how. Each field of human activity and especially geography, sees and listens to the landscape from a

different point of view - see Fig. 5 and Fig. 6. The pictures show an example of how a geographer looks at the same place, at the same time, and how a person focused on art education. For this activity, it is necessary to go into the field and cultivate the ability to observe phenomena that often tell us at first glance what is good in the landscape and what is not right. Such objects and phenomena are called physiognomic. Some information about "invisible" objects and phenomena is provided by the landscape indirectly through physiognomic objects and phenomena. Hidden objects and phenomena are called decipient. Their manifestations are "visualized" through indicators. It does not have to be a landscape close to nature, but on the contrary a "normal" rural or urban landscape as well as a technical landscape. There is also human activity everywhere, which may or may not be in harmony with the development of the landscape. Reading the landscape gives us a better insight into its further use and planning changes in the landscape in accordance with sustainable development. For school purposes, the point is that we do not have to look for any special types of landscapes for this activity, but on the contrary, we learn to read in the landscape that surrounds us.

For this purpose, we will first define suitable landscape elements and then we will observe and identify the so-called indicators in the landscape, which will help us clarify in which direction the landscape has developed and how we can correct its further development. We use the term landscape element in connection with the secondary<sup>1</sup> landscape structure, which creates sets of man-made natural and partially or completely altered dynamic systems, as well as newly created artificial elements (RŮŽIČKA, RŮŽIČKOVÁ, 1973).

Fig 5 Prokop, Š. (geography)



Fig 6 Dvoříková, L. (art)



### Examples of landscape elements

(Processed according to L. Peřínová)

Terms: Place with genius loci, visual axis, landscape dominants, axis in the landscape, e.g.: road, visual barrier, neglected place.



Fig. 7 Place with genius loci

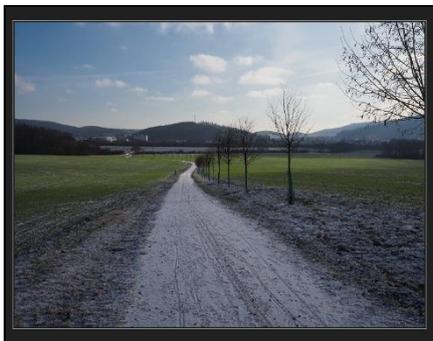
The atmosphere or spirit of the place (so-called *genius loci*) tells us how the place is perceived by ourselves, while we do not have to be physically present at the place. Decisive for its understanding is the subjective perception, which arises from a combination of intellectual and emotional stimuli, conscious and unconscious. *Genius loci* is colored by the values and experiences with which it is connected.<sup>3</sup>

*Genius loci* is therefore the spirit of the place. It includes positive and negative perceptions of the landscape. It is often the reason why we return to a certain place repeatedly. Places with a *genius loci* can be, for example, castles, chateaux, battlefields, cemeteries, the Passion of the Christ, monuments, water areas or industrial architecture.



*Fig. 8 Visual axis*

The visual axis is an important line inside the development, which could have arisen from historical development or was intentionally established. It can connect parts of the city, but it does not have to lead to important destinations in the landscape.<sup>4</sup>



*Fig. 9 Axis – road*

Axis - a road can connect important destinations in the urban structure or in the landscape. They can also be, for example, biocorridors.

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<sup>3</sup> ČABLOVÁ, Markéta. *Prostory: průvodce tvorbou a obnovou veřejných prostranství*. 1. vyd. Brno: Partnerství, 2013, 123 s.

<sup>4</sup> A significant, historical or intentionally established line within a development or urbanized space, concentrating functional activities and spatial sensations. Composition axes can connect parts of the city, they may or may not lead to important goals (nodes) of the urban structure or landscape (the goal may also be a significant natural formation) .HEXNER, Michal. *Územně analytické podklady hlavního města Prahy. Téma 11.15. Kompoziční osy a průhledy* [online]. Praha, 2007, 38 s. [cit. 2014-09-23]. Available from: [Kompoziční osy a průhledy](#)



*Fig. 10, 11 Dominant*

The dominant is a visually significant element in the landscape composition. It can be a building or a natural formation that has a significant impact on the structure of the urban or rural landscape. The surroundings help the dominant to excel.



*Fig. 12 Visual barrier*

A visual barrier is a barrier or obstacle that obstructs the view or disturbs it in some way.



*Fig 13. Zanedbané místo*

A neglected place is a desolate and neglected area, which is not given sufficient care and attention to, for example, a black dump.

**Example of a record sheet for landscape elements**

**Landscape element**  
**Axis in the landscape**

PHOTO

**Category:** Axes in the landscape - e.g. birch alley

**Marking In the map:**

**Coordinates:**

**Justification for categorization:**

**Proposal:** KEEP    YES    NO

**Additional care of the element:**  
If YES, then e.g. prune and revitalize regularly.  
If NO - then justify why?

**Basics of indication**

The main geographical skills include the art of knowing, recognizing and purposefully using synergetic relationships between landscape components (natural and anthropogenic). This skill is important not only for movement and living in the landscape, but also for assessing the suitability and risks in the area. The basis for the indication of various landscape objects, including individual components of the landscape, is the systematization of indication features and the definition of a set of indication links, ie artificially abstracted connections between physiognomic (visible) and decipient (observer or interpreter hidden) components of the landscape. The physiognomic component is characterized by so-called indicators, such as plant communities, relief shapes, geological units, contours of other homogeneous areas – water objects, terrain edges, etc. Using an indication link, the parameters of objects that are difficult to observe or not at all observable, so-called indicators, are detected. Direct or indirect interpretive features during post-component or complex interpretation lead to their detection. With the component approach, it is possible to use the application of partial indicators (litho-, halo-, phyto-, hydro – etc. indicators). Various indicators can be set for working with images (aerial photographs, memories, photographs, sketches, ground-based observations) taken in both natural and cultural landscapes.

## Examples of indicators

### A. Natural indicators

Willow stands indicate floodplains on the plain. The captured grass remnants on the willow branches then indicate the height of the flood.

“Drunk forest”– forest with bending tree trunks close above the root – indicates a slowly moving soil to shallow geological unstable subsoil. The trees thus respond to the tilt by straightening the trunk vertically.

Groups of maple syndicate stony soils equipped with nutrients. However, they must be maples not planted by humans in alleys or parks.

Ash trees indicate moist soils, similar to alders.

### B. Combined natural anthropogenic indicators

Forest on slopes or plateaus indicates relatively poorer soils compared to the environment with similar terrain parameters.

Straight trees with twists indicate the distance of the path and trail.

Crooked trees and shrubs indicate small watercourses.

Straight trees and shrubs indicate land boundaries and parcels.

The church indicates the relative highest place in the village.

The location of the village indicates the source of water.

The location of the ponds indicates originally moist poorly drained places in the landscape.

### C. Anthropogenic indicators

Buildings requiring repair indicate a weaker economic status of the owner.

Smaller cubic capacity of vehicles and older vehicles indicate a weaker economic status of the owner.

The poor condition of municipal roads indicates an insufficient budget of the municipality.

The state of public greenery (maintenance and renewal) indicates the level of development of the municipality.

The condition and modification of the exterior and interior of the town hall indicates the municipality's attitude to the common public building.

The size of the land around the individual development indicates the economic status of the owner.

The level of flood control measures indicates the organization and interest of the population in their own safety.

The existence of a playground and school facilities indicates the interest of the municipality in maintaining a younger population in the municipality.

The maintenance of the church and its surroundings indicates the degree of religiosity in the municipality.

The condition of front gardens and crofts indicates the extent of leisure time of the inhabitant (indirectly his or her satisfaction with the given amount of income).

Horizontal (along the contour line) terracing of slopes indicates an older phase of parcelling of land, while vertical (along the fall line) younger (colonization) phase of parcelling.

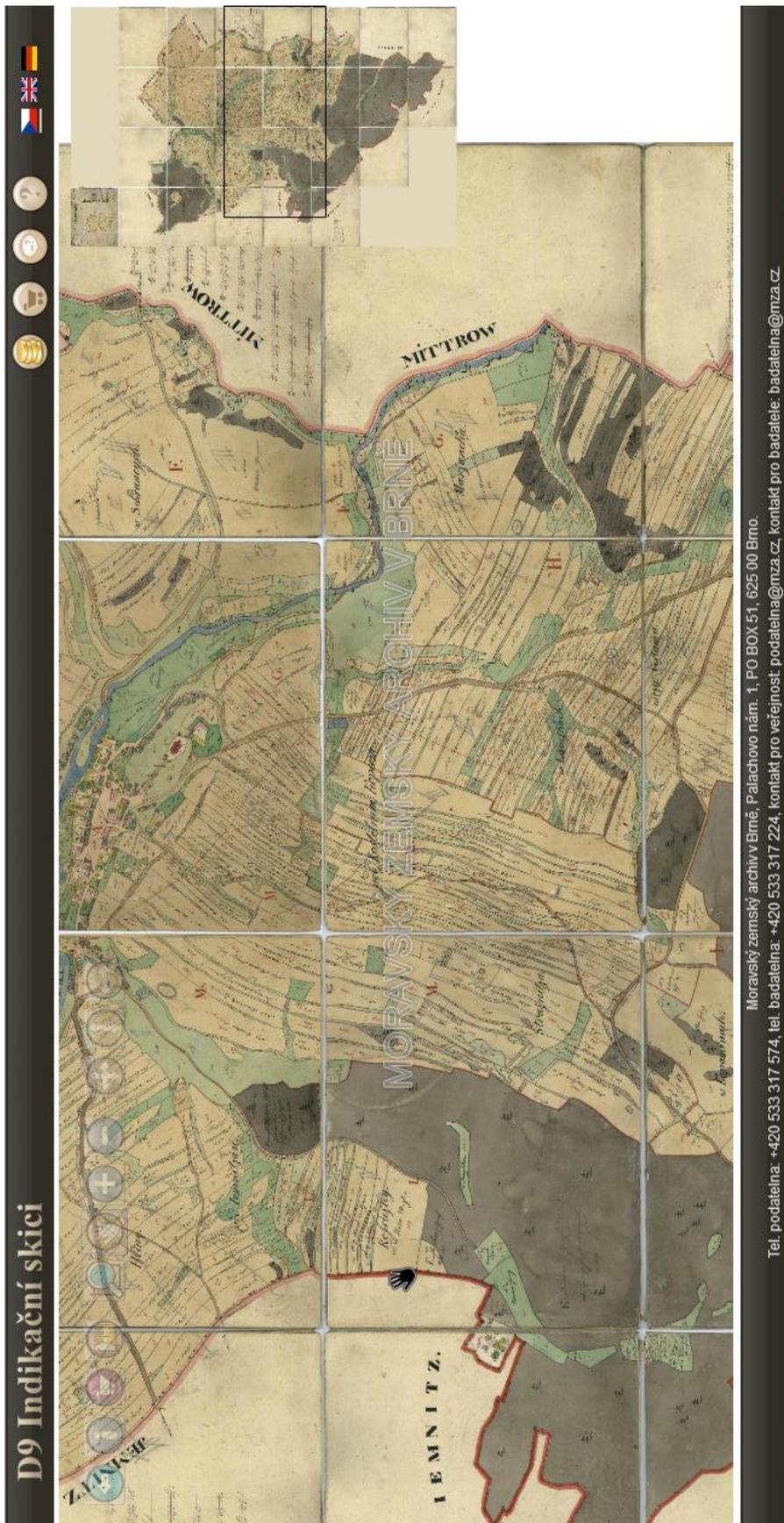
### **Estimation of old cultivated land according to the parcelling of land near the village of Strážek**

The horizontal parcelling is older, which can be seen by the terracing and mature vegetation at the boundary of the plots. This type of parcelling protects the soil from erosion. The vertical parcelling is newer, there is no vegetation at the boundaries of the plots. Soil is more prone to erosion.

#### **Photodocumentation:**



**Fig. 14, 15 Horizontal (left) and vertical (right) parcelling of land near the village of Strážek**



D9 Indikační skici

Moravský zemský archiv v Brně, Palachovo nám. 1, PO BOX 51, 625 00 Brno.  
 Tel. podatelna: +420 533 317 574, tel. badatelna: +420 533 317 224, kontakt pro veřejnost: podatelna@mza.cz, kontakt pro badatele: badatelna@mza.cz

Fig. 16 Example of a stable cadastre from 1830 with horizontal (bottom right) and vertical (middle bottom) parcelling of land near the village of Strážek

**Table of the most frequently used technical terms for translation into English:**

<b>Concept and brief characteristics in Czech</b>	<b>Concept and brief characteristics in English</b>
<b>krajinné prvky</b>	
<b>krajina</b>	
<b>indikátory v krajině</b>	
<b>přírodní indikátory</b>	
<b>antropogenní indikátory</b>	
<b>dominanta</b>	
<b>pohledová osa</b>	
<b>osy v krajině</b>	
<b>místo s geniem loci</b>	
<b>pohledová zábrana</b>	
<b>zanedbané místo</b>	
<b>průzkumná geografie</b>	

### 3.4.3 ORIENTATION IN THE FIELD USING A MAP FOR ORIENTEERING

<b>Length of activity</b>	<b>Day 2 in the evening, day 3 in the morning</b> Students: Track construction skills training - 2 hours Delivery of field controls and feedback - 3h.
<b>Used methods, forms</b>	Frontal while practicing basic skills, paired for the first steps in the field, individual in own orientation and practicing track construction. The basics for using maps for orienteering are the subject of short-term forms of outdoor education at or near school.
<b>Aims of activity, field goals</b>	After the activity, students: <ul style="list-style-type: none"> <li>- describe the legend of the orienteering map;</li> <li>- explain how to use a compass without and with a map;</li> <li>- firstly go through it in a group, then individually two variously demanding routes according to the orienteering map;</li> </ul>
<b>Field Didactic goals</b>	Students: <ul style="list-style-type: none"> <li>- propose variously demanding routes with control points for independent orientation of pupils in the field;</li> <li>- build the proposed route, correctly place the control point in the field;</li> <li>- select the most important geographical terms from the activity and translate them into English.</li> </ul>
<b>Aids</b>	Stationery, worksheets, compass, teaching orienteering map, template for drawing controls, stands with pliers for recording the passage, lantern on orienteering.
<b>Outputs</b>	Route proposals with commentary, final route proposal, distribution of control points, glossary of the most used terms.
<b>Prologue</b>	<p>The basic activities in long-term outdoor education include the use of cartographic skills. This contains, in particular, various forms of orientation in the field, which are useful to practice briefly at the beginning of the course. Pupils and students at the lower levels of schools only need to go through the planned route in practice, for example on a map for orienteering, and then record the route they went through. A short geocaching can also be useful for familiarization with the environment where they will move during the course.</p> <p>For teacher training students, we focus on learning methods to practice this orientation by building various difficult routes on educational maps for orienteering and selecting appropriate exercises for its training.</p> <p>Orientation is an activity leading to skills that are important for safe and healthy movement in nature and as such have been part of educational programs at primary, secondary and various types of universities for many years. It is also a basic skill for recording various phenomena on maps, in field research in geography, biology, history and other subjects.</p> <p>- <u>Why orienteering, why orienteering maps?</u></p> <p>During its existence, this industry has developed an excellent methodology for training orientation, which is also suitable for the general public, and especially for schools. After all, in Scandinavia, maps for orienteering in schools have been used since the very beginning of this sport. (Hofmann, Korvas, <i>Orientation in Nature</i>, 2007). Very inspiring is the material <i>Orienteering to Schools</i> by Goran</p>

	<i>Anderson 2017</i>
<b>Note</b>	Suggestions for practicing orientation and working with a map key are suitable for preparation at school, and we can give more space for practical training outside during outdoor education. The actual orientation in the field according to various maps and aids is used mainly in research teaching, when the analysis, interpretation and creation of map materials start on the basis of them.

**Orienteering map for training: see Annex 1**

### Construction of tracks for primary school pupils

One of the most important skills of a teacher is the appropriate choice of place in the mapped area, if he does not have directly an educational map or a map with fixed control points for the public, which are constantly increasing. This is immediately followed by the skill of building a suitable track for variously advanced participants (pupils).

Keep in mind: "The controls are not hidden, it depends on the choice of procedure, not the game of hide and seek!"

#### - Start and finish

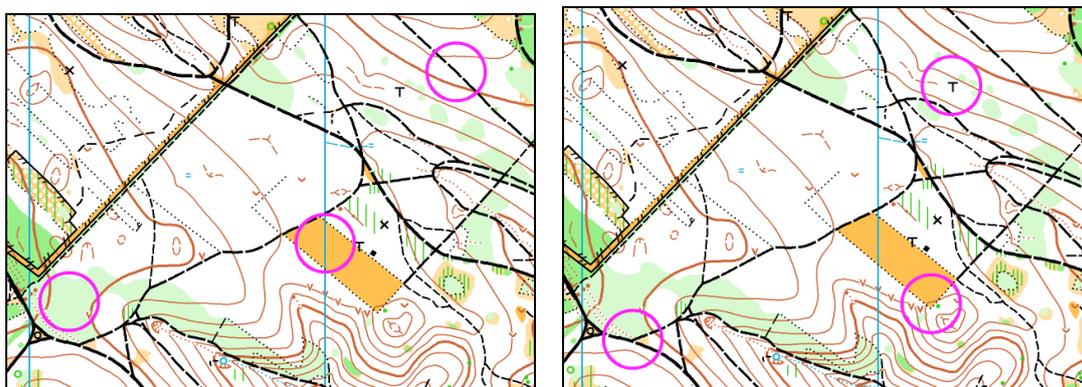
The track must be built so that it is reasonably difficult and long and contains a suitable number of control points (neither too little nor too much; the difficulty results from the experience / age of the pupils, the difficulty of the terrain, etc.).

The first principle is a good location for the start and finish. When there is a hostel or camp on the map, it is advantageous to build the start and finish there. When building educational tracks, it is recommended to make the start and finish in the same place.

While building a track, we have to deal with two aspects. The first is the position of the control points themselves, and the second is what the procedures between them look like.

#### - Control points position

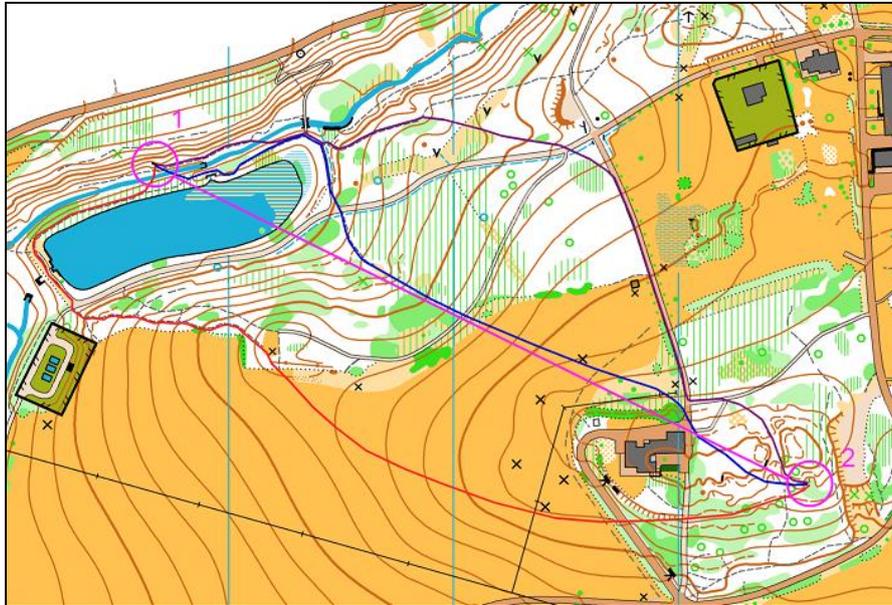
We build controls on distinctive and clear objects. It is inappropriate to place the control only on the road (a second determination is needed - bending, end, crossing, etc.). This rule applies mainly to line and area symbols. An object expressed by a point symbol (treestand, pit, spring, etc.) is ideal for controls if there is no interchangeable object near it.



**Fig. 17,18 On the left an example of a bad location of controls, on the right a good one (map: Trnůvka)**

- **Procedures between controls**

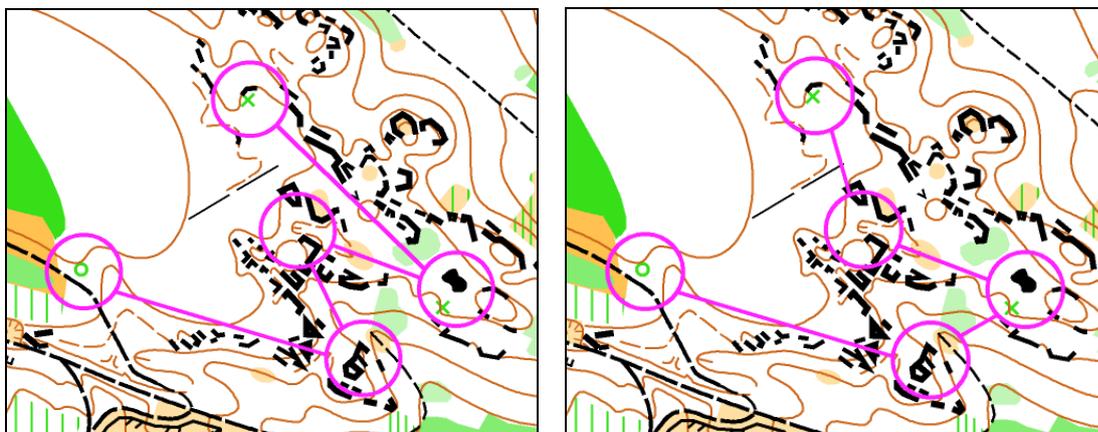
For more experienced pupils, the procedures need to be chosen so that the participants have the opportunity to choose them. Ideally, the procedure has two options; the first one which is shorter and more difficult, without predominant use of paths (eg clean forest, along the border of stands); and the second one which is longer and easier, along paths or a distinctive line (forest edge, along a stream, etc.). In this way, the daredevil who decides for the harder variant earns time. The procedure can have more than two options.



**Fig. 19 Different variants of the procedure (map: Libverda)**

The greatest possible difference in procedures emphasizes the interest of orientation. There are several procedures on the Libverda's map. The shortest variant may not be the fastest, because it requires constant attention. The northern approach using roads will suit faster runners, when they do not have to map on the roads too much.

Attention should be paid to the angle between the individual procedures as well. During construction, we should avoid sharp angles so that the process from control is not in the same direction as the process to control. During the races, the running runners can be then navigated according to those who run away from the control.



**FIG. 20, 21 On the left an example of bad angles between procedures, on the right good (map: Valečov)**

Furthermore, it is not appropriate to include insensitive climbs on the track, which is, however, almost impossible in some rugged terrain.

#### - Spread of controls

It requires a lot of experience. It is more difficult to find the right object on which to place the control than the control already built. Each spreader must check the correct location of the control point several times using significant surrounding objects on the map. We avoid mistakes if there are two spreaders. One marks the control point and the other assesses whether the first spreader isn't wrong while placing the control. The first spreader has another important task, which is that the place for control can change from year to year and is therefore not suitable for our purposes. Therefore, he can suggest another location that will be more accurate in the field. This happens most often with older maps on orienteering, because forests in the Czech Republic are often used economically. **The suitability of the control can only be assessed on the spot in the field.**

The more complex construction of our own tracks will be eliminated on public maps for orienteering, where fixed controls are located. The builder then chooses the track from them. However, during this selection, they must follow the same principles as were mentioned above.

**Table of the most frequently used technical terms for translation into English:**

Concept and brief characteristics in Czech	Concept and brief characteristics in English
Orientační běh	
Stavba trati pro žáky	
Mapový klíč pro mapu na OB	

### 3.4.4 NATURAL CONDITIONS AND THEIR INFLUENCE ON HUMAN ACTIVITY IN THE LANDSCAPE

The activity is identical to the activity described in the subchapter 2.4.1, p. 19. This is a group lesson, where students move around the landscape with the help of a map and GPS station. It is similar to the game "Geocaching". Instead of treasures, however, they look for tasks on the route that lead to the sub-tasks listed in the introductory table. The partial goals are again directed towards the concept: "How nature affected the activities of people in the visited area", and vice versa, "How people influenced the character of the landscape in this area". The basic tasks are designed for students of the Faculty of Education, Masaryk University, who have the task of modifying them for different age groups of pupils. For lower secondary school pupils, the tasks are changed due to their age peculiarities. Unlike primary school pupils, they "play" less and focus more on observation and context. This will be reflected in the assigned tasks by less description and more explanation. They will pay more attention to the impacts of human activity on the environment and consider how to use the visited sites further. Editing tasks is also one of the main field-didactic goals. The output of this activity will be a record of the route, including completed tasks in the form of a "Story Map".

**Table of the most frequently used technical terms for translation into English:**

Concept and brief characteristics in Czech	Concept and brief characteristics in English
krajina	
chráněná krajinná oblast	
GPS	
geografická inercie	
půdní typ – kambizem, rendzina	

<b>břidlice, vápenec, pískovec</b>	
<b>Rudické vrstvy</b>	
<b>hutě</b>	
<b>struska</b>	
<b>voda – zdroj energie</b>	
<b>buk, habr, dub</b>	
<b>dřevěné uhlí</b>	
<b>lom – povrchový důl, který slouží k těžbě nerostných surovin nebo hornin</b>	
<b>Story map -</b>	

### 3.4.5 HISTORY AND PRESENT OF JEDOVNICE AND ITS SURROUNDINGS<sup>5</sup>

The presented activity is again identical to the activity listed in the subchapter 2.4.2, p. 28. To visit all the aforementioned sites, it is necessary to use the bus to move from ATC Jedovnice to the village Křtiny. However, this activity can be spread over two days. The return journey is then completed by the pupils of lower secondary school using an assigned route on the map for orienteering. This activity is located in the southern part of the Moravian Karst and includes the non-karst area of the Rakovecké Valley (Rakovecké údolí). It includes the last accessible cave Výpustek, which served human activities for many years. One of the main landmarks of the town of Křtiny is the Baroque church, which is the work of architect Santini. The small town of Křtiny thus became an important place of pilgrimage, which had a great influence on its further development. Less than 7 km away from Křtiny is the extinct medieval settlement Bystřec, which lies in the Rakovecký valley, on the way to ATC Jedovnice. In one day, we will get to places that throughout history have influenced the formation of this part of the area of interest in various historical periods from prehistory, through the Middle Ages to the present day.

Historical and geographical connections can be found in this environment in many other localities, given that the Moravian Karst Protected Landscape Area in particular and its caves have provided a suitable refuge for humans for millennia and this fact is supported by numerous archaeological finds. The publication by RNDr. Ivan Balák - Moravian Karst Cave and Man (Moravský kras jeskyně a člověk), which was published in 2019 was very stimulating for the creation of these teaching materials. We can easily imagine that the whole five days in a given environment could be devoted only to historical-geographical contexts in different historical periods.

#### **Table of the most frequently used technical terms for translation into English:**

<b>Concept and brief characteristics in Czech</b>	<b>Concept and brief characteristics in English</b>
<b>kolonizace</b>	
<b>lokátor</b>	
<b>speleologie</b>	
<b>mariánské poutní místo</b>	
<b>Baroko</b>	
<b>národní kulturní památka</b>	
<b>ambit</b>	
<b>votivní obrazy</b>	

<sup>5</sup> Processed according to study materials by P. Vyhňáka, K. Mrázkové a M. Jirečka.

### 3.4.6 SOIL AS A NECESSARY PREREQUISITE FOR LIFE

<b>Length of the activity</b>	Classroom - introduction, preparation of aids - 1 hour Terrain - 4 hours Classroom - evaluation of field research, poster creation, presentation - 3-4 hours.
<b>Used forms, methods</b>	Instruction, group work, soil sampling with a soil drill, work with thematic maps, soil moisture measurement, roller method, poster creation, discussion.
<b>Aims of the activity, field goals</b>	After the activity, students: <ul style="list-style-type: none"> <li>- describe the soil as an integral part of the environment connected with other natural factors of the place (relief, geology, climate, moisture, biota);</li> <li>- describe the productive function of soil as the main means of production of agriculture;</li> <li>- describe the soil as a heterogeneous system (living + inanimate matter), which consists of horizons that reflect the characteristics of other natural components of the landscape;</li> <li>- prove by examples that non-respect of the spatial distribution of the area of different soils can lead to insufficient use of their potential, or to its degradation;</li> <li>- creates an informative poster and through it presents the findings of field research;</li> <li>- select the most important geographical terms and translate them into English;</li> </ul>
<b>Field-didactic goals:</b>	Students <ul style="list-style-type: none"> <li>- proposes various modifications of assigned activities for primary and lower secondary school students; they choose the most important terms that students practice during the activity;</li> <li>- propose land activities for short-term outdoor education near the school;</li> </ul>
<b>Aids</b>	Worksheets, field diary, mobile phone with map applications, stationery, crayons, tourist maps. Aids from the department: Terrain backpack - geological map 1 : 25 000, soil map 1 : 25 000, topographic map 1:10 000, orthophoto images (50s + current) overlaid by cadastral plan, lockable bowl for soil sampling 3 ×, large bowl, wash bottle with water, soil drill, GPS, battery, charger, magnifying glass, telescope, field shovel, measuring tape, reclosable plastic bag, large washable mat, rubber gloves, notepad, alcohol markers, clip folder. Poster creation aids: flipchart, markers, wax crayons, adhesive tape, scissors, glue.
<b>Outputs</b>	During the field work and in the classroom, take <b>photo documentation</b> and <b>annotated video recordings</b> (all you need is a mobile phone).  Poster or field research presentation. Commentary in English.
<b>Prologue</b>	Soil issues are presented briefly, factually, in some textbooks of geography, rather as a partial component of the physical-geographical system. This has far-reaching implications for the perception of the importance of soil functions. The current land management in the Czech Republic is a reflection of the loss of the population's relationship to land, which is largely owned by agricultural holdings.  This teaching activity aims to <b>integrate the view of the soil</b> as one of the basic attributes of human existence.
<b>Note</b>	This soil assessment procedure can also be used for other case studies, e.g. for the evaluation of suburbanization in the village Březina. It is thus possible to assess the suitability of the selected area for the construction of a new housing estate.

## PART A - WORK PROCEDURE

- 1) Joint classification of teaching materials and aids into individual groups (maps, pictures, soil drills, drills, sledgehammer, backpacks with other equipment).
- 2) The instructor will instruct on the handling of the soil drill and the soil probe.
- 3) You can find the sampling location according to the received map or using GPS coordinates.
- 4) Follow the instructions below to take soil samples:
  - a) taking soil samples from different depths (with a drill, see point 5c), take the samples with you to the classroom;
  - b) sampling of the soil profile (using a soil probe, photograph the profiles appropriately and describe the horizons).
- 5) Record the location and altitude (from GPS) of the location in the worksheet. Determine the expected soil type according to the soil map.
- 6) Process the following tasks directly in the field:
  - a. Based on your own observations and maps, describe the terrain and land use. Create a topographic sketch of the site with labels. Get photo documentation from the site.
  - b. Record the current weather conditions (temperature, precipitation) and use the indicators in the landscape and soil to estimate what the weather could have been the day before.
  - c. Using a drill, take soil samples approximately in size of 2 palms from a depth of 10 cm, then 20-30 cm and 40 cm. Take an annotated video or photo documentation during sampling. Bring the samples in closed and marked (according to the depth) bowls to the classroom and describe each sample according to the following procedure (basic soil characteristics can be found in the materials in the folder, further in Tomášek, 2000):
    - *Soil cohesion* – consistency (how the soil holds together).
    - *Soil fertility* – grind the soil in your hands and describe the shape and size of the lumps. (The optimum lump of fertile soil is: average 0.5 – max. 1.0 cm, the rounder the more fertile the soil).
    - *Soil texture, soil type* – grind the soil in a bowl, pour water over it and roll out a roller about 8-10 cm long and about 1 cm thick. Let the roller rest for about 1 minute and then bend it by less than 90 °. Result:
      - if the roller breaks, it is most likely sandy soil;
      - if the roller cracks and breaks, it indicates loam soil;
      - if the roller bends with only small cracks, it characterizes the clay soil.
      - The loam soil has optimal fertility.
      - Document the results.
- 7) Think back about each activity you do while working with the soil and write down the skills and knowledge that the student needs / you need for the activity and make a note of them in the prepared table for task 13) in the worksheet. *Record in which grades pupils usually learn this knowledge and skills at school (both in the classroom and in various forms of outdoor education).*
- 8) Use task No. 13 when compiling a table of used technical terms.

**PART B - WORKSHEET**

Perform tasks 1–8 in the field, tasks 9–12 in the classroom

1) **Group / localities:** \_\_\_\_\_  
**Members:** \_\_\_\_\_

2) **Locality coordinates:** \_\_\_\_\_  
**Altitude**<sup>6</sup> \_\_\_\_\_

3) Mark the course of the route in color into the topographic map 1 : 10 000.

4) Mark the location of the soil sampling as accurately as possible in all map documents

5) Always describe the landscape around the site with regard to how it is used. Assess whether its use is appropriate or should be changed.

6) Take a photo documentation of the collection point and a topographic sketch of the site with labels.

7) Record the weather in the prepared table No. 1.

**Tab. No. 1 Weather recording**

<u>Date:</u> _____ <u>Time:</u> _____ <u>(observations at the site)</u>	<u>Previous days</u> <u>(reasoned estimate based on observation and knowledge of the weather of previous days in a different location)</u>

8) Take samples according to point 5 c) entering into marked bowls (alcohol marker)

When taking samples from different depths, emotionally (by touch) estimate and describe the humidity conditions at different depths according to the table (taken from: Tomášek, 2000, p. 30)

<sup>6</sup> Use GPS to measure the actual altitude of the collection point as accurately as possible, so place the device on the ground.

<u>Humidity conditions</u>	
<u>Soil</u>	<u>Characters</u>
<u>arid</u>	<u>without signs of moisture</u>
<u>dry</u>	<u>does not cause a feeling of cold</u>
<u>moist</u>	<u>causes a feeling of cold, does not moisturize the hand</u>
<u>damp</u>	<u>moisturizes the hand</u>
<u>wet</u>	<u>water drips</u>

Additional description of humidity conditions:

**Work with soil samples (classroom)**

9) Describe the consistency (cohesion) of the soil according to Tomášek (2000, p. 31)

<u>Consistency</u>	
<u>loose</u>	<u>incoherent, scattering</u>
<u>crumbly</u>	<u>disintegrating with a slight pressure of the hand</u>
<u>cohesive</u>	<u>crumbling with bigger hand pressure</u>
<u>solid</u>	<u>non-crushable by hand, the blade of the knife penetrates</u>
<u>very stiff</u>	<u>the knife edge does not penetrate</u>

Additional description of soil consistency:

10) Describe the shape and size of the lumps on a separate sheet and estimate the soil fertility according to the data from point 5 c) of the assignment. Describe each horizon separately.

11) Perform a simple test according to the instructions in point 5 c) of the assignment and on the basis of its results and describe the soil texture on a separate sheet (specify the soil type). Document the progress of the experiment. Do this separately for each sample.

12) On the next sheets, describe the pictures of the removed soil profiles (by redrawing or inserting photos of the profiles).

13) According to point 6) of the assignment, complete the table:

<u>ACTIVITY</u>	<u>KNOWLEDGE</u>	<u>SKILLS</u>


**Table of the most frequently used technical terms for translation into English**

Concept and brief characteristics in Czech	Concept and brief characteristics in English
<b>Půda</b>	
<b>Půdní druhy</b>	
<b>Půdní typy</b>	
<b>Pozorování</b>	
<b>Vlastnosti půdy</b>	
<b>Konzistence půdy</b>	
<b>Vlhkostní poměry</b>	
<b>Využití půdy</b>	
<b>Experiment</b>	
<b>Půdní vrták</b>	
<b>Lopatka</b>	
<b>Odebírání vzorků</b>	

### 3.4.7 EVALUATION OF SUBURBANIZATION IN THE VILLAGE BŘEZINA

<b>Length of the activity</b>	Preparation of the activity - preparation of map materials and other aids - 2 hours - usually takes place in the evening before the activity itself. Outdoor education itself without moving - 3-4 hours. Evaluation and processing of results - 3 hours Discussion of results - 1 hr.
<b>Used methods,</b>	Group work. Working with the map. SWOT analysis. Mass discussion of the Rolel Play method.

<b>forms</b>	
<b>Aims of the activity, field goals</b>	<p>After the activity, students:</p> <ul style="list-style-type: none"> <li>- prepare map materials for field activities (see Annex 3);</li> <li>- draw various phenomena into the map;</li> <li>- describe the geographical characteristics of the study area;</li> <li>- create the final map and interpret the recorded phenomena and processes;</li> <li>- use the SWOT analysis method to evaluate the selected location and explain the basic principles of the method;</li> <li>- select the most important geographical terms and translate them into English.</li> </ul>
<b>Field Didactic goals</b>	<p>Students</p> <ul style="list-style-type: none"> <li>- propose various modifications of assigned activities for primary school pupils;</li> <li>- choose the most important concepts that pupils practice during the activity;</li> </ul>
<b>Aids</b>	Worksheets, field diary, map materials, mobile phone with map applications, stationery.
<b>Outputs</b>	Poster with map outputs and SWOT analysis, presentation made by documentary materials including English commentary.
<b>Prologue</b>	Suburbanization is a term used to describe the growth of areas on the outskirts or in the hinterland of large cities. In the Czech Republic, suburbanization has been evident since the second half of the 1990s, but until nowadays it is not a complete process, although it is no longer as rapid as in previous years. Because it is a dynamic process, it can be easily captured using maps. Pupils and students should also understand the causes and consequences of uncontrolled urban sprawl.
<b>Note</b>	Other locations from the area of interest can be used as well.

## Work procedure

### A. Mapping in the village

### B. Role Play - evaluation of construction after the year 2000 in terms of selected groups of citizens

#### Introduction

For the work in the field is chosen location, which relates to new construction in the countryside, which should properly complement existing state and meet various criteria so as not to disturb the operation of the whole community, and, conversely, be suitably supplemented. The basics for the following exercises are working with a map, aerial photographs, their processing in the field and subsequent discussion of the created material. Firstly, it is necessary to prepare materials for mapping and at the same time for evaluating the development of the landscape. In order to avoid technological or time problems, the materials are given partially prepared. An important goal of this activity, however, is to gain the skill of creating materials for field mapping for any area (eg. the surroundings of your school / residence where you can go to map with pupils). This is a key skill of a geography teacher. Instructions for the preparation of map materials can be found in Appendix No. 2.

#### Aims

A. Practicing cartographic skills, especially map reading, map analysis and interpretation, map creation, map composition.

B. Based on the previous mapping, you, as the mayor of the village, have to decide where to place the construction of civic amenities in the village of Březina.

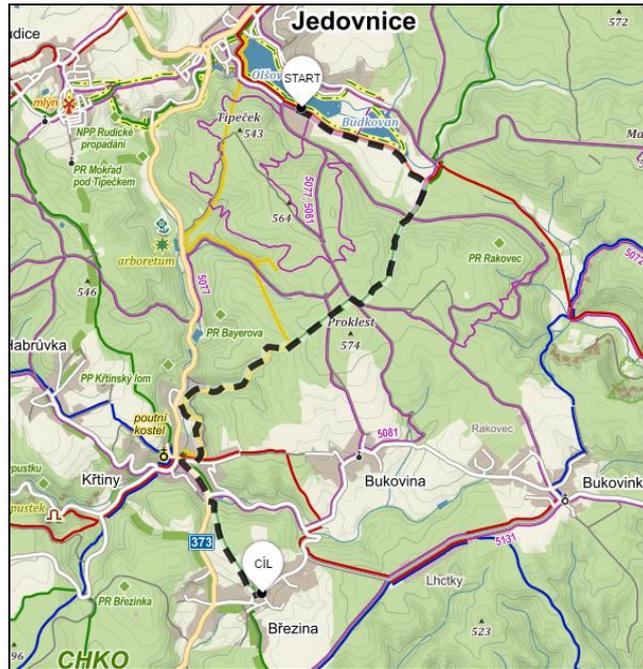


Fig. 22 Route Jedovnice - Březina ([www.mapy.cz](http://www.mapy.cz))

### Field mapping, work procedure:

- **Create base maps - see appendix no. 2**
- Prepare a pad and drawing supplies for mapping.
- Discuss the draft of the legend and then process it with respect to the following mapping objectives:
 

(distinguish between development in the municipality until about the year 2000 and development after that year, record the amenities of the municipality, eg determination of the municipality center, services provided by the municipality, transport infrastructure, places for rest and leisure, places for business plans, etc.).
- Legend will be further modified as needed for mapping. The legend must be complete, i.e. everything you draw on the map must also be in the legend, but the legend can contain more classes than is mapped in the terrain.
- Determine the scale of the map according to the measurements in the field and on the map.
- To determine the age of the development, you will use aerial photographs, which you will prepare together with maps of individual parts of the village.
- Carefully draw individual objects on the map, always showing the theme (color, hatch or number). If you do not know what to do with categorization, photograph the area or object or describe it verbally into the notes.
- Map the selected section in its entirety, i.e. without "white spaces".
- Create enough photocopies so that you can draw everything you need in the field. Then in the room, you redraw the mapped areas from each map to the final map.
- The thematic map is processed into the final composition of the map, which contains:
  - **MAP NAME:** Together with the map face, form the most distinctive element of the map composition. We use capital letters in the name, the name does not contain the word "map". It should include factual, spatial and temporal determination. May contain subtitles.
  - **LEGEND:** Serves to interpret the used map characters, other cartographic means of expression, color scales. It must be complete, logically arranged and comprehensible.
  - **MAP FACE:** It is created by the map itself.

- **MAP SCALE:** Indicates the ratio between the distance on the map and the actual distance. We distinguish three basic types of scale: verbal, numerical and graphic. The most recommended is the graphic. It is suitable for copying the map and changing the format.
- **IMPRINT:** Contains information about the author of the map, year of publication, the base map, number of copies, etc.

### Role Play: New construction of civic amenities in the village Březina

1. As the mayor of the municipality, you have to decide on the location of the following objects in the municipality:
  - Retirement home.
  - IDS JMK stop in a new development towards Křtiny.
  - General store - multi-purpose shopping center?!?
  - Playground.
  - Outdoor socio-cultural area.
2. For accurate localization, use the acquired knowledge about the village, as well as the map data received and processed so far.
3. Focus the newly placed object on the GPS.
4. **Choose a symbol to express the location of the object on the map.**

Write 5 positives and 5 negatives for each object, which led you to place objects in this location. Explain to the voters why you are talking about these civic amenities in the village.

Use the data from the census to justify - see the website of the Czech Statistical Office

([www.czso.cz](http://www.czso.cz)).

<b>Civic amenities (justification)</b>	<b>Positives</b>	<b>Negatives</b>
<b>Retirement home</b>		
<b>IDS JMK stop</b>		
<b>Multipurpose shopping center, shop</b>		
<b>Playground</b>		
<b>Community center</b>		
<b>OTHER</b>		

**Note:** Adjust the size of the table according to the amount of information you want to insert into it.

**Table of the most frequently used technical terms for translation into English**

<b>Concept and brief characteristics in Czech</b>	<b>Concept and brief characteristics in English</b>
urbanizace	
suburbanizace	
amenitní migrace	
vybavenost obce	
katastr	
pohyb obyvatelstva	
tematické mapování	
kompozice mapy	
legenda	
mapové pole	
tiráž mapy	
metoda Roll - play	

### 3.5 ANALYSIS OF EQUIPMENT AND DEVELOPMENT OF ATC OLŠOVEC, JEDOVNICE

<b>Length of activity</b>	Preparation of the activity - preparation of map materials and other aids - 1 hour - usually takes place in the evening before the activity itself. Field work itself without moving - 3-4 hours. Evaluation and processing of results - 3 hours Discussion of results - 1 hour
<b>Used forms, methods</b>	Group work. Working with the map. SWOT analysis. Mass discussion.
<b>Aims of the activity, field goals</b>	After the activity, students: <ul style="list-style-type: none"> <li>- prepare map materials for field activities;</li> <li>- create a map of functional areas of ATC Olšovec;</li> <li>- create the resulting map and interpret the recorded phenomena and processes;</li> <li>- will use the SWOT analysis method to evaluate the selected site and explain the basic principles of the method;</li> <li>- selects the most important geographical terms and translates them into English.</li> </ul>
<b>Field-didactic goals</b>	Students <ul style="list-style-type: none"> <li>- propose various modifications of assigned activities for primary and lower secondary school pupils;</li> <li>- choose the most important concepts that students practice during the activity;</li> </ul>
<b>Aids</b>	Worksheets, field diary, map materials, mobile phone with map applications, stationery.
<b>Outputs</b>	Poster with map outputs and SWOT analysis, presentation from documentary materials with English commentary.
<b>Prologue</b>	In the village Jedovnice there is one of the large recreational areas, which was used for corporate recreation of employees and their children. Similar areas have been set up by large and medium-sized enterprises throughout the Czech Republic in attractive places. In the past 20 years, these areas have undergone major changes in connection with the restructuring of industry. Some disappeared completely, others changed owners. However, each of them has been waiting and is waiting for their transformation into a functioning facility, which is an integral part of the tourism infrastructure. Subsidies from companies have dropped out and owners have to deal with changes to their facilities related to their further use. In general, it is not enough to fill their capacity just by lying in a tourist attractive area. It must attract with its complementary services, which are targeted at different sections of the population in terms of their location, size and development opportunities. From these facts follows the focus of students' activities.
<b>Note</b>	It can also be used for other sites from the area of interest.

#### 1. Complete a detailed map of ATC Olšovec on A3 paper. (you will receive a printed one)

Follow all cartographic rules for creating the map - see pages 27-28.

When creating a map, focus on:

- Determination of the functional use of areas - for accommodation and camping, sports, relaxation, catering (individual × public), services, sanitary facilities, or other functions.
- Marking of significant point or line objects (e.g. information boards, paths...)
- Distinguishing different types of accommodation (in terms of quality), show the level of other services on the map by suitable cartographic means.
- Representation of the main places for the implementation of activities and routes of movement of various interest groups in the camp divided according to the following criteria:
  - A) social status of the visitor
    - families with children,
    - seniors,
    - other groups of visitors;
  - B) type of accommodation of group for:
    - persons living in a tent here,
    - persons living in caravans,
    - persons who are accommodated in different categories of buildings.
- Representation of places of possible conflicts of activities and use of space of different groups of accommodated persons.

2. Based on your own observations, evaluate the equipment of the camp and the possibilities of living for the above-mentioned groups of visitors using a SWOT analysis according to the diagram below.

SWOT analysis

Strengths	Weaknesses
Opportunities	Threats

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**3. Your task now is to set a goal (s) for the further development of the campsite. Propose a number of specific measures leading to the revitalization of the entire ATC Olšovec area. Decide what the revitalization priorities are? (i.e., think about what should be done first and later). Prepare quality arguments and map materials for the presentation, so that it can be used for a role game (council meeting).**

**Table of the most frequently used technical terms for translation into English**

Concept and brief characteristics in Czech	Concept and brief characteristics in English
Rekreační zařízení	
SWOT Analýza	
Věková struktura	
Druh ubytování	
Apartmány	
Chatky	
Stany	
Karavany	
Informační centrum	
Funkční využití ploch	
Strategický plán	
Mapový klíč	

### 3.6 CONCLUSION

The presented teaching material aims to show the possibilities offered by different types of landscapes for outdoor education. These activities were practiced by students of the Faculty of Education, Masaryk University, who not only learned to work in the field according to the worksheets, but also had to form an opinion on what they could transfer from the activities to teaching to primary, or secondary school. For teachers from practice, the material should then serve as an offer of topics that can be implemented in the field, not only in the Jedovnice region, but with some modification in another area. Many of these topics are case studies. These represent one of the ways to mediate the solution of a real situation to students or pupils. A case study can generally be defined as an intensive study of one case, thanks to which knowledge is obtained, which is then used to solve the problem. The case study represents qualitative research methods, mainly because it examines certain phenomena in their depth and in a real context. The solution of case studies can be included in research teaching, and for geography or other subjects, outdoor education is suitable for this form of teaching, which has space for collecting, analyzing and interpreting data from secondary, but mainly from primary sources. The presented material contains several case studies that can be solved in the vicinity of Jedovnice.

The Atlas of the Moravian Karst and the Atlas Area for Outdoor Education and Outdoor Activities form an important and separate appendix to the above-mentioned teaching materials. With its help, teachers can change and focus on different activities in different directions than those listed in the worksheets. The atlas offers opportunities to use other places in the area of interest for accommodation and activities that may differ from these activities. Teachers as well as visitors can experience various activities associated with staying in nature, with various types of tourism, as well as solving case studies that reflect the peculiarities of the environment in which they will stay with pupils and students.

Pupils and students acquire the necessary knowledge during outdoor education, but mainly skills that they can use in any further teaching in the field and in solving real life situations. In group teaching and teamwork, attitudes are also created towards the landscape in which the teaching takes place. Clearly, however, this style of teaching is dominated by the development of social ties between all the actors involved in teaching. Worksheets are also newly related to the selection of key professional terms that students work with in teaching. These key concepts form the "professional framework" of all activities. Pupils can also learn these concepts in a foreign language and thus strengthen foreign language teaching through geography, history or biology.

### 3.7 LIST OF USED LITERATURE

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HENYCH, M. *Výuka orientace v terénu pomocí map na orientační běh*. Bakalářská práce, PdF MU, 2009.

HOFMANN, E., MÍSAŘOVÁ, D., HERCIK, J. *Interdisciplinární terénní výuka*. Univerzita Paleckého v Olomouci 2014, dostupné z [http://civ.upol.cz/soubory/vystupy/teorie/Hofmann\\_et\\_al\\_2014.pdf](http://civ.upol.cz/soubory/vystupy/teorie/Hofmann_et_al_2014.pdf)

HOFMANN, E. (ed.). *Integrované terénní vyučování*. Brno: Paido, 2003. 123 s. ISBN 80-7315-054-9.

KOLEJKA, J. *Nauka o krajině pro studující geografie magisterských učitelských oborů*. 1. vydání. Brno: Masarykova univerzita, 2014. 129 s. ISBN 978-80-210-6659-5.

KORVAS, P. a HOFMANN, E. *Orientace v přírodě*. 2008. vyd. Brno: Masarykova univerzita, 2008. 96 s. Vydání 1. ISBN 978-80-210-4715-0.

PEŘINOVÁ, I. *Koncepce terénní výuky na základní škole v Kuřimi*. Diplomová práce, Masarykova univerzita, 2016.

SVOBODOVÁ, H., MÍSAŘOVÁ, D., DURNA, R., ČEŠKOVÁ, T., a HOFMANN, E. *Koncepce terénní výuky pro základní školy. Na příkladu námětů pro krátkodobou a střednědobou terénní výuku vlastivědného a zeměpisného učiva*. 1. elektronické vyd. Brno: Masarykova univerzita, 2019. 110 s. ISBN 978-80-210-9246-4. doi:10.5817/CZ.MUNI.M210-9246-2019.

SVOBODOVÁ, H., HOFMANN, E., MÍSAŘOVÁ, D. a ČEŠKOVÁ, T. *Bezpečnost jako bariéra terénní výuky zeměpisu na základní škole*. In *8. mezinárodní geografické kolokvium*. 2018. ISBN 978-80-8152-646-6.

TOMÁŠEK, M. *Půdy České republiky*. 2. dopl. vyd. Praha: Český geologický ústav, 2000. ISBN 8070754036

### 3.8 LIST OF APPENDICES

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Appendix No. 1: Educational map for orienteering

Appendix No. 2: Preparation of data for mapping (not only) in the build up area of Březina

Appendix No. 3: Creation of a panoramic sketch

Appendix No. 4: Questionnaire for feedback

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#### APPENDIX NO. 1: EDUCATIONAL MAP FOR ORIENTEERING

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Orienteering tutorial maps are available from:

<https://katedry.ped.muni.cz/geografie/terenni-praxe/vyukove-mapy-pro-orientaci-v-terenu-mapy-pro-orientacni-beh>

## APPENDIX NO. 2: PREPARATION OF DATA FOR MAPPING

**Aids:** laptop with internet connection (wi-fi network is available in the classroom), A4 format papers, A0 / 1 format paper, printer (b/ w), scissors, glue

**Source of map data:** <https://geoportal.gov.cz/web/guest/map>

### Introduction:

According to these instructions, it is possible to prepare high-quality data for field mapping anywhere in the Czech Republic. It is therefore possible to obtain material for teaching in the field in a relatively easy way, which can be used repeatedly in various modifications (depending on the nature of the assignment). Map materials in various qualities are freely available on map portals. The Basic Map of the Czech Republic 1: 10000 (ZM 10) ČÚZK, available in digital form on the website of the INSPIRE National Geoportal at the link above, is suitable for mapping in the field of the village (case study Suburbanization in the village Březina). The advantage over many other, e.g. commercial portals, is its detailed topographic content.

### Workflow:

1. In a web browser, browse the INSPIRE National Geoportal website to open bookmark **maps** (or directly enter the web address, see  the link to the source maps).

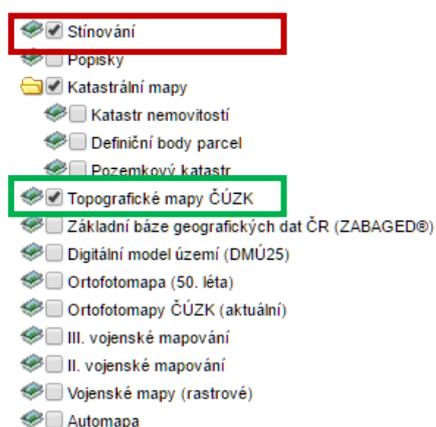
2. If the web service is active, you will see the map of the Czech Republic on the page (left) with the option of selecting **layers of map compositions** (right, see Fig. 1). Select the **ČÚZK Topographic Map** layer as a map base (highlighted in green). For faster loading of content, **uncheck** the item Shading (highlighted in red).

3. Zoom in on the map of the Czech Republic above the selected target area, for our purposes we will use the model village Březina (district Brno-venkov, formerly Blansko). Use the slider in the upper left corner of the map field to "zoom in" on street level or **increase the scale** of the map.

4. Now you need to think about the total area of the area that you want to map. If you want to monitor the development of suburbanization, it is necessary to select the territory of the municipality beyond the built-up areas marked on the map. Although the data is constantly updated, the processes in the

landscape (whether natural or anthropogenic) run much faster. Thus, a part of the territory (detail) in reality may serve a different purpose than the one shown on the map. Simply put, we will select the territory so that it partially extends beyond the build up area of the municipality in all directions of the world.

5. Since such a large area cannot be projected on a small paper size at the required scale, you must help yourself differently. Divide the total area into several partial, **overlapping** map sections, while defining the total area of the resulting map using **the border points of the territory** (road junction, spot height, significant object, etc.). Choose the size of the cut-outs according to the technological possibilities of printing on the printer available to you (the most accessible A4, for larger office printers also A3). These areas must overlap in all directions (as in Figure 2), as you get the resulting map by combining partial map sections, which you stick on large format paper. The diagram in the picture is for illustration only. There can be more partial map sections (A1 – AX), depending on the size of the area of interest and the selected scale. In the following steps we will describe how to save / print partial map sections so that the map scale **is not deformed**.



Obr. 1: Výběr vrstev mapového podkladu

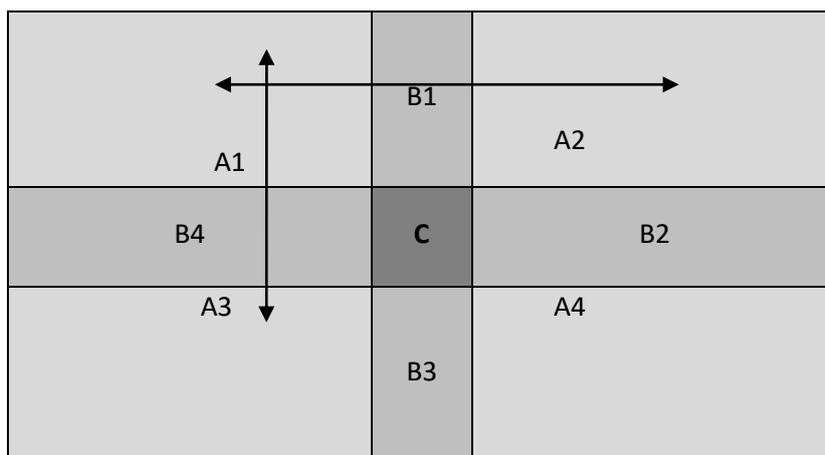
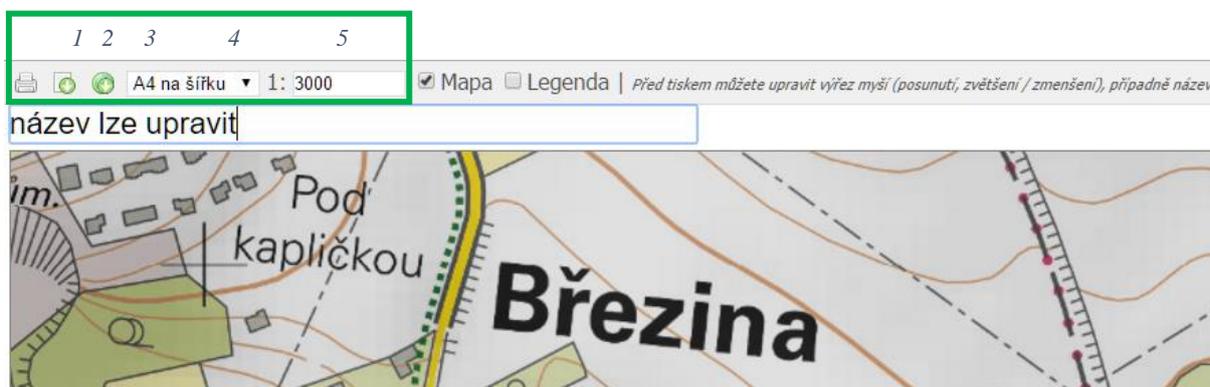


Fig. 2: Scheme of the principle of composing the resulting map using mutually overlapping partial map sections. A1 – A4 are partial map sections, arrows indicate the overall dimensions of A1 (analogous to A2 – A4); surfaces B1 – B4 are created by overlapping a pair of cut-outs A1 – A4 so that objects lying, for example, in area B1 must be located both in cut-out A1 and in cut-out A2 (analog. for B4 and A1, A3 and others); area C is created by overlapping all adjacent map views.

6. If you have displayed the default map view (the one you start from, eg A1), you will find a toolbar in the upper left corner of the map field and select the *Print* option. A new browser window will open (see Fig. No. 3), where you can further adjust **the position of the viewport** (by moving the map area with the mouse), specify the desired **scale** (5), select the **format** and **orientation** of the viewport (4). Buttons 2 and 3 allow you to **export** the image to PNG and Geo TIFF formats. You can also edit the **name** of the viewport (eg A1), which can make it easier for you to compose the overall map (of course, you will then cut the names out). Button 1 starts the print dialog box in which you can save the cutout in PDF format and print it later.

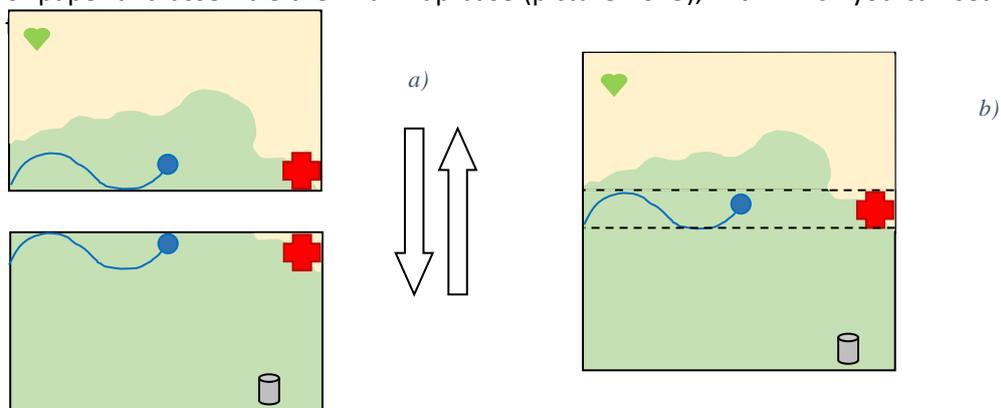
When saving / printing a viewport located at the edge of the resulting map, make sure in advance that the viewport includes the relevant boundary points of the area of interest. When saving / printing additional cut-outs, always make sure that they **sufficiently overlap** the displayed area according to the diagram in Fig. 2. According to point 6, save / print all partial map sections needed to complete the final map.

NOTE: Print the maps in black and white, you will color the individual areas according to the specified legend of land use.

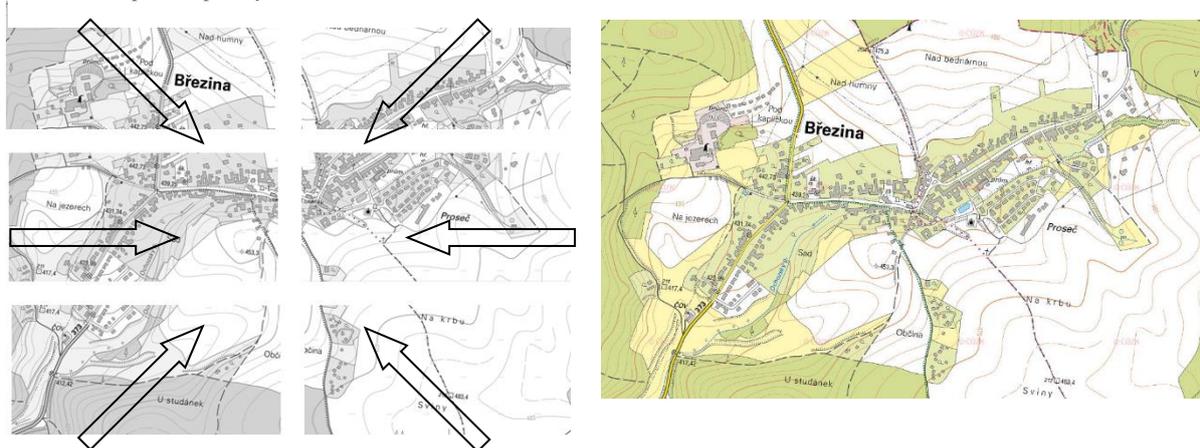


Obr. 3: Náhled okna pro finální úpravy mapového výřezu před odesláním k tisku

7. Spread the individual map sections on a large format paper and try to compile the resulting map of the area of interest. Remember that you made the cutouts so that they overlapped. It is therefore necessary to cut the white edges and lay the cutouts on top of each other so as to create a continuous area of the area of interest, similar to Figure 4. Finally, glue the cut-outs on a large piece of paper and assemble the final map base (picture no. 5), with which you can set out to map to the



Obr. 4: Skládání dílčích mapových výřezů a) ve výslednou mapu zájmového území b)--- značí plochu překryvu



Obr. 5: Složením jednotlivých výřezů a) vznikne finální mapový podklad b)

#### Sources of images:

Figure No. 1 Mapy. 2016. *Národní Geoportál INSPIRE* [online]. [cit. 2016-10-06].

Available from: <https://geoportal.gov.cz/web/guest/map>

Figure No. 2 own processing

Figure No. 3 own processing according to the National Geoportal INSPIRE (see above)

Figure No. 4 own processing

Figure No. 5 own processing according to the topographic map 1:10000 (ČÚZK), available online on <https://geoportal.gov.cz/web/guest/map>

### APPENDIX NO. 3: CREATION OF A PANORAMIC SKETCH

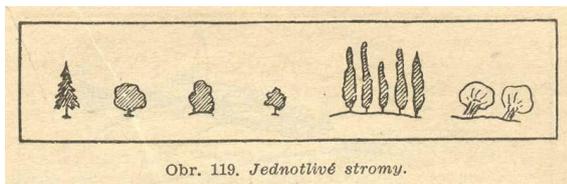
Various techniques are used in reconnaissance and terrain capture, including different types of sketches from situational to panoramic. The technique of making a panoramic sketch was created at a time when it was not possible to use the evaluation of various images, etc. The technique of processing such a sketch was dealt with by cartographers for the purposes of military artillery. The instructions below come from 1935 in a handbook entitled "Handle of military education - lower level" and were published by the Military Science Institute.

#### **Why use this technique in modern technologies today?**

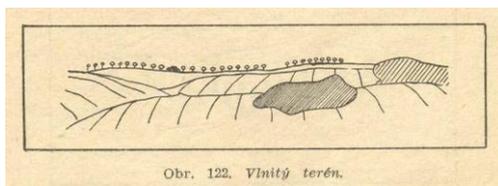
When processing a panoramic sketch, we must primarily think about the displayed landscape and evaluate point, line and area elements. In photography, we think mainly from what angle and in what definition we will work, and the evaluation will come later. However, photography is a suitable complement for further processing and evaluation of a certain section of the landscape.

#### **Processing instructions:**

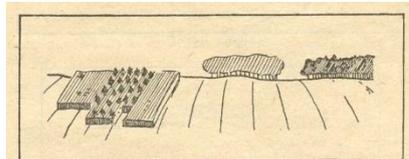
On a sheet of paper, preferably on a solid surface, we gradually draw objects and lines of terrain, in rough outlines as it appears to our eye. The first figures show how the shapes of e.g. trees, forests and bridge structures should be drawn. Everything is drawn schematically. This also applies to houses, settlements, etc. Slopes are indicated by dashes in the direction of the greatest slope. The other pictures are already examples of the drawing of the undulating terrain and the terrain with the village.



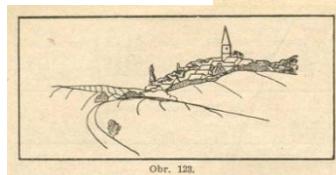
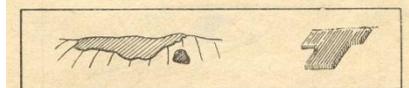
Obr. 119. Jednotlivé stromy.



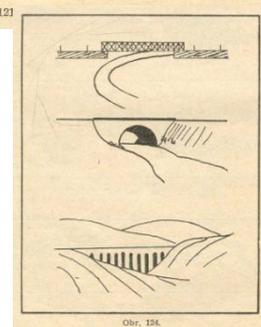
Obr. 122. Vlnitý terén.



Obr. 120. Lesík bliský.



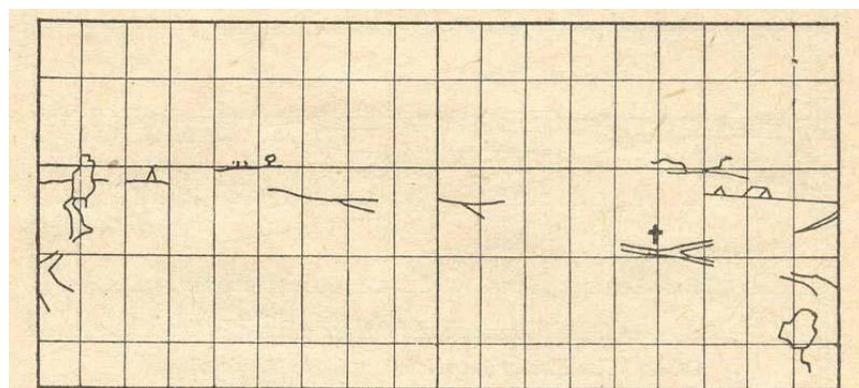
Obr. 123.



Obr. 124.

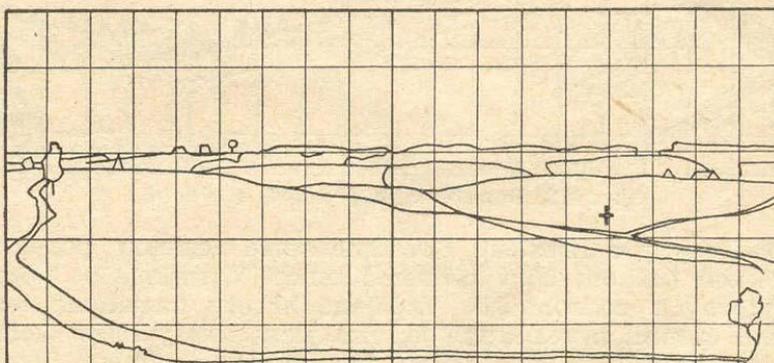
To lay out individual objects, lines and surfaces, it is advisable to use a basic grid, which we apply on paper. It does not have to be as dense as in the picture, but in principle it will help us to make it easier to place the observed phenomena. However, it is not a necessity.

**A.** In the first phase, we will make a frame. We will draw on the sketch some of the most important points and places, if possible regularly distributed. We can then mark other details in this frame.



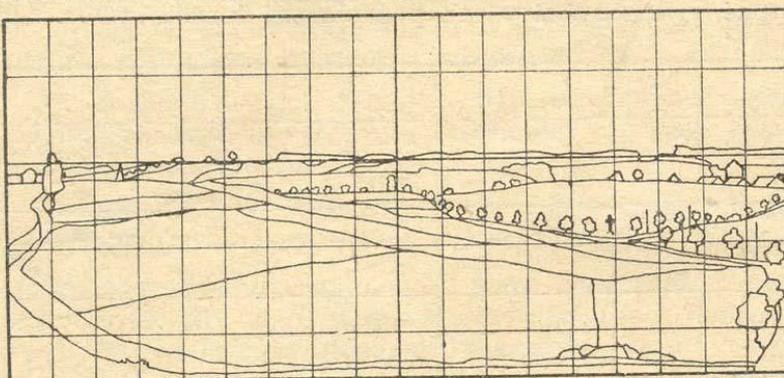
Obr. 115. Panorámatický náčrt, 1. údobí.

**B.** In the second phase, we will add terrain lines to the sketch frame, e.g. consecutive ridges, outlines of forests, settlements, roads, other places of view, etc..

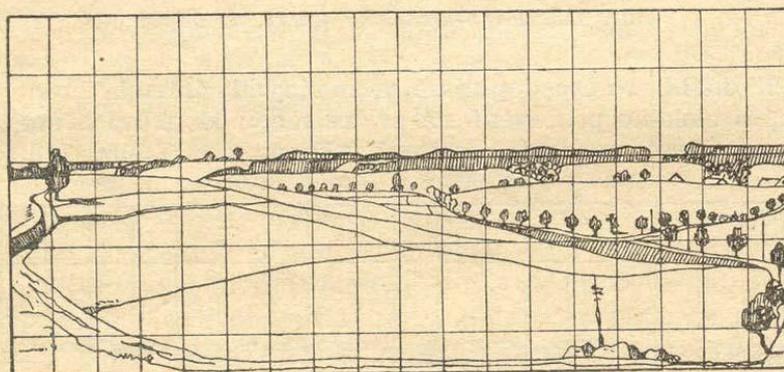


Obr. 116. *Panoramatický náčrt, 2. údobí.*

**C.** In the third phase, we draw everything that is important for the observed landscape to identify them. You can mark larger details with symbols and add them to the sketch legend so that we don't have to remember what we captured with these symbols later.



**D.** In the fourth phase, we will complete the drawing. Above all, we will finish the legend and description of what we drew.



Obr. 118. *Panoramatický náčrt, 4. údobí.*

For our needs, we will add in which direction the monitored landscape section is oriented and we will evaluate the monitored landscape section from the point of view of identifying its structure.

(Processed according to: [csopevneni.xf.cz/Prirucka/Prirucka-nacrť.htm](http://csopevneni.xf.cz/Prirucka/Prirucka-nacrť.htm))

APPENDIX NO. 4: QUESTIONNAIRE FOR FEEDBACK

1. Have you ever completed outdoor education in Geography during primary / high school?

PS: YES (continue with table) NO (continue to question 2)

HS: YES (continue with table) NO (continue to question 2)

	PS	HS
a) How long did it last (number of days)?		
b) Where did it take place?		
c) Write a form (eg terrain practice course, excursions, walks, other)		
What activities did you do? (tick the box)		
d) field research		
e) observation		
f) measurement		
g) photographing		
h) work with a map		
i) work with GPS		
j) work with a compass		
k) work with thematic maps		
l) keeping a field diary		
m) drawing a sketch		
n) drawing the route of the walk		
o) drawing a mental map		
p) other ( <i>specify</i> ):		

2. Have you ever completed outdoor education in other subjects during primary school (eg PE courses, adaptation courses, school trip, etc.).

YES NO

If yes, please specify the focus:.....

3. Did you have all the information about Integrated Outdoor Education Jedovnice in advance?

YES NO

4. How do you evaluate the overall content of IOE Jedovnice? (**grading as in school**):

.....

5. How do you evaluate individual activities? (**evaluation as in school, if you did not do the activity, do not mark**)

Excursion around the Moravian Karst	1	2	3	4	5
Mapping in ATC Olšovec	1	2	3	4	5
Orienteering	1	2	3	4	5
Working with aerial photos	1	2	3	4	5
Historical day (Výpustek, Křtiny, Bystřec)	1	2	3	4	5
Geocaching	1	2	3	4	5
Games (branball,...)	1	2	3	4	5
Other activities ( <i>specify</i> ):					
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5

6. What is the greatest benefit of IOE Jedovnice?

.....  
.....

7. What would you change about the organization of IOE Jedovnice?

.....  
.....

8. Is there anything you definitely didn't like?

**YES                      NO**

**If yes, write what:**

.....  
.....

9. Do you think that you will learn more through outdoor education than at school?

**YES                      NO**

**If so, write what makes outdoor education better:**

.....  
.....  
.....

10. Do you appreciate the connection between teaching geography and movement?

**YES                      NO**

11. Would you be interested in more outdoor education while studying at university?

**YES                      NO**

**If yes, in what form:**

- a) **one-day outdoor education**
- b) **multi-day outdoor education**
- c) **excursions, walks**
- d) **another form: .....**

12. Do you, as a future teacher, also plan to carry out outdoor education with your students?

**YES                      NO**

13. If so, do you think you'll run up against any obstacles? If not, choose the reasons why not **(you can choose more than one option):**

- a) **no obstacles**
- b) **lack of my knowledge and experience**
- c) **lack of motivation**
- d) **expectation of a low result**
- e) **unsuitable environment where outdoor education could be realized**
- f) **lack of time for preparation**
- g) **lack of time during the school year (other things must be done)**
- h) **unwillingness of colleagues to go into the field with me**
- i) **lack of funds**

- j) lack of support from school management**
- k) insufficient administrative support from the school**
- l) possible danger of outdoor education for pupils**
- m) others: .....**

Comments, suggestions:

.....  
.....

Identification:

**MAN**

**WOMAN**

**Combination of specialisation:.....**

## 4. HEALTHY LIFESTYLE AND A SPRING SOJOURN IN NATURE

The course *Healthy lifestyle and a spring sojourn in nature* is drafted as a several days long course focused on outdoor activities for children mostly on kindergartens and schools in nature, physical courses, field education and so on.

The goal of this course is to open basic findings from the field of tourism and sojourning in nature with the aim on health preventive physical activities for children of the lower-school age.

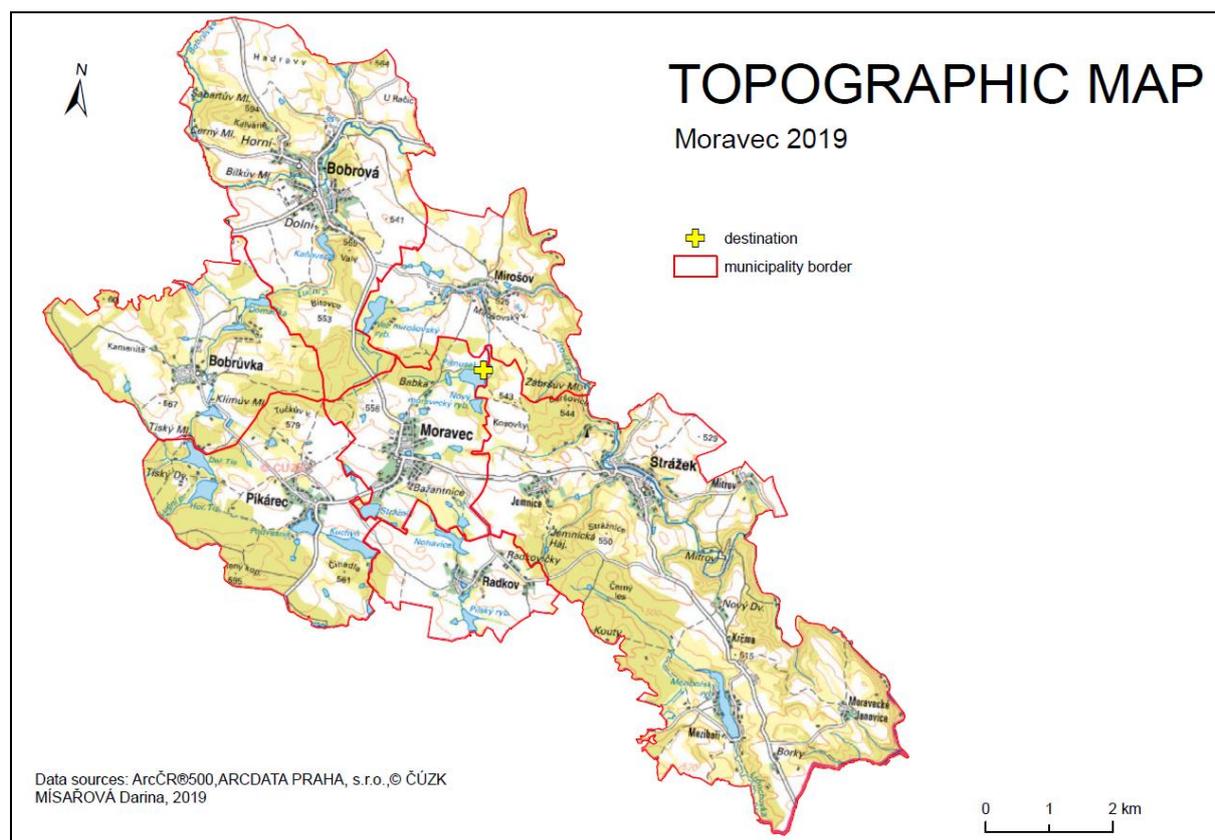
After finishing this course is student prepared to understand and apply issues of healthy, purposeful and ecologically approached sojourn in nature focused on health preventive activities applied in terms of summer outdoor education for children of lower-school age. The emphasis is given on specific physical, recreational, and relaxing activities in nature.

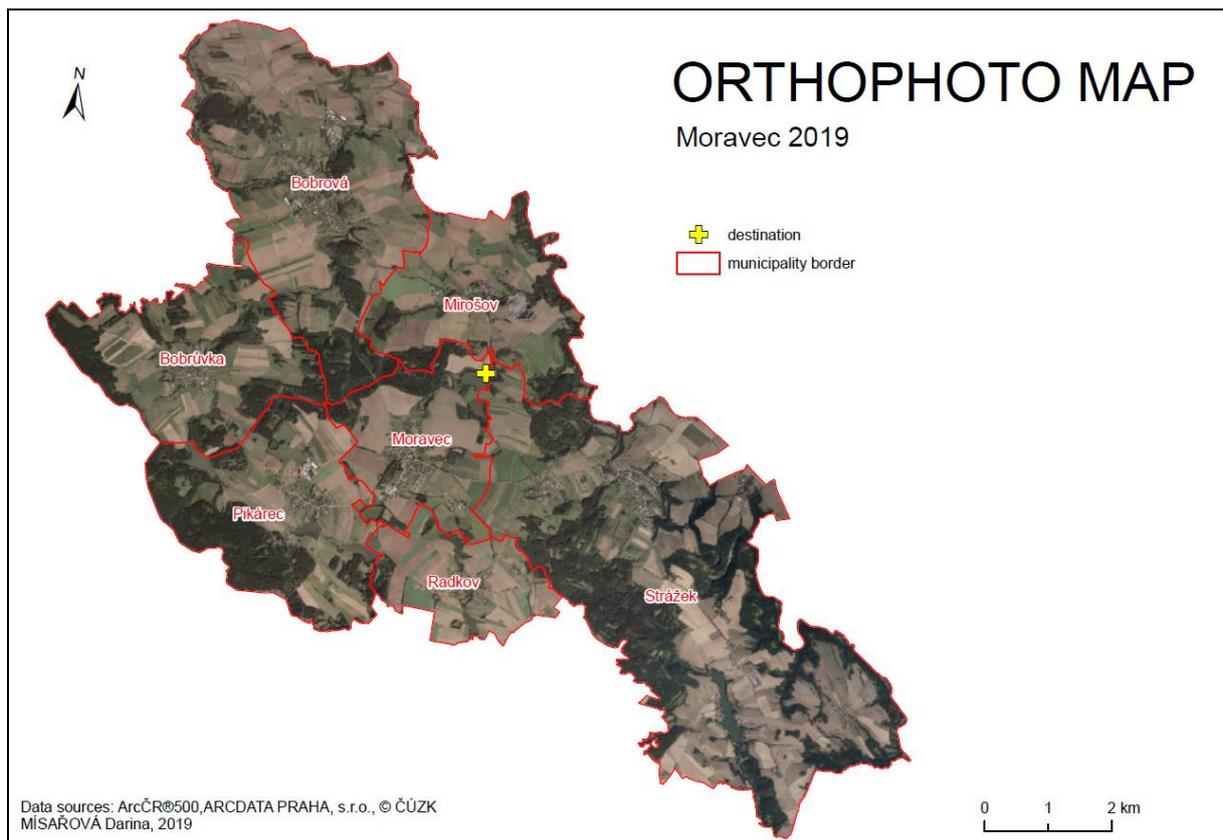
The course is offered even to students who do not have [Učitelství pro 1. stupeň základní školy](#) (program Pdf, M-ZS5) as major and it is organised as 5 days long course.

The requirement for obtaining the credit is active participation and fulfilling the conditions of the course in full extent.

### 4.1 LOCALISATION OF OUTDOOR EDUCATION – MORAVEC

Coordinates: 49°26'25" N 16°8'40"E





Moravec is a rural municipality located in the eastern part of the Bohemian-Moravian Highlands at an altitude of about 560 m. The municipality has a population of 612 inhabitants (as of 31 December 2018). From the administrative point of view, it is placed in the Žďár nad Sázavou District in the Vysočina Region. Moravec lies approximately 21 kilometres south-east of the town Žďár nad Sázavou, 41 km east of Jihlava town, and 144 km south-east of the capital Prague.

The archival material about the Moravec estate dates back to 1370, when the owner of the estate was Vít of Kraslice. In the recent past, the dominant land use in this area was agriculture and forestry. The same human activities in the landscape remain quite frequent to the present day, but new ones have emerged in the last few decades as well, like tourism and recreation. The slopes in the hilly area are not as steep as in the mountains on the borders of Czechia, yet they allow many winter and summer sports to be carried out there. The relatively flat relief offers a great opportunity for children to learn skiing, cross-country skiing, MTB biking, or hiking. The Vysočina Arena Sports Facility, which represents a base for all sports activities mentioned above, is located near the city of Nové Město na Moravě. It is also the venue for the series of the World Championship Biathlon and the Mountain Bike World Cup.

The road II/360 passes through the municipality. The dominant feature of the municipality is the Church of the Finding and Exaltation of the Holy Cross, the chateau and the chateau park. The Baroque church was rebuilt in 1794 from the original chateau chapel. For school children, the municipality has set up a primary school and a kindergarten.

The municipality covers an area of 5.51 square kilometres made up of agricultural land (67.8 %), forest (17.7 %), water (6 %) and built-up and other areas (8 %). That land is the source area for many of our rivers. The area is known as "The rooftop of Europe", because the main European watershed between the drainage basins of the Black Sea and the North Sea runs through this very area.

## 4.2 COURSE ORGANISATION

The field course is drafted for 4 groups of students. Every group has an individual programme in two three-hours long blocks – morning and afternoon. Groups will change through activities during the 4 days, the fifth day is collective programme for all the groups.

## 4.3 THEMATICAL CONTENT AND TIMETABLE OF THE COURSE

Day	group	9,00 - 12,00	14,00 - 17,00
Sun	ABCD		Beginning and the content of the course
Mon	A	All-day hiking trip	
	B	Cycling	Orientation
	C	PE in nature	Canoeing
	D	Games in meadows	Traffic education
Tue	A	Games in meadows	Traffic education
	B	All-day hiking trip	
	C	Cycling	Orientation
	D	PE in nature	Canoeing
Wed	A	PE in nature	Canoeing
	B	Games in meadows	Traffic education
	C	All-day hiking trip	
	D	Cycling	Orientation
Thurs	A	Cycling	Orientation
	B	PE in nature	Canoeing
	C	Games in meadows	Traffic education
	D	All-day hiking trip	
Fri	ABCD	Games and competitions	Clean-up, departure

## 4.4 STUDY MATERIALS

In the beginning is suitable to identify expected outcomes in concord with valid declared curricular documents:

### Expected outcomes – RVP ZV

Pupil/student:

TV-3-1-01 connects regular everyday physical activity with health and uses given opportunities

TV-3-1-02 manages simple physical activities of an individual or activities performed in a group in concord with an individual conditions; strives for their improvement

TV-3-1-03 cooperates during simple team physical activities and competitions

TV-3-1-05 reacts on the basic instructions and orders to the acquiring activity and its organisation

TV-3-1-01p manages the preparation for the physical activity in accordance with instructions

TV-3-1-04p sticks to basic principles of safety during physical activities and has acquired basic hygienic habits during physical activities

TV-3-1-05p reacts on basic instructions and orders related to the acquiring activity

- displays positive attitude to the motorial learning and physical activities

- manages basic means of locomotion and special orientation due to the individual conditions

TV-5-1-01 takes part on the realisation of regular physical regime; uses fitness oriented activities; expresses appropriate independence and will to improve one's capability

TV-5-1-03 manages to perform acquired physical skills in accord with personal conditions

TV-5-1-04 applies rules of hygiene and safe behaviour in common sport environment; adequately reacts in case of classmate's injury

TV-5-1-05 simply evaluates the quality of a physical activity of a classmate and reacts to the instructions of self-execution of the physical ability

TV-5-1-06 acts in concord with fair play; abides the rules of games and competitions, acts in concord with fair play: recognises and marks obvious offenses against the rules and adequately reacts; respects another gender during physical activities

TV-5-1-10 orients in sources of information about physical activities and sport events in the school in place of birth; individually acquires needed information

TV-5-1-11 adapts on the water environment, follows rules of swimming hygiene, manages basic swimming skills in concord with individual qualifications

TV-5-1-12 manages chosen swimming technique, elements of self-rescue and safety

TV-5-1-03p improves basic physical abilities due to own capabilities and skills

TV-5-1-04p applies hygienic and safety principles of physical activities

TV-5-1-05p reacts to instructions to execute own physical activity

TV-5-1-06p sticks to rules of games and acts in concord with fair play

- improves own physical condition, motional exhibition and correct body posture

- manages basic preparation of the organism before the physical activity due to instructions

---

#### 4.4.1 BASICS OF WATERMANSHIP

---

##### **Characteristic of the activity**

Among the most popular activities in nature in the Czech Republic is touring. It is a compendium of abilities and knowledge related to the actively spending time in nature, including culturally cognitive activities.

Amongst the most liked forms of touring is, just behind hiking and cycling, *water tourism*. *The most frequent form of this activity is using different vessels to go down the river*, but it includes

also windsurfing, paddleboarding or sailing the ships or rafts in the calm waters (lakes). This type of touring is called *watermanship*.

There is a list of a several links to available publications which deals with this topic:

Information about the safe movement mostly on the flowing water can be found in publication by Petr Ptáček *Bezpečně na tekoucí vodě* (Ptáček, 2015).

Basics of watermanship technique can be found in the publication by Zdena Jahodová *Waterman's alphabet* (Jahodová, 1995).

Other information e.g. about Czech rivers and other important info can be obtained from the book by the author's collective *Jedeme na vodu* (Špaček et al., 1990)

**The goal** of this activity is to introduce basic knowledge and skills related to watermanship: safety during movement near and in the water, introduction to the basics of the history of watermanship, introducing various types of ships, paddles, types of water and types of water bodies, specifics of the first aid at the water. In the frame of the practical part participants try basic strokes used in individual types of vessels (kayak, canoe, paddleboard, raft, windsurf...).

### Content and description

**Goal: introducing participants to the theoretical basis of water tourism and to the practical skills with individual types of the vessels and paddleboard, games on the shore and in the water.**

**Tools:** ships, rafts, paddleboards, life jackets, throwing pouches, paddles

**History:** <https://www.raft.cz/historie.aspx> (*Historie vodáckého sportu*, 2020)

**Vessels and their operation:**

### Canoe, kayak, raft

Vessels are made mostly of plastic or hardened rubber so they can withstand mechanical damage. They are equipped with seats and adapted for various levels of the water difficulty.



Fig.23: Canoe



Fig. 24: Kayak ("KAJAK PRIJON COCAINE PRO", 2020)



Fig. 25: Raft ("Gumotex Colorado", n.d.)

- Crew – choice of posts in the ship  
 „Sternman“ – posted on the stern, steerer, generally more experienced waterman.  
 „bowman“ – posted on the bow, „propulsive unit“ of the ship.  
 „porcelain“ – crew member who is not paddling and is just transported. Cares for the good mood in the ship.
- Embarking and disembarking – sternman holds the ship, bowman puts in baggage. Then bowman holds the ship and sternman embarks. After that, bowman also embarks. This order of embarking is important in case that the ship ships away – the sternman can navigate the ship more easily than bowman.
- Paddles – the length of a paddle is set due to the height of its user; it should span from the ground between the chin and the radix of nose of the user.

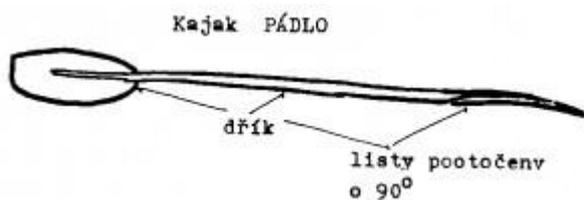


Fig. 26: Kayak paddle

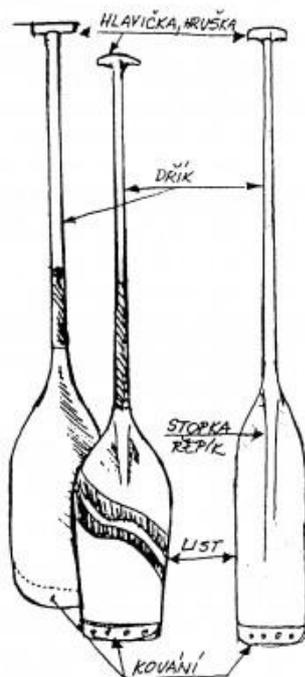


Fig 27: Canoe paddle

- **Paddling technique and the basic briefing:**  
<https://www.youtube.com/watch?v=PwJOAKRtdk8> (Vodácká instruktáž, 2019)

We hold the paddle by the grip with the upper hand overhand grip. The thumb is placed against other fingers. Height of the hold with lower hand should be approx. 10-15 cm from the blade.

**Basic stroke forward** – the chest leans forward, arms are stretched. The blade of the paddle dives approx. 15 cm from the side of the ship and pulls next to the side backwards to the level of a hip. Simultaneously, the chest is being gradually straighten. The paddle is pulled out of water and moved close to the surface forward into the next stroke. When moved we heed that the blade is in the horizontal position. The stroke serves as drive of the ship.

**Backwards (contra) stroke** – opposite movement of the paddle than during forward stroke. We put the paddle into the water behind our body and pull it forward. It is used for slowing or stopping of the ship.

**Wide forward stroke (curved)** – the beginning of the stroke is similar as during the basic stroke, pulling of the paddle follows a bend in the direction away from the ship and backwards. This stroke is used to turn the ship and change its direction.

**Wide backwards stroke** – the opposite stroke than wide stroke forward. This stroke is used to turn and slow the ship.

**Pull** – the chest leans from the ship, the paddle is put into water far from the ship and then pulled to the side of the ship in the sheer direction. By turning of the blade by the side of the ship we can easily segue to the basic stroke. This stroke is used to change the direction of the ship without slowing it. If performed incorrectly the ship may capsize.

Saving of the capsized ship – the ship is left bottom up. It cannot be turned so it does not sink. Air bubble will help to keep the ship on the surface. Then it can be easily moved to the bank. After it is moved to the bank, the water can be emptied by tilting of the ship.

### **Paddleboard**

Rapidly developing paddling sport. Its followers can be met on the flowing waters as well as calm waters. In paddleboarding the paddleboarder stands on the stable float and uses a long paddle to move it. This sport can be adopted quickly even by beginners. Paddleboards are divided by its shapes, processing, placing of the fins and other parts (obr. 6) (waved, universal, speed, fitness and so on), important is correct chose of the float due to conditions of its use and physical parameters of its user.



**Fig. 28: Types of paddleboards**

- Paddle – the length of the paddle is fundamental for paddling, recommended length of the paddle is height of the figure + approx. 20 cm. The paddle should be adjustable.



**Fig. 29: Paddleboard paddle**

Style of paddling – after sailing off the shore we kneel on the float in the middle part and paddle to the deeper waters where is less risk of an injury in case of falling. On knees we learn basic movement forward, turning and stopping. Then we move ourselves to the basic position – stance, knees slightly bent, legs apart on the width of shoulders. We hold the paddle in straighten arms (with the blade pointed forward). When returning to the shore we kneel again and we slow the float with contra strokes.

#### Basic strokes

- **Straight ride** – the paddle is put into the water vertically and pulled backwards. Stroke sides are changed.
- **Changing directions** – continuously stroke as far as possible from the float or use the contra stroke.

Basic video briefing: <https://www.youtube.com/watch?v=l3yX1MgzgS4>

### **Games on shore and in water**

Games serve to reduce shyness of water and using vessels in the water, choosing of the correct material and to consolidate of the basics of techniques. We start with simple games on the shore and then we move into water.

#### ***The size matters...***

**Tools:** paddles of the different sizes

Participants divide into two teams and stands on the starting line. In the form of relay race the first one from the team runs for the prepared paddles, takes the paddle of the correct size and type and runs back to his/hers team where the relay is passed on. The team who is faster and has correct sizes of paddles wins.

#### ***Size of the paddle***

**Tools:** paddles of the different sizes

Due to the instruction every participant draws a paddle from the pile. The group must form a line in the given place due to the length of their paddles as fast as possible. Then they change their paddles due to the right length for every participant.

#### ***Paramedics***

**Tools:** life jackets

Participants divide into teams due to their quantity and teams will position themselves on the track. The player who is closest to the starting line holds life jackets in equal number to the team members. On the mark the player with life jackets runs and gives everyone a lifejacket. The goal is to put on a life jacket (including fastening and zipping up) and to make a run to the finish line. The faster team with correctly fastened life jackets wins.

#### ***“Ahoy”***

**Tools:** life jackets, paddles, vessels (canoes, rafts, kayaks...), eventually helmets

Participants are divided into pairs (canoe) or into teams of four to six members (rafts) and every team gets life jackets, paddles and helmets in corresponding number on the shore. On the mark, everyone will put on the life jacket, take the paddle and their goal is to take a seat in the ship. When everyone is seated correctly and the ship is ready to sail, the team will shout “Ahoy!”. The fastest pair/team wins.

### ***Transporting on paddles***

**Tools:** paddles, various objects for transportation

Every participant has a paddle and a bunch of various objects to transport. On the mark, participants will start to gather and transport objects on the blade of the paddle from start to finish. Players cannot touch objects with no body part. The fastest player wins.

### ***Throwing pouches***

**Tools:** throwing pouches, buoys

Participants will divide themselves into teams. Every team has several throwing pouches and a buoy placed in the water. The goal is to hit the buoy with the pouch. The first one to hit are winners. Variant: teams can compete to hit the buoy more times.

### ***First aid***

**Tools:** due conditions, throwing pouches, life jackets, first aid kits and so on

Participants will divide themselves into teams. Teams have a certain amount of time to prepare and to repeat what to do when rescuing a drowning man. Afterwards, the team shows the rescue, eventually reviving of the drowning person to others. The correct performance and authentic performing of the situation are evaluated.

### ***Tag games in water***

**Tools:** ships, paddles, life jackets (helmets), anything to distinguish teams (Hawaiian garland, reflex vest, ...)

Crews (correctly dressed in the life jackets, eventually with helmets on) play classic tag game. If one of crews is tagged, they will put on distinguishing things and try to catch another crew. When the ships or crews touch the distinguisher is passed on.

### ***Tag game with change of roles***

One crew is chasing. A ship which is caught sails to the shore and the crew changes roles in the ship (bowman for sternman and opposite). Then they go back to game. Who wants, can make the change on water without sailing to the shore. The rule that third caught crew is tagging can be established.

### ***Shark rescue***

**Tools:** ships (various types and paddleboards), paddles, life jackets, (helmets)

One team is in vessels and the second is swimming. All players have life jackets on. In the moment when someone calls "Watch the shark!" crews try to pull swimming people into ships or on to paddleboards. We simulate the rescue of drowning persons or rescuing of the crew of the capsized ship. When everyone is in ships we sail to the shore and change roles.

### ***Mobile buoy***

**Tools:** ships, paddles, life jackets

One crew (or an individual in kayak) is a mobile buoy. This buoy moves freely on the water body. The task is to sail around the mobile buoy and return to the shore. The mobile buoy can help weaker crews by sailing towards them, to others can make the game harder by sailing away from the shore. On the shore the crews will change their roles, be it in the ship (roles of bowman and sternman) or the composition of crews.

### ***Sailing with the porcelain***

**Tools:** ships, paddles, life jackets, various objects

On a given place (in water or on the shore) are different objects or persons. The task is to sail to them and transport them to the given place as fast as possible.

#### **Keywords**

Safety, basic strokes, cooperation, trust, estimation of one's abilities, skills on water, kayak, canoe, paddleboard, raft, paddle, first aid, games on shore, games in water

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#### **4.4.2 GAMES IN A MEADOW**

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##### **Characteristics of the activity:**

**Goal:** of this teaching block is introduction of many small physical games which can be played outside as well as inside. Participants will obtain a stack of games which can be applied not only in the physics classes, outdoor schools but also during free time activities. Games are divided into several groups due to their field of focus. There are included icebreakers, warm-ups, games which develop spatial orientation, self-confidence, combative games, inter-subject games.

##### **Content and description**

###### ***Theoretical part:***

**Goal:** introducing participants to the theoretical basis of games at a playground and in a meadow.

##### **Content:**

- To support physical activities can be suitable to use short outdoor games. Physical games serve to train certain physical activities. They have simple rules and are focused on developing physical abilities. We use authentic outdoor environment.
- During the realisation of games is good to remind to stick to the general rules of fair play.
- Games can be modified due to the age and number of players.

Practical part:

**Goal:** practical introduction of participants to games and their variations.

**Tools:** listed in the description of individual games

### **Icebreakers**

Their goal is icebreaking and letting players to know each other, e.g. in the new collective. The aim is to remember names, contact between players and so on.

#### **Lists of icebreakers:**

<https://adoc.tips/teamwork-seznamovaci-hry.html>

<https://www.hranostaj.cz/katalog-11.html>

<https://clanky.rvp.cz/clanek/c/Z/17339/1000-her-pro-skoly-krouzky-a-volny-cas-kontaktni-hry.html/>

### ***Ways with a ball***

**Tools:** 3 balls

The game is used to let children know each other as much as possible. We start the game with one ball, everyone says his/hers name and then a name of a person to which he/she plans to throw a ball. Simultaneously, everyone must remember a person who he thrown a ball and a person who thrown a ball to him/her. It can be modified by adding animals, numbers, colours, surnames.

### ***Blanket***

**Tool:** a blanket or a bigger piece of cloth

Children are divided into two teams. Two persons hold stretched blanket. One child from each team stands as close as possible to the blanket. On a command, the blanket is removed and children must say opponent's name as fast as possible. Children change.

### ***Vampires***

**Tools:** none

Players make a circle, in the middle is a vampire. He slowly walks towards one of players and tries to touch him. Others can save the victim by saying his/hers name. It can be modified when the victim must look at someone who is only one who can save the victim.

## **Warmups, tag games**

The goal of warmups and tag games is to mobilisation and warming up of the organism, but also strengthening of velocity or endurance skills of children.

### ***Reds and blacks***

**Tools:** none

Players are divided into two teams (reds and blacks). When the colour is spoken by an instructor, the group to which this colour belongs pursues the other group in the limited area. If a player from the pursued team is caught, he/she will join the pursuing team.

**Variants:**

1) the team who is first to answer a riddle starts to pursue players of the other team.      2) I – Y: an instructor says various words, if I/Y is present in them, the group which has I or Y starts to pursue.

### ***Na Třetího (Beauty and the beast)***

**Tools:** none

The game starts in circle with two players always standing behind one another. Two players start outside the circle. One is pursued and the other is pursuing. The pursued one can save himself/herself if he/she runs in front of pairs and the last one of the trio becomes the pursued.

**Variants:** Beauty and the beast. The beast pursues the beauty and in the moment when the beauty is saved by running in front of one of pairs, the last one from this pair becomes the beauty. Children can roleplay the beauty by screaming and the beast by roaring. This variation is demanding in terms of perception and orientation.

### ***Tag game in pairs / trios***

**Tools:** scarf for the pursuing pair

It is typical tag game in pairs. The only difference is in pair connection = players hold their knees, props their heads against shoulders, stand back to back and holds their hands under their legs and so on.

### ***Tag game with a poem***

**Tools:** none or anything to mark a pursuing player

It is a typical tag game. Who wants to save oneself takes a position arranged in advance and says a poem or sings one stanza or chorus of a song.

### ***Dressing tag game***

**Tools:** various parts of clothes (e.g. gloves, vest, hat, distinguisher...)

Typical tag game. The pursuer changes clothes with tagged player, who must put them on. When dressed, the tagged player can start to pursue others.

## **Spatial orientation**

### ***Homeless***

**Tools:** none

Players "renters" are in the circle. In the middle of the circle is one "homeless". The homeless will chose a player and walks towards him/hers. The homeless will give a hand to the chosen player and says "Good day". Then they change places. The player will, before he leaves his/hers place, says goodbye to his neighbours and becomes homeless. The new neighbour (former homeless) greets with his new neighbours (they will shake hands and says "Good day" to each other. The game is repeated, the number of homeless can be raised.

### ***Dobrý den, pojd'te ven***

**Tools:** none

Players are standing in the circle. One walks outside the circle, choses a player, knocks on his/hers shoulder and says "Dobrý den, pojd'te ven" and starts running. Both run in the opposite direction. Where they meet, they will shake their hands and runs again. The first one to reach starting position is saved. The other walks around the circle and choses another opponent.

### ***Airplane***

**Tools:** none, eventually musical background

Roles are divided in trios (or quaternions). One player is a pilot, two are wings (the fourth can be tail of the plane). When the music starts, the group moves synchronically due to the commands from the pilot. (uptight run = ascending, moving in with knees bent = descending and so on)

### ***The shark***

**Tools:** underlays or marks

Variant of the game with chairs. On the ground are placed underlays or marks and the players move in the space and performs swimming styles. On the command from the player who represents the lifeguard "Watch out! Shark!" all the players try to get on the underlays (=islands) and save themselves. Underlays are gradually removed.

## **Perception and strengthening of trust**

The purpose of these games is to gain trust in coplayers and building of the relationships in the collective.

### ***Oracle***

**Tools:** none

Players make pairs. One in the pair is the oracle and reads from the palm of the other player. The one who shows his/hers palm leads the oracle who must move in a way to keep his face as close to the palm of the other player as possible. There can be music in the background.

### ***Alley of trust***

**Tools:** none

Players make two rows so players in the row A can stand against players in the row B (facing each other). The distance between rows will be on the arm length but the players cannot reach to the other row. Everyone will stretch arms into the alley, but they do not connect them. One participant who stands approx. 10 metres away must run through the alley as fast as possible. Players in rows must move their arms away as close to the runner as possible. The runner should not slow in the alley and he/she should run through "Mexican wave". If the runner slows it points out that he/she is afraid and does not trust others. Everyone can try to run. The game evaluates due to the time of the run.

### ***Runs the one, who...***

**Tools:** none

Children are standing in the circle. The teacher gives tasks: Runs the one, who has red trousers. Runs the one, who feels well and so on. The one who does not fit requirements stands still.

## **Combat games**

The purpose of these games is development of strength and agility skills in combination with using of force.

### ***Turtles***

**Tools:** none

All players are turtles and one is a smuggler. Turtles are crawling on the ground and the smuggler tries to turn them on their back. When the smuggler successfully turns over one turtle, the turtle becomes a smuggler.

### ***Slapping the bum***

**Tools:** none

Pupils divide into pairs. Their hold their hands and try to slap one another's bum.

## **Games motivated by educative subjects**

If possible, we try to achieve interdisciplinarity in games. It is suitable to relate physical activities with topics of other educative subjects as is math, Czech language, Sciences and so

on. Such inter-subject relationship can be often seen in activities during outdoor education and field education.

### ***Czech language***

**Tools:** cones, pencil, paper with words to fill

Children runs from the start line to the picture and try to remember words. Then they will write these words down and fill the correct i/y

### ***Math***

Tools – a list with tasks

Children obtain a list with numeral information. They try to remember information. Lists are handed to the teacher who then gives tasks: e.g. jump so many times how much milk has Mrs. Downeyr milked on Monday.

### ***Arts, sculptures***

*The teacher gives topic to perform. Children try to perform the topic with use of their own body. They will basically create a living picture.*

### ***Musical education***

Children form pairs. They will start to massage each other with massage balls due to the character of playing music – slowly, fast, gently, stronger and so on. It is a psycho-motoric technique. The massage is pleasant and the experience and perception of one's body in relation with listening to music emerges.

### **Keywords**

Physical activities, cooperation, trust, coordination, speed, perception, tactics.

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## **4.4.3 ALL-DAY HIKING**

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### **Brief theoretical base**

During the activity called “All-day hiking” students will undertake approx. 16 km long hiking trip (Moravec – the ruin of Podmitrov castle and back). The interdisciplinarity of the activity is aimed on the development of culturally exploring activity and ecology education. Its content are instructions for preparation, organisation and realisation of the trip and camping in nature with lower-school age children. Except the physical part of the activity is its content also orientation in nature and basics of topography and basics of survival in terms of a civil defence. All with the emphasis on cooperation between students and introduction to cultural specifics of the local environment. The activity aims on the interaction between subjects and connection of the educative curriculum of an elementary school, mostly in fields of *Člověk a společnost*, *Člověk a jeho svět*, *Člověk a příroda*, *Člověk a zdraví*, *Člověk a svět práce* altogether with chosen cross-sectional topics of RVP ZV and support and development of health oriented physical activity in terms of Physical Education curriculum.

### **Equipment**

- A map, a quarter of a A3 paper, writing tools, smartphone (camera)
- A bag, food and drink, suitable clothes (raincoat) and shoes, first aid kit

- Kettles, an axe, matches, a knife, spoons, spices, an onion, potatoes

### ***Rough timetable***

- Start of pathfinders: 9:15
- Start of trackers: 9:30
- Meeting of both groups in village Strážky: 12:00
- Arrival to the ruin of Podmitrov: 13:30
- Departing from the ruin: 15:00
- Arrival to the camp: 17:00

Goals, after the course students will be able to:

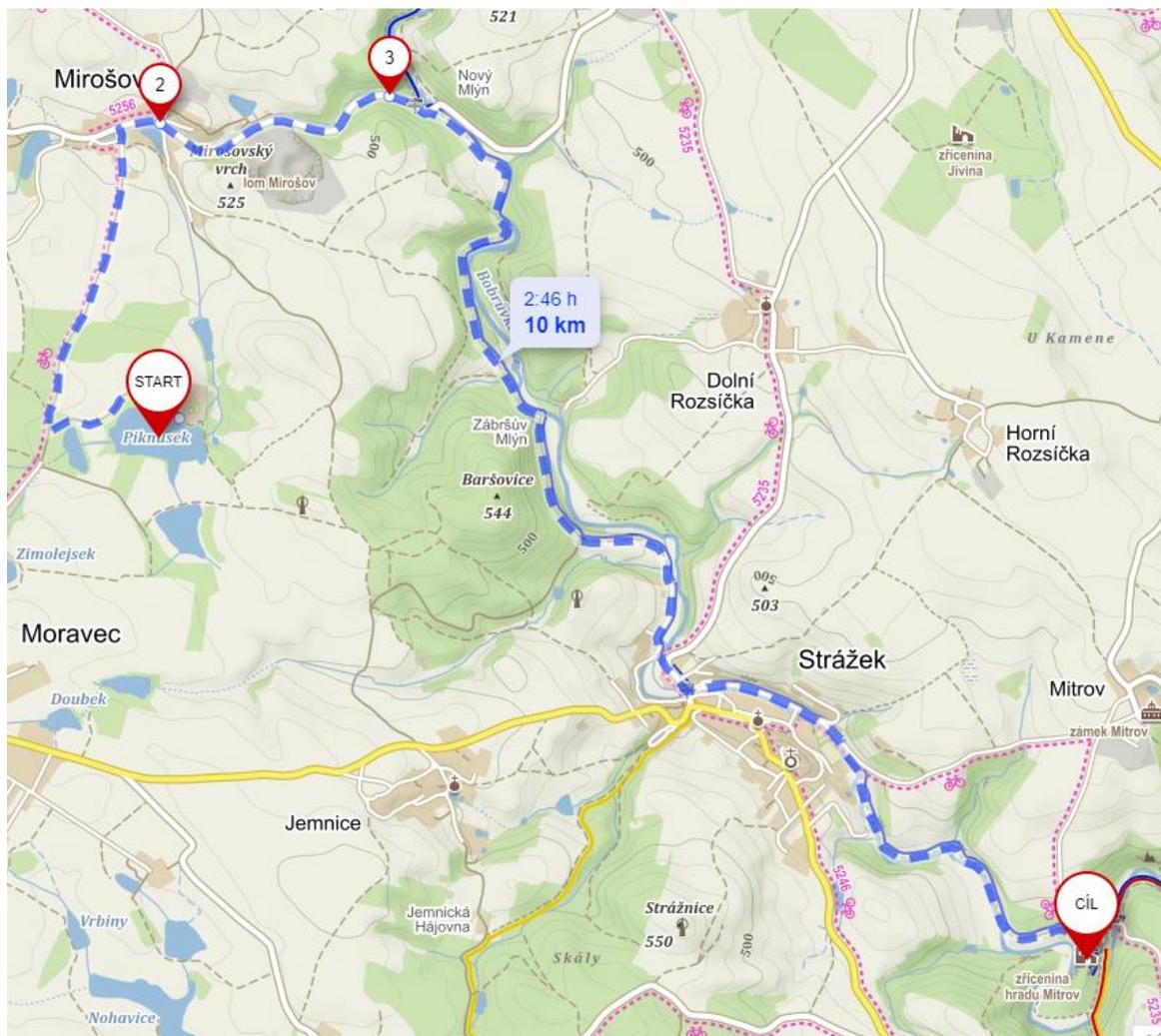
- Prepare, organize and realize a school hiking trip.
- Prepare, organize and realize camping in nature.
- Move safely on the marked path.
- Collect, sort, describe, interpret and evaluate information from the local environment.
- Explain and apply basic knowledge from the field of tourism and camping in nature with aim on health preventive physical activities.
- Set a fire with available tools – and axe, matches.
- Make a meal on the fire.
- Explain the goal of the activity and its importance.

### **Content and description of individual activities**

#### ***Introductory briefing and the course of the activity***

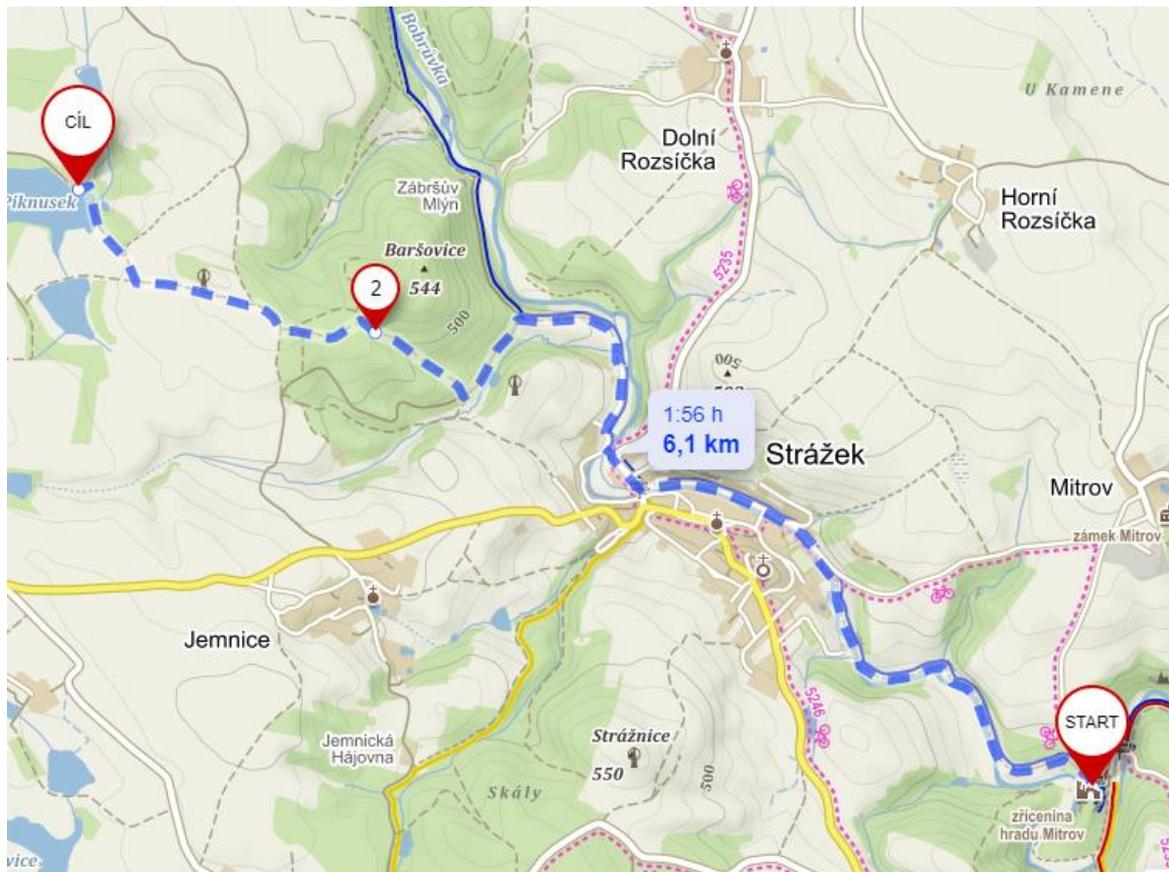
During the introductory briefing, the whole group is verbally introduced to the path. The map is not at disposal. The instructor will describe a day's plan and informs students that they will go through the bigger part of the day on their own. Afterwards, students will be divided into two groups – "pathfinders" and "trackers". The task of pathfinders is to mark the path during the hike for trackers, who are dependant on this marking. There could be used ribands or marks made of piled stones, arrows made of branches or other products of nature. They have a section of a touristic map with marked path at their disposal. Another task is to make several (10-12) tasks and their description deploy suitably around the path so the group of trackers can find and complete them. It is suitable to chose topics and tasks due to the relation with the environment and context of the locality through which the path leads. The group of trackers completes these tasks along the way and documents them (photograph, written record, audio record etc.).

Both groups will meet in the village Strážek. They continue onwards together from there until they reach their destination – the ruin of Podmitrov castle.



**Fig. 30: Description of the path from the camp to Castle Mitrov (2020)**

There the whole group approaches a task to set a fire and cook goulash made of resources obtained before, which is a lunch for the whole group (the group will obtain necessary resources during the morning briefing). They have an axe, matches and a kettle at hand. At the castle will the group also meet again an instructor who will lead the feedback discussion and evaluates activities. When the fire is quenched the group will set forth to the camp in Moravec by the shortest possible route.



**Fig. 31: Way Castle Mitrov - Moravec (2020)**

During the whole day the group creates the “portfolio” (picture 10). It is a sheet of A3 sized paper divided into four parts: history, biology, geography and 100+1. The group or chosen individuals are recording points of interest in the visited locality from the view of history, geography, biology and others which do not fit to these categories. The portfolio is important index which represents the group.



Fig. 32: Portfolio

#### 4.4.4 ORIENTATION IN NATURE

##### Brief theoretical base

In the frame of activity called "Orientation in nature" students will go through theoretical and practical part with stronger focus on orientation in nature and topography by using physical activities suitable for lower-school age and pre-school age children. Theoretical part is aimed on introduction of basic characteristics and possibilities of map sheet usage and plans of surrounding of the place we are staying at (a room, limited camp, closest surroundings of the camp).

The goal of the practical part is to introduce participants to suitable physical activities. These activities can be generally called "Orientational games". The interdisciplinary activity aimed to develop geographical cognitive activity. Its content are instructions for preparing, organising and realisation of orientation games with lower-school age children. Except physical and orientational part of these activities is also the social part as most of activities related to orientation in such a low age is connected to the group activities. Another important aim is to inter-subject relations and relation of the educative content of the curriculum of elementary school, mostly in field of *Člověk a společnost*, *Člověk a jeho svět*, *Člověk a příroda*, *Člověk a zdraví*. The is also development of health oriented physical activity in the frame of Physical education curriculum.

Cíle, po skončení výuky budou studenti schopni:

- Připravit, organizovat a realizovat základní orientační hry v místnosti.
- Připravit, organizovat a realizovat základní orientační hry v nejbližším okolí v rámci ohraničeného místa pobytu.
- Sbírat, třídit, popsat, interpretovat a hodnotit informace z mapy a reflektovat je se skutečností.
- Vysvětlit a v praxi aplikovat základní poznatky z oblasti orientace v přírodě se zaměřením na zdravotně preventivní pohybové aktivity.
- Provádět základní dovednosti s buzolou.
- Vysvětlit, k čemu daná aktivita směřuje a v čem je pro život lidí důležitá.

## Content and description of individual activities

### *Introductory briefing and the process of the activity*

During the introductory briefing is the whole group of students introduced to the process of this teaching block. An instructor will describe content of the activity and its goals in the frame of the theoretical part. The theoretical part begins in the room but even there should the instructor put strong emphasis on the practical examples. Students sit around one common table. During the theoretical part maps and plans of closest surroundings of various scales from 1:5 000 to 1:50 000 are distributed into groups (duos and trios of students). Every group will obtain writing tools. The theoretical part will begin by explaining of general terms (due to the age of the target group) – orientation, map, plan, topography. It is also focused on simple explanation of creating maps, plans and outlines. In the frame of description of work with a map is the goal deeper explanation of topographical marks and map legend symbols in the individual map sheets. For this purpose, we will use a group game called “**Topographical softball**” (see description below). For better understanding of map creation has every group a task to draw simplified “**outline of a room**” and draw e.g. a point where they stand in the outline in it. In the following part are compasses supplied to the groups and they will be again introduced to the way of pinpointing of the azimuth, which they can use afterwards in the game called “**Orientation with a peg**” and then they will leave the room completely during the game called “**Countervailing circles**”. After this activity, the camp is left and the whole group leaves together with suitable map to practice learned skills to the nearest surroundings. The group will obtain various tasks during the march. Some are common, others only for a part of the group, but all with the goal to actively work with the map. Everything is happening in a playful style without the emphasis on the perfect performance in the task. Many times, mistakes and inaccuracies are even welcomed so that they can help to show possibilities of the correct execution of the task. The fulfilment of tasks will bring the whole group back to camp together where the individual ability to orientate in nature before and after the teaching block will be evaluated by self-reflection and group discussion which is led and moderated by an instructor. We are trying to find out if the level of the competence of an individual and the whole group has changed.

## Activities

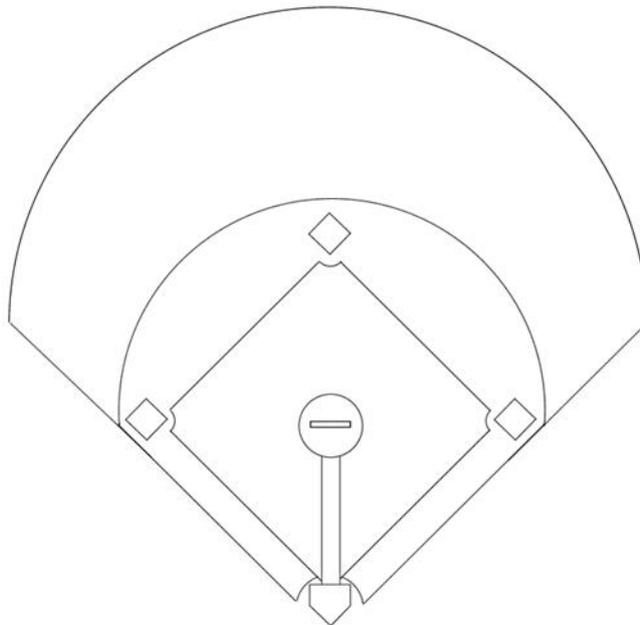
### *„Topographical softball“*

It is an activity which goal is to introduce a group to the content of the map sheet. A group is divided into two teams (batters, fieldsmen). The task of batters is to “bat” any information which is on the map sheet (e.g. a border stone, land improvement line and so on). The task of

fieldsmen is to find this information in the map sheet as fast as possible. On the draft of the softball playground (picture 11) is laid a pin of batters which is moved for a base after some amount of time (due to the age of participants). E.g. if the interval is 10 seconds, the pin will move to the first base after 10 seconds, to the second base after 20 seconds and so on.

After more than 40 seconds of searching for the given information will batters obtain a point for going through all four bases. In the opposite case, the batter (pin) stays on the last base he came to due to the time which fieldmen needed to find the place on the map sheet. In case fieldmen will find the information in less than 10 seconds, the batter is out.

Rules of changing can correspond with rules of softball. For faster progress is possible to modify rules, e.g. to set the number of "bats" of both teams due to the number of their



members.

**Fig. 33: Softball ground**

### ***„Outline of the room“***

Outline of the room is very important activity which develops understanding of the scale of the plan and map. Quality of the outline is directly proportional to the age of participants. The basis is the simple draft of circuit walls, correct placement of doors and mark of the place where the group is. The more able can try to draw individual tables and chairs in the room. There are many modifications of which are related to the quality of the draft. Afterwards, there can be created many activities which can help for better understanding of the perception of orientation in the nearest space.

### ***„Orientation with a pin“***

It is a simple activity which serves as an exercise for practicing work with a compass, or in case of pre-school children to practice of estimating the directions as in front of, behind and so on. After the pupils learn to specify the azimuth with compass, they will try in practice to set an azimuth of a place where they want to hide a pin. When the pin is hidden, they will count steps on their way back. Then they will deliver the information which consists of the azimuth and the number of steps (e.g. azimuth 125 degrees and 34 steps) from the meeting place and the chosen person tries to reach the hiding spot and bring the pin back. If the chosen person fails, they can go to find the pin together with the one who gave the task. Together they can find out if the

mistake was made during the hiding or the search. The activity can be repeated due to the temporal possibilities. With every try the work with a compass grows better.

### **„Countervailing circles“**

It is an activity in which the perception of orientation in the room is transgressed to the larger area, in this case the borders of the camp. Two groups set out to explore the camp with a plan. They walk on the perimeter in opposite directions (e.g. from the northern side) and they draw places where they left pins into the plan all along the way. The groups meet halfway (on the southern side of the camp) and they swap their plans. The goal is to draw the places with pins as precisely as possible so both groups will find all the pins and meet again on the northern side.

### **„Active work with a map and a compass“**

Activities which are related to leaving the camp and active work with map and real surroundings. Individual teams (duos, trios) change in the leadership of the whole group and try to lead the group to the exact place. Others are task with looking for points of importance, altitude and mainly to confront the real movement in the terrain with a map basis.

### **Gears**

- Various kinds of a suitable maps (a plan of the camp, touristic maps, maps for orientational running and so on) which represents the closest surroundings.
- A compass
- Paper, pen
- Pins
- A room with tables and chairs

### **Approximate timetable**

- Meeting in the room (summerhouse in the middle of the camp): 14:00
- Theoretical part: 14:00 – 14:45
- Practical part: 14:45 – 16:00 to 16:30

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## **4.4.5 PHYSICAL EDUCATION IN NATURE**

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### **Brief theoretical basis**

In the frame of the activity called “PE in nature” students will go through practical education with focus on physical activities connected to use and possibilities of the near surroundings of the camp. The basic goal is to create a list of games which can be used to move the group in different environment and conditions. Interdisciplinarity is included by using natural environment. By its exploration we include several fields (geography, botany, physics...). Supply of the individual activities is very varied. One of the scale factors can be the intensity and quantity of physical burden. In case of low intensity with higher quantity of burden we speak mostly about games and activities aiming for learning in nature. In case of higher intensity and lower quantity of burden we speak mostly about supporting of active physical activity in natural environment. Chosen activities are aiming on interdisciplinary relations and connection of the educative curriculum of an elementary school mainly in fields of *Člověk a společnost*, *Člověk a jeho svět*, *Člověk a příroda*.

Cíle, po skončení výuky budou studenti schopni:

- Připravit, organizovat a realizovat základní orientační hry v místnosti.
- Připravit, organizovat a realizovat základní orientační hry v nejbližším okolí v rámci ohraničeného místa pobytu.
- Pohybovat se bezpečně v terénu podle trasy vyznačené v mapě.
- Sbírat, třídit, popsat, interpretovat a hodnotit informace z mapy a reflektovat je se skutečností.
- Vysvětlit a v praxi aplikovat základní poznatky z oblasti orientace v přírodě se zaměřením na zdravotně preventivní pohybové aktivity.
- Provádět základní dovednosti s buzolou.
- Vysvětlit, k čemu daná aktivita směřuje a v čem je pro život lidí důležitá.

## Content and description of the individual activities

### *Introductory briefing and the process of the activity*

During the introductory briefing is the whole group of students introduced to the course of the whole teaching block. Even sooner, during the breakfast the group will obtain an information about the temporal course of the activity, about the time of departure from the camp, meeting place and about things which will be good to have during the activity. The meeting at the camp's gate starts by giving an information about use of the literature concerned about PE in nature. Then the group sets of and during the first part of the circle around the camp are played examples of marching games. Marching games can be divided into two basic groups. The first part of marching games is focused on making the march faster and the second part is focused on entertaining the group with the aim of lowering perception of the length of the march and is also more focused on using the natural environment for learning. Another part of this block is focused on usage of the material which can be found in nature, in our case it is forest biotope. The basic task of the group is to build a "fairy home". Motivation for building differs due to the group. It can be the activity of building itself or searching for suitable materials, creativity – with small children or we can focus on the building and its verbal description afterwards, even group discussion why was build this or that element of the building, which part of the building is important and why. We can try to make a fictional auction and offer of the broker – with older children. It is an activity which aims on socialisation and we can watch many specific social and personal phenomena. Next part is focused on the group communication during the march when is set an important point in the landscape and the task of the group is to find a way to it. The captain is chosen who should lead the group. In case of disagreement the group can agree on a new captain. Because of change of the way of march the group "walks on the rope" (everyone holds it by one hand) and the captain walks first (picture 12). In the last part of PE in nature the group stays on the place where they should get. In the final part before returning by the round trip to the camp is given time to introduce the group to the Morse alphabet by using string letters as one of possible simple manners of communication. Lower intensity of physical burden is substituted by higher amount of physical activity when the group gets from the string letters to some basic knots which relate to real examples of usage. Even though there is a low amount of physical burden, from the view of soft motoric skills and imagination it is an ideal exercise for fingers on both hands at once. After this part, the group marches back to the camp where is repeated the goal of PE in nature and individual content of the completed activities before the group is dismissed. The reflection and feedback to the activities is always important.

## Gears

- A rope
- Knotting ropes

## Approximate timetable

- Meeting at the camp's gate: 9:00
- Return 12:00



**Fig. 34: Marching with a rope**

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## 4.4.6 TRAFFIC EDUCATION

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### Brief theoretical basis

During the activity called Cyclo-tourism students will go through theoretical and practical part. The theoretical part is focused on giving general information about cyclo-tourism and traffic education focused on children bike riding. In the practical part students will go through education in techniques of bike riding with focus on basic skills – departure, downhill, braking, fluency of ride, getting across the obstacle.

Goals, students will be able:

- To prepare, organise and realise traffic education for children.
- Theoretically master parts of the bike.
- To master the safety of movement with children in traffic..
- To explain and apply basic knowledge from the field of riding technique, planning of the trip, riding organisation
- To perform basic riding skills.
- To explain the course of the activity and its contribution.

## Theoretical part

During the theoretical part we go through safety first. There are Ten Commandments of the safe behaviour of ty cyclist on the road which are imperative to follow. ("Cyklistické bezpečnostní desatero", n.d.)

Ten commandments of cyclist:

- 1. Ride only the bike which is functional and well adjusted. Do not forget to use protection gear. The helmet is mandatory for everyone under 18 years of age, but even older should not underestimate wearing of the helmet. Also, some glasses which protects against Sun, insects, dust and small debris are helpful.**
2. Stay true to the slogan "to see and to be seen"! Dodržujte heslo "vidět a být viděn"! Mandatory gear: every bike must be equipped with the white front reflector and the rear red reflector. Reflectors on the pedals and in the wheel should be orange. When the visibility is low the bike must have its lights on same as the car – in the front white lights, in the rear red lights. To lower the risk of collision even more it is good to wear clothes of reflective and fluorescent colour.
- 3. The cyclist is a driver and a member of the traffic. Do not forget that it is forbidden to drink alcohol and use narcotics before or during the ride.**
4. Ride on the cycling paths and look for the bike lanes and corridors There can ride only children under 10 years of age ride on the pavement.
5. ide carefully, thoughtfully, watch your surroundings and anticipate possible dangers. You are not alone on the road.
6. Use all senses. Do not listen to loud music, do not use your phone for calling or writing messages during the ride, do not forget that you are drivers. When changing direction of the ride indicate it with your hand. Watch the traffic.
7. Ride on the right, if you ride in pair ride in a line with enough space between each other. Bigger groups will be safer in the traffic if they divide themselves into smaller groups.
8. If you ride in traffic do not forget about car drivers and their treacherous dead angle. Watch cars around you and their signalling, after all, you see more.
9. When parking the bike lock it with a solid lock to the inbuilt object. However, it is better to take a photo of your bike with its serial number, you will need it in case of theft. It is ideal to have your bike registered in the register of bikes.
- 10. Report all accidents with injury on the number 158.**

It is also good to introduce to students to various traffic signage. Cyclist must obey all the traffic signs. When a cyclist is a participant in traffic, he or she must stick to the instructions of persons authorized to manoeuvre the traffic on roads and to respect all the signs and light signalling. Some of signs and signals apply to cyclists in general, some are to cycling related – pictogram corridor for cyclists, cycling lanes, crossings for cyclists, ride in the opposite direction, space assigned for cyclists before the crossroad.

Another important information which are adopted by students:

- Mandatory gears of the bike
- Legislation for organisation of the bike trip for children
- Suitable gears

- Suitable food and water intake
- Bike maintenance and minor repairs
- Solving the typical traffic situation
- Types of bikes and counsels for choosing one
- Trip organisation
- Bike games

Important links:

[https://theses.cz/id/6ijes4/Bed\\_ich\\_pulk - BP 2016.pdf](https://theses.cz/id/6ijes4/Bed_ich_pulk_-_BP_2016.pdf)

<https://www.ibesip.cz/tematicke-stranky/aktivni-pohyb-v-silnicnim-provozu/nakole/povinna-vybava-jizdniho-kola>

### **Practical part**

In the practical part, students are adapting skills of riding. This training is organised at an open place which is large enough, preferably made of asphalt.

- Basic seat on bike (hands, legs, position of the seat and foot, relaxed shoulders)
- Climbing the hill (core above the front wheel, bent elbows, easy gear)
- Downhill (core beyond the seat, stand on pedals, brake with both brakes)
- Effective braking (core backwards, go from the seat, both brakes together)
- Slow ride (eyes front, hands on brakes, constant pressure to pedals, calmness)
- Ride into the sharp bend (inclining of the bike, eyes lead the bend)
- Overcoming an obstacle (lifting of the front wheel)
- Riding with one-hand grip

In the end is good to make an obstacle course and try with students a dexterity ride (e.g. around the clubs, riding across bridge, carrying over some objects etc

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#### **4.4.7 CYCLO-TOURISM**

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##### **Brief theoretical basis**

During the activity Cyclo-tourism students will attend approx. 20 kilometres long bike trip. The goal of the activity is to develop riding skills in group, adopt rules of safe riding on various types of roads and finally, to improve the condition of the students and their orientational skills. The content of this activity are instructions for preparing, organising and realisation of a bike trip with lower-school age children. Interdisciplinary relations are visible during the course of the activity and it is clearly connected to educational content of the elementary school curriculum, mainly in the fields of *Člověk a společnost*, *Člověk a jeho svět*, *Člověk a příroda*, *Člověk a zdraví*, *Člověk a svět práce*. There is also apparent development of health oriented physical activity in terms of PE curriculum.

Cíle, po skončení výuky budou studenti schopni:

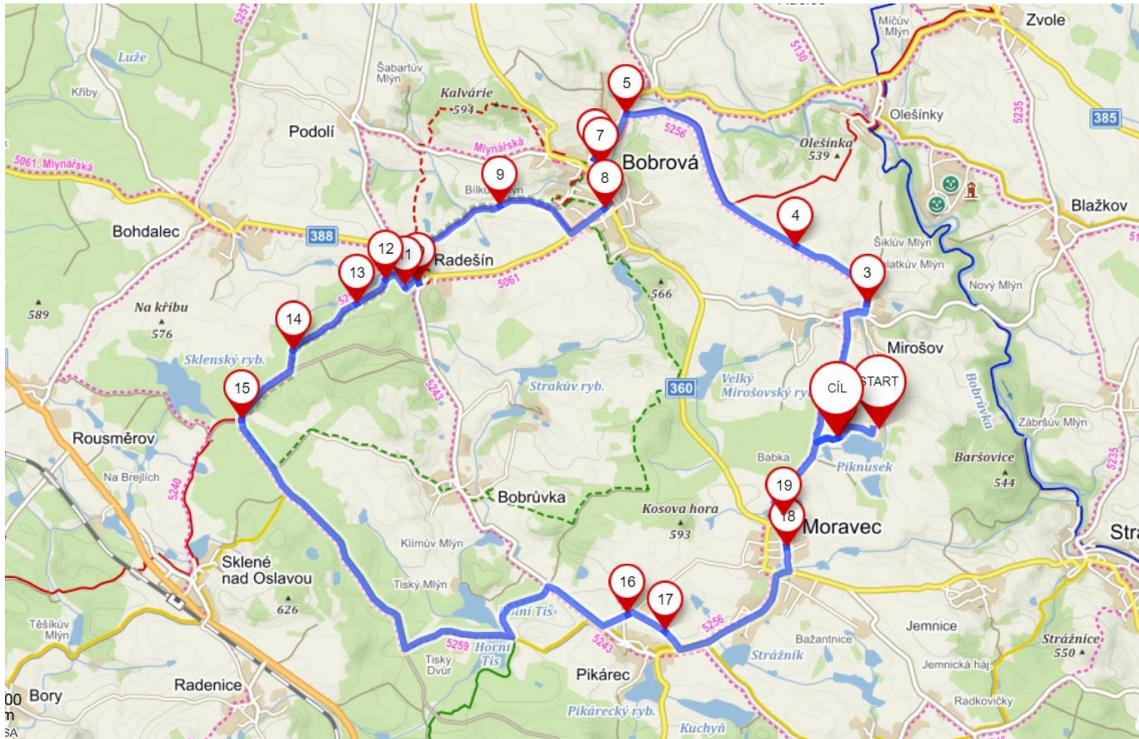
- Připravit, organizovat a realizovat cyklovýlet s dětmi ml. školního věku.
- Pohybovat se bezpečně v terénu podle trasy vyznačené v mapě.
- Sbírat, třídit, popsat, interpretovat a hodnotit informace z mapy a reflektovat je se skutečností.
- Vysvětlit a v praxi aplikovat základní poznatky z oblasti techniky jízdy na kole, plánování trasy, organizace jízdy.
- Umět provádět základní dovednosti v jízdě na kole.
- Vysvětlit, k čemu daná aktivita směřuje a v čem je přínosná

#### **Briefing and pre-ride preparations:**

- Behaviour in the cluster Chování se v balíku (enough space between cyclists – for safe braking, riding in only in line, not beside each other, waiting at crossroads, notification of danger – passing cars, potholes etc., turning off the direct course. If the group is bigger, ca. eight students, we leave enough space between groups so cars can safely overhual the group.
- Leader – teachers should ride at the front and rear of the group so they can oversee the whole group and set a pace and course.
- Before departing we conduct test ride when students try their bikes in the camp (smooth operation of gears, right height of the seat, correct operation of brakes, inflation of tyres). Can be found here: [https://theses.cz/id/6ijes4/Bed\\_ich\\_pulk - BP 2016.pdf](https://theses.cz/id/6ijes4/Bed_ich_pulk_BP_2016.pdf)
- We acknowledge students with the planned trail – it is suitable to consult the trail with students over a map, or to share it into their smartphones.
- Checking of gears (first aid kit, spare tyres, bicycle pump, patches, drinks to bags, energy bars, raincoat, money, mobile phone).

#### **Trail:**

For variety is chosen undemanding trail in length of 20 kilometres which consists of various types of roads and surfaces – 3<sup>rd</sup> class roads with low traffic, field roads (asphalt, gravel), forest roads (dirt, grass, gravel).



**Fig. 35: Example of the trail ("Trasa cyklo: Moravec", n.d.)**

### During the ride

During the ride we pay attention to the adequate pace, we make stops when needed and during the stops is suitable to allow students further planning of the trail, looking for alternative routes, giving tasks and so on. During the ride and stops is good to mind the technique of the ride, namely:

- Correct and timely gear shifting
- Effective braking
- Technique of getting over the bumps
- Watching the frequency of pedalling
- Correct seat on the bike

We recommend relating the ride with watching the landscape, searching for interesting tourist, geographical and natural places, recording of the trail into the locator (e.g. smartphone) watching the traffic and so on. It is good to draw student's attention to specifics of the ride in group and in various terrain, mostly with children and to heed rules of safe riding.

### After the ride

After returning to the camp we evaluate the ride, state the number of travelled kilometres, or overcame altitude on the trail. Students can do individual reflection, recording of the trail, deduce conclusions and recommendations.

## 4.5 REFERENCES

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- Cyklistické bezpečnostní desatero*. Leaderfox.cz. Retrieved June 30, 2020, from <https://www.leaderfox.cz/cs/content/show-alias/cyklisticke-bezpecnostni-desatero>
- ČESKÁ FEDERACE STAND UP PADDLE, 2019. Paddleboarding: jak pádlovat a nejčastější chyby. *Youtube.com* [online]. [cit. 2020-10-31]. Dostupné z: <https://www.youtube.com/watch?v=I3yX1MgzgS4>
- Gumotex Colorado. In *Sunshop.cz*. [https://www.sunshop.cz/gumotex-colorado-360-raft-zelena-seda-/?gclid=Cj0KCQjwoub3BRc6ARIsABGhnyZt-FC51nbiGIQaT4GqXyFRr7yI59F3IgeFNyVbPvhAs-GZMQMtrhcaAtoeEALw\\_wcB](https://www.sunshop.cz/gumotex-colorado-360-raft-zelena-seda-/?gclid=Cj0KCQjwoub3BRc6ARIsABGhnyZt-FC51nbiGIQaT4GqXyFRr7yI59F3IgeFNyVbPvhAs-GZMQMtrhcaAtoeEALw_wcB)
- Historie vodáckého sportu*. (2020). Retrieved June 28, 2020, from <https://www.raft.cz/historie.aspx>
- Jahodová, J. (1995). *Vodácká abeceda* (Vyd. 1, ilustroval Jiří SLÍVA). Dita.
- KAJAK PRIJON COCAINE PRO. (2020). In *Vodacky-obchod.cz*. <https://www.vodacky-obchod.cz/kajaky-na-divokou-vodu/kajak-prijon-cocaine-pro/>
- Kánoe. In *Vodácké centrum*. [https://www.vodacke-centrum.cz/kanoe-samba-zelezny-5-2/p1311?gclid=CjwKCAjwxev3BRBBEiwAiB\\_PWM3nOXVKzy2XZVFStjoW76-27anA3mUPrxzEECc9q\\_2jUC7icDFKPRoChjUQAvD\\_BwE](https://www.vodacke-centrum.cz/kanoe-samba-zelezny-5-2/p1311?gclid=CjwKCAjwxev3BRBBEiwAiB_PWM3nOXVKzy2XZVFStjoW76-27anA3mUPrxzEECc9q_2jUC7icDFKPRoChjUQAvD_BwE)
- Pádlo*. Vikingove-Tabor.estranky.cz. Retrieved June 30, 2020, from <https://vikingove-tabor.estranky.cz/clanky/vybaveni/padlo.html>
- Printable Baseball Diamond Diagram. (2020). In *Printyourbrackets.com*. <https://www.printyourbrackets.com/printable-baseball-diamond-diagram.html>
- Ptáček, P. (2015). *Bezpečně na tekoucí vodě* (Vydání druhé). Petr Ptáček.
- Špaček, O., Vít, Z., & Mrzena, V. (1990). *Jedeme na vodu: kilometráž Vltavy, Lužnice a Otavy* (1. vyd). Mladá fronta.
- Trasa cyklo: Moravec*. Mapy.cz. Retrieved June 30, 2020, from <https://mapy.cz/turisticka?planovani-trasy&x=16.1106107&y=49.4601480&z=13&dim=5af2bd634541a11102ffc3bd>
- Trasa pěšky: Moravec*. (2020). In *Mapy.cz*. <https://mapy.cz/turisticka?planovani-trasy&x=16.1825375&y=49.4497619&z=14&rc=9kyGxxUR2K6Xjl-5frgV6mypyxUKN3&rs=base&rs=coor&rs=coor&rs=coor&ri=2034294&ri=&ri=&ri=&mrp=%7B%22c%22%3A132%7D&xc=%5B%5D&rut=1>
- Trasa pěšky: Podmitrov*. (2020). In *Mapy.cz*. <https://mapy.cz/turisticka?planovani-trasy&x=16.1825375&y=49.4497619&z=14&rc=9IfmxxUK8S17oIAJd.OhVA&rs=coor&rs=coor&rs=coor&ri=&ri=&ri=&mrp=%7B%22c%22%3A132%7D&xc=%5B%5D&rut=1>
- Typy paddleboardů. In <https://www.pujcovnapodpalavou.cz/>. <https://www.pujcovnapodpalavou.cz/nase-paddleboardy/>
- ZNOJMO.TV, 2019. Vodácká INSTRUKTÁŽ - Co vědět, než vyrazíte na vodu. *Youtube.com* [online]. [cit. 2020-10-31]. Dostupné z: <https://www.youtube.com/watch?v=PwJOAKRtdk8>

## 5. HEALTHY LIFESTYLE AND A SOJOURN IN A WINTER NATURE

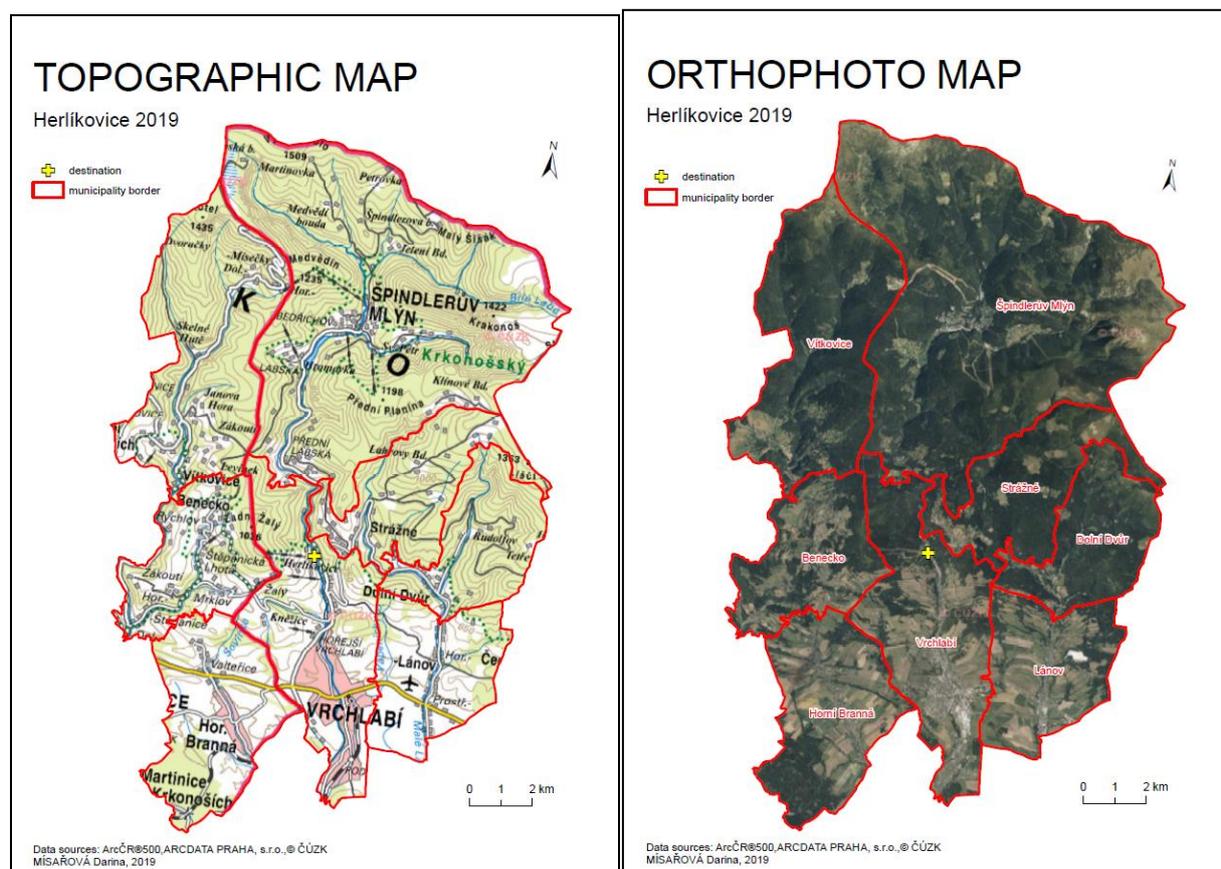
**The course** Healthy lifestyle and a sojourn in a winter nature is designed as a multiday training course focused on the theoretical and practical introduction with outdoor activities for children of pre-school and lower school age mainly at a winter outdoor schools, physics courses and field trips. The goal of this course is to open up general knowledge from the field of winter outdoor education with the focus on health preventive exercises with children of a pre-school and lower-school age. After the completing of the course, a student will be able to understand and apply in the practice techniques connected with healthy, efficient and ecologically approached sojourn in a winter nature with focus on the health preventive activities applicable in the field of the outdoor education with children of pre-school and lower-school age within the framework of the equivalent competencies. The emphasis is placed on specific motional, recreational and relaxing activities in the winter nature.

The course is offered even to students other than from major study programmes Učitelství pro 1. stupeň základní školy (program Pdf, M-ZS5) and the course takes seven days.

The active participation during the whole course is a requirement for completing the course.

### 5.1 LOCALISATION OF OUTDOOR EDUCATION – SKI RESORT HERLÍKOVICE

Coordinates: 50°39'35.8"N 15°35'37.6"E



The first written mention of Herlíkovice dates back to 1627. However, Herlíkovice ceased to exist as an independent municipality in 1951 and was divided between Vrchlabí and Strážné.

Today, Herlíkovice is administratively part of the town of Vrchlabí, which lies at the junction of two regions - Hradec Králové and Liberec.

The first inhabitants of the area were probably miners who mined iron ore in the vicinity of Herlíkovice in the 15th century, as well as lumberjacks who cut down forests for timber for local mines, smelters, and hammer mills in Vrchlabí. Later, cattle breeders joined too.

The greatest flourishing of mining took place here in the 16th century. Small-scale agricultural production developed mainly in the 17th and 18th centuries. When mining activity slowed down after 1792, domestic textile production joined agriculture and lumbering as the main sources of livelihood for the locals.

At the end of the 19th century, tourism began to develop as well. The advantageous location of Vrchlabí including Herlíkovice at the foothills of the Krkonoše Mountains, its natural and landscape values as well as cultural and social potential predetermine it as a starting point for tourism.

The east-oriented slopes of Žalský Ridge, on which the Herlíkovice (Front Žalý, cable car exit station at approx. 1000 m above sea level) and Bubákov (upper station at approx. 770 m above sea level) ski resorts are operated, used by Masaryk University for winter training courses, belong geomorphologically to the Krkonoše Mountains. Remains of etch plain (exposed and levelled surface) can be found at the top parts of the Žalský Ridge. The round tops are separated by shallow depressions (Demek et al., 2014). These localities still belong to the above-average precipitation areas of the Czech Republic, which, together with the higher altitude of the area, have so far provided sufficient snow cover necessary for the needs of winter training courses. Taking into account climate change, it is important to realize that this situation may change. The area is also suitable for cross-country skiing. On the eastern slopes of the Žalský Ridge, there is a machine-modified cross-country ski trail, and under the western slopes, there is a racetrack – the Benecko cross-country ski area.

## 5.2 COURSE ORGANISATION

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The field course is made for several groups of students. The size and allocation of individual groups can be different due to the current individual focus and due to the current weather and snow conditions. During teaching blocks (mostly in the afternoon), which are based on teaching of gliding and turning on the snow, are groups divided due to the level of individual abilities of participants so the homogeneity of groups is preserved. If the block is focused on a different type of activities new teams will be formed.

Every group realize individual programme in two three hours long teaching blocks – the morning block, the afternoon block and the common evening block of another activities. In the frame of six teaching days are five days focused on teaching of gliding and turning based on introduction into the methodology of education and improving of the individual motional abilities, mostly in the morning block. Other activities are put into the afternoon block.

### 5.3 FRAME AND TIMETABLE OF THE COURSE

Day	Group	9,00–12,00	14,00–17,00	19,00–21,00
<b>Sat</b>	Everyone	Journey Brno – Herlíkovice	Opening of the course and the course framework, familiarization with surroundings, division into groups, checking the equipment and maintenance.	Lecture „Safe movement in the winter landscape”
<b>Sun</b>	Original groups	Diagnosis of basic skiing skills and orientation in the premises in relation to the skill level of the group.	Orientation in the premises, basic skiing skills and orientational team games in the winter landscape.	Lecture „Current trends in teaching of downhill skiing and turning on snow” and methodology video.
<b>Mo</b>	Original groups	Introduction into the methodology of skiing, group teaching and individual skills improvement.	Individual approach in team teaching, practical examples of movement possibilities in the winter landscape. (winter shoes, snowshoes, sledges, etc.)	Lecture „Dangers in mountains and first aid basics in the winter landscape”.
<b>Tue</b>	Original groups	Group teaching and improving of individual skiing skills.	Individual programme according to the agreement of individual groups, games on snow.	Lecture „Possibilities of movement activities in the winter landscape”.
<b>Wed</b>	Groups according to chosen activities from the supplied list.	All-day trip in the winter landscape, snowtubing, sledge track, etc.	All-day trip in the winter landscape, snowtubing, sledge track, etc.	Social evening in the outdoor environment with complementary activities.
<b>Thu</b>	Original groups	Group teaching and improving of individual skiing skills.	Visitation of the lookout complemented by lecture about history, geomorphology, geography and ethnography of the region.	Lecture „Historical development of winter motional activities in relation with supporting of a healthy lifestyle”.
<b>Fri</b>	Original groups	Group teaching and individual verbal evaluation.	Carnival on the snow – collective goodbyes with the resort in an entertaining way	Feedback of the course given by individual groups.

<b>Sat</b>	Everyone	Ending of the course, organisational issues.	Departure to Brno.	
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#### 5.4 STUDY MATERIALS

Based on the valid documents about education (RVPZV, 2007) we can identify expected outcomes which projects into the study materials in relation with the repletion of this course:

Before the description and realisation of the individual study materials is advisable to identify expected outcomes in concord with the valid curricular documents and to introduce basic aspects:

##### **Expected outcomes – RVP ZV**

TV-3-1-01 connects regular everyday physical activity with health and using of an offered opportunity

TV-3-1-02 manages simple physical activities of an individual or activities performed in a group in concord with an individual conditions; strives for their improvement

TV-3-1-03 cooperates during simple team physical activities and competitions

TV-3-1-05 reacts on the basic instructions and orders to the acquiring activity and its organisation

TV-3-1-01p manages the preparation for the physical activity in accordance with instructions

TV-3-1-04p sticks to basic principles of safety during physical activities and has acquired basic hygienic habits during physical activities

TV-3-1-05p reacts on basic instructions and orders related to the acquiring activity

- displays positive attitude to the motorial learning and physical activities

- manages basic means of locomotion and special orientation due to the individual conditions

TV-5-1-01 takes part on the realisation of regular physical regime; uses fitness oriented activities; expresses appropriate independence and will to improve one's capability

TV-5-1-03 manages to perform acquired physical skills in accord with personal conditions

TV-5-1-04 applies rules of hygiene and safe behaviour in common sport environment; adequately reacts in case of classmate's injury

TV-5-1-05 simply evaluates the quality of a physical activity of a classmate and reacts to the instructions of self-execution of the physical ability

TV-5-1-06 acts in concord with fair play; abides the rules of games and competitions, acts in concord with fair play: recognises and marks obvious offenses against the rules and adequately reacts; respects another gender during physical activities

TV-5-1-10 orients in sources of information about physical activities and sport events in the school in place of birth; individually acquires needed information

TV-5-1-03p improves basic physical skills because of one's physical possibilities and abilities

TV-5-1-04p applies hygienic and safety principles to perform health harmless and safe physical activity

TV-5-1-05p reacts to instructions to perform own physical activity

TV-5-1-06p sticks to the rules of games and acts accordingly to fair play

- improves own physical condition, motional display and correct posture

- manages basic preparation of organism before the physical activity due to the instructions

**Health aspect:**

- The pupil is untied by the stay in nature from everyday problems, stereotypes of school environment, worries and family problems
- The pupil is improving his physical capability through stay on the fresh air during the considerable part of a day
- The pupil learns to implement physical activity into his day regime

**Educative aspect:**

- The pupil learns new abilities (e.g. during the winter outdoor school the pupil will learn techniques of the downhill skiing)
- The pupil is introduced to the locality of the stay; as to its natural variety as to the cultural character

**Formative aspect:**

- The pupil will strengthen its hygienic habits and the correct day regime during the whole stay
- The pupil is developing his aesthetical as well as ethical sentience through the outdoor stay
- The pupil strengthens not only his relationship with the class collective but also with his teacher and a prospective new pupil. The pupil experiences extraordinary experiences during the whole stay
- The pupil learns toleration and teamwork
- The pupil learns independence

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#### 5.4.1 BASICS OF CURRENTLY USED METHODOLOGY OF GLIDING AND TURNING ON SNOW

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**Brief theoretical base**

Amongst the most popular winter activities in the Czech Republic belongs *downhill skiing, snowboarding and cross-country skiing, but also many other physical activities which are complementing main teaching blocks.*

The content of a given teaching block (which is repeated multiple times during the course due to its importance and need of bigger temporal funding) is introduction of basic possibilities of

gliding and turning on skies and snowboard as one of the main boosters of healthy lifestyle during an outdoor stay in nature in winter.

The goal of this activity is to develop a positive attitude to supplied winter physical activities through introduction and fixation of basic knowledge and skills based on gliding and turning on skies and snowboard and improving of a level of individual physical skills.

Part of gaining of the theoretical knowledge is safety of movement on piste and off-piste, familiarization with history of gliding and turning on skies and snowboard, introduction of basic types of skies and snowboards and its maintenance, specification of first aid in winter nature. In the frame of practical part of the course participants try basic gliding and turning techniques and they are becoming familiar with methodology through practice.

The methodology of skiing itself is very discussed part of the course since there are multiple approaches to teaching gliding and turning on the snow in the Czech Republic. Essentially, we can say that goals in skiing skills teaching are similar but there are some differences in the content of teaching of individual skills.

It is possible to gain a license which entitles to teach gliding and turning from a subject which has a valid accreditation given by MŠMT or APUL (apul.cz, 2020). The general difference in the frame of a content of a basic course methodology of these organisations is so called “school” and “commercial” approach to teaching. Simply said, in the frame of a methodology focused mainly on a “school” approach (MŠMT accreditation) is focus given on teaching during school training courses, whereas a “commercial” approach is aimed more individually on a client in whose case is not certain how long will he or she be interested in the teaching. As is written above, the goal is common and it is based on the current level of physical abilities. As an ideal goal in the frame of a level of physical activity can be considered a basic carved turn. It is most probable that not everyone will achieve this level. For that reason, there is a categorisation of simpler turns which can help one to move down the slope. In the frame of our courses we are mostly using methodology of Ski Association of the Czech Republic, who are focused also on creating methodology of teaching of gliding and turning on snow. We are watching also APUL trends, whose members are active in publishing of articles about methodology on the web portal for downhill skiing SNOW (SNOW).

Goals, after the course students will be able to:
– Safely commence basic physical skills connected to turning and gliding on snow.
– Know the right methodology of gliding and turning on snow.
– Explain the aim of a given activity and its purpose.

## **Content and description of individual gliding and turning activities**

### ***Introductory briefing and the process of an activity***

In the frame of the course it is the activity with biggest temporal donation. For five morning and partially also four afternoon blocks students have an opportunity to work on their individual practical skills which are supported by theoretical knowledge in the frame of evening lecture blocks. Instructors will acquaint students with methodology of gliding and turning on snow, but they will also dedicate themselves to improving individual skills in their group. Individual methodology steps are then complemented by suitable activities which are of the level suitable for pre-school and lower-school age and are in correlation with the methodology of teaching of gliding and turning.

All instructors at the course have appropriate license which gives them the authority to teach gliding and turning on the snow. The course is based on the methodology of the Ski Association of the Czech Republic (Basic skiing) which is complemented in its individual phases in relation to children of pre-school and lower-school age with playful activities.

### **Methodology**

The current basic methodology row is composed from introductory *Sjezdová příprava*, then follows part *Základní oblouky, Smýkané – paralelní oblouky, Řezané oblouky, Modifikované řezané – carvingové oblouky, Modifikované smýkané – paralelní oblouky, Závodní a ostatní formy lyžování* (CZECH SKI, 2020).

Students will become familiar with methodology row maximally to the level of *Řezané – carvingové oblouky*. Higher level of physical abilities and performance-oriented approach are not the goal of this course.

### **Downhill training**

Downhill training is an elementary phase which are beginners concerned with, but some of its elements can be placed into the timetable as warm-ups, exercises and motivational games even for more experienced skiers. This phase is divided into *General skiing training* a *Specialised training for gliding and turning*. In the frame of General skiing training are ranked basic physical abilities (handling gears, walking, turns, climbing and falling). Recently, we ranked here also the ability of gliding snow plough and riding the ski-tow (it has its foundation in the “school” teaching).

In the Specialised training for gliding and turning are physical abilities which helps to fix motional patterns (e.g. straight ride, can't ride, starting turns to the slope without the need of another bend in the parallel position and also wavy line which helps mainly the correct steering of skis in the parallel position).

### **Basic turns (stemmed a parallel)**

It is necessary to manage previous phase well to continue in quality. In the frame of “school” teaching is basic principle of the previous phase to teach a pupil to ride a ski-tow in shortest possible time (to save one's strength). In the “commercial” methodology of teaching is the instructor more concerned about practice before the ski-tow ride itself even if it means that the client can be tired sooner. The aim of *Basic bends phase* is to offer enough exercises and games which will help to adequately show two types of bends (stemmed and parallel). During this phase it is important for the instructor to correctly diagnose the level of motional skills of his group and to invest enough time to practice adequate style of gliding and turning whether using stemmed or parallel bends in the basic execution. It is important to reflect on the basic phases of motorial learning so the progress to the more complicated variant is not too fast or slow.

### **Cut and slide turns**

In this phase are taught exclusively parallel bends. They differ by the amount of riding on the base part of the ski or on the edges. Bends done during turning on edges are called carved. Bends done during turning on the base part of the ski are called hurried. Another important part of this phase is the technique of different variants in relation to the length of bends (short, middle and long).

In the frame of the methodology it is not the last phase in teaching gliding and turning but in this point we have our limit of the physical abilities level in gliding and turning on the skis. This limit is equal to the practical abilities which we demand to show on the adequate level in the

following course Basic school skiing which is organised in the form of lifelong education and if participants fulfil requirements of the course they will obtain a license which entitles its holder to teach skiing on all types of schools in the Czech Republic.

### **Activities**

Due to the extent of the methodology row (it can be published solely) we are introducing only chosen samples of activities (games) which are individual parts of the gliding and turning teaching complemented. Activities are introduced in the basic form for teaching on the skis and it is up to every instructor to modify them to be suitable for current conditions and level of physical abilities of the assigned group.

Chosen activities are sorted methodically and only as a concept what can be a part of individual phases of teaching gliding and turning on the skis.

#### ***One-legged chase***

*Terrain: flat*

*Purpose: lifting, manipulation with gear*

In the limited area players move just on the one ski (snowboard). A player can save himself before being tagged if he or she lay on the ground. Afterwards, a player will immediately stand up and for 10 seconds he or she cannot be tagged. If the skier is caught, he or she will leave the area, removes a ski and sticks it into snow. A player can re-join the game after buckling the other ski. Players take turns in the role of a “tagger”, winner is the player who can tag most skiers in given time limit. In case of snowboarders the activity is modified due to their resources. (e.g. they do not remove snowboard from their legs as it would take long to put it back).

#### ***Biathlon***

*Terrain: flat*

*Purpose: getting used to skiing (snowboarding) gear*

Skiers go through a track where they fulfil various tasks.

- throwing snowball at a target
- throwing ski pole at a target
- throwing Ringo circlet on a stick
- throwing at the goal, hitting a basket, ...

#### ***Bears and fishes***

*Terrain: flat*

*Purpose: shifting, sliding*

Fishes (students) are arranged around the perimeter of a square. In the middle is skier who represents a polar bear. On a call “the bear is hunting” must all the fishes change their places that they run across the territory of the bear. The one who is caught by the bear becomes a new polar bear. With beginners is enough to play only in skiing shoes. If the group is intermediate (the level of abilities is estimated by the instructor) we can play with one or both skis on.

### **Blind row on skis**

*Terrain: flat*

*Purpose: turns, balance on skis*

Skiers have their eyes covered and they blindfolded form rows due to the criteria given by an instructor – e.g. age, height, weight, number of siblings, colour of their hat and so on.

### **Samurai battles**

*Terrain: flat*

*Purpose: balance on the skis, getting up*

The samurai (instructor) is standing in the middle of a large circle of skiers who has enough space to fall around them. The samurai points randomly with both ski poles to skiers' legs – then they must jump – or to their heads – then they must squat. If someone gets wrong, he or she must sit or fall down. The game can be re-joined by standing up and bowing to the samurai.

### **Evacuation**

*Terrain: flat*

*Purpose: walking on skis, changing directions and turns*

Children are moving in the limited area on skis. Every child represents one animal. In the middle of the area is a pole with a pennant. During the free movement is forbidden to stop. The instructor can at any time call one animal whose task is to touch the pole and call "stop!". Other skiers are trying to get as far from the pole as possible before "stop!" is shouted (they can even leave the limited area). After "Stop!" is shouted all players must stop. The task of the chosen animal is to make as much snowballs as is possible in one minute and hit at least one of other skiers. They can try to dodge but their skis must stay in place. The penalty points are counted.

### **The bear**

*Terrain: flat*

*Purpose: group coordination, throwing*

Children are standing in the circle and holding hands. One player is inside the circle representing the bear. The bear is trying to get out of the circle and run to the safety – his lair, which can be a tree or some different base. The bear is zigzagging when running out of the circle, after he leaves the circle other players are trying to hit him with prepared snowball. The ones who are throwing cannot move. If the bear is hit three times players in the circle win. If he is not hit three times, the bear wins.

### **Mirrors**

*Terrain: gentle slope*

*Purpose: changing weight from one ski to another*

Two skiers without ski poles are skiing behind each other in small distance (every pair choses safe distance and they make necessary changes in the second and following rounds based on their experience). First skier puts down various objects (skiing goggles, hats, gloves, snowballs) and the second skier is trying to pick them up (they change in the second round). The one who picks up more objects wins.

## **Speed**

*Terrain: gentle slope*

*Purpose: speed regulation*

The instructor is going first down the slope, other skiers are following him in the same speed (no one is overtaking). During the glide skiers are evaluating how they would scale the speed on the 1-5 scale. When the glide is finished the group is to agree on the speed – then the instructor gives speed of the second glide.

## **Agility glide**

*Terrain: gentle to moderate slope (due the level of physical skills)*

*Purpose: combining more skills into one unit*

*Example:* We will stake a track on the slope which starts with 2-3 bends, then follows a terrain wave, then bend, at the marked place the competitor puts down his skis, runs to the marked base where he does somersault, runs back, puts on his skis, then he will do given turn and then he continues the glide. At the end he will go through a gate (which is put in the turn so the safe range on the flat or contour line is ensured). The time can be measured.

## **Carnival**

*Terrain: gentle to moderate slope (due to the level of learned physical skills during the whole course)*

*Purpose: social contact, affectivity*

It is a specific activity which is one of the final parts of all practical blocks connected with teaching of gliding and turning on the snow. Students know about this activity from organisational information about the course so they have a chance to prepare at home. The whole practice part of the course is finished together in the afternoon block on the suitable slope by celebration in masks. The carnival is filmed and in the evening block after the feedback of the individual groups is the video projected. The purpose of this activity is to celebrate the movement on the snow (everyone can attend the carnival as he or she sees fit – in the mask or without it) and collective goodbye to the areal.

## **Gear**

The basic gear is matching the gear of every participant. Basic information how to chose this gear is given to participants during the preceding summer course. Basic aids for teaching at the course (camera, data projector, sound system, skiing gears, snowshoes, maps, compasses, ...) provides the department.

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## 5.4.2 WINTER TOURISM WITH SNOWSHOES

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### **Brief theoretical base**

Skiing tourism and winter hiking tourism are in the frame of the course classed into wider blocks. Winter tourism with snowshoes for the children of lower-school age might seem as too demanding on the first look but if the conditions are providential children like to try also this mean of moving on snow. The activity is put into the shorter block (mostly 2-4 hours, due to the interest) and is suitable even in the combination with other activities (games on snow, hiking).

Cíle, po skončení výuky budou studenti schopni:

- Bezpečně provádět základní pohybové dovednosti spojené s turistikou na sněžnicích
- Znat základy historie vývoje a úvod do metodiky použití sněžnic.

### Content and description of individual activities

#### *Introductory briefing and the course of an activity*

In the afternoon block participants will try to practice walking on the trimmed and untrimmed terrain. They will be discovering differences between the movement in snowshoes and in winter shoes (it depends on the current conditions if they will go with the instructor to the proper place in the form of a trip or the practice will take place near the cabin). In the frame of given activity can be applied chosen orientational games which were introduced during the summer course a year before at Moravec. From the view of basic methodology we introduce students with the technique of walking in the snowshoes (safe movement and transport of snowshoes, walking on the flat terrain, walking in the slope, crossing, running in the snowshoes, walking with poles and without poles) according to authors Korvas, Došla (2007).

#### Approximated timetable

Afternoon blocks individually due to the agreement with the instructor. (between 14-18 o'clock).

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### 5.4.3 GAMES AND OTHER ACTIVITIES ON SNOW

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#### Brief theoretical base

Small games are not primarily connected only with the mountains and winter outdoor schools but they can be also used even in the school surroundings, e.g. during the integrated field education, a trip, or other form of sojourning in nature. We can build also on the interdisciplinarity and the connection of physical and educational content of other subjects in the frame of education of children of the lower school age.

Cíle, po skončení výuky budou studenti schopni:

- Připravit, organizovat a realizovat hry a další činnosti na sněhu
- Využít zimního prostředí k propojování mezipředmětových vazeb (př. učení pohybových dovedností ve spojení s výtvarnými dovednostmi)
- V praxi aplikovat základní poznatky z oblasti pohybových her například při učení v pohybu na sněhu
- Uvědomit si a dokázat vysvětlit důležitost využití her a dalších činností v zimní přírodě v souvislosti se zdravotně preventivními pohybovými aktivitami

### Content and description of the individual activities

Thematically is this block divided into “Games on snow” and “Activities on snow”.

## Activities

### **Games on snow**

This part is based on the usage of an environment (close surroundings of accommodation), available natural resources (snow, icicles, flowing water and so on) and a knowledge of simple physical games from summer training course (Hutututu, Eskimo tag race, Kafe, Biathlon, and so on) and their application to the authentic environment. We are trying to apply advantages of surroundings into the individual games, e.g. in the game Eskimo tag race is possible to beat down a way into the deep snow or in the game Hutututu is possible to use snow as a mean of safer underlay for falls than is grass in summer and so on.

### **Activities with snow**

This is a “art and craft” activity. Snow is a suitable material e.g. for sculpting, building of an igloo, creating of different obstacle courses and so on. The amount of physical exertion is on a low level but long-term. The main goal of this activity is development of communication in a group, cooperation and creativity.

In activities listed above are obvious relations between subjects and connection of educative content of an elementary school curriculum, mostly in fields Člověk a společnost, Člověk a jeho svět, Člověk a příroda, Člověk a zdraví, Člověk a svět práce together with chosen cross-cutting issues of RVP ZV and support and development of health orientated physical activities in the frame of Physical Education curriculum.

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## 5.4.4 POSSIBILITIES OF PHYSICAL ACTIVITIES – „UNTRADITIONAL DAY“

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### **Brief theoretical base**

In the frame of the winter course is important to change the structure and the form of a one-sided physical activity and to change education in blocks. This change is related to the safety and support of health as during the one-sided stress can appear muscle fatigue which increases the risk of an injury. In case of organising winter outdoor schools for pre-school and lower-school aged children is directly through the regulation recommended (Směrnice, 2006) when should the change come. In the terms of this day which is also called “The critical day” is possible to change actively spent time for other forms of physical activities in the winter landscape and so there are many possibilities of application during the all-day programme. There is also special time for the regeneration and relaxation.

**Cíle, po skončení výuky budou studenti schopni:**

- Nabídnout odpovídající zdravotně preventivní pohybové aktivity ve vztahu k prostředí, ve kterém se nachází
- Využít zimní prostředí a možností aktivit k podpoře a formování postojů studentů a jejich sociální kultivaci

## **Content and description of individual activities**

### ***Introductory briefing and the process of an activity***

The goal of this block is to present other possible activities with the possibility of choosing one of them. Emphasis is given on the affective part of movement and on the experience (Kirchner, 2005) which is imperative for forming of the attitude of students to the movement in the winter landscape. Students are offered activities which can be realised with regards to weather conditions due their own choosing.

## **Examples of activities**

### ***All-day trip***

Winter hiking can be briefly described by words Movement – nature – exploring. In terms of the activity “All-day trip” is the main goal to introduce participants to the basics of organisation of winter hiking trips, show them specifics and differences from the all-day trips in other seasons with emphasis on the quality of individual preparation of gears in relation to the current weather conditions. Students will be introduced to the map orientation and correct choice of terrain which is imperative mainly in the winter season when a person is affected by severe weather conditions – cold, snow and wind. It is important to make preparations and plans before the trip and to adapt the length of the trip to the basic characteristics of the group (age, number of participants, quality of gear, weather forecast and so on). We do not also forget the importance of motivation and entertainment. In the terms of a trip we can apply marching games which are a part of the summer training course (see chapter Physical education in summer).

### **Gears**

Students get the detailed information about necessary gear before the course. The instructor is equipped with a map, compass, GPS device or mobile phone with interactive map and first aid kit. For recuperatory events (e.g. school events or events of various organisations or institutions) is the content of the first aid kit given by the addition n. 4 of regulation n. 106/2001 (Vyhláška č. 106/2001 Sb., 2020) and it is possible to use it as a base for school events of all kinds (trips, walks, outdoor education, hiking courses, field education and so on).

### **Approximate timetable**

Departure is after a breakfast between 8:30 and 9:00. Stops along the way are adapted to the chosen trail. Return is always no later than 15:30 in the time of extended lunch.

### ***Sledge track***

Sledging is, when seen from the history side, one of the oldest forms of movement by gliding and turning on snow (Kulhánek, 1989). Based on possibilities of the location can be chosen spontaneous sledging, sledging on the near meadow and if possible we can use an official sledge track. The activity relates to an experience and is not physically demanding. It can be offered to watch methodology video about the safe style of sledging on the 5 kilometres long track. This activity can be combined with other activities of the day and is very suitable for pre-school children.

### ***Snowtubing***

It is an activity where a participant rides an inflated rubber tube like tubes from a tractor wheel which slides down from a hill in a specially prepared channel. In case we want to avoid a commercial approach, we can build a snowtubing track near our accommodation ourselves. I

that case we must heed basic principles of building and using of this track. Snowtubing tubes can be replaced by e.g. plastic gliders.

### **Ice-skating**

Due to our possibilities we can arrange a rent of ice rink near our accommodation and we can use it to introduce methodology of a basic skating. (Nykodým, 2011).

### **Swimming pool, Wellness**

The inseparable part of staying in the mountain environment is also relaxing and regeneration. This possibility is provided by commercial facilities in surroundings. Their visit is suitable in combination with all previous activities.

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## 5.4.5 LECTURES – THEORY AND PRACTICE

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### **Brief theoretical base**

Theoretical blocks are placed in the evenings and placed in the social room. In educative, yet attractive way are students supplemented with theoretical information to the individual fields of movement. Students can participate on lectures and they create content of their message in groups.

Cíle, po skončení výuky budou studenti schopni:
– Uplatňovat získané teoretické informace v praxi v rámci jednotlivých výše popsaných zdravotně preventivních pohybových aktivit v zimní přírodě

### **Content and description of individual activities**

Individual topics are prepared for participants to discuss and we can choose from the following:

- Safety of movement in the winter landscape
- Current trends in the teaching of gliding and turning on snow
- Dangers in mountains and basics of first aid in the winter landscape
- Possible physical activities in the winter landscape
- Historical development of winter physical activities in relation to the support of healthy lifestyle

## 5.5 LITERATURE

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Apul.cz: *SNOWSPORTS EDUCATION* [online], 2020. Praha [cit. 2020-06-30]. Dostupné z: <https://www.apul.cz/>

CZECH SKI: *Svaz lyžařů České republiky* [online], 2020. Praha [cit. 2020-06-30]. Dostupné z: <https://www.czech-ski.com/>

KIRCHNER, Jiří, ed., 2005. *Prožitek a dobrodružství prožívání*. Ústí nad Labem: Univerzita J.E. Purkyně. ISBN 80-7044-699-4.

KORVAS, Pavel a Jan DOŠLA. *Zimní turistika na sněžnicích* [online]. Brno: FSpS MU, 2007, 12 [cit. 2020-06-30]. Dostupné z:

<https://is.muni.cz/auth/do/1499/el/estud/fsps/ps08/zimtur/web/pages/autori.html>

KULHÁNEK, Otto, 1989. *Zlatá kniha lyžování: z dějin československého a světového lyžařství*. Praha: Olympia.

NYKODÝM, Jiří, Petr STAREC a Jiří SEDLÁČEK, 2011. *Výuka bruslení hravě a bezpečně: textová opora ke kurzu*. Brno: Masarykova univerzita, 19 s. ISBN 9788021056305.

*Rámcový vzdělávací program pro základní vzdělávání: RVP ZV* [online], 2007. [cit. 2020-06-30].

SMĚRNICE: pro pořádání zimní školy v přírodě s výukou lyžování. *RVP ZV* [online]. 2006 [cit. 2020-06-30]. Dostupné z: <https://clanky.rvp.cz/wp-content/uploads/prilohy/1582/smernice.pdf>

*SNOW: Portál pro sjezdové lyžování* [online]. Praha [cit. 2020-06-30]. Dostupné z: <https://snow.cz/>

Vyhláška č. 106/2001 Sb.: Vyhláška Ministerstva zdravotnictví o hygienických požadavcích na zotavovací akce pro děti, 2020. *Zákony pro lidi: Sbírka zákonů* [online]. Praha, 2014 [cit. 2020-06-30]. Dostupné z: <https://www.zakonyprolidi.cz/cs/2001-106/zneni-20140101>

Základní lyžování. *CZECH SKI: Svaz lyžařů České republiky* [online]. Praha [cit. 2020-06-30]. Dostupné z: <https://www.czech-ski.com/zakladni-lyzovani>

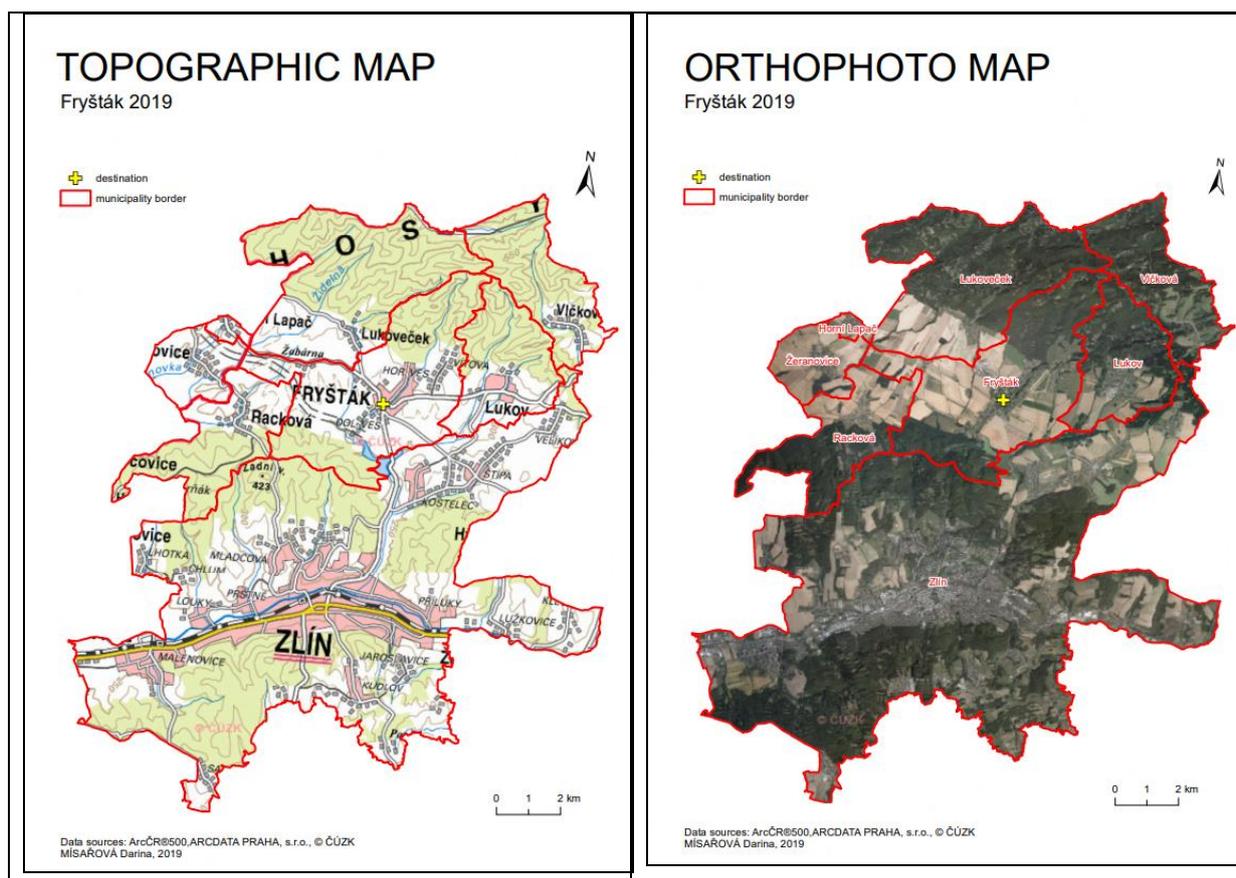
## 6. INTEGRATED LANGUAGE AND METHODOLOGY COURSE

### 6.1 INTRODUCTION

The English Department offers Bachelor and Master degree programmes. The graduates of these are qualified teachers of English at lower secondary schools. In the second year of the Bachelor programme (single-subject study plan), the students are required to participate in an *Integrated Language and Methodology Course*, which is based on experiential learning principles. Students in the other study programmes and study plans can take the course as optional. The course presents a reasonable intellectual, emotional, spiritual and social challenge. The participants have an opportunity of developing their communicative competence in English and teaching competences as well as their personalities. The course takes place in Dům Ignáce Stuchlého at Fryšták (the Zlín Region), a building offering accommodation, catering, and suitable number of well-equipped classrooms.

### 6.2 LOCALISATION OF OUTDOOR EDUCATION – FRYŠTÁK

Coordinates: 49°17'6"N 17°41'3"E



Fryšták is a town in the Zlín Region and Zlín District of Czechia. It is situated between the cities of Zlín and Holešov and it lies by the Fryštácký stream. Its average elevation is 270 m. The town has a population of 3 697 inhabitants (as of 31 December 2018).

Early records are documented in 1356. By the 19th century, the town of Fryšták was notable for its agriculture and wood production. The town has a relatively small number of sights that would attract tourists. There is no infrastructure for summer recreation. There are two natural water bodies in the town, but neither of them is a sufficient attraction for visitors.

The town of Fryšták lies in the axis of the Fryšták Furrow (Vizovice Highlands), which geomorphologically belongs to the system of the Outer Western Carpathians. The furrow is formed by a declined structure (Demek et al., 2014), which is basically the SE extension of the Upper Moravian Valley. The relief of the nearest surroundings is mostly levelled (by erosion-denudation processes) and the tectonic ditch (furrow) is limited by the slopes of the Zlín Highlands to the south and by the slopes of the Hostýn Hills to the north. The rugged surface of flysch rocks in the subsoil is covered (buried) by late Tertiary sediments. Starting in the past and continuing these days, the landscape of the Fryšták Furrow is used mainly for agriculture and the construction of settlements, whereas the surrounding highlands, especially the Hostýn Hills, are abundantly forested. Numerous shallow valleys with wide valley floors, which intersect the furrow across the north-south direction, create a picturesque economic landscape in contrast to the forested hills, which is the gateway between eastern Hana and Wallachia.

### **6.3 INTEGRATED LANGUAGE AND METHODOLOGY COURSE**

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Each Intensive Language and Methodology Course offered by the English Department has an umbrella topic (the ones used in the past included “Wild West”, “Canada”, “Shakespeare it is!”, among others). The umbrella topic (the name of the Course) affects all the elements of it – the costumes, the names of rooms and the names of activities, detailed adjustments of each activity and a potential to develop the participant’s knowledge in a specific area. The framework of the course remains the same, only the theme changes every year. The themes offer opportunities of a cross-curricular perspective. The umbrella topic of the course in the autumn 2019 was a voyage around the world (according to Jules Verne’s *Around the World in 80 days*). The name of the course was *Around the World in 5 Days* and the theme allowed the integration of geographic issues. The integration of geographical issues followed the principles of CLIL (Content and Language Integrated Learning).

During the courses, the participants are encouraged to speak only English all the time (including their free time) – to ensure that their language development is taking place. They have a rich and varied programme – there are four ninety-minute workshops, morning circles allowing for reflection and feedback and attractive evening activities every day.

The course always has an online support in VLE Moodle where the participants can find all study materials and they can also take part in discussions in asynchronous forums.

The organizers are accompanied by students who experienced the course before and are joining again in the role of assistants. It is an opportunity for them to have a hands-on experience with the organization of the Course – observe things from the organizers’ perspective and in this way enrich their pedagogical and organizational skills.

### **6.4 COURSE DESIGN**

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One of the essential characteristics of experiential learning is “the central role that experience plays in the learning process” (Kolb, 1984, p. 20), which is “based on instruction, action and reflection” (Outward Bound, 2017). Some activities are inspired by the Summer School of Lipnice (member of Outward Bound International).

Generally speaking, experiential courses consist of a series of dramaturgically sequenced game-like activities. The games need to be carefully selected and all of them include communication in the target language (English).

The activities stimulate creativity, team cooperation and reflection. Some activities are physical, some include drama elements, some are movement-oriented activities.

The activities at the course can be physically and psychologically demanding. The physically demanding ones can range from those requiring a simple use of the whole body to performances resembling competitive sports levels. These challenging experiences may mean a certain level of psychological difficulty for individual participants. The participants are offered the possibility of opting out if they find the level of challenge too high in any way, which contributes to their sense of safety. They use this opportunity only very rarely.

The Integrated Language and Methodology Course also serves as a model especially for teachers who, in addition to standard lessons, organize outdoor schools, summer camps, trips, etc. During the course, students will gradually experience creative activities that will be subsequently assessed in terms of usability in their own teaching practice.

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#### 6.4.1 WHOLE COURSE ACTIVITIES

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The following examples are activities that are part of the course (with modifications based on the umbrella topic of a particular course):

##### “GETTING TO KNOW YOU” ACTIVITIES

Suitable for contributing to group cohesion in the situation when some participants have known each other but others have not. It is also necessary to take into account that some participants have experience with a similar type of course.

##### GUARDIAN ANGELS

One of the key introductory activities. By lot, every participant chooses his “protectee” (another participant for whom they will act as guardian angels for the rest of the course). The angels will be “revealed” just before the end of the course. During the course the angels will try to please their protectees (messages, small gifts, etc.) to make their days more enjoyable. For that purpose, they can use mailboxes. During the first evening, each participant makes a creative mailbox based on the main theme of the course. The mailboxes are kept in the main hall and everybody can write messages and leave presents, not just guardian angels.

##### MORNING ALARM CLOCK

Music or song that wakes the participants up every morning.

##### EVENING RITUAL

Following the chosen central theme of the course, the trainees will conclude “ritually” every day in the same form. A thematic song (eg a lullaby), a poem, etc. can be used for this purpose.

## MORNING REFLECTION

Regular introductory activity of the participants had taken on the previous day. Reflection is organized in small groups with the course instructors and assistants as facilitators. In the autumn 2019 the activity was called Roll Call.

## HOT CHAIR

This is one of the final activities where participants are asked to tell other participants in their small groups why they value them. It can be done in writing or in speaking.

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### 6.4.2 COURSE TIMETABLE

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**Course title:** Around the World in 5 Days

#### **Monday - Day 1:**

3pm – 6 pm: Welcoming the participants.

6pm - dinner

Evening programme: 7pm - 10pm

7pm - Surrounding game (60 mins) and smuggling

During the activity the participants are supposed to find the names of different rooms and places in and near the building. For the theme of travel around the world the names are:

Fryšták – Frystport

Main Hall – London

Bar – Singapore

Dining hall – Calcutta

Art room – Yokohama

Brown room – San Francisco

Green room – Liverpool

Garden – The Atlantic

9:30 - good spirits (The activity originally called Guardian Angels is described above)

9:45 - lullaby

For the rest of the course, the participants are divided into four groups (each group has a different colour). The timetable below is structured for the four groups. All the activities have theme-based names that indicate the character of the activity a little bit and raise expectations but do not reveal too much.

#### **Tuesday – Day 2**

Tuesday morning schedule

7:15 Morning exercises with Veronika

7:30 Breakfast

Group	8:15 – 8:55 Roll Call	9:00 - 10:30	10:45 - 12:15
<b>A yellow</b>	London	<b>Mapping the Territory</b> Yokohama	<b>Mapping the Territory</b> Yokohama
<b>B green</b>	Yokohama	<b>Easy or tough? Speak off the cuff.</b> London	<b>All aboard!</b> San Francisco
<b>C blue</b>	San Francisco	<b>Northwest Passage</b> Liverpool	<b>Easy or tough? Speak off the cuff.</b> London
<b>D red</b>	Liverpool	<b>All aboard!</b> San Francisco	<b>Northwest Passage</b> Liverpool

#### Tuesday afternoon schedule

Group	12:15 -14:00	14:00 -15:30	15:45 -17:15
<b>A yellow</b>	<b>Lunch</b>	<b>Easy or tough? Speak off the cuff.</b> London	<b>Conquer that booty</b> London
<b>B green</b>		<b>Mapping the Territory</b> San Francisco	<b>Mapping the Territory</b> San Francisco
<b>C blue</b>		<b>Bewitched Pictures</b> Liverpool	<b>Bewitched Pictures</b> Liverpool
<b>D red</b>		<b>Bewitched Pictures</b> Yokohama	<b>Bewitched Pictures</b> Yokohama

#### Tuesday evening:

6pm dinner

7pm - Masquerade

9pm - lullaby

9:30 – night game – organized by assistants

#### Wednesday – Day 3

Wednesday morning schedule

7:15 Morning exercises with Veronika

7:30 Breakfast

<b>GROUP</b> <b>8:15 – 8:55</b> Roll Call	<b>9 – 10:30</b>	<b>10:45- 12:15</b>
<b>A YELLOW</b> London	<b>Bewitched Pictures</b> Liverpool	<b>Bewitched Pictures</b> Liverpool
<b>B GREEN</b> Yokohama	<b>Bewitched Pictures</b> Yokohama	<b>Bewitched Pictures</b> Yokohama
<b>C BLUE</b> San Francisco	<b>Mapping the Territory</b> San Francisco <i>You need jackets and shoes to go outside</i>	<b>Mapping the Territory</b> San Francisco <i>You need jackets and shoes to go outside</i>
<b>D RED</b> Liverpool	<b>Easy or tough? Speak off the cuff.</b> London	<b>Conquer that booty</b> London

### Wednesday afternoon schedule

Wednesday afternoon is a relaxation afternoon. The participants can decide about their own activities-

### Wednesday evening

6pm dinner

7:30 pm Aye or Nay - *in morning* Roll Call rooms.

9pm - Café - *in London*

10pm - lullaby

### Thursday – Day 4

#### Thursday morning schedule

7:15 Morning exercises with Veronika

7:30 Breakfast

<b>Group</b>	<b>8:00 – 8:55</b> Roll Call	<b>9:00 - 10:30</b>	<b>10:45 - 12:15</b>
<b>A yellow</b>	London	<b>Northwest Passage</b> Liverpool	<b>All aboard!</b> San Francisco
<b>B</b>	Yokohama	<b>Conquer that booty</b>	<b>Northwest Passage</b>

<b>green</b>		London	Liverpool
<b>C blue</b>	San Francisco	<b>All aboard!</b> San Francisco	<b>Conquer that booty</b> London
<b>D red</b>	Liverpool	<b>Mapping the Territory</b> Yokohama <i>You need jackets and shoes to go outside</i>	<b>Mapping the Territory</b> Yokohama <i>You need jackets and shoes to go outside</i>

### Thursday afternoon schedule

Participants sign up for an option by lunchtime.

Group	12:15 - 14:00	14:00 -15:30	15:45 -17:15
Everyone		<i>One Thousand And One Riddles With A Few Thrown In</i> London  <i>You need jackets and shoes to go outside.</i>	<b>OPTIONS (offer of 4 activites, students select 1)</b>

### Thursday evening

6pm - inner

7:30pm - video presentation, photos, awards ceremony

8: 30pm - good spirits revelation

9pm - Let's Dance

10pm - lullaby

### Friday - Day 5

Friday morning schedule

7:15 Morning exercises with Veronika

7:30 Breakfast

GROUP	8:55 – 10:30	10:45 – 11:45	11:45
<b>8:15 – 8:45</b> Roll Call			
<b>A yellow</b> London			

<b>B</b> <b>green</b> Yokohama	<b>Journey's end</b>	<b>Final Evaluation</b>	<b>LUNCH</b>
<b>C</b> <b>blue</b> San Francisco			
<b>D red</b> Liverpool			

## 6.5 ACTIVITY DESCRIPTIONS

What follows is the descriptions of all main activities of the course and optional activities that were offered on Thursday afternoon.

### The main activities:

1. Bewitched Pictures
2. One Thousand And One Riddles With A Few Thrown In
3. All Aboard!
4. Mapping the Territory
5. Northwest Passage
6. Easy or tough? Speak off the cuff.
7. Conquer that Booty

### Optional activities:

1. Fabled treasure
2. Changes in latitude, changes in attitude
3. Arty party
4. Frystport triathlon

All the activities are described in reader-friendly tables . All appendices follow the tables (except for a very long appendix for the activity Northwest Passage which is placed in the Appendices).

### 6.5.1 BEWITCHED PICTURES

Ailsa Randall

<b>Timing and location</b>	2 90-minute sessions. Indoor or outdoor.
<b>Type of Course (for example:</b>	Making a film

<b>music, writing, etc)</b>	
<b>Objectives</b>	Students make a film together based loosely on the topic of the whole course. They discuss the strategy together, appointing roles and making sure that everyone is involved and appears in the film.
<b>Learning outcomes or products</b>	By the end of the session students will be able to: Create a story for a 5-minute film Work together to assign roles, including director and cameraperson Discuss the procedure in English Work together as a team to agree on the final product
<b>Teaching aids</b>	A video camera or a phone
<b>Procedure</b>	Students are given instructions at the start such as: Work in a team Appoint roles Decide on the story line Wear costumes You can edit if you have time but if not it will be done by assistants It should be 5 minutes long at least You can go outside or inside Film for some time before and after the actual scene to allow for editing Speak clearly Then they are given the rest of the session to work on it. Films are shown during the final evening of the whole course.
<b>Notes</b>	Teachers and assistants also make their own film which is shown at the end of the film evening.

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### 6.5.2 ONE THOUSAND AND ONE RIDDLES WITH A FEW THROWN IN

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Ailsa Randall

<b>Timing and location</b>	One 90-minute session. Combination of indoor and outdoor.
<b>Type of Course (for example: music, writing, etc)</b>	Working out riddles, memorising and reciting limericks, team work
<b>Objectives</b>	To memorise and recite limericks (pronunciation practice, focus on rhythm, team work) To find the answer to riddles which were placed around the grounds of the premises in teams

	To focus on kinesthetic learners
Learning outcomes or products	By the end of the activity students will be able to: recite some limericks with the correct pronunciation and rhythm, answer around 40 riddles in English, cooperate in the team better, divide up a team into roles and assign tasks to each person.
Teaching aids	Limericks and riddles were cut up and stuck around the premises outside Pens/ Pencils for the students Outdoor shoes 3 teachers were needed to listen to the recitals and assess them and then assess the answers to the riddles and judge if alternative answers were possible
Procedure	Students were told the rules – they could receive 5 points for a limerick and 1 point for a riddle. They were divided into groups. They were given 60 minutes to finish the activity. One student had to memorise a limerick and recite to another, who then came in to recite it to one of the judges. At the end of 60 minutes the riddles sheets were collected and evaluated and prizes were given.

# HUNGER GAMES RIDDLES

1		23	
2		24	
3		25	
4		26	
5		27	
6		28	
7		29	
8		30	
9		31	
10		32	
11		33	
12		34	
13		35	
14		36	
15		37	
16		38	
17		39	
18		40	

## HUNGER GAMES RIDDLES

1 Q: What has a foot but no legs?

2 Q: Poor people have it. Rich people need it. If you eat it you die. What is it?

3 Q: What comes down but never goes up?

4 Q: I'm tall when I'm young and I'm short when I'm old. What am I?

5 Q: Mary's father has 5 daughters – Nana, Nene, Nini, Nono. What is the fifth daughters name?

6 Q: How can a pants pocket be empty and still have something in it?

7 Q: In a one-story pink house, there was a pink person, a pink cat, a pink fish, a pink computer, a pink chair, a pink table, a pink telephone, a pink shower– everything was pink!

What color were the stairs?

8 Q: A dad and his son were riding their bikes and crashed. Two ambulances came and took them to different hospitals. The man's son was in the operating room and the doctor said, "I can't operate on you. You're my son."

How is that possible?

9 Q: What goes up when rain comes down?

10 Q: What is the longest word in the dictionary?

11 Q: If I drink, I die. If I eat, I am fine. What am I?

12 Q: Throw away the outside and cook the inside, then eat the outside and throw away the inside. What is it?

13 Q: What word becomes shorter when you add two letters to it?

14 Q: What travels around the world but stays in one spot?

15 Q: What occurs once in a minute, twice in a moment and never in one thousand years?

16 Q: What has 4 eyes but can't see?

17 Q: If I have it, I don't share it. If I share it, I don't have it. What is it?

18 Q: Take away my first letter, and I still sound the same. Take away my last letter, I still sound the same. Even take away my letter in the middle, I will still sound the same. I am a five letter word. What am I?

19 Q: What has hands but can not clap?

20 Q: What can you catch but not throw?

21 Q: A house has 4 walls. All of the walls are facing south, and a bear is circling the house. What color is the bear?

22 Q: What is at the end of a rainbow?

23 Q: What is as light as a feather, but even the world's strongest man couldn't hold it for more than a minute?

24 Q: What starts with the letter "t", is filled with "t" and ends in "t"?

25 Q: What is so delicate that saying its name breaks it?

26 Q: You walk into a room with a match, a kerosene lamp, a candle, and a fireplace. Which do you light first?

27 Q: A man was driving his truck. His lights were not on. The moon was not out. Up ahead, a woman was crossing the street. How did he see her?

28 Q: What kind of tree can you carry in your hand?

29 Q: If an electric train is travelling south, which way is the smoke going?

30 Q: You draw a line. Without touching it, how do you make the line longer?

31 Q: What goes up but never comes down?

32 Q: What has one eye but cannot see?

33 Q: A man leaves home and turns left three times, only to return home facing two men wearing masks. Who are those two men?

34 Q: Which weighs more, a pound of feathers or a pound of bricks?

35 Q: How many months have 28 days?

36 Q: A frog jumped into a pot of cream and started treading. He soon felt something solid under his feet and was able to hop out of the pot. What did the frog feel under his feet?

37 Q: A horse is on a 24 foot chain and wants an apple that is 26 feet away. How can the horse get to the apple?

38 Q: If a blue house is made out of blue bricks, a yellow house is made out of yellow bricks and a pink house is made out of pink bricks, what is a green house made of?

39 Q: What goes up a chimney down but can't come down a chimney up?

40 Q: We see it once in a year, twice in a week, and never in a day. What is it?

41 Q: Mr. Blue lives in the blue house, Mr. Pink lives in the pink house, and Mr. Brown lives in the brown house. Who lives in the white house?

42 Q: They come out at night without being called, and are lost in the day without being stolen. What are they?

43 Q: How do you make the number one disappear?

1. A fellow jumped off a high wall,  
And had a most terrible fall.  
He went back to bed,  
With a bump on his head,  
That's why you don't jump off a wall.

2. Limericks I cannot compose,  
With noxious smells in my nose.  
But this one was easy,  
I only felt queasy,  
Because I was sniffing my toes.

3. There once was a man from Peru,  
Who had a lot of growing up to do.  
He'd ring a doorbell,  
then run like hell,  
Until the owner shot him with a .22

4. There was an odd fellow named Gus,  
When travelling he made such a fuss.  
He was banned from the train,  
Not allowed on a plane,

And now travels only by bus.

5. There once was a farmer from Leeds,  
Who swallowed a packet of seeds.  
It soon came to pass,  
He was covered with grass,  
But has all the tomatoes he needs.

6. A canner, exceedingly canny,  
One morning remarked to his granny.  
A canner can can,  
Anything that he can,  
But a canner can't can a can, can he?.

7. There was a young woman named Bright,  
Whose speed was much faster than light.  
She set out one day,  
In a relative way,  
And returned on the previous night.

8. There once was a man from Tibet,  
Who couldn't find a cigarette.  
So he smoked all his socks,  
and got chicken-pox,  
and had to go to the vet.

9. There once was a man named Brice,  
Who had a nasty head full of lice.  
He said, If I eat them,  
Then I'll have beat them!  
And besides they taste very nice.

10. There once was a child in Spain,  
Who loved to play in the rain.  
One day he tripped,  
And broke his hip,

Now he is in serious pain.

11. My neighbor came over to say,  
Although not in a neighborly way,  
That he'd knock me around,  
If I didn't stop the sound,  
Of the classical music I play.

12. There once was a man stuck in a stall,  
He tried to get out but would fall.  
One day a man flushed,  
The fat man just blushed,  
And quickly ran out of the mall.

13. There was a young lady of Cork,  
Whose Pa made a fortune in pork.  
He bought for his daughter,  
A tutor who taught her,  
To balance green peas on her fork.

14. I'd rather have Fingers than Toes,  
I'd rather have Ears than a Nose.  
And as for my Hair,  
I'm glad it's all there,  
I'll be awfully said, when it goes.

15. A newspaper man named Fling,  
Could make "copy" from any old thing.  
But the copy he wrote,  
Of a five dollar note,  
Was so good he is now wears so much bling.

16. A man and his lady-love, Min,  
Skated out where the ice was quite thin.  
Had a quarrel, no doubt,  
For I hear they fell out,

What a blessing they didn't fall in!

17. There was a young lady of Lynn,  
Who was so excessively thin.  
That when she assayed,  
To drink lemonade,  
She slipped through the straw and fell in.

18. There was an enchanting young bride,  
Who ate many green apples and died.  
The apples fermented,  
inside the lamented,  
and made cider inside her inside.

19. There was a young schoolboy of Rye,  
Who was baked by mistake in a pie.  
To his mother's disgust,  
He emerged through the crust,  
And exclaimed, with a yawn, Where am I?

20. There once was a boy named Dan,  
who wanted to fry in a pan.  
He tried and he tried,  
and eventually died,  
that weird little boy named Dan.

21. I need a front door for my hall,  
The replacement I bought was too tall.  
So I hacked it and chopped it,  
And carefully lopped it,  
And now the dumb thing is too small.

22. I know an old owl named Boo,  
Every night he yelled Hoo,  
Once a kid walked by,

And started to cry,  
And yelled I don't have a clue!

23. One Saturday morning at three,  
A cheese monger's shop in Páree.  
Collapsed to the ground,  
With a thunderous sound,  
Leaving only a pile of de brie.

24. I once fell in love with a blonde,  
But found that she wasn't so fond.  
Of my pet turtle named Odle,  
whom I'd taught how to Yodel,  
So she dumped him outside in the pond.

25. I'm really determined and keen,  
To start giving this house a spring clean.  
I will do it I say,  
Yes, I'll do it today,  
Well, I'll do it tomorrow, I mean.

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### 6.5.3 MAPPING THE TERRITORY

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Zuzana Kršková

<b>Timing and location</b>	2 90-minute sessions. Explanation and follow-up discussion indoors, mapping indoor.
<b>Type of Course (for example: music, writing, etc)</b>	Discussion + Creating a thematic map of Frystak
<b>Objectives</b>	To teach students how to transfer their ideas into the map. Map the group dynamics. Discuss possible procedures and outcomes. Teach about time-management. Allow students to work independently as well as in the group with a minimal interference of the teacher. To use phones to start discussion over the collected materials.
<b>Learning</b>	Thematic map containing the mapped items, legend and name according

<b>outcomes products</b>	<b>or</b> to the choice of students, photos and videos
<b>Teaching aids</b>	2 sizes of maps (various details), materials for creating the map (scissors, glue, pens, felt pens, pencils, paper), phones
<b>Procedure</b>	<p>Introduce the topic of the session (mapping the unknown territory), task (explore the grounds, document it, create a map of that territory) and outcomes</p> <p>Instructions – Students decide themselves how they approach the THEME (what to map – can choose from the list), and the TASK (individuals or groups mapping, time management,....)</p> <p>Putting the map together (60 mins) collecting all the data and creating the map together</p> <p>Final discussion (using photos and videos)</p> <p>Final feedback</p>
<b>Notes</b>	

Possible features/items to explore (can be only an inspiration, Ss can choose only some or create their own list):

Elevations

Peaks

Crevices

Barriers/divides of a sort

Hydrography (oceans, seas, rivers,...)

Local art

Land use

Signs of local engineering

Source of drinking water

Points of interest (your choice)

Native population activity

Possible threats

Treasure

Possible sanctuary/shelter

Source of food

Native fauna

Vegetation

**Maps printed from:**

[http://www.takemaps.com/cz/mapa\\_ceske\\_republiky\\_cz.php](http://www.takemaps.com/cz/mapa_ceske_republiky_cz.php)

#### 6.5.4 EASY OF TOUGH? SPEAK OFF THE CUFF!

Pavla Buchtová

<b>Timing and location</b>	90 minutes. Combination of indoor and outdoor.
<b>Type of Course (for example: music, writing, etc)</b>	Practicing speaking skills
<b>Objectives</b>	Students will practise impromptu speaking in a variety of contexts and on different topics related to the theme of traveling around the world in 1870s Students will provide positive and supportive feedback on the speeches
<b>Learning outcomes or products</b>	The students will be able to: give at least one impromptu speech on the given topic, evaluate the performances made by their classmates, become aware of their strong points when speaking.
<b>Teaching aids</b>	none
<b>Procedure</b>	<p><b>Free lead-in discussion</b></p> <p>Briefly discuss: What constitutes a good public speech?</p> <p>Elicit answers among the students (possible answers: e.g. body language, facial expressions, interaction, voice tone, voice timbre, speed, intonation, placing emphasis, pausing, eye-contact, appropriate vocabulary, developing the topic...)</p> <p><b>Speeches:</b></p> <p>Each student is given a slip of paper with a number. The number indicates the order of speeches and their topics</p> <p>Before each speech, the teacher announces the topic of the speech and briefly introduces the historical/cultural/literary context (1-2 minutes)</p> <p>Almost immediately the students should give an impromptu speech (about 2 mins); others may create a suitable environment, audience – depending on the topic, but don't speak or interrupt!</p> <p>Nobody else can talk or intervene (students can applaud when the speech is over)</p> <p>Finally, the teacher asks for POSITIVE feedback only (no criticism as the task is not easy at all) – what they liked about the speech performed.</p> <p>Also the teacher should praise every performance, not criticise, and encourage the students</p>

	<p>Next student's turn</p> <p><b>Conclusion:</b></p> <p>Finally, it is good if the teacher summarises the whole session, praising and positively evaluating the performances.</p> <p>(You may want to include the following comment: every teacher actually has to make impromptu speeches in practical career; even if this task is tough, it can be a good practice)</p> <p>Also, feedback can be elicited</p>
<b>Notes</b>	

**Topics:**

Britain

You are Mr. Fogg and you want to fire your servant because he served you water too warm

You are a gentleman in a gentlemen's club explaining why women can't enter the club

You are Queen Victoria and you are about to bless the gentlemen on their journey

India

You are an Indian girl about to be burnt alive as part of the suttee ritual. Plead for your life.

You are Aouda who just found out there are no relatives awaiting her and she has nowhere to go. Try to persuade Mr.Fogg to bring you with him on his journey.

A young boy/girl begging in the streets of Calcutta. Tell your story. Why are you living in the streets?

You are a Hindu and you try to explain what is reincarnation about

You are Rabindranath Tagore, an Indian poet. You oppose British colonialism and explain why India needs to be independent

You are a British (recruiting) sergeant recruiting locals into British Army

Japan

You are Mr. Fogg and you just encountered a Japanese Samurai about to commit harakiri. Try to reason with him why he shouldn't.

USA

You are a man employed by the Western Pacific Railroad company advertising for Pacific Railroad (the first Transcontinental Railroad)

You are Passepartout, just captured by the Sioux. Plead for your release.

You are a Sioux chief. You want to talk to the representatives of the federal government and explain why your tribe resists the construction of the railroad

Back in Britain

You are Queen Victoria and you deliver a speech to the British nation

You are Mr. Fogg and you are asking Aouda to marry you (despite thinking you are penniless)

You are Passepartout, the best man at Mr. Fogg’s wedding. Give a heartfelt toast to your master and his bride.

21<sup>th</sup> century

You are a 7th grade teacher. You talk about Jules Verne’s *Around the World in 80 Days* in the class and encourage students to read the novel

### 6.5.5 NORTHWEST PASSAGE

Ondřej Krahulec

<b>Timing and location</b>	90 minutes. Indoor.
<b>Type of Course (for example: music, writing, etc)</b>	Role-playing and simulation game. Discussion-based and story-driven game
<b>Objectives</b>	Students will be able to express their character’s opinion and add meaningful evidence or ideas to support their claim. Students will be able to work as a team and find solutions to the issues presented to them by the game. Students will experience some of the situations sailors had to face at the time; therefore, they will be able to describe and understand some of the perils waiting for 19th century Arctic explorers.
<b>Learning outcomes or products</b>	Unique way through the story for every group including an ending of the story based on the decisions taken during the game. Individual reflection using “a five-leaf clover”.
<b>Teaching aids</b>	Gamebook + extra materials illustrating Sir Franklin’s expedition (most of them authentic: diaries, pictures, orders from the admiralty). Reflective tool – “a five-leaf clover”.
<b>Procedure</b>	<b>Intro</b> Students first get to know the era and aim and dangers of their future voyage (during the surrounding game – 1 <sup>st</sup> evening) <b>Session</b> First, they will learn more about the orders, they are given by the admiralty. Second, they pick a role they would like to play (of the sailors of the expedition). Then, the actual game starts, the crew is presented with one issue they need to solve (preserving resources, encountering the Inuit, exploring the unknown land, survival) at a time. The group is presented with several options to pick from. They need to discuss the possibilities and pick the one they feel is the best for them. The teacher (narrator), always gives them feedback on the option they have chosen (based on the gamebook for the scenario), he or she keeps of their progress

	<p>journey.</p> <p>Students progress through the story, their situation improves or worsens based on their decisions. They have 4 indicators to help them imagine the situation: morale, food, sanity and crew alive.</p> <p>The situation is getting increasingly more difficult as the game continues (based on the true events of Sir Franklin’s expedition) and the story can have various endings, but the chances of survival are slim.</p> <p>When the game is over, the narrator concludes the story of the particular group.</p> <p>Finally, every person reflects on the game from their own perspective, using the “five-leaf clover” tool. It is also possible to share some experiences and ideas with other classmates and teachers.</p>
<b>Notes</b>	Supportive materials and the actual game to be used by the teacher have more than 40 pages, but it is planned to turn them into a web page to help other teachers reuse the game.

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### 6.5.6 CONQUER THAT BOOTY

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Ondřej Vitula, Marek Antal

<b>Timing and location</b>	90 minutes. Indoor.
<b>Type of Course (for example: music, writing, etc)</b>	Music, dancing
<b>Objectives</b>	<ul style="list-style-type: none"> <li>– To socialize</li> <li>– To have fun</li> <li>– To learn how to incorporate music and dancing activities within the classroom environment</li> </ul>
<b>Learning outcomes or products</b>	<p>By the end of the activity students will:</p> <p>know the team better,</p> <p>be able to dance a couple of new dances,</p> <p>be able to use dancing in their classrooms.</p>
<b>Teaching aids</b>	<p>Comfortable clothing</p> <p>Music and speakers</p>
<b>Procedure</b>	<p>Students are invited to the dancefloor to dance a series of dances. The sequencing should be done so that you go from couple dances to group dances back and forth so that everyone feels comfortable. While notorious group dances (like Macarena or Sirtaki) helps everyone socialize and have fun, including couple dances (like jive or polka) also helps to build better team dynamics. Every now and then we should included a song that can be well used within classroom itself (like Baby</p>

	shark for younger learners or Wobble to energize teenagers or even adults). Tutorials to all of these can be found online and they are fairly easy to teach and learn.
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### 6.5.7 ALL ABOARD!

Alena Dobrovolná, Jaroslav Suchý

<b>Timing and location</b>	90 minutes, classroom activities
<b>Type of Course (for example: music, writing, etc)</b>	Music (using songs in the classroom)
<b>Objectives</b>	<p>Students will learn various techniques and ways to use songs in the classroom.</p> <p>Students will think about using different techniques with different levels and age groups.</p> <p>Students will be able to choose an appropriate song for a certain age group and level and adapt the difficulty of the tasks appropriately.</p> <p>Students will realize in what ways and for what purposes songs can be used, will look at them not only from the point of view of language but also will look for their educational values.</p>
<b>Learning outcomes products or</b>	<p>Students will be able to design a set of activities based on song lyrics.</p> <p>Everything will be done through hands-on experience, students will try out all the activities and techniques and then they will think about them and discuss them from the methodology point of view.</p>
<b>Teaching aids</b>	Recordings of the songs, paper suitcases with paper ships of different colours, maps, quiz + answer sheets, blu-tack, playing board (map with the Phileas Fogg's route)
<b>Procedure</b>	<p>Students will do a set of song-based activities. The connecting theme of the session is a voyage around the world (according to Jules Verne's Around the World in 80 days). All the songs are connected with places where Phileas Fogg stopped during his journey.</p> <p><b>1)</b> Students are coming to the room, music is playing: East of Suez <a href="https://www.youtube.com/watch?v=bxlp8pl8THs">https://www.youtube.com/watch?v=bxlp8pl8THs</a></p> <p>Each student will get a small paper suitcase with a ship and a map of the journey in it. The ships are different colours; the students will form groups according to the colour of their ships.</p> <p><b>2) Warm up</b> – students will do the quiz in groups. Through the quiz they</p>



working places and will check or finish another group's work.

For a successfully accomplished task, all the groups will move their ships one field forward.

### **5) Calcutta**

The Four Preps: Calcutta  
<https://www.youtube.com/watch?v=4iIl6Jmsonw>

(slips with parts of lyrics marked A – H – for the walls, blu-tac, gapped lyrics – 1 sheet per group – Attachment 3)

The slips A-H will be placed on the walls of the corridor. One student in each group will be a runner (they can take turns but only one can run at a time). The runners will have to remember the letters and the sentences on the walls and dictate them to their group.

Once the groups have all the pieces, they will be given the sheet with gapped lyrics and they will try to guess where they belong in the song.

The song will be played to them to be checked. For every correctly placed slip they can move their ships forward by one field.

### **6) Hong Kong**

George Harisson: Hong Kong Blues

<https://www.youtube.com/watch?v=7HRjvDBWJQA>

(cards with words from the song)

Students will play in their groups – Grab the card – the running version – words spread on chairs, groups standing in queues; the first students compete for the words they hear in the song. According to the number of words gained, the groups will move their ships by a corresponding number of fields.

Option: if there is enough time, the activity can start like this: Each student will be given one card; they first mingle around the room explaining their words in pairs. Once both students in the pair guess the word, they will exchange the cards and move to another student. After several swaps, the activity is stopped and then GRAB THE CARD is played.

### **7) New York**

Frank Sinatra: New York, New York

<https://www.youtube.com/watch?v=EUrUfJW1JGk>

	<p>(gapped lyrics – one worksheet per group – Attachment 4)</p> <p>Each group will be given one worksheet with a gapped text of the song. Since the song is notoriously famous, the students will be probably able to fill it without listening. If not, there are pictures which should help them. Once they fill in the gaps, the song is played; the students will check and sing along.</p> <p><b>9) Summary</b></p> <p>Discussion about the techniques used with the songs, how to adopt them for different levels and ages, and what the techniques can be used for, how to grade the tasks...</p>
<b>Notes</b>	The attachments are added below.

**Attachment 1, quiz:**

- 1) What is a mobile phone text abbreviation for London?
- 2) How many inhabitants are there in Bombay?  
a) 7 million                      b) 13 million                      c) 15 million
- 3) What is Calcutta's nickname?  
a) City of Joy                      b) City of Sorrow                      c) City of Oblivion
- 4) When was the territory of Hong Kong transferred to China?  
a) in 2007                      b) in 1987                      c) in 1997
- 5) In the 19th century the port of Yokohama was known as a centre of trade with:  
a) silk                      b) spices                      c) gun powder
- 6) San Francisco has its name after which saint?  
a) Saint Francis of Assisi                      b) Francis Xavier                      c) Francis de Sales
- 7) New York City consists of five boroughs. Can you name them?

**Attachment 2:**

Name	Word

Attachment 3:

## The Four Preps: Calcutta

I've kissed the girls of Naples

They're \_\_\_\_\_

I've also kissed some French girls

Who \_\_\_\_\_!

The Spanish girls \_\_\_\_\_

Oh, yes, indeed they are

But the ladies of Calcutta

Are \_\_\_\_\_!

The ladies of Calcutta

\_\_\_\_\_

And after it is stolen, you'll say:

" \_\_\_\_\_

I've \_\_\_\_\_

But the ladies of Calcutta

\_\_\_\_\_!"

D pretty as can be

B came from Paris

H are lovely

E sweeter by far!

A steal your heart away

G I've kissed the girls of Naples

C kissed them in Paris

F Do something to me!

**Attachment 4:**

**NEW YORK, NEW YORK**

Start spreading the \_\_\_\_\_

I'm leaving today

I want to be a part of it

New York, New York

These \_\_\_\_\_

Are longing to stray

Right through the very \_\_\_\_\_ of it

New York, New York

I wanna \_\_\_\_\_ in a city

That doesn't \_\_\_\_\_

And find I'm king of the \_\_\_\_\_

Top of the heap

These little town blues

Are melting away

I'll make a brand new \_\_\_\_\_ of it

In old New York

If I can make it there

I'll make it anywhere

It's up to you

New York, New York

New York, New York

I want to \_\_\_\_\_ in a city

That never \_\_\_\_\_

And find I'm a \_\_\_\_\_

Top of the list

King of the \_\_\_\_\_

A number one

These little town blues  
Are melting away  
I'm gonna make a brand new \_\_\_\_\_ of it  
In old New York

And if I can make it there  
I'm gonna make it anywhere  
It's up to you  
New York, New York, New York



1x



1x



2x



1x



2x



2x



2x



1x

## 6.5.8 INTRODUCTION, ICEBREAKERS

Alena Dobrovolná Jaroslav Suchý, Filip Pultar

<b>Timing and location</b>	45 mins. The main hall of the venue.
<b>Type of Course (for example: music, writing, etc.)</b>	Introductory activities for making students familiar with the teachers and other participants.
<b>Objectives</b>	Through a set of short icebreakers students will learn about the topic of the course, will meet the teachers and other participants, will be divided in groups and will get to know the members of their groups. At the same time, as teachers or future teachers, they will learn some activities which they can use at the beginning of the lesson or at the beginning of a course with their (future) students.
<b>Learning outcomes or products</b>	The students will get the description of the activities for their future use, the next day in the morning they will discuss how these activities can be used in teaching practice and if necessary how to adapt them for different ages and levels.
<b>Teaching aids</b>	Map of the world
<b>Procedure</b>	<p><b>1) Map of the world</b></p> <p>Since the main theme of the course is based on Jules Verne's book <i>Around the World in Eighty Days</i>, the first activity is connected with the theme. Students will imagine that the floor of the room is the world map. If necessary, the map can be displayed on the wall of the room. The students are instructed where points of the compass are oriented and then they go to the place which they've either visited or would like to visit. When the students find their places, they chat with others standing nearby, discussing the place of their choice. The teachers can join the groups. After about 5 minutes volunteers can summarize what they were discussing, giving some info about the chosen place.</p> <p><b>2) ABC line</b></p> <p>This is an activity aimed at learning each other's names in a funny way and also helps to develop group dynamics. The students will stand on the chairs which are put in a circle touching each other. They have to reorder so that they stand alphabetically according to their first names. They cannot get down from the chairs and have to help each other to manage the reordering. When this is finished, everybody says their name and the order is checked.</p> <p>3) Students will form groups (the grouping is done according to the colours of invitation letters the students were sent before the start of the course).</p> <p>4) Greetings around the world – the students are introduced to different types of greetings that are used around the world and while the music is playing, they greet each other and at the same time they say their</p>

	<p>names, so that they learn them as fast as possible.</p> <p>5) Spider web – this activity helps to create rapport within the group because the task cannot be accomplished without mutual cooperation. The students stand in a circle and have to hold hands but not with the person next to them. Once this is done, they have to untangle the web without letting their hands go.</p>
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### 6.5.9 CHANGES IN LATITUDE, CHANGES IN ATTITUDE

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Ailsa Randall

<b>Timing and location</b>	90-minute session
<b>Type of Course (for example: music, writing, etc)</b>	Music
<b>Objectives</b>	Students will learn some songs connected to travelling and will have a chance to suggest and sing some other songs from a list provided.
<b>Learning outcomes or products</b>	Students will learn some songs which they can use in their own teaching. They will work on their pronunciation through singing the songs.
<b>Teaching aids</b>	A guitar, ukulele, songbooks from the department of English Language and Literature. 2 teachers and one student played instruments. Some percussion instruments were also provided and used by students.
<b>Procedure</b>	<p>Students were introduced to the songbooks and some songs connected to travelling were suggested by the teacher.</p> <p>After that students were given the option of choosing some songs which they would like to sing. Some songs were also specifically for children, as these could be used in the students' own teaching.</p>
<b>Notes</b>	<b>The songbook contains about 120 songs.</b>

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### 6.5.10 ARTY PARTY

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Zuzana Kršková

<b>Timing and location</b>	90-minute session. Arts room.
<b>Type of Course (for example: music, writing, etc)</b>	Creative activities, handwork, informal discussion + instructions
<b>Objectives</b>	– To balance the types of activities that students go through throughout the course

	<ul style="list-style-type: none"> <li>– To create a relaxing atmosphere and employ students' hands to create something they can keep</li> <li>– Show variety of creative tasks connected to the topic "Around the World in 80 days"</li> <li>– To teach students names of constellations in English</li> <li>– To engage students in an informal conversation in English within a topic that is not primarily aimed at language</li> </ul>
<b>Learning outcomes or products</b>	<ol style="list-style-type: none"> <li>1) Constellation cards and a paper telescope/projector</li> <li>2) Chinese knots – creating a bracelet with a knot.</li> <li>3) Creating an image using small pieces of a paper on a topic "Around the World in 80 Days"</li> </ol>
<b>Teaching aids</b>	Handouts with tutorials, constellation charts, colored paper, paper, scissors, paracord, candle and matches, glue, watercolors, needle
<b>Procedure</b>	<ol style="list-style-type: none"> <li>1) Option 1 was to create constellation cards and a paper telescope/projector that can be used to teach small children basic constellations. Students were to create small cards painted with watercolors (optional), choose constellations and make holes in the card in the shape of the constellation. The card, together with the telescope can serve either as a telescope at night or as a projector that can project the stars on the wall with the use of a torch.</li> <li>2) Chinese knots – students will try to tie some of the more complicated knots and eventually create a bracelet with a knot. Students will be provided with tutorials (+ teacher's aid) to learn how to make the knots.</li> <li>3) Creating an image using small pieces of a paper on a topic "Around the World in 80 Days" – Students are provided with papers and glue, it is a free activity on the topic.</li> </ol>

## 6.6 CONCLUSION

The description of the *Integrated Language and Methodology Course* can serve as a source of inspiration for foreign language teachers who organize outdoor activities or outdoor schools or who want to teach a foreign language together with another subject (CLIL – Content and Language Integrated Learning).

Most activities can be adapted for any age groups and different contexts. Apart from communicative competence in the target language the activities also contribute to the enhancement of team cooperation and personality development.

## 6.7 BIBLIOGRAPHY

Fryšták. (2017). *Oficiální stránky města Fryšták*. Retrieved from <http://www.frystak.cz/>

Halada, V. (2007). *Genius Loci. Gymnasion časopis pro zážitkovou pedagogiku*, 7, 130–131.

- Hanuš, M., & Hanuš, R. (Eds.) et al. (2016). *Instruktorský slabikář*. Praha: Nadační fond Gymnasion.
- Hanuš, R., & Chytilová, L. (2009). *Zážitkově pedagogické učení*. Praha: Grada Publishing, a.s.
- Hrkal, J., & Hanuš, R. (2007). *Zlatý fond her II*. Praha: Portál.
- Jirásek, I. (2006). Hra. *Gymnasion časopis pro zážitkovou pedagogiku*, 6, 5.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.
- Martin, A., Franc, D., & Zounková, D. (2004) *Outdoor and experiential learning: A holistic approach and creative approach to programme design*. Boston: Gower Company.
- Outward Bound International. (2017a). *Outward Bound International*. Retrieved from <https://www.outwardbound.net>

## 6.8 APPENDIX

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### 6.8.1 GDPR STATEMENT

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At this event, photos and videos will be taken which may be posted on the website of the Faculty of Education at Masaryk University ([www.ped.muni.cz](http://www.ped.muni.cz)) and/or on the faculty profiles on the social networks Facebook ([facebook.com/pdfmu//https://www.facebook.com/Department-of-English-Language-and-Literature-1613084468908917/](https://www.facebook.com/pdfmu/)) and Instagram ([instagram.com/ muni\\_pdf /](https://www.instagram.com/muni_pdf/)).

Print and put on noticeboard:

The personal data manager is Masaryk University, ID: 00216224, registered office Žerotínovo nám. 9, 611 77 Brno, contact address: Faculty of Education MU, Poříčí 623/7, Brno 603 00 and the photos and videos are taken for the purposes of promotion of the event and its organizer. Everyone who may be recognised on the pictures or videos has the right to information, to access the photos or to request deletion of them, and may contact the Office for Personal Data Protection. For more information and questions, please use this e-mail address: [info@ped.muni.cz](mailto:info@ped.muni.cz).

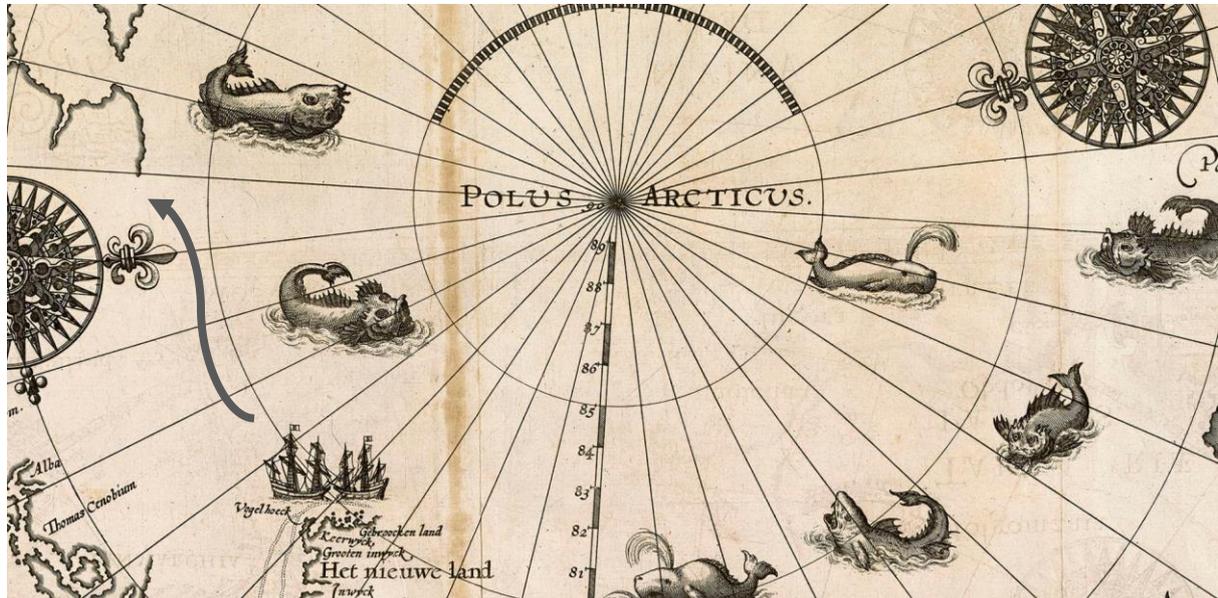
Contact details of the Data Protection Officer for the Administrator

You can contact the Data Protection Officer at Masaryk University at [poverenec@muni.cz](mailto:poverenec@muni.cz)

Thank you

Faculty of Education, Masaryk University

## Northwest Passage



The Arctic as imagined by W. Barents in 1598

### Instructions

- Check the orders from the Admiralty regarding your voyage.
- Go through the maps, to see what territory remains uncharted so you can fill it in.
- Get familiar with the ships (look at the pictures, read instructions from the Admiralty regarding your equipment).
- Read the accounts about some of the perils you may face when venturing into the Arctic.
- Look at the crew list of the officers – think about a role, you would like to play.



## Orders from the Admiralty

By the Commissioners for executing the office of Lord High Admiral of the United Kingdom of Great Britain and Ireland.

1. Her Majesty's Government having deemed it expedient that further attempt should be made for the accomplishment of a north-west passage by sea from the Atlantic to the Pacific Ocean, of which passage a small portion only remains to be completed, we have thought proper to appoint you (**Rear-Admiral Franklin**) to the command of the expedition to be fitted out for that service, consisting of **Her Majesty's Ships "Erebus,"** under your command, taking with you **Her Majesty's ship "Terror,"** under the command of **Captain Crozier**.
2. On putting to sea, you are to proceed, in the first place, by such a route as from the wind and weather, you may deem to be the most suitable for despatch, to **Davis' Strait**.
3. You will then proceed in the execution of your orders into **Baffin's Bay**, and get as soon as possible to the western side of the Strait.
4. As, however, we have thought fit to cause each ship to be fitted with a **small steam-engine and a propeller**, to be used only in pushing the ships through channels between masses of ice... the supply of fuel to be taken in the ships is necessarily small you will **use it only in cases of difficulty**.
5. **Lancaster Sound**, and its continuation through **Barrow's Strait**, having been four times navigated without any impediment by Sir Edward Parry, will probably be found without any obstacles from ice or islands. Proceed in a straight course to **Melville Island**; continue to push to the westward and to the southward without loss of time in a course as direct towards Bhering's Strait as the position and extent of the ice, or the existence of land, at present unknown, may admit.
6. Should you be so fortunate as to accomplish a passage through Bhering's Strait, you are then to proceed to the Sandwich Islands, to refit the ships and refresh the crews and you are to lose no time in returning to **England by way of Cape Horn**.
7. If at any period of your voyage the season shall be so far advanced as to make it unsafe to navigate the ships and you have to make the resolution of **wintering** in those regions, you are to use your best endeavours to discover a sheltered and safe harbour, where the ships may be placed in security for the winter.
8. In an undertaking of this description much must be always left to the discretion of the commanding officer, and you will duly **weigh how far the advantage of starting next season from an advanced position may be counterbalanced by what may be suffered during the winter**, and by the want of such refreshment and refitting as would be afforded by your return to England.
9. If you meet with any inhabitants, either **Esquimaux or Indians**, near the place where you winter, you are to endeavour by every means in your power to **cultivate a friendship** with them, by making them presents. You will, however, take care not to suffer yourself to be surprized by them but use every precaution, and be constantly on **your guard against any hostility**.
10. We deem it right to **caution you against** suffering the two vessels placed under your **orders to separate**, except in the event of accident or unavoidable necessity, and we desire you to keep up the most unreserved communications with the commander of the "Terror" Captain Crozier.
11. The expedition has been supplied with a portable observatory to **conduct magnetical and meteorological observatories**. We direct you, therefore, to place this important branch of science under the immediate charge of **Commander Fitzjames**.

12. You are to make use of every means in your power to **collect and preserve specimens of animal, mineral and vegetable kingdoms**, we trust that you will receive material assistance from the **officers under your command**, several of whom are represented to us as well qualified in these respects.

Given under our hands, this 5th day of May 1845.



**Sir John Franklin, the leader of your expedition**

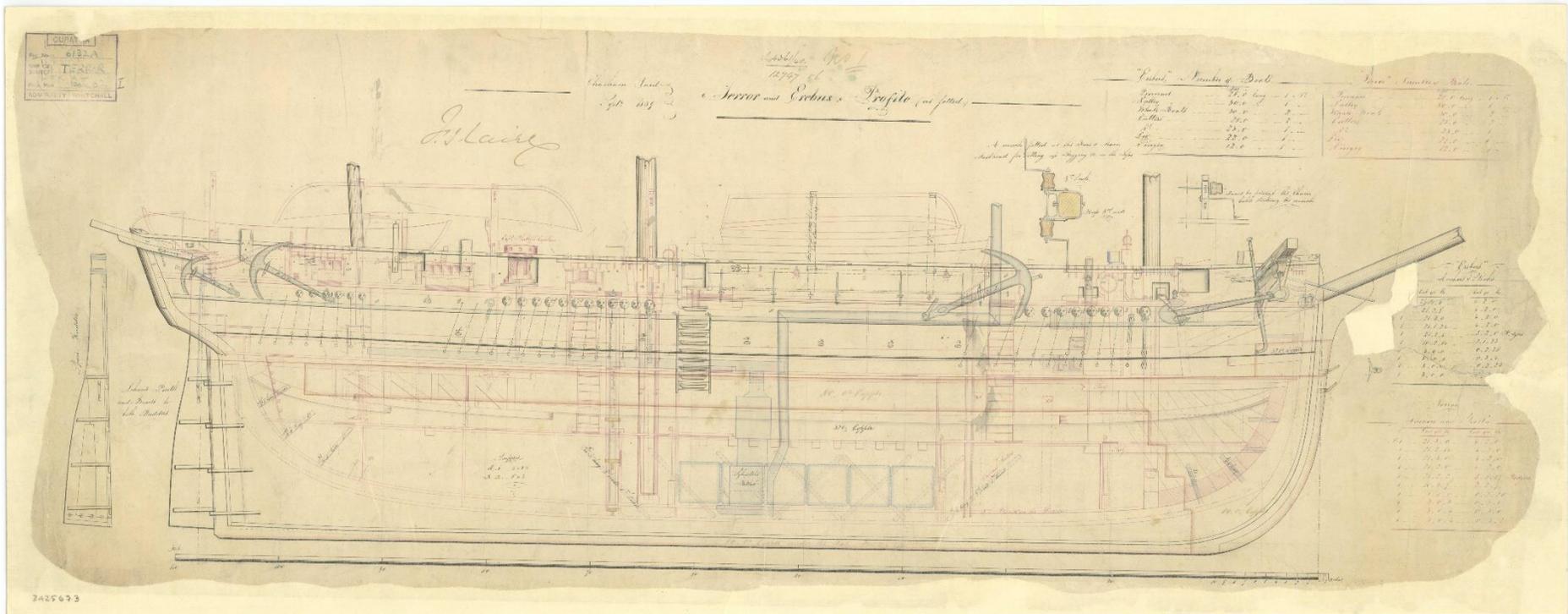




The Arctic regions as known to you, with uncharted territory to be explored



HMS Erebus in the ice



The plan of the ships for 1839 expedition before the steam propellers were fitted

## **Perils of the Arctic**

On Scurvy by W. E. Parry

*...I have received this morning the first unpleasant report of the scurvy having made its appearance among us : Mr. Scallon, the gunner of the Hecla, had for some days past been complaining of pains in his legs, which Mr. Edwards at first took to be rheumatic, but which, together with the appearance of his gums, now left no doubt of the symptoms being scorbutic...*

*...Every attention was paid to Mr. Scallon's case by the medical gentlemen, and all our anti-scorbutics were put in requisition for his recovery: these consisted principally of preserved vegetable soups, lemon-juice, and sugar, pickles, preserved currants and gooseberries, and spruce-beer...*

*The loss of lemon-juice, of which I have before had occasion to speak, in consequence of the breaking of the bottles by frost, continued still to take place to so great a degree, that it now became absolutely necessary to adopt some measures for providing against similar contingencies in future, and to preserve the remainder...*

### **On Frostbite W. E. Parry**

*...As we were now, however, approaching the coldest part of the season, it became more essential than ever to use the utmost caution in allowing the men to remain for any length of time in the open air, on account of the injury to their general health, which was likely to result from the inactivity requisite to the cure of some of the most trifling frost-bites. Mr. Edwards has favoured me with the following brief account of such cases of this nature as occurred on board the Hecla :—" The majority of the men who came into the sick-list, in consequence of frost-injuries during the severity of the winter, suffered mostly in their feet, and especially in their great toes ; and, although none of them were so unfortunate as to lose a toe, yet few cures were effected without the loss of the nail and cuticle, in which the vital power was invariably destroyed...*

*...they immediately ran out with it; and Smith, not having time to put on his gloves, had his fingers in half an hour so benumbed, and the animation so completely suspended, that on his being taken on board by Mr. Edwards, and having his hands plunged into a basin of cold water, the surface of the water was immediately frozen by the intense cold thus suddenly communicated to it ; and, notwithstanding the most humane and unremitting attention paid to them by the medical gentlemen, it was found necessary, some time after, to resort to the amputation of a part of four fingers on one hand and three on the other...*

### **On Wintering Ships in Ice by Helen Humphreys**

*...The ships are fastened in the ice now, frozen in a sheltered bay. This is to be their winter harbour. Everything has gone well. This immobility is all part of the plan, and yet it makes the sailor nervous to hear the groans of the ship as the ice constricts around her girth, and to gaze out over a whitening horizon. Soon the decks themselves will be closed in, draped with tarpaulins to try and prevent snow from burying the ships and to attempt to trap some of the heat from the coal fires burning below...*



LIEUT. L.E. VESCONTE.



LIEUT. COUCH. (MATE.)



LIEUT. DES VŒUX. (MATE.)



LIEUT. R.O. SARGENT. (MATE.)



LIEUT. FAIRHOLME.



CAPT. CROZIER. ("TERROR")



CAPT. SIR JOHN FRANKLIN.



COM. FITZJAMES. (CAPT. "EREBUS")



LIEUT. GRAHAM GORE. (COM.)



JAMES REID. (ICE MASTER.)



M.D.S. GOODSIR. (ASST. SURGEON.)



S. STANLEY. (SURGEON.)



C.H. JOSMER. (PURSER.)



H.F. COLLINS. (2<sup>ND</sup> MASTER.)

SAILED FROM ENGLAND 19<sup>TH</sup> MAY 1845 IN SEARCH OF THE NORTH-WEST PASSAGE.

Some of the officers of HMS Erebus and HMS Terror

## Crew

### **Rear-Admiral Sir John Franklin (59 years old, non-playable character)**

- A trusted captain.
- An intelligent and charismatic naval officer loved by his men.
- Some believe that he is too old to lead the voyage.

### **Captain Francis R. M. Crozier (Captain of Erebus, 48 years old)**

- An Irishman who rose to the ranks through hard work and commitment.
- He joined the navy when he was 13.
- He is a veteran of many arctic expeditions. He is a friend with James Reid.
- He is short-tempered.

### **Commander James Fitzjames (32 years old)**

- An illegitimate son of an unknown aristocrat.
- A well-educated and charismatic naval officer.
- He had to work hard and perform brave deeds to assume his position.
- His position in society is often challenged due to his illegitimacy.
- A friend of S. Stanley's, they served together in navy (during Opium Wars in China)

### **Lieutenant W. Fairholme (24 years old)**

- A witty Englishman known for his sense of humour.
- A smart and agreeable companion.
- An optimistic person who sees hope in even the grimmest of moments.
- A Mr Osmer's card-playing companion.
- He is at odds with Lt. Gore. They rarely agree with one another.

### **Lieutenant Graham Gore (39 years old)**

- An Englishman who served in the navy since he was 14.
- A Franklin's protege.
- He is a deeply religious man.
- He knows some of marines serving on the ships and seems to have some influence over them.
- He is at odds with Lt. Fairholme. They rarely agree with one another.

### **Charles H. Osmer (Paymaster Purser, 46 years old)**

- A very conscientious man, he takes all his duties seriously.
- He oversees money-related matters; he is in charge of resources including food rations.
- He is very good with numbers, very practically oriented man.
- He has a wife and children waiting for him at home.
- A Lt Fairholme's card-playing companion.

### **James Reid (Ice Master, 45 years old)**

- One of the few Scotsmen in the crew.
- An experienced veteran of many Arctic expeditions. A person with a very practical mind.
- A friend of Captain Crozier's.
- A somewhat rough and unpolished person but he is ultimately good-hearted.
- He is in charge of navigating ships through ice and clearing ice from ships' path if necessary.

- He has a wife waiting for him at home.

**Harry D. S. Goodsir (Assistant Surgeon, 25 years old)**

- A Scottish physician and naturalist from a family with deep tradition of medical practice.
- A keen scholar who has already published his theories regarding anatomy and cell-theory.
- A true humanist with the heart of gold who cares deeply for his patients.
- He is a religious man.

**Stephen S. Stanley (Surgeon, 37 years old)**

- Mr Goodsir’s superior, chief medical doctor of the expedition.
- He is a self-confident man and a friend of J. Fitzjames’. They served together in the navy; he operated on him and removed a bullet from his arm.
- He is a very pragmatic man and his patients sometimes seem to be only piles of flesh to him.
- He has a wife and a son waiting for him at home.

<p>GUN CARD</p> <p>If you decide to use the card, you have the final word in this round.</p> 	<p>You are left only with your wit to persuade others that your ideas are the best.</p>	<p>You are left only with your wit to persuade others that your ideas are the best.</p>
<p>You are left only with your wit to persuade others that your ideas are the best.</p>	<p>You are left only with your wit to persuade others that your ideas are the best.</p>	<p>You are left only with your wit to persuade others that your ideas are the best.</p>
<p>GUN CARD</p> <p>If you decide to use the card, you have the final word in this round.</p> 	<p>You are left only with your wit to persuade others that your ideas are the best.</p>	<p>You are left only with your wit to persuade others that your ideas are the best.</p>

**Stephen S. Stanley**  
**(Surgeon, 37 years old)**

- Self-confident
- Pragmatic
- Cynical
- Wife + son
- Friends: Com. Fitzjames  
(saved him)

**James Reid**  
**(Ice master, 45 years old)**

- Scottish
- Veteran
- Practical
- Rough
- Kind-hearted
- Helps ships sail through ice
- Friends: Cpt. Crozier

**Lt. G. Gore**  
**(Lieutenant, 39 years old)**

- Englishman
- Franklin's protégé
- Religious
- Influence over marines
- At odds with Lt. Fairholme

**Lt. W. Fairholme**  
**(Lieutenant, 24 years old)**

- Englishman
- Witty
- Optimistic
- At odds with Lt. Gore
- Friends: Mr Osmer

**Harry D. S. Goodsir**  
**(Asst. surgeon, 25 years old)**

- Scottish
- Scientist
- Surgeon
- Caring
- Humanist
- Religious

**Cpt. F. R. M. Crozier**  
**(Cpt. of Erebus, 48 years old)**

- Irishman
- Hard-working
- Started from scratch
- Short-tempered
- Humanist
- Friends: Mr Reid

**Com. J. Fitzjames**  
**(Commander, 32 years old)**

- Illegitimate son
- Stigma 
- Well-educated
- Charismatic
- Brave
- Friends: Mr Stanley

**Charles H. Osmer**  
**(Purser, 46 years old)**

- Conscientious
- Dutiful
- Practical
- In charge of food & equipment
- Wife + children
- Friends: Lt. Fairholme

# Reflection

## Northwest Passage

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- 2 adjectives
- 3 verbs
- 1 sentence
- 1 noun

# GAMEBOOK

## Variables

Visible	Range	Initial	Notes
food	0–10	7	
sanity	0–10	7	
morale	0–10	7	
crew	0–130	130	
<b>Background</b>			
speed	0–5	3	
scurvy	0–4	2	
<i>curse</i>	0/1	0	
<i>ship</i>	0/1	1	
<i>funpack</i>	0/1	0	
<i>passage</i>	0/1	0	
<i>cornwallis</i>	0/1	0	
<i>east</i>	0/1	0	
<i>sledgeparty</i>	0/1	0	

If any variable is about to drop below zero, it remains zero. 0 is the minimum for all the variables. All the variables are integers.

# 1

There is some more space left on your ships even after loading all the necessary equipment and provisions. You have a unique opportunity to take some extra provisions with you. What will you take with you on the hazardous journey?

1a: We will take extra lemon juice as it might help you battle diseases during the travels.

1b: We will definitely need more food on the journey so; you will take more canned meat on board.

1c: We will take more coal on board as it can be used both to power the propellers of your ships and keep you warm during polar nights.

1d: We will not leave England without the means to throw a proper sailors' party. Let's take on board more rum, tea, tobacco and even costumes for a masked ball or theatre play.

Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
1a	-1 scurvy	2	You have taken what you have deemed necessary or important. In your case it is also extra lemon juice. Now it is time to set sail and say farewell to your dear ones who you are leaving behind. The adventure begins...	
1b	-1 sanity +1 food	2	You have taken what you have deemed necessary or important. In your case it is also more canned meat. Now it is time to set sail and say farewell to your dear ones who you are leaving behind. The adventure begins...	
1c	+1 morale +1 speed	2	You have taken what you have deemed necessary or important. In your case it is also more coal. Now it is time to set sail and say farewell to your dear ones who you are leaving behind. The adventure begins...	
1d	+1 morale <i>funpack</i> = 1	2	You have taken what you have deemed necessary or important. In your case it is also supplies for enjoying your leisure time. Now it is time to set sail and say farewell to your dear ones who you are leaving behind. The adventure begins...	

## 2

You set sail weeks ago and your ships sailed through Davis Strait to Baffin Bay. You continue through Lancaster Sound to Barrow Strait. Your task is to continue southwest but there is a unique chance to explore an island (hopefully) to the north of Cape Walker. There is an opening in the ice that will let you sail north – an opportunity that is rarely available. Will you take a slight detour north to explore Cornwallis Island and make history by erasing yet another blank space on the map?

2a: You will write history from this very day on. No place will be left unmapped. You will take a slight detour and explore the surroundings of Cornwallis Island.

2b: There is no time to be wasted on detours. Someone else will come and map the island later. We need to continue southwest as fast as possible.

Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
2a	-2 speed <i>cornwallis</i> = 1	3	It is an island indeed – Cornwallis Island. You have mapped and charted it in the map. You have already pushed the boundaries of human knowledge a bit further. You continue south when you have finished your detour.	Cornwallis Island has been discovered! (map1)
2b		3	You have not wasted your precious time and you have hurried south in the hope that you will get as far as possible before the winter comes, and ice closes the passage south.	

### 3

-4 crew

As you continue south terrible things come in your way. Four of your crew members have died of weakness and lung disease. The ships' doctors fear that this might be an outbreak of tuberculosis. A terrible disease to fight on board the ships in the Arctic. What will your measures be to tackle this dangerous situation? You can choose more than one of the measures suggested below. It is possible to combine the measures or choose none of them.

3a: We need to quarantine everybody who shows only the slightest symptoms of the disease. Better safe than sorry.

3b: More lemon juice will be distributed among the crew to help them battle illnesses and general weakness of their bodies.

3c: Food rations for the crew will be increased. Hungry or starving crew members are more prone to be victims of diseases than those who are well fed.

Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
3a	-1 morale	4	A lot of crew members are unhappy. Those who are seemed fit for duty have to take over duties of those who are labelled ill. The healthy ones are overworked just because some of the other sailors have coughed a little.	Can be combined with other measures.
3b	-1 scurvy	4	More lemon juice is distributed nowadays to fight the diseases, not only scurvy. We hope it helps our sailors to stay healthy.	Can be combined with other measures.
3c	-1 sanity -1 food	4	The crew is well fed. Hopefully, it helps them fight any disease that might come in their way.	Can be combined with other measures.
			You have done what was necessary. Luckily for you, it seems that the disease has not spread (if there was any).	This is the outcome to be added to any combination.

## 4 Intermezzo

-1 crew

A great tragedy has struck. Your beloved captain and leader, Sir John Franklin, has unexpectedly died of high fevers that started only several days ago. You are mourning this tragic loss, but you know that you must continue the expedition in his name and find the Northwest Passage. Cpt. Crozier takes over the command of the expedition.

As you continue south you map Somerset Island, which was thought to be a peninsula, and a narrow and shallow strait between it and Boothia Felix (way too narrow and shallow for your ships). Moreover, you have discovered a new island to the west, and you have named it after the Prince of Wales.

Variables	Graphic design & notes	Go to
if <i>cornwallis</i> = 1 then use <i>map11</i>	Somerset Island + Prince of Wales Island discovered (map11)	5
if <i>cornwallis</i> = 0 then use <i>map01</i>	Somerset Island + Prince of Wales Island discovered (map01)	5

## 5

Your lemon juice starts to ferment. It is slowly starting to change into an alcoholic beverage, as happens to all fruit juices. It is getting increasingly more and more disgusting. Your sailors complain about its taste. There has been a suggestion from one of the cooks to boil it to stop the fermentation and improve its taste.

5a: We will boil the lemon juice we have to stop the fermentation process and keep it drinkable.

5b: We will not boil the juice and force the sailors to drink it as it is. They should know that it is good for them.

Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
5a	scurvy = 4	6	The taste of the lemon juice is saved, the process of the fermentation has stopped. What is more, the sailors do not complain when they need to drink it.	
5b	-1 morale	6	The juice is disgusting to drink, the sailors hate it and complain about it all the time. Let them nag about it, you know it is important to drink it and you force them to do so.	

## 6

The winter is coming, and the ice is slowly closing in front of you. Sooner or later you will have to find a suitable place to anchor and wait for the spring thaw to come so you can continue your expedition. However, it is still possible to push south if you try hard and use all the means you have available.

6a: We will push southwards, use dynamite to blow up openings in the ice and use our propellers in order to get as far south as possible to have a head start the next spring.

6b: We will not risk damaging our ships, we will find a suitable place to winter and stay there. The journey is over this year.

Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
6aa	if speed < 3 then speed = 0	7	You pushed southwards blowing openings in the ice, but the grip of the winter was tighter and tighter, it even damaged your propellers and they are no use now. You have got a slight head start for the spring to come but at what cost...	
6ab	if speed >= 3 then speed +1	7	You pushed southwards blowing openings in the ice, but the grip of the winter has been tighter and tighter and eventually you had to anchor in one of the bays. You have got a decent head start for the upcoming spring.	
6b		7	You have taken into consideration all the pros and cons and you have decided to anchor where you are. You have gained no head start for the next spring, but the ships seem to be safe for this winter.	

# 7

The year 1845 is slowly coming to an end. You are wintering on Somerset Island. The nights are long and freezing. Time passes by very slowly, there is not much to do. However, there has been an suggestion to throw a Christmas party on ice! If you have taken costumes on board, you can even have a masked ball.

7a: That is nonsense, we need to preserve as many resources as possible. We cannot waste our precious supplies on parties.

7b: A party is a good idea. It will raise the spirit of our sailors. Let's have a modest party.

7c: The crewmembers deserve a proper and even lavish celebration that may even last for several days. Let them be cheerful for once, they have been through a lot.

## Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
7a	-1 morale	8	You are perceived as killjoys. You have saved the resources from being used unwisely but the crew feel unhappy for not celebrating Christmas and New Year's Eve properly.	
7ba	if <i>funpack</i> = 1 then +2 morale -1 food	8	The party has been successful, the sailors loved the idea of putting on the costumes. They cheered and drank and laughed and enjoyed the night thoroughly. The crew are really thankful.	
7bb	if <i>funpack</i> = 0 then +1 morale -1 food	8	The party has been successful; your sailors have enjoyed the night and they are thankful for it.	
7ca	if <i>funpack</i> = 1 then +3 morale -2 food	8	The party has been a huge success. The sailors loved the idea of putting on the costumes. They cheered and drank and laughed and enjoyed the night thoroughly. There were even drinking contests, fights and bets. All the fun sailors love. They would go to hell and back for you!	
7cb	if <i>funpack</i> = 0 then +2 morale -2 food	8	The party has been very successful, and it lasted for several days. The sailors cheered and drank and laughed and enjoyed it all thoroughly. They are really thankful.	

## 8 Intermezzo

You have waited for a long time for it to come, and finally, the spring of 1846 is here. Your ships are freed from the ice and you can set sail again. As you continue south you see land in front of you. Is it an island or peninsula? Whatever it is, you are naming it after King William.

Variables	Graphic design & notes	Go to
if <i>cornwallis</i> = 1 then use <i>map111</i>	North of King William Island discovered (map111)	9
if <i>cornwallis</i> = 0 then use <i>map011</i>	North of King William Island discovered (map011)	9

# 9

From the very moment King William Island or Peninsula (we can only guess now) appeared in front of us, a question has been looming in the air...

We need to sail around it in order to finish the Passage, what direction shall we take? There are no maps or clues to help us in our decision, only our experience and gut feelings.

9a: We will sail southwest of the newly discovered land hoping to emerge in Dease Strait; thus, completing the Passage before the ice closes again this year.

9b: We will sail southeast of the newly discovered land and we will force the Northwest Passage before the sea freezes again this year.

## Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
9aa	if <i>cornwallis</i> = 0 then use <i>map011w</i>	10	You have trusted your instincts and continued along the west coast of what seems to be an island.	West coast of King William Island has been discovered! (map011w)
9ab	if <i>cornwallis</i> = 1 then use <i>map111w</i>	10	You have trusted your instincts and continued along the west coast of what seems to be an island.	West coast of King William Island has been discovered! (map111w)
9ba	<i>east</i> = 1 if <i>cornwallis</i> = 0 then use <i>map011e</i>	10	You have trusted your instincts and continued along the east coast of what seems to be an island.	East coast of King William Island has been discovered! (map011e)
9bb	<i>east</i> = 1 if <i>cornwallis</i> = 1 then use <i>map111e</i>	10	You have trusted your instincts and continued along the east coast of what seems to be an island.	East coast of King William Island has been discovered! (map111e)

## 10 Intermezzo

-4 crew

The winter came early this year. The sea froze and trapped your ships in its icy grip. There is not much you can do about it. You can only wait for the spring thaw of 1847. You have ventured where no other civilised person has stepped before. However, the Arctic is an unforgiving and hostile place to explore; not everyone will survive. During the first months of the winter 4 crewmembers died of general exhaustion, illnesses and hypothermia. Yet, you must carry on...

Go to 11.

# 11

You do not want to sit idly and wait for the spring, or do you? The admiralty has given you orders to explore the lands of the Arctic, its fauna and flora and conduct a series of experiments concerning extreme temperatures and the Earth's magnetic field. There has been a suggestion to send a well-equipped sledge party to explore the other side of the island/peninsula and then come back before the winter is over. They might be away even for several weeks. Will you send your men to explore the hostile place?

11a: We will send 10 well-equipped and provisioned men to explore and map this island or peninsula near which we are stranded. It might help us better understand this land and even learn more about its geography, fauna and flora. It might come in handy in the future...

11b: It would be foolish to send away our men. It is too risky, no one knows what awaits them out there.

## Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
11aa	if <i>cornwallis</i> = 0 then use <i>map0111</i>	12	You wished your men good luck and sent them away. They returned after several weeks and mapped the other side of what seems to be an island and conducted a series of experiments. However, there has been an incident on their way back...	West and east coast of King William Island has been discovered! (map0111)
11ab	if <i>cornwallis</i> = 1 then use <i>map1111</i>	12	You wished your men good luck and sent them away. They returned after several weeks and mapped the other side of what seems to be an island and conducted a series of experiments. However, there has been an incident on their way back...	West and east coast of King William Island has been discovered! (map1111)
11b		13	You did not send you men away. You kept them safe and you are waiting for spring to come.	

# 12

...the sledge party which has just returned encountered a band of savages – Inuit on their way back to the ships. There were some 30 of them, most of whom were armed with bows and spears. As they were getting closer, your men got ready for anything that might come. One of your marines panicked and a gunshot cracked through the air. The marine felt that one of the savages was holding his weapons in a threatening way and he shot him in the chest. The savage fell to the ground dead. The rest of the savages scattered. What shall we do with the marine?

12a: He was not given any order to shoot. Weren't we given orders from the admiralty not to harm natives unless necessary? The marine needs to be punished severely – let him be flogged (whipped) in front of the crew.

12b: The marine killed an innocent man and threatened the success of the whole expedition. He was not given any order to shoot, what is more, he acted against the admiralty's commands to treat natives well. He deserves to be hanged for it. This would also teach others to obey commands.

12c: The marine showed courage while facing the savages and gave them no quarter. He will be decorated for bravery in front of the crew.

## Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
12a	-1 morale <i>curse = 1</i>	13	The crew did not like the fact that the marine was punished for killing an armed savage. Should an Englishman be afraid to kill a dangerous savage?	
12b	-2 morale -1 crew <i>curse = 1</i>	13	The crew was outraged by your decision to hang the brave marine for killing an armed savage. Does this mean that civilised subjects of the crown are less important than nameless savages who threaten us? What is this?!	
12c	+1 morale <i>curse = 0</i>	13	The marine did not expect it, but you could see that a huge burden was lifted from his shoulders. The rest of the crew cheered and sang Rule Britannia spontaneously. We will give savages no quarter!	

# 13

A band of some 30 savages is approaching to your ships. There seem to be men and women alike, but it is difficult to distinguish them from one another, some of the Inuit are armed with bows and spears. As they are getting closer and closer, they seem to do so in strange ritual-like manner. What shall we do? We need to act quickly!

13a: Fire at once and kill them all before they get any closer to the ships and harm any one of you with their dark magic or weapons!

13b: Watch them carefully and let them come closer and try talking to them to learn what they want.

Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
13a	-2 sanity <i>curse = 1</i>	15	Three salvos of shots gunned them down. As they were dying on the frozen ground, shrieks of horror and words in an unknown tongue echoed through the air. One word was more distinct than the others "Tupilaq". When you checked the scene of the killing, a strange figurine amid the bodies caught your eye. It was carved from walrus tusk and covered in the blood of the savages. The whole incident was, if put mildly, very unsettling.	Tupilaq figurine found.
13ba	if <i>sledgeparty = 0</i>	15	The Inuit were very curious when it came to your ships and expedition. As some of you knew some of the words of their tongue you exchanged pleasantries and you learned some important pieces of information. This piece of land is an island indeed. The other piece of news was rather unsettling – the spring thaw is not coming this year. As a token of good will, they handed you a figurine carved of walrus tusk. They said it would bring you good luck.	Tupilaq figurine found.
13bb	if ( <i>sledgeparty = 1</i> and <i>curse = 1</i> )	14	Some of your men can understand a few words of their tongue. They came to settle a blood debt you have. They have a proposal for you...	
13bc	if ( <i>sledgeparty = 1</i> and <i>curse = 0</i> )	15	A few crew members could understand some of the words they spoke. As they saw the executed marine, they said that the killing of their man had been settled. As a token of reconciliation, they gave you a figurine carved from walrus tusk. They warned you that the spring thaw was not coming this year. They did not want to exchange any pleasantries, they said goodbye in a very cold manner and left.	Tupilaq figurine found.

# 14

... if you execute the man responsible for killing one of their own, the debt will be settled. If not, the frozen land itself will kill you as you have acted against its rules. What shall we do with such a “proposal”?

14a: Accept their proposal and execute the marine responsible for killing one of their kin to settle the debt.

14b: Dismiss their proposal and send them away.

14c: Let them learn the consequences of threatening loyal subjects of the crown. Dismiss their proposal and kill them all. Savages obviously need to learn their place.

## Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
14a	-2 morale -1 crew <i>curse = 0</i>	15	After you had executed the marine, they said that the debt had been settled. As a token of reconciliation, they gave you a figurine carved from walrus tusk. They warned you that the spring thaw was not coming this year. They did not want to exchange any pleasantries, they said goodbye in a very cold manner and left.	Tupilaq figurine found.
14b	-2 sanity -2 morale -1 crew	15	You dismissed their proposal and sent them away. They left without a single word, they only left behind a strange figurine carved from walrus tusk that was covered in blood. Your crew cheered when you did not hand in the marine and dismissed the wilful proposal of the savages.  The very next morning, the marine you had saved was nowhere to be found. He simply vanished into thin air. Without a trace. Rumours that you have secretly handed the poor marine to the savages in some kind of a twisted deal started to appear. But you have not done anything like that! What happened to the poor man?! This is insane!	Tupilaq figurine found.
14c	-2 sanity -1 morale -1 crew	15	Three salvos of shots gunned them down for their insolence. As they were dying on the frozen ground, shrieks of horror and words in an unknown tongue echoed through the air. One word was more distinct than the others - “Tupilaq”. A strange figurine lying amid the bodies of the savages caught your eye. It was carved from walrus tusk and covered in the blood of the savages. Your crew cheered when they defeated the savages. The very next morning, the marine you had saved was nowhere to be found. He simply vanished into thin air. Without a trace. What happened to the poor man?! A feeling of horror has started overtaking the ships.	Tupilaq figurine found.

# 15

It is spring 1847 and you are still waiting for the thaw. You start to notice that some of the sailors wander around aimlessly and their stares are empty. Everybody is dead tired of the never ending night and endless white spaces around you, that is for sure. The ships look like opium dens at times – absent minded people with blank gazes all around you. But isn't there more to it? One of the surgeons (Mr. Goodsir) has come up with a theory that the canned food causes food poisoning that clouds people's minds and also affects their bodies. The tins are sealed with lead and when you open them in a lot of cases, you find the lead from the seal almost dripping into the food. What shall we do about it? Most of our food is stored in tins...

15a: It is just a theory of one person, there is no proof. It is nonsense. People are just tired of the endless winter, once we set sails again, they will cheer up.

15b: We depend heavily on canned food, but we must limit it. We also need to throw away the tins with the worst seals. It will cost us a lot of food, but it will hopefully save us from the worst.

15c: We need to get rid of all the tins, they are literally killing us. We cannot afford to have them around as some crew members would secretly try to eat from them and they would make the matter only worse. Hopefully, the spring will come soon, and we still have enough food supplies to reach civilization.

## Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
15a	-2 sanity	16	You say it is nonsense. There is no force to overturn your ruling. The fact is that the situation is not getting any better - quite the opposite. Let's hope that the spring comes soon.	
15b	-1 sanity -1 food	16	We have lost a lot of cans and the situation is not getting much better. How long can we go like this? We need a new impulse and also fresh supplies.	
15c	+1 sanity -3 food	16	The crew seem to be getting more focused and vigilant, they are also aware of the fact that there is no more canned food. We still have some food supplies left, but we have to use them wisely.	

# 16

The spring of 1847 did not bring a thaw. The ice did not melt. The ships are still trapped in ice. Is there any chance things will get better? You need to start thinking about back-up plans, don't you?! Will you abandon the ships and continue your journey on foot, or will you wait one more year?

16a: We will hold steady, there are enough resources on the ships. If there is any chance of forcing the passage and surviving the journey, it lies with our ships. We will wait one more year, the thaw will come, and the ships will be free again.

16b: There is no point in waiting. We need to act quickly; the ships are of no use. We will take all the necessary equipment and supplies with us and we will continue south on foot to save ourselves. There are hunting outposts on the Canadian mainland. If we reach them, we will be saved.

16c: There is no point in waiting for the thaw that is not coming; the ships are ice-bound. We will take all the necessary equipment and supplies with us and we will continue northeast on foot to save ourselves. There are shipwrecks on the east coast of Boothia and whaling ships pass by from time to time. If they find us, we will be saved.

## Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
16a	-2 food -3 morale	17	You have decided to spend one more year on the ships. The food is running low and so is the morale of your men.	
16b	-3 food -2 morale <i>passage = 1</i> <i>ship = 0</i>	17	You have abandoned the ships and taken as many things and supplies as you can carry. You have turned lifeboats into sledges, and you continue south on foot hoping to reach civilisation before it is too late.	
16c	-3 food -2 morale <i>ship = 0</i>	17	You have abandoned the ships and taken as many things and supplies as you can carry. You have turned lifeboats into sledges, and you continue northeast on foot hoping to be saved.	

## 17 Intermezzo

The time is slowly passing by. The winter of 1847/1848 seems to be the longest you have ever gone through. The food stocks are dwindling. The crew are exhausted, and people have started dying of malnutrition and exhaustion. 10 of your crewmembers have perished so far and the dream of spring seems to be thousands of miles away.

-10  
crew  
-1 food

Variables	Text summarising the results of the decisions
if scurvy = 0	Life is hard indeed, but at least you are lucky that there has not been a scurvy outbreak. Any symptoms remotely resembling scurvy were tackled immediately by the ships' doctors when they showed up.
if scurvy > 0 and < 4 -10 crew	As life hasn't been hard enough, there has been an outbreak of scurvy. 10 people have died so far, and the rest are afraid about who is next.
if scurvy = 4 -20 crew	As life hasn't been hard enough, there has been a terrible outbreak of scurvy. 20 people have died so far and those who are still alive cannot have high hopes.

Variables	Text summarising the results of the decisions
if curse = 1 -2 sanity -5 crew	What is more, there have been strange rumours of voices that lure people in the night. Those who succumb to their soft voices are never to be seen again. Be it as it may, it is undeniable that 5 of your crewmembers have vanished from the face of Earth and stories full of horror creep around.

Variables	Go to
if ship = 1 and east = 1	18
if ship = 1 and east = 0	19
if ship = 0	20

# 18

The spring of 1848 has arrived, and your ships are finally free. The ice is melting, you can finally set sail! Where will you go?

18a: We will force the Passage. It is our goal and we cannot fail our queen. Let's continue towards the south and then west!

18b: We have no idea what awaits us; if we continue and get stuck again, we are dead. If we turn back now, we will be able to get back to Baffin Bay this year and seek for help. If we fail to find the Passage this time, we will succeed the next one; however, if we die, we will never succeed.

## Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
18aa	$passage = 1$ if $cornwallis = 0$ then use $map01111$ -10 crew -1 food	21	You have decided to press onwards. You have mapped the last pieces of King William Island and you continue west. You have forged the last links of the passage, but your journey is far from an end. If you die here, no one will ever know that you have found the Northwest Passage.  Sailors are weak and starving, food stocks are running low, people are dying of hypothermia, but you carry on.	King William Island is complete! (map01111)
18ab	$passage = 1$ if $cornwallis = 1$ then use $mapcomplete$ -10 crew -1 food	21	You have decided to press onwards. You have mapped the last pieces of King William Island and you continue west. You have forged the last links of the passage, but your journey is far from an end. If you die here, no one will ever know that you have found the Northwest Passage  Sailors are weak and starving, food stocks are running low, people are dying of hypothermia, but you carry on.	King William Island is complete! (map complete)
18b	-10 crew -1 food	21	You have decided to turn back and save your ships and as many lives as possible. The journey is still far from an end.  Sailors are weak and starving, food stocks are running low, people are dying of hypothermia, but you carry on in hope that one day you might get back home alive.	

# 19

The spring of 1848 has arrived, but your ships are still trapped in ice. The ice hasn't melted and your ships are slowly but steadily being crushed by the ice. You have no other choice than to abandon them and reach safety on foot. The chances of your survival are slim but British men will not give up! Like once before you have two possibilities where to continue:

19a: We will take all the necessary equipment and supplies with us and we will continue south on foot to save ourselves. There are hunting outposts on the Canadian mainland, if we reach them, we will be saved.

19b: We will take all the necessary equipment and supplies with us and we will continue northeast on foot to save ourselves. There are shipwrecks on the east coast of Boothia and whaling ships pass by from time to time, if they find us, we will be saved.

## Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
19a	<i>passage = 1</i> -2 food	20	You have abandoned the ships and taken as many things and supplies as you can carry. You have turned lifeboats into sledges, and you continue south on foot hoping to reach civilisation before it is too late.	
19b	-2 food	20	You have abandoned the ships and taken as many things and supplies as you can carry. You have turned lifeboats into sledges, and you continue northeast on foot hoping to be saved.	

## 20 Intermezzo

You slowly continue on foot in the direction you have chosen. There is not much food left, if any, and your once proud crew members are weak and dying of exhaustion and hypothermia. You have lost at least 20 good sailors and it is still summer 1848.

-20 crew -1 food
------------------------

Variables	Text summarising the results of the decisions
<b>if curse = 1</b> -5 crew -1 food -1 sanity	As if it were not enough, one group of sailors went completely mad. They stole some food and set a tent on fire to warm themselves. They were howling like wolves and stuffing their mouths with whatever food they had found. They could not be calmed down and they injured several people who wanted to save them. The remaining marines had to shoot the madmen before they could cause more harm.

**Go to 21.**

# 21

Your crew has gone through a terrible ordeal so far. They are exhausted and starving. They demand that you increase the rations of food. What will you do?

21a: Give them the last scraps of food you have (have you ever thought that even shoes could be eaten), that will leave you with no or almost no reserves.

21b: Continue rationing the last bits and pieces of food and do not succumb to their demands.

## Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
21aa	if <i>ship</i> = 1 -1 food +1 morale	22	You have given your crew a generous ration at last and it boosted their morale for some time. Is there anything left for the future? The journey is not over yet...	
21ab	if <i>ship</i> = 0 -1 food +1 morale	25	You have given your crew a generous ration at last and it boosted their morale for some time. Is there anything left for the future? The journey is not over yet...	
22ba	if <i>ship</i> = 1 -1 morale	22	You continue rationing whatever is left. You will not allow such foolish demands to be imposed on you by common sailors.	
22bb	if <i>ship</i> = 0 -1 morale	25	You continue rationing whatever is left. You will not allow such foolish demands to be imposed on you by common sailors.	

# 22

-10 crew

You sail on, but the journey home is endless. More crew members have died and there is strange talk about what to do with the bodies. What at first seemed to be a madman's thought is now getting more and more feasible. You are running low on food and yet there is plenty of meat on board. Will you let your men feast on the bodies of their friends? Will an Englishman eat an Englishman?

22a: That is completely out of the question. This will never happen on Her Majesty's ships. We will not allow it!

22b: It is a desperate idea indeed, but it might be the only thing to save you and your crew. It needs to be done.

Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
22aa	if (morale < 3 or sanity < 3)	28	Starving and exhausted men on the verge of dying or going mad did not ask for your permission. When they have finished feasting on the dead, they turned their insane eyes on the living...	
22ab	if (morale > 3 and sanity > 3) and (speed > 2) -2 food; +1 sanity	29	You have saved the dignity of you and your crew members both the dead and those who are still alive. Will you all die of starvation in the end?	
22ac	if (morale > 3 and sanity > 3) and (speed < 3) -2 food; +1 sanity	23	You have saved the dignity of you and your crew members both the dead and those who are still alive. Will you all die of starvation in the end?	
22ba	if (morale < 3 or sanity < 3)	28	Starving and exhausted men on the verge of dying or going mad first feasted on the dead, when they have finished, they turned their insane eyes to the living...	
22bb	if (morale > 3 and sanity > 3) and (speed > 2) +1 food; -1 sanity	29	You have committed a terrible sin that will hardly ever be forgiven but it saved the lives of you all. For now...	
22bc	if (morale > 3 and sanity > 3) and (speed < 3) +1 food; -1 sanity	23	You have committed a terrible sin that will hardly ever be forgiven but it saved the lives of you all. For now...	

## 23 Intermezzo

You have almost escaped the perils of the Arctic. Almost...

Variables	Text summarising the results of the decisions
if <i>curse</i> = 1 -5 crew -1 sanity	There was a terrible snowstorm one night. The snowstorm almost turned over the ships, but they survived the ordeal in the end. Some of the crewmembers swore that they heard words in a strange tongue being carried on the winds of the storm. Some of you would even believe it. Has the snowstorm devoured 5 of the sailors? Or have they simply fallen overboard? You will never know...

Go to 24.

## 24

HMS Erebus has been damaged by an iceberg, it is taking in water and it is lagging behind. Now it is clear that you will not reach any civilised outpost in time to save everybody if you continue at this pace. You need to take everybody on board the HMS Terror and leave the HMS Erebus behind but there will be hardly enough resources for everybody...

24a: We will leave no one behind, even if it means we all die in the end. We haven't gone through this hell together only to part in the end.

24b: We will leave the ill and the weak behind. That should do.

24c: We will leave the ill and the weak behind; furthermore, 3 officers from our ranks will sacrifice themselves and stay with those who will be left behind. If no one volunteers, we need to decide it in a different manner, randomly or we will force some officers to do as told.

### Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
24aa	-1 food +1 morale if (morale < 2 or sanity < 2 or food < 2)	30	You have tried to save everybody, but you have not been able to save even yourselves...	
24ab	-1 food +1 morale if (morale > 1 and sanity > 1 and food > 1)	29	You have taken on board the HMS Terror as many people as possible hoping to find help soon...	
24ba	-1 morale -20 crew if (morale < 2 or sanity < 2 or food < 2)	30	You have tried to save at least some men, including all the officers but you relied too much on the loyalty of your crew...	
24bb	-1 morale -20 crew if (morale > 1 and sanity > 1 and food > 1)	29	You have tried to save at least some men, including all the officers, but if do not find any help soon, you might be all doomed in the end...	
24c	-25 crew	29	You have sacrificed a lot of good men including some of your officers. Will that be enough to save the rest?	

# 25

You crawl onwards hoping to find traces of civilisation. Suddenly, you see a small group of Inuit on the horizon. What will you do?

25a: We will try to befriend them and hope to trade at least some food for whatever they want.

25b: We will try to rob them of whatever they have, it might help us survive.

## Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
21aa	if morale > 2 +1 food	26	You have been able to befriend them, and they treated you well, you have got some good pieces of advice regarding pulling your sledge and what is more important even some food. All that has cost you just some trinkets.	
21ab	if (morale < 3 and curse = 1) -1 morale	26	You ordered your men to befriend them and trade with them, but they ignored your order and attacked the Inuit hoping to get some loot but the Inuit managed to escape.	
21ac	if morale < 3 and curse = 0) +1 food	26	You ordered your men to befriend them and trade with them, but they ignored your order and attacked the Inuit hoping to get some loot. Your men killed all the savages but did not find much booty, only a little food.	
22ba	if curse = 0 +1 food	26	You ordered your men to attack the savages hoping to get some loot. Your men killed them all but did not find much booty, only a little food.	
22bb	if curse = 1 -1 morale	26	You ordered your men to attack the savages hoping to get some loot, but the savages managed to escape.	

## 26 Intermezzo

Variables	Text summarising the results of the decisions
if <i>curse</i> = 1 -5 crew -1 sanity	There was a terrible snowstorm one night. Some of the crewmembers swore that they heard words in a strange tongue being carried on the winds of the storm. Some of you would even believe it. Has the snowstorm devoured 5 of your men? Or have they simply wandered in the night never to return? And why? You will never know...

The white plains of the Arctic are endless and unforgiving. And your men continue to die like flies. They are dying of hunger, exhaustion, hypothermia or simply no will to live anymore. You are quickly running of what is left of your resources.

-30 crew -2 sanity -2 food
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Variables	Text summarising the results of the decision	Graphic design & notes
if <i>passage</i> = 1 and <i>cornwallis</i> = 0 then use <b>map01111</b>	You carry on. You have mapped the last pieces of King William Island and you continue south to the Canadian mainland. You have forged the last links of the passage, but the cost seems to be terrible. Will there ever be anyone to learn about your success?	King William Island is complete! ( <b>map01111</b> )
if <i>passage</i> = 1 and <i>cornwallis</i> = 1 then use <b>mapcomplete</b>	You carry on. You have mapped the last pieces of King William Island and you continue south to the Canadian mainland. You have forged the last links of the passage, but the cost seems to be terrible. Will there ever be anyone to learn about your success?	King William Island is complete! ( <b>mapcomplete</b> )

Go to 27.

## 27

Your men are dying almost every day and strange talk about what to do with the bodies has emerged. What at first seemed to be a madman's thought is now getting more and more feasible. You are running low on food and yet there is plenty of meat every day. Will you let your men feast on the bodies of their friends? Will an Englishman eat an Englishman?

**27a:** That is completely out of the question. This will never happen to the civilised people of the British Empire. **We will not allow it!**

**27b:** It is a desperate idea indeed, but it might be the only thing to save you and your men. **It needs to be done.**

### Outcomes

	Variables	Go to	Text summarising the results of the decision	Graphic design & notes
<b>27aa</b>	if ( <b>morale</b> < 3 or <b>sanity</b> < 3)	28	The starving and exhausted men on the verge of dying or going mad did not ask for your permission. When they have finished feasting on the dead, they turned their insane eyes to the living...	
<b>27ab</b>	if ( <b>morale</b> > 2 and <b>sanity</b> > 2) -2 food +1 sanity	31	You have saved the dignity of you and your crew members both the dead and those who are still alive. Will that matter...	
<b>27ba</b>	if ( <b>morale</b> < 3 or <b>sanity</b> < 3)	28	The starving and exhausted men on the verge of dying or going mad first feasted on the dead, when they have finished, they turned their insane eyes to the living...	
<b>27bb</b>	if ( <b>morale</b> > 2 and <b>sanity</b> > 2) +1 food -1 sanity	31	You have committed a terrible sin that will hardly ever be forgiven but it saved the lives of you all. For now...	

## 28 Ending

Variables	Ending
<i>if passage = 1</i>	<p>In the end, you have been eaten by your own desperate men.</p> <p>The crew without its officers and resources could not escape the perils of the Arctic and they perished soon after you. You have forged the last missing link of the Northwest Passage with your lives. All the crew members of Franklin's lost expedition are idealized and hailed as heroes back in Britain.</p> <p>It will take generations before the shards of truth will slowly start to emerge to tell the real story of the HMS Erebus and the HMS Terror and their crew. A tale of adventure, misfortune and horror.</p>
<i>if passage = 0</i>	<p>In the end, you have been eaten by your own desperate men.</p> <p>The crew without its officers and resources could not escape the perils of the Arctic and they never returned home. All the crew members of Franklin's lost expedition are idealized and hailed as heroes back in Britain.</p> <p>It will take generations before the shards of truth will slowly start to emerge to tell the real story of the HMS Erebus and the HMS Terror and their crew. A tale of adventure, misfortune and horror.</p>

## 29 Ending

Variables	Text summarising the results of the decision
if <i>passage</i> = 1 and (morale > 0 and sanity > 0 and food > 0)	<p>Rule Britannia! You have forced the Northwest Passage and returned home. You are hailed as heroes back in Britain. People will forever love the story of the brave crewmembers of the HMS Erebus and the HMS Terror as they succeeded against the force of nature, against the curse of the Arctic, against all odds. And they prevailed!</p> <p>It will take generations before some of the darker secrets of your expedition will be brought to the light as well.</p>
if <i>passage</i> = 0 (morale > 0 and sanity > 0 and food > 0)	<p>You have not forced the Northwest Passage as commanded but at least you have returned home. There has been some disappointment at the Admiralty regarding your expedition, but common people will forever love the story of the brave crewmembers of the HMS Erebus and the HMS Terror as they fought against the force of nature, against the curse of the Arctic, against all odds. And they prevailed!</p> <p>It will take generations before some of the darker secrets of your expedition will be brought to the light as well.</p>
if <i>passage</i> = 1 and (morale < 1 or sanity < 1 or food < 1)	<p>You fought until your last dying breath, but you could not escape the perils of the Arctic. One by one, all the men were lost to starvation, madness, exhaustion and illnesses.</p> <p>You have forged the last missing link of the Northwest Passage with your lives. Will they ever learn that back home? All the crew members of Franklin's lost expedition are idealized and hailed as heroes back in Britain.</p> <p>It will take generations before the shards of truth will slowly start to emerge to tell the real story of the ships the HMS Erebus and the HMS Terror. A tale of adventure, misfortune and horror.</p>
if <i>passage</i> = 0 and (morale < 1 or sanity < 1 or food < 1)	<p>You fought until your last dying breath, but you could not escape the perils of the Arctic. One by one, all the men were lost to starvation, madness, exhaustion and illnesses.</p> <p>All the crew members of Franklin's lost expedition are idealized and hailed as heroes back in Britain.</p> <p>It will take generations before the shards of truth will slowly start to emerge to tell the real story of the ships the HMS Erebus and Terror. A tale of adventure, misfortune and horror.</p>

## 30 Ending

Variables	Text summarising the results of the decision
if <i>passage</i> = 1	<p>You have forced the Passage! You must return safely home! You tried to maintain order to the last, but your crew mutinied, and they killed you hoping to save at least themselves. But without their officers and with dwindling resources, they could not escape the perils of the Arctic and they never returned home. All the crew members of Franklin's lost expedition are idealized and hailed as heroes back in Britain.</p> <p>It will take generations before the shards of truth will slowly start to emerge to tell the real story of the HMS Erebus and the HMS Terror and their crew. A tale of adventure, misfortune and horror.</p>
if <i>passage</i> = 0	<p>You have tried to maintain order to the last, but your crew mutinied, and they killed you hoping to save at least themselves. But without their officers and with dwindling resources, they could not escape the perils of the Arctic and they never returned home. All the crew members of Franklin's lost expedition are idealized and hailed as heroes back in Britain.</p> <p>It will take generations before the shards of truth will slowly start to emerge to tell the real story of the HMS Erebus and the HMS Terror and their crew. A tale of adventure, misfortune and horror.</p>

## 31 Ending

Variables	Text summarising the results of the decision
if <i>passage</i> = 1 and ( <i>morale</i> > 0 and <i>sanity</i> > 0 and <i>food</i> > 0)	<p>After the months of walking south feeding on whatever you found, you encountered a group of fur hunters and they took you to their outpost. The remnants of your crew were finally saved.</p> <p>You are hailed as heroes back in Britain because you found the Northwest Passage and returned home. It will take more than 50 years before a ship sails through the Passage. People will forever love the story of the brave crewmembers of the HMS Erebus and the HMS Terror as they succeeded against the force of nature, against the curse of the Arctic, against all odds. And they prevailed!</p> <p>It will take generations before some of the darker secrets of your expedition will be brought to the light as well.</p>
if <i>passage</i> = 0 ( <i>morale</i> > 0 and <i>sanity</i> > 0 and <i>food</i> > 0)	<p>After months of walking northwest feeding on whatever you found, a whaling ship appeared on the horizon and the remnants of your crew were finally saved. You have not forced the Northwest Passage as commanded but at least some of you have returned home. There has been some disappointment at the Admiralty regarding your expedition, but common people will forever love the story of the brave crewmembers of the HMS Erebus and the HMS Terror as they fought against the force of nature, against the curse of the Arctic, against all odds. And they prevailed!</p> <p>It will take generations before some of the darker secrets of your expedition will be brought to the light as well.</p>
if <i>passage</i> = 1 and ( <i>morale</i> < 1 or <i>sanity</i> < 1 or <i>food</i> < 1)	<p>You fought until your last dying breath, but you could not escape the perils of the Arctic. One by one, all the men were lost to starvation, madness, exhaustion and illnesses. You got to the Canadian mainland but the nearest outpost of civilisation was many miles away when the last one of you perished.</p> <p>You forged the last missing link of the Northwest Passage with your lives but will they ever learn that back home?</p> <p>All the crew members of Franklin's lost expedition are idealized and hailed as heroes back in Britain.</p> <p>It will take generations before the shards of truth will slowly start to emerge to tell the real story of the ships the HMS Erebus and the HMS Terror. A tale of adventure, misfortune and horror.</p>
if <i>passage</i> = 0 and ( <i>morale</i> < 1 or <i>sanity</i> < 1 or <i>food</i> < 1)	<p>You fought until your last dying breath, but you could not escape the perils of the Arctic. One by one, all the men were lost to starvation, madness, exhaustion and illnesses.</p> <p>All the crew members of Franklin's lost expedition are idealized and hailed as heroes back in Britain.</p> <p>It will take generations before the shards of truth will slowly start to emerge to tell the real story of the ships the HMS Erebus and Terror. A tale of adventure, misfortune and horror.</p>



*Tupilaq figurine*

### **Sources of pictures and authentic texts**

Excerpts from books and diaries by W. E. Parry and Helen Humphreys

Catherine Price, <https://www.sciencehistory.org/distillations/the-age-of-scurvy>

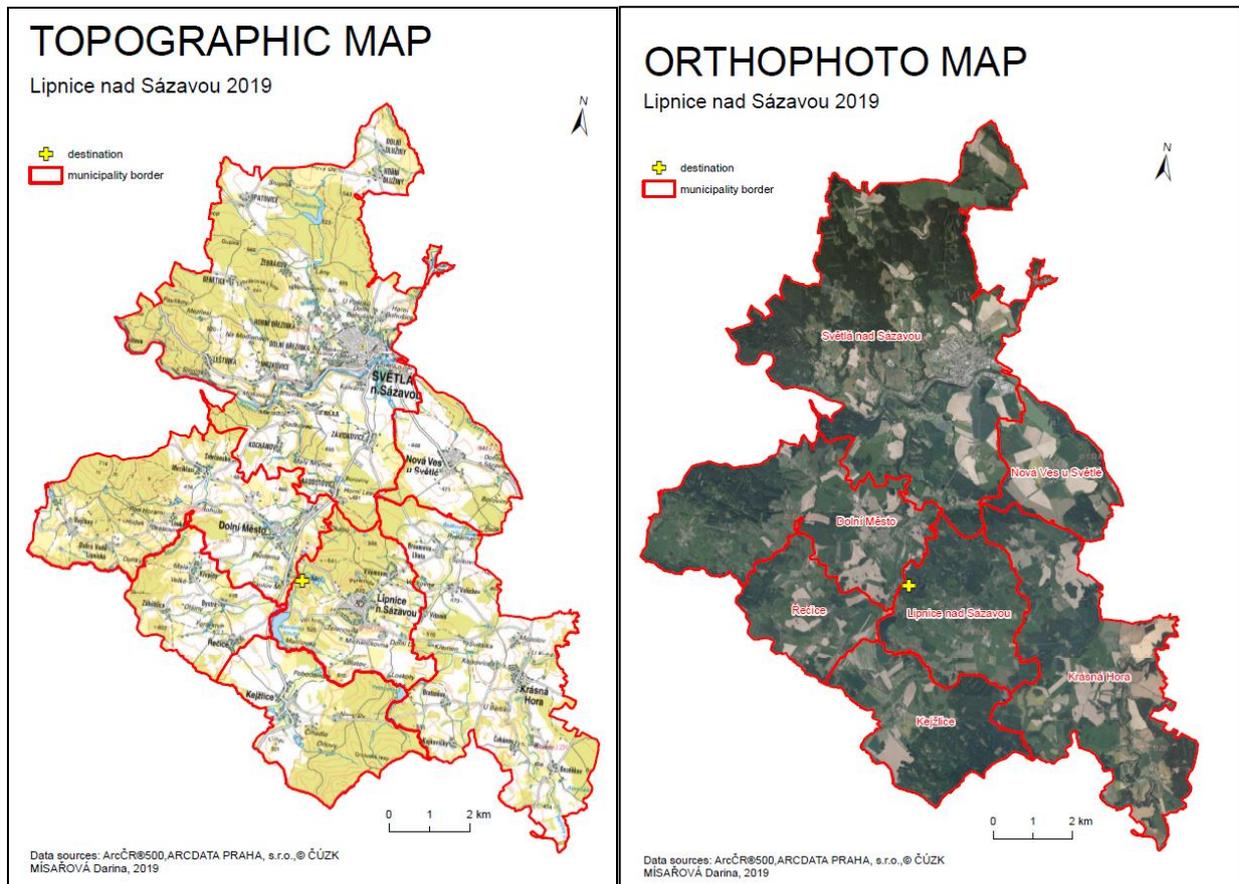
Ansgar Walk, [https://en.wikipedia.org/wiki/Tupilaq#/media/File:Tupilak\\_1.jpg](https://en.wikipedia.org/wiki/Tupilaq#/media/File:Tupilak_1.jpg) (CC BY-SA 3.0)

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## 7. METHODOLOGY OF PERSONAL AND SOCIAL EDUCATION DEVELOPMENT COURSE

### 7.1 LOCALISATION OF OUTDOOR EDUCATION – LIPNICE NAD SÁZAVOU

Coordinates: 49°36'47"N 15°24'49"E



Lipnice nad Sázavou is a historical municipality, formerly a town in the Havlíčkův Brod District in the Vysočina Region. It is located at an altitude of 580 m above sea level on the dominant landscape ridge on the border of middle and upper Posázaví. The municipality was founded at the beginning of the 14th century and has a rich history associated with the dominant feature of the village - Lipnice Castle. The castle was the residence of important aristocratic families, especially in the Middle Ages, and the townlet under the castle provided the economic background of the castle.

The municipality has a population of 654 inhabitants (as of 31 December 2018). Lipnice nad Sázavou is, thanks to its rich history, medieval castle and tradition of the writer Jaroslav Hašek, one of the most important sights of Posázaví with supraregional significance, a frequent tourist destination for tourists and an important recreational area. However, a relatively large part of real estate in the municipality is used only seasonally as cottages. Due to the diversity of the relief of the territory, the partly medieval development and the dispersion of settlement, especially in the peripheral parts, ensuring adequate living conditions for the population is relatively difficult.

The base of the Czech Camping Union in the Bohemian-Moravian Highlands is located directly on the border of geomorphological districts. The rugged relief of the Melechovská Highlands alternates with the depressions of the Humpolec Basin. Numerous forms of weathering of the granite subsoil have created captivating landscape formations – tors, rock bowls, and rock overhangs (Demek et al., 2014). Geographical location and rugged relief make this location an ideal place for adventure pedagogy and leisure time pedagogy. The surrounding landscape, decorated with numerous flooded quarries after earlier mining, directly encourages the exploring and rediscovery of the beauties of nature. The genius loci of the local landscape is formed by works of art carved into the rock blocks of the National Monument of Eavesdropping (The Mouth of Truth, Bretschneider's Ear and The Golden Eyes). In a unique way, natural and human creations are combined here, sensitively placed on important landscape elements.

## 7.2 INTRODUCTORY DESCRIPTION

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**SOpP146 Methodology of personal and social education development course** is open to interested students from all departments of PdF MU, but it is closely connected to a course (which is primarily (core curriculum) intended for students of the programme Sociální pedagogika a volný čas – Bc – presenční):

- SV4BP\_KZ3L Kurz 3 (letní) – accreditation valid to 2018
- SOp146 Metodický kurz – accredited since 2018
  
- **Workplace**, Faculty of Education MU, Department of Social Education
- **Number of students** – During the last twenty years, approx. 900 students have completed this course (in different formal content modifications)

### Theoretical foundation

**Study classification** – The course is intended mainly for all day programme students in the fourth semester of the Sociální pedagogika a volný čas programme

- The course is the methodical and practical outcome of two years of theoretical and partial preparation of students in lectures and seminars in the fields of free time education and personal and social development at the level of helping professions in which they will later work.
- The course takes place during the spring exam period, usually in the last week of May.
- The course is intentionally placed in the tuition at the end of the second year as it follows subjects specifically focused on free time education and the whole conception of education at the Department of Social Education at Faculty of Education of MU, which runs through all the semesters of the first and second years.
- The course is an obligatory six day field methodological course with 30–40 participants and five instructors.

**Main goal** – Students will improve their teaching skills through realisation of methodical, teaching and reflective activity in a specified project team. Afterwards, they can understand the nature and use of various games, techniques and free time activities and needs related to them for their work with specific focus groups.

**Purpose – by the end of this** course students will have achieved necessary experience in leadership thanks to their own reflection on the experience of leading individually and in a group under the supervision of instructors and intervention of their fellow students. On this basis they create their own professional portfolio of values, beliefs and knowledge in the field of helping professions.

This finalizing process is not misaligned with the whole conception of students' studies. On the contrary, it follows, directly or indirectly, the whole concept of the studied programme, mainly the specialization in the field of free time education. It is also possible to consider it as a closed concept of personal development through the direct experience obtained at the course (so it is possible to offer the course to students from other programmes). It is congruent with the courses and classes listed below (in accreditations currently valid for the Bachelor's day studies):

- SOp117 Osobnostní příprava 1
- SOp127 Osobnostní příprava 2
- SOp137 Osobnostní příprava 3
- SOp116 Kurz 1 - seznamovací
- SOp126 Kurz 2 (zimní)
- SOp122 Výchova ve volném čase
- SOp123 Výchova ve volném čase 1 - Metodika aktivit
- SOp134 Výchova ve volném čase 2 - Metodika her
- SOp143 Vedení zážitkově orientovaných kurzů

The course also relates to continuous and regular teaching practice which is a part of studies and is also supervised.

The course is focused on personal and social competences, through techniques, activities and games which are related to experiential learning, on spending time in the countryside, practical free time activities with people of all ages and social groups, physical activities in the countryside, self-reflective and self-exploring activities, but also on tourism, camping, natural scientific and geographical skills.

Students themselves, in project teams, lead techniques on thematically based blocks, prepare methodology in advance and process their reflection and evaluation. They create their own database of games and are introduced to other students' games in the context of personal and social competences. The whole course is temporally, physically and mentally demanding. Even that is a part of our educational strategy as our partial pragmatical intention is to offer students the possibility to see that being a professional in the field of experiential learning is not for free and that play in terms of the principles of education through experiential learning is not only about playing as such. The purpose of experientially oriented learning is based on a theoretical foundation which is also an open applicable system for various focus groups in terms of education on different levels and with different (and specific) focus groups.

### **Relevance and contribution**

During the course, students purposefully focus on the field of free time education and experiential learning methodology through their own practice. They invest a lot of effort into the practice during four months of preparations over the whole semester and in the leading of prepared blocks of activities focused on several topics. Their self-reflection on their performance

and group supervision of their colleagues and instructors becomes an inspiring part of the process.

A great contribution is the amount of time which is given to reflection and self-development in the personal, social and professional areas through obtained experience. Through this process purposeful development of personal and social competence is achieved.

Students themselves participate in the course and so they develop their skills in the areas of participation, teamwork and taking over responsibility for the process and its result.

Another considerable benefit is also the experience with teamwork in teams which are created with all the aspects of group dynamics.

An essential reality of the course is that students are under direct supervision of their instructor and through self-reflection and reflection given by their colleagues they will move further in their knowledge and skills in course leadership.

They will try and learn to process their methodology and reports of their leadership in the context of free time education and experiential learning methodology.

A significant educational advantage is the fact that before throwing students into the real environment to begin their teaching practice everything takes place in the safe environment of a training group based on two principles, which we call S.I.N. a Z.U.V.P.A. (see Soják, P. et al., 2014)

A contribution is often also the content of the activities, which often help students to grow and develop their personality and serve as motivation for further activity.

A more elaborated description of the whole conception and system of this field education can be found in:

SOJÁK, Petr a kol. *Kuchařka pro lektory zážitkově orientovaných kurzů, aneb, (Ne)vaříme z vody*. Brno: Masarykova univerzita, 2014. ISBN 978-80-210-7572-6.

SOJÁK, Petr. *Osobnostní a sociální rozvoj, aneb, Strom, mozaika a vzducholoď*. Praha: Grada, 2017. Pedagogika (Grada). ISBN 978-80-271-0342-3.

#### **Course requirements:**

1. Active participation in training and programme planned.
2. Methodology preparation – for three months, students prepare the methodology on the basis of which students do their presentations. The instructors serve as counselling support; they do not actively create the methodology but can comment and offer their experience as constructive criticism.
3. Methodological output: students alone (in project teams) lead in blocks, process the methodology, reflect on their outcomes and those of their colleagues and get acquainted with the techniques and games of their colleagues in the context of developing their own personality in relation to the self, others and the profession.
4. The final report: participants submit the processed reflection on their gained experience in the form of a final evaluating report in which they reflect on their own presentation and the presentation of other teams and colleagues.

Students are divided into five project teams (5–8 team members) – **the criteria for division are:**

1. Meeting with people with different experience, knowledge and skills (specialisation and experience in leadership and organising free time activities).
2. Strengthen one's experience, knowledge and skills with people who one does not know how to cooperate with and so they can create their own opinion about them and style of cooperation with them. The other way round, to strengthen cooperation with people one can work with so the art of synergy in a team can be strengthened and prevention of the "groupthink" syndrome can be created.
3. Find one's qualities in a role/roles which can be offered to the team (main and secondary team roles) and through self-reflection find its meaning for self, others, and the profession.
4. To ensure equal gender layout in the team (*in the predominantly feminine environment of faculties of education the main goal is to have at least one man in a team*). Group dynamics are always influenced by masculine and feminine energy and its understanding and meaning have its impact on the creation of one's own conception of leadership not only in the field of helping professions.

### **7.3 DESCRIPTION OF THE COURSE REALISATION IN RELATION TO STUDENTS**

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Tasks of the project team before, during and after the realisation of presentation performances

- The whole organisation and preparation are wholly in the hands of each team, so the students can really try overall leading of the course.
- It is up to them how responsible an attitude they will choose. Everything will be reflected on afterwards at the course. If the team underestimates something during the preparation or realisation, students will be led to understanding of the consequences of their un/preparedness.
- Students will get suggestions which will help them in adequate preparation. Nevertheless, they are not checked up on to see if and how they approach the process of creation, with the only exception being the date of timely submission of their draft and afterwards the final form of their prepared methodology. If this condition is fulfilled students will draw which two of five blocks they will lead. There is not enough time to realise all the five blocks with five teams. After this drawing, teams will have usually 10 to 14 days for final preparations of their two blocks.
- As suggested, students are prepared for the course a year in advance in classes which precede this course. During these courses, students practice their competence in many ways in order to be ready to adequately manage the course.

#### **Recommendations for students for the preparatory stage of the course:**

1. Every team will have several preparatory meetings during the semester (within the supportive seminary - SOp143 Vedení zážitkově orientovaných kurzů).
  - Division of roles / choosing of the team leader / division of tasks and priorities
  - *condition* – all students participate to some extent, in the preparation as well as in the implementation and finishing of the course
  - after realisation – the team will process feedback on their leading (the final report – see below)

2. Teams will send their first drafts of the methodology at least six weeks before the course and the whole final concept of their methodology at least ten days before the course for the final revision.
3. Everything can be continuously consulted with five instructors who oversee the course.
4. Every team will prepare the whole methodology and programme for every block in indoor and outdoor variations based on the dramaturgical principles of course preparation and in terms of their own dramaturgical legend (unitary conception) in five thematical (time delimited) blocks.
  - a) Games and techniques placed at the beginning of the course:
    - icebreakers
    - warmups
    - tuning self and others up
    - focused on winning trust – cohesion
    - focused on supporting the mood (positive)
  - b) games and techniques which develop social skills
    - group dynamics
    - initiative and group games (dynamics)
    - interaction and communication
    - social facilitation, cooperation, competition (problem solving)
    - group / team roles
  - c) games and techniques **focused on the perception and development of the environment**
    - ecological / environmental field
    - intercultural / multicultural field
    - global /social field
  - d) games and techniques **which develop the atmosphere**
    - creative
    - funny / humorous
    - sports / physically oriented
    - relaxing
    - with elements of dramatical education (combination)
  - e) **closing** games and techniques
    - reflection / self-reflection
    - feedback (sharing)
    - evaluating
    - finishing

Blocks can be filled with individual topics or a combination of them. Everything then depends on the goal and purpose set.

### **Realisation of chosen blocks**

- The block is always led **by one team** (which takes all responsibility for it), and the others present are participants.
- Two of instructor the instructors from the department take the role of participants (so the supervising team has a perception from the both sides) – while the other two instructors take a supervising role – one instructors free to engage in other activities necessary for

running the course in terms of his/her own mental hygiene, but out of the actual programme.

- Every block will run for **2 hours**, not less, not more (no block can interfere with another).
- During the six-week course every team will lead two blocks.
- The blocks will be drawn (in terms of what block every team will lead) 10 days before the course if every team delivers their methodology on time. Otherwise, instructor the instructors will divide the blocks between the teams. (*principle of collective responsibility*)

### Work schedule of the individual blocks at the course

block I.:	8:30 – 10:30
block II.:	11:00 -13:00
block III.:	14:00 – 16:00
block IV.:	16:30 – 18:30
block V.:	20:00 – 22:00

### Reflection on the realised block

The content of the reflection on realised blocks (if the team considers it appropriate to insert it into the block) is focused on the participants' reflection. In this reflection the team does not reflect on its own programme or the team itself (does not evaluate the quality of its performance), but focuses the reflection on the participants' experience, feelings and other.

**Reflection, feedback and common assessment** of individual blocks and teams is done the next day – the whole afternoon after outcomes are done based on the following schedule:

8:00	<b>Příprava ZV pro týmy 5*20</b>			100
10:00	<i>reflexe I.</i>	<i>I. tým</i>	<i>5 x 45 min + 15 min pauza</i>	45
11:00	<i>reflexe II.</i>	<i>II. tým</i>		45
12:00	<i>OBĚD</i>			
13:00	<i>reflexe III.</i>	<i>III. tým</i>		45
14:00	<i>reflexe IV.</i>	<i>IV. tým</i>		45
15:00	<i>reflexe V.</i>	<i>V. tým</i>		45

Every team takes notes about (due to feedback sheets) continuous reflection on its own outcomes and those of other teams (see evaluation manual).

**V reflexi je prostor na tato témata:**

#### OTÁZKY PRO LEKTORY

- *Jaký cíl jste stanovili a jaký jste realizovali?*
- *V čem a jak tento cíl korespondoval s tématem vašeho bloku?*
- *Co jste viděli u účastníků vzhledem k vašemu realizovanému cíli?*

#### OTÁZKY PRO ÚČASTNÍKA

- *Kdy jsem při hře cítil flow a jak jsem se do něj dostal/a?*
- *O čem pro mě tento realizovaný blok byl?*
- *Čím ho pro mě lektori naplňovali a co bych potřeboval/a jinak?*
- *Kdy jsem byl aktivní a kdy pasivní účastník?*

Tasks for the team after realisation of the programme

- To elaborate and deliver the final report one month after the course at the latest.

The course does not end when realised, but after the course there will be one workshop meeting (approx. 3 hours) held 10-14 days after the course. There participants of the course have a possibility to “digest” the experience obtained at the course and share it with others. Afterwards, as a team they are to write a final report based on their own or the proposed model (see below). The final report will be commented on by the instructorinstructors and recommendations might be given. Only afterwards does every individual obtain a credit.

### **Content of the final report:**

1. **Reflection and evaluation** of realized programme
  - a) Basic information date: place: participants: team: other:
  - b) Description of the resort and its surroundings – description of the environment and its suitability in terms of organising the programme
  - c) Goals and methodology – what was our intention, goal and where did we find inspiration for methodology
  - d) Material used, material supply – efficiencies / deficiencies, other recommendations
  - e) Description of preparation - brief, origin of the team, number of the team meetings, progress of meetings and other recommendations
  - f) Dramaturgy – general process – highlight of successful and unsuccessful moments
  - g) Scripts - prepared, real, ideal, reminders
  - h) Other outcomes, individual comments about the course realisation
2. **Feedback on the programme made by other groups** – (mainly appreciation and suggestions of possible variations – constructive criticism, not only negative feedback)
3. **Feedback on the whole methodology of the course** (structure, organisation, content, base, to individual instructors, other ideas, recommendations)
4. **Whole finalized methodology** after adjustment and realisation

## **7.4 ENVIRONMENT DESCRIPTION, SCHEDULE, AND SCRIPT OF THE COURSE**

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### **Description of the resort and its surroundings – description of the environment and its suitability in terms of organizing the programme**

The environment is set in a beautiful protected landscape area, interwoven with many quarries due to quarrying. One of these quarries is also a dominating feature of our camp. Accommodation is in two-bedded cabins. Catering takes place in a dining room where there is also a kitchen. (breakfast, snacks, lunch, dinner) Concerning sanitary facilities there are separate toilets and showers in an extra building. The area also offers sports activities – there is a football pitch and a beach volleyball court. Two specified places are available where it is possible to make a campfire. Last but not least, we have to mention that the area is near to a former quarry, which is flooded, and can be used for swimming or canoeing. Also, the main room can be used. It is large and well equipped for any programme or leisure pursuit in case of bad weather. On the

other hand, it is not possible to realize more demanding programmes here with higher numbers of participants. Various material and spatial equipment is available for use. The environment is ideal for organising different adventurous activities.

Also, the space around the area should be mentioned. As said above, the area is in a protected landscape area. The surroundings correspond with their protected status. There is a forest, other flooded quarries, fishponds, fields, meadows, etc. Accessibility to the area is very good.

Near the area there is also a castle, Lipnice and Sázavou, where after closing hours it is possible to have experience orientated activities and games. We have very nice experience with organising games during the night-time with the castle as the coulisse nicely backing the whole atmosphere. There is also a possibility to sleep at the castle – in dungeons, by the walls and in towers.

### Course timetable

SCÉNÁŘ	7:00	7:30	8:30	11:00	12:00	13:00	14:00		18:30	20:00
	7:00	SNÍDANĚ			ALKO	OBĚD			VEČEŘE	
1. den					ALKO	zahájení	SMS	STRATEGIE		KAVÁRNA
2. den	protaženíčko		blok I.	blok II.			blok III.	blok IV.		blok V.
3. den	protaženíčko		příprava ZV	ZV	ZV		ZV	ZV	Pouť do	SPIRÁLA ŽIVOTA
4. den	protaženíčko		PETRAKTACE	TÝMOVKY	TÝMOVKY		TÝMOVKY	TÝMOVKY	presentace úprav	SOCPEDE NEZLOB SE
5. den	protaženíčko		blok I.	blok II.			blok III.	blok IV.		blok V.
6. den	protaženíčko		příprava ZV	ZV	ZV		ZV	ZV	rozloučení	

### PROGRAMME – SCRIPT („METOĎÁK“ – LIPNICE)

	Activity	Names and a brief goal of games and techniques	time	zajišťuje - garant
1 <sup>st</sup> day			FRIDAY	
11:30		Instructors' lunch		
12:00		Meeting at the place		
12:15	introduction	<b>ALKO - Tasters</b> – mapping of space and time Scheduler, feedbacker, game mediator, stage propertier, base mediator – <a href="#">project teams</a>	60min	Dušan + Markét
13:15	LUNCH	+ accommodation		
14:00		<b>SMS – zpráva – team game</b> – ability to react to changes; topic – apply for a project scholarship, grant request, petition against – <a href="#">project teams</a> <b>purpose</b> – theory of accommodation (adaptation) – reaction to the flow of information in which we need to orientate – we choose a means of strategy and decision in times of unexpected change + reflection and analysis – directed questions	60min 40 + 20	Petr + Markét
15:00	COFFEE			
15:30		<b>BAREVNÁ STRATEGIE</b> – tactical game focused on team cooperation- <a href="#">project teams</a> <b>purpose</b> – theory of rational decision/choice – it is necessary to evaluate the situation so I can reach for my goals	120min	Petr + Veru
17:45		+ reflection and analysis – directed questions	45min	
18:30	DINNER			
20:00	Evening programme	<b>KAVÁRNA Open Space</b> – <a href="#">everyone for himself/herself</a> “Professional” panel discussion about books –	60 min 4*15min	Veru + Dušan

		workshop – game methodology – professionally – brainstorming		
21:00		Poslední PŘÍPRAVA NA VÝSTUPY		
21:30		Free communication block (campfire) – guitar and singing		
2 <sup>nd</sup> day		<u>1st methodology day</u>	SATURDAY	
7:00		“stretching” – voluntary		
7:30	BREAKFAST			
8:30	morning	block I. BLUE	120 min	
11:00	morning	block II. RED	120 min	
13:00	LUNCH			
14:00	afternoon	block III. ORANGE	120 min	
16:30	afternoon	block IV. GREEN	120 min	
18:30	DINNER			
20:00	dinner	block V. YELLOW	120 min	
22:00		Free communication block – guitar and singing		
3 <sup>rd</sup> day			SUNDAY	
7:00		“stretching” – voluntary		
7:30	BREAKFAST			
8:00		Preparing ZV for teams 5*20	100	Petr
10:00	reflection I.	5 x 45 min + 15 min pause	45	
11:00	reflection II.		45	
12:00	reflection III.		45	
13:00	LUNCH			
14:00	reflection IV.		45	
15:00	reflection V.		45	
15:45	COFFEE			
16:15	Afternoon block	Processing reflections in writing by individual teams Or what we heard and wanted to hear?	45	
17:00	DINNER I.			
17:30	Afternoon block	POUŤ DO SANTIAGA – approx. 3 km – everyone for himself/herself purpose–	90min	Andy + Markét
20:00	Evening block	SPIRÁLA ŽIVOTA – everyone for himself/herself purpose –	90min	Petr + Dušan
21:30	DINNER II.	At the castle – free communication block – campfire, sausages, guitar and singing		
4th day			MONDAY	
7:00		“stretching”- voluntary		
7:30	Wake-up	+ funny warm-up at the castle + joint clean-up		
8:00	BREAKFAST	At the castle		
8:30	Morning programme	PETRAKTACE - 3.5 km over eyes, ear, mouth –topic – our Senses – project teams purpose –	90min	Veru

12:00	LUNCH			
13:00 – 18:00	Afternoon block	<b>TÝMOVKY</b> – to improve: 5x55min <b>purpose</b> - Fairy tale – getting the team spirit and focus Coffee bean- team challenge and teampay – high ropes Script and dramaturgy – team mind maps		Markét + dílčí ostatní lektoři
		Sharing – team binding, dynamics Selfdrive – team preparation for the second leading of a block		
		Presentation of corrected programmes – selected moments - Aquaria – How we have shifted? 5*5min	75	
18:30	DINNER			
19:30	Evening block	<b>Socpede nezlob se</b> –tune-up + making of a funny board game – <b>other than project teams</b>	45	Andy + Dušan
22:00		Free communication block – guitar and singing		
5 <sup>th</sup> day		<u>2<sup>nd</sup> methodology day</u>	TUESDAY	
7:00		<b>“stretching”</b> – voluntary		
7:30	BREAKFAST			
8:30	morning	block I. YELLOW	120 min	
11:00	morning	block II. GREEN	120 min	
13:00	LUNCH			
14:00	afternoon	block III. BLUE	120 min	
16:00	afternoon	block IV. ORANGE	120 min	
18:30	DINNER			
20:00	evening	block V. RED	120 min	
22:00		Free communication block – guitar and singing		
6 <sup>th</sup> day			WENSDAY	
7:00		<b>“stretching”</b> – voluntary		
7:30	BREAKFAST			
8:00		Preparing ZV for teams 5*20	60	Petr
9:00	reflection I.	5 x 45 min + 15 min pause	45	
10:00	reflection II.		45	
11:00	reflection III.		45	
12:00	LUNCH			
13:00	reflection IV.		45	
14:00	reflection V.		45	
15:30		<b>Final goodbye</b>		Veru + Petr
16:30	Farewells	Packing, parting, departing		

## 7.5 DESCRIPTION OF SELECTED ACTIVITIES

What we offer to students to help their development in the field of leadership alongside with the supervised methodology programme.

## ALKO = akademická lesní kavárna od nepaměti

### Leitmotif of the whole course:

- *Tender for realisation of the right café and preparation of the right coffee (goal: enter the game as baristas with free time intent – slogan: “That is the right coffee!”).*
- *The patron and investor is an entrepreneur of Czecho-American origin, Johnny Hasek, who comes from Lipnice.*
- *He is searching for the right people he could invest into in his investment-entrepreneurial intent “ALKO” (performed by students)*
- *... Afterwards follows another free interpretation which accentuates a concrete group of students that will arrive, introductory motivation included.*

### Introductory and continuous motivational game „Na projekt“ = TASTERS

- **aim:** To welcome participants in a creative and specific way and to explain the organisational and other needs regarding the requirements of the environment, rules and realisation of the course + exploration of the terrain where participants will be present for six days.
- **Purpose and motivation:** Entrepreneurial intention “Back to the roots” (is a metaphor of a spire of experience as a spire of education/self-discovery of individuals but mostly teams (due to colour) in which they work for the whole semester.
- **realisation:**
  - Teams walk around and display a ground plan – the map of ALKO area (45 minutes) – (see: Informatorium sheet + stress test alk)
  - Based on the cards they walk through the checkpoints with instructors who will reward them for successfully performed tasks with hints in the form of rules of behaviour in ALKO (team members will receive confirmation from the entrepreneur in the form of a stamp).
- **Reflection/ending:** Team presentation of the map.

### SMS

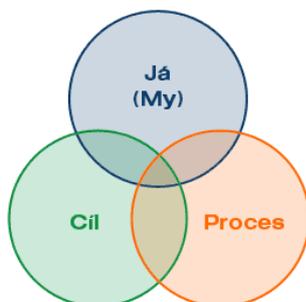
- **aim:** to react to changes in a team – **Theory of accommodation** (lens): it is necessary to meet/cooperate as the rays of light on the retina do – otherwise we get a damaged, blurred and dim picture
- **meaning:** *Theory of accommodation= adapting – How do we react to the flow of information torrents in which we need to orientate– What are the strategies and decisions we choose when unexpected change from outside or within the team occurs?*
- **motivation:** *We cook instant soup (lentil soup) or in the old way from the proper materials? Meeting of modern ordinary instant cook with M. D. Retig*
- **realisation:** The game SMS follows – difference – SMS are written by individual teams into the lines of a flipchart (5 teams)) – taskmaster is P.

- Content of SMS: *message for an ombudsman – grant request, support for realisation of Alko café* (deadline has passed, but there is a chance thanks to the good idea) or *Complaint for an ombudsman – How are they as employees of Socped in ALKO treated.*
- **reflection:** game SMS – administrated by P+?
  - motto: “Back to the past” as retro on the essence of our Cookbook
  - questions:
    - *What changes have you been through in the game and what was your reaction?*
    - *What changes have you undergone as a team during the preparation of the programme methodology?*
    - *How did you react to them? - individually X as a team*

### Adair’s theory of dynamic equilibrium says:

Should the team operate and perform well in the long term it should not forget about processional questions (progress and quality of team work or path to goal) and the individual needs of its members (personal satisfaction with teamwork, ambition repletion and appropriate relation to the environment). Optimal combination and simultaneous catering of individual and team needs with a constant focus on processional questions leads to the long-term stability of the team and as such is very good capital to support its efforts.

In addition to this topic we can accentuate also different Theories of accommodation (adaptation). – we react to the information torrents flow where we need to orientate – we choose the means of strategy and decisions in moments of unexpected change. The team is the most effective if it focuses on every part of teamwork, i.e. :



**Reaching the goal** = the reason for the group’s creation. (For the team around the project it can be successful implementation of a project. For the financial team it can be securing the financial function of the company.)

**Area of the processes** = everything that happens in the team, the means which the team uses to achieve a result (communication, feedback, division of the roles and so on.)

**Individual** = everything that happens inside the individual (motivation, meeting needs, asserting of knowledge, beliefs, values and so on.)

### BAREVNÁ STRATEGIE

- **aim:** To realise the principles of cooperative X competitive behaviour and its consequences in the frame of a tactical strategy game.
- **purpose:** *Theory of rational behaviour/choice – it is necessary to evaluate the situation to achieve one’s goals. When is it favourable to cooperate, to compete or facilitate and how does our decision influence us and our surroundings?*
- **motivation:** no scene, but introduction of game rules in the form of ushers in the gallery where there will be five live statues in the art-café (everybody will obtain an envelope

with rules. Participants will first read the rules and afterwards they can enter the gallery, where articulated clerk Peter will read the rules at the table).

- **realisation:** see Rules
- **reflection:**
  - first round: questions: *What can kick-start us? What can knock us down?*
  - Second round: introduction to the Strategy game + question: *Mine/our demons and angels, who accompanied me/us before the course – surmises, rumours, and others. + motivators, accomplishments.* (unspoken reference to the Facebook conversations of students and spreading of +/- messages).
  - Third round: (can be used afterwards in the team games)
    1. **earth** (team certainties) – *On whom and what can I rely in our team?*
    2. **air** (team spirit) – *How could I breath in our team?*
    3. **fire** (team conflicts) – *Which of our conflicts were constructive and which destructive?*
    4. **water** (lifegiving purpose and team vision) - *Our agreements in the team?*

It is profitable to properly connect the whole topic with education and vocational parallels in areas which accentuate the theory of rational behaviour/choice (by A. Smith) – plainly said – it is necessary to evaluate the situation so I can reach my goals in relation to different social groups. It is also important to make a connection with the theory of games (balance) by J. Nash. It is not possible to predict the result of cooperation in the search of balance if we look at individual decisions apart from the others. We must see every decision of a player in the context of all the possible decisions of other players.

### LITERÁRNÍ KAVÁRNA

- **aim:** to deepen knowledge of experiential learning - see Kuchařka...
- **purpose:** *experience must be supported by acquittance otherwise we guide our clients only by intuition and often on an emotional basis related only to acceptance of our libido (non/comfort)*
- **motivation:** – Enlightenment as an age of awareness + triads by Komenský (senses-reason-faith), motto: “I am responsible for the time which I invest into everything. Let’s try to try!”
- **realisation:**
  - 5 tables – at every table there is a small metaphorical refreshment and as well as something to read also one of instructors is there to enliven the discussion and ask questions.
  - 15 minutes at every table
  - A crossword from the daily press in advance – five simple questions related to the topic (to tune-up, to serve as food for thought).
    1. Goal of the cooking (and this course)
    2. How to stir and use spice (dramaturgy)

3. Keeping drinking habits (personal development of instructors, supervision, our role here)
  4. Not every lentil will puff you out (reflection, why are we here, to do what)
  5. Reading room (other recommended literature)
- **reflection:** to head towards understanding and obtaining experience based on the principles of Kolb's cycle:  
*What have I brought? What have I taken?*
  - **form:** to stroll with a member of another team like Aristotle's peripatetic school with the goal of clarifying thoughts to oneself by constant repetition (a possibility to stroll also with instructors).

### POUŤ „do Santiága“

- **aim:** self-discovery, silence and solitude with one's thoughts and feelings, the experience of self as a part of a journey and environment which I am walking through.
- **purpose:** *to go on a short pilgrimage (in the minimalistic concept of the pilgrimage) without words (no phone) and to think about everything and nothing.*
- **motivation:** a shell, a cane and a story of a pilgrim, to pass through a gate.
- **realisation:** Participants will individually start a journey to the castle. During the journey they will find a place to meditate about what they are thinking about at the moment – *a letter to self*
- **reflection:** self-projective, a space for individual self-reflection through time with oneself.

The purpose of this activity is by another means to develop students' understanding of emotional intelligence (not only in accordance with the theory of D. Goleman) in helping professions. To support the student's ability to understand himself/herself and others and effectively manage his/her relations with other people.

### SPIRÁLA

- **aim:** The realisation of to what extent we influence our lives (our mistakes, coincidences, decisions, desires, and dreams).
- **purpose:** The journey through the spire to elements inside us, which can be found in the field of destiny. The journey will lead us through our value setting. A space to cease and discover self.
- **motivation:** Ambience of the castle and its courtyard where the game takes place, presence of monks and character of Fate, the drum which beats the rhythm of life.
- **realisation:**

**The Spire** – the marked place – in its centre a participant will obtain one card of an element (+ information where to go to look for a place of element beyond the field of destiny). During the journey into the spire it is possible to do introspection. In the middle of the spire is the place of four elements where a participant takes a card with a place where s/he wants to go.

A participant chooses an element which s/he wants to go to from the spire. S/he goes away from the spire into the field of destiny. To enter the field of destiny s/he must light the candle/lamp and step in.

**Gate of immortal souls** – is a place near the entry to the field of destiny, somewhere near the spire. Only here can a participant light his/her candle, or it can be lit by one who has enough courage to save him/her.

**The field of destiny** – a place which must be crossed on the journey to the place of the element which has been chosen in the spire. It can be crossed only with a lighted candle (or lamp (symbol of life)). In the field of destiny walks the character of Fate and from time to time puts out the light of someone's candle. Then he rings the triangle to acknowledge that he has done so. Participants who are momentarily in the field must stop and stay still if Fate is approaching. If Fate sees someone moving (gestures or facial expressions) he can extinguish his candle, the light of his life. Fate does not bargain. If this happens to someone only another person who will take his/her candle and return to the place where candles can be lit and bring it back can save him/her. (Only two other candles can be carried)

**Place (Tree) of memories** – there their journey does not end. At this place they will extinguish their light and they cannot go back into the field of destiny. Under this tree they stay in silence and meditate, or they can watch those who are still in the field of destiny. They think about their journey through the field of destiny until the drum stops beating. In this moment, the journey ends for everyone and a participant has time to write down self-reflection on a prepared sheet of paper.

**Heartbeat** – A drum which beats during the whole game.

**Triangle** – is in the hands of Fate and is sounded every time when he extinguishes someone's light. (If their candle extinguishes by any means other than Fate no one will know if s/he has not seen)

**Place of the element** – At every place of the element an activity will run centred on experience/muse or awareness related to one's life:

- FIRE – the light of Alkad
- EARTH – the way from Durdalary
- WATER – the spring of Orivium
- AIR – the mirror of Erised
- **reflection:** self-projective, a space for individual self-reflection through time with oneself.

#### **PETRAKTACE – Pět smyslu**

- **aim:** discovery of meaning of cooperation beyond our comfort zones through our senses
- **purpose:** The winner is not the team that will be first beyond the finishing line but the one with the least number of mistakes, the best performance. However, this they will learn at the end. 😊 Senses are a gateway to our consciousness and unconsciousness. Unfortunately, in life we are often bound by them.
- **motivation:** Senses are a gateway to our consciousness and unconsciousness. Unfortunately, in life we are often bound by rationality which precludes us our freedom of expression. (symbolism of binding with a chain)
- **realisation:**

Five groups whose members are bound by chain – are walking the path of recognition of their senses - 5 senses = 5 stops, where they can unbind different numbers of their members. At every stop different tasks await, which are connected to one of the senses. Their success will determine the number of people they can unbind. The activity can be made harder if for every successful task the group loses one sense.

The groups will navigate themselves by GPS coordinates, the same principle as in geocaching (treasure hunt). There is also a *hint* which leads to every place – in the form of a cypher – e. g. *The eye watches the pine opposite.*

There is always a supervisor from another team in every team because the whole activity will be a kind of a competition, ☺. The supervisor will help us with logistics and possible complexity of chains as he will be unbinding the people due to their success in individual tasks. (He will carry the keys to make the preparation of the activity as simple as possible).

There will be also a leader in every team who will have a decisive voice when the team is not able to agree (the leader's position can be changed).

Every team will have one doppelganger (harmer), who secretly helps his/her original team.

### **Tasks:**

**Sight** = building with bricks (on a distant place is a piece of paper with printed shapes (5x5) with numbers. The team must remember them only with sight. In another place there are bricks. From the bricks the team must build a three-dimensional object – on the top of the object will emerge a letter/word – the team will have to recognize it) – there will be a limited time for remembering, building and recognizing a letter.

**Hearing** = Limericks– to hear, to learn and to pass in a relay – the number of successful limericks will determine the number of keys received

**Smell** = sniffers – spice recognition – for every three spices guessed a team will receive one key

**Taste** = the team must eat a whole loaf of bread in a given time without washing it down

**Touch** = the whole team must go through a single piece of an A4 paper

- **reflection:** Through a strong experience people understand the meaning of the comfort zone. Csikszentmihalyi M. described a flow state; a moment in our lives, when our body or mind will reach its limits in a conscious effort to reach for something of value but difficult to obtain. This flow is situated between the borders of boredom and danger. It depends if we go through this state in the eustress or distress situation.

### **SOCPEDE NEZLOB SE**

- **aim:** to create a creative social board game
- **purpose:**
  - A creative event thinking about “socped”
  - A space for expression – vision of why we do “socped”, what it means for us
  - Playing the game – to have fun with the game
- **motivation:** classical outdoor running game - Člověče, nezlob se
- **realisation:** A space to create something connected – 6 boardgames that can go together

- Divide players into 6 teams – 6 semesters
    - A uniting element – play cards, a boardgame
    - 6 parts in one field – 6 chapters (before study + 4 semesters + what will come afterwards/future)
  - Socped – creating together
  - To play at least a part of the game at the course -> to play the game properly at the event after the course (to 4 weeks after the course)
- The essence of the game:
  - To create columns for topics we will cover – not just to make fun of educators but also in terms of some self-development.
  - To make up a motivation for the game.
  - The game has two levels – the first is just fun like with Člověče, nezlob se!, the second motivates towards the content
  - To give some categories in which it will be possible to make up the play cards
- Creation:
  - Creation of the game plan and game mechanics
  - Creation of play cards
  - Then combine all the 6 game plans – every part will have a different form and mechanics (why not?)
  - 6 “players” will play the game -> 6 teams – 1 team for every player – a team do everything together

## CONCLUSION

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The path to innovations in education is certainly neither easy nor short. It requires a lot of practical experience, but it must have help in theory supported by research. However, this is a topic for another work. The presented texts are aimed at innovations in the sense of connecting the curriculum of individual disciplines. The path to interdisciplinarity is not just one. We can embark, for example, on the path of complete integration of individual subjects into one. Or we can choose the path of gradual integration of subjects, where we focus only on appropriate topics or forms of teaching. The current curriculum also opens the way to interdisciplinarity. So far, this is mostly symbolically expressed by the conception of the state curriculum in the form of the Framework Educational Program, where groups of subjects that cover educational areas appear. Especially from the lower secondary school, there are areas that gather groups of subjects, for example of a scientific or social science character, refer to Man and Nature and Man and Society. However, this does not mean that science subjects have no connection to social science subjects. The closest to this connection is Geography, which addresses the mutual relations and connections between man and nature in the landscape. The behavior of people has always been limited by a certain character of the natural environment, which, on the contrary, the man transformed in many cases through his activities. To what extent people have succeeded in the positive or negative cases can be exemplified at many different places in the earth. Ultimately, in the process of the interaction of man and nature will again have a decisive word in nature, however man moves forward in his technological progress. It is simply because man is an integral part of nature.

The possibility of building a curriculum based on interdisciplinarity is therefore open. However, there are many barriers that the creators of such a curriculum have to face. The links, for example, among Geography, Biology, Physics and Chemistry are obvious. However, they do not work on all topics horizontally, but they have a vertical arrangement. We will quite successfully "talk" about the origin of life on Earth in combined Geography and Biology, but we will have to avoid, for example, in the 6th grade, the principles of chemical reactions in the photosynthesis of plants, etc.

The presented texts follow the path of gradual integration through topics and forms of teaching. As the most suitable form of teaching, we chose the one that takes place outside the school. These are various forms of outdoor education. We consider outdoor education to be an open system that we will never be done with. We owe this mainly to several variables, such as:

- its duration, which varies according to the nature of outdoor education;
- the place where the teaching takes place can be at different distances from the school depending on what we want to do in the given environment and what time dotation we have for it;
- the degree of its integration from bilateral interdisciplinary links to its transdisciplinary nature;
- current topics, which again differ from place to place...

One of the most important things in its implementation in all types of schools is its natural interconnectedness. That fact was realized by all teachers who participated in the implementation of this project. The fact is that in previous years there was a certain cooperation among departments in this direction at PdF MU, but we never managed to coordinate long-term outdoor education courses, both in terms of mutual provision of material equipment and supplementing the content of teaching courses of participating departments. . The presented

material thus represents the basis for further cooperation and coordination in the field of various outdoor activities.

Although the themes and elaboration of individual courses are different, they still reflect everything that connects individual subjects and that is space in terms of Geography. In the context of history, each space shows a certain development. From the point of view of Biology and other scientific subjects, we can observe various relationships and connections between animate and inanimate nature in space. Staying out of school also means increased mobility. Solving specific situations requires communication and interpersonal skills, and language helps us to orient ourselves in an environment other than our home country.

The project and its direction started the next phase of cooperation among departments at the Faculty of Education, Masaryk University, this time in the field of outdoor education.