ERASMUS+ SMALL-SCALE PARTNERSHIPS IN THE FIELD OF PUBLIC EDUCATION (2022- 1-HU01-KA210-SCH-000084386)

"EXPERIENCE PEDAGOGY, FOREST SCHOOL AND ACTIVE TOURISM" FOREST SCHOOL MODEL PROGRAM (Grade 10)

1 DAY

► SUBJECT / SUBJECT ELEMENT: Issues and problems of **nature and environmental protection, sustainable development.**

● Methodology :

○ **Application of different forms of work** : **Frontal class/group work** (class/group size of 24 – 26 people), **individual work** , **differentiated individual work** , **student lecture/presentation** (preliminary goal and/or task definition), **pair work** (2 – 2 students with the same task definition activity), **group work** (minimum of 2-3, maximum of 4-5 students with homogenous and/or differentiated tasks).

○ **Application of different methods** : **Teacher explanation, student experiment/short lecture, investigation and observation, presentation** , **smartphone, interactive whiteboard, film/video, map, mineral and rock collection,** application and use of models and weather measuring devices.

○ **Applying/developing various logical-thinking operations** : **Applying/developing the ability to think logically/creatively** . **Application/development of analytical and deductive skills** (recognition, understanding and interpretation of whole-part relationships and correlations). **The ability to synthesize, the application/development of inductive thinking** (creating hypotheses based on cause and effect relationships, making forecasts, creating systems). **Application/development of the ability to systematize, infer** and **generalize** (extrapolation) . **Application/development of problem-solving thinking ability** and **sustainability approach .**

● GENERAL PROFESSIONAL CONTENT: **General nature and environmental protection, sustainable development.**

○ **Getting to know** the **basic general concepts of nature and environmental protection** . **The** overview, discussion **and understanding of sustainable development and** the current, concretely appearing/present problems of our days through the discovery and learning of the forest school and its immediate environment.

● Interactive student/student pair/group - task/tasks :

- Geography : **Orientation in the forest and woodlands** . **Getting to know the different possibilities, forms and ways of finding your way around** the forest. Recognizing and recognizing the natural elements and phenomena that appear in the forest and in the forest, as well as individual forest landmarks. **Direction and route, destination planning in the forest are natural elements and phenomena** - for example, the position/movement of the Sun, the moss-covered tree trunks, the typical and prevailing wind direction, etc. – **with the help of, using. Use of** the **map and the compass** , orientation in nature using the map and the compass. **Modern navigation tools and forms** – such as GPS, various routing platforms, mobile phone applications, etc. - **its use in orientation in forests, forests and woodlands.**

- Biology : **Getting to know the structure and operation of natural science test tools** , including primarily the light microscope . Study of **the** optical structure of the light microscope, the essence **of its operation** and **its importance in the examination of samples from different areas. Examining soil and water samples** in the environment of the forest school , getting to know the rules of **making a scientific report** . Study of the structural structure of **microbial organisms , their importance** in natural decomposition processes.

- Physics : **Carrying out measurements that help to understand the relationship between physics and sustainability in the environment of the forest school. Measuring** the temperature in different areas - e.g. in a forest, by the water, in a field, etc. – **and at different times** (morning, noon and evening). **Factors affecting temperature** - e.g. the role of sunlight, shadow, the presence of water, etc. - **and the examination of the effects of climate change on temperature** . Learning about the **carbon footprint** (carbon or carbon dioxide footprint) **and the factors influencing it. Calculation and determination of an individual carbon footprint** with the help of a mobile phone application and the Internet , and thus understanding the impact of human activities in the field of climate change and sustainability. **A review of alternative options for reducing individual carbon footprints for sustainability.**

- Chemistry : Selective recognition of pollutants (waste) **occurring in the forest school and its surroundings , assessment of their danger, and the preparation** and removal of a waste treatment and collection plan. **Means of transport** - e.g. road vehicles, trains, agricultural and forestry machines and vehicles, etc. - **examination of the possibilities and occurrence of air pollution caused by** (e.g. soot, carbon dioxide, oxides of sulfur, oxides of nitrogen, hydrocarbons, etc.) .

(Student pair and/or group task planning can be organized based on the number of participants in the forest school program by forming student pairs and/or homogeneous and/or heterogeneous groups of 3-5 people.)


● Active tourism module :

- **Active tourism program/programs** : **Discovering and exploring the environment of the forest school** within the framework of active tourism **during nature walks, walking and/or cycling tours** . (E.g. Kerekerdő Tourist Center / Harangodi School of Forestry and its surroundings.)


2 DAY

► SUBJECT / TOPIC ELEMENT: Getting to know the history of **the forest** , **the seasonal wildlife and living communities of the environment of the forest school** .

● Methodology :

○ **Application of different forms of work** : **Frontal class/group work** (class/group size of 24 – 26 people), **individual work** , **differentiated individual work** , **student lecture/presentation** (preliminary goal and/or task definition), **pair work** (2 – 2 students with the same task definition activity), **group work** (minimum of 2-3, maximum of 4-5 students with homogenous and/or differentiated tasks).

○ **Application of different methods** : **Teacher explanation, student experiment/short lecture, investigation and observation, presentation** , smartphone, interactive board, film/video, map, mineral and rock collection, application and use of **models and weather gauges and experimental tools .**

○ **Applying/developing various logical-thinking operations** : **Applying/developing the ability to think logically/creatively** . **Application/development of analytical and deductive skills** (recognition, understanding and interpretation of whole-part relationships and correlations). **The ability to synthesize, the application/development of inductive thinking** (creating hypotheses based on cause and effect relationships, making forecasts, creating systems). **Application/development of the ability to systematize, infer** and **generalize** (extrapolation) . **Application/development of problem-solving thinking ability** and **sustainability approach .**

● GENERAL PROFESSIONAL CONTENT: **Forest environment and wildlife, living communities.**

○ **Discovering and getting to know** the history of the **forest/forests in general and the forest/forestry environment of the forest school** , its seasonal fauna and life communities in particular . (E.g.: Harangodi Forestry School / "Pagony" learning trail: Getting to know the living world of the forest, getting to know the living community of the Harangodi forest. Getting to know the tree species, shrubs, and herbs that make up the forest, the structure of the tree, the soil of the forest, the role of dead wood, other plants, animals and fungi in the forest.) **Emphasizing the role and importance of the wildlife of the forest/forests in our everyday life** and the natural and environmental sustainability of our Earth . (The effect of the forest on the CO_2 cycle and the greenhouse effect.) Strengthening education for the conscious preservation and protection of the forest and its wildlife.

● Interactive student/student pair/group - task/tasks :

- Geography : **Discovering and getting to know the relationships and regularities of the climatic and climatic effects of forests and** woodlands . **The forest, the concept of afforestation** , the basic climate-zonal forest types, **the role of forests in the global climate and the local climate** . **Recognizing the connections between forest cover and climate change.** Preparation of a lichen map and soil investigations.

- Biology : **Getting to know the forest as a habitat** . The study of the living creatures of the most developed terrestrial biome - primarily the flora - in the immediate **environment of the forest school** . Realization of material and energy circulation in the ecosystem. **Organizing** the living creatures of the forest , exploring their relationship, getting to know the structure, operation, system and connection of the **food network . The role of forest values and the importance of their preservation** . Getting to know and applying the characteristics of **field work , acquiring morphological and species knowledge** , learning **the steps of plant identification .**

- Physics : **Soil physics measurements with a soil thermometer at different locations of the forest school** , for example in a forest, field, waterfront, etc. **The examination of the factors affecting soil temperature and their correlations.** The **importance and role of measuring and knowing**

soil temperature in agriculture and ecology . **Highlighting** the possible effects and consequences of soil temperature changes **on plants and animals,** as well as the correlation of soil temperature with environmental protection. **Examination of soil** texture . Defining the concept of soil texture through experience and **highlighting its significance in the development of environmental awareness** . Recording the role of soil texture in influencing the environment and agriculture.

- Chemistry : The **characteristics and properties of carbon dioxide** - e.g. formula, color, smell, physical state, density, polarity, solubility in water, chemistry of its aqueous solution, etc. –, **the discussion and examination of** . **Conducting experiments** to produce and detect carbon dioxide. **Collecting soil samples and performing various physical and chemical tests** . Identifying and getting to know the different types of soil, **examining the soil's color and composition, water-holding capacity,** analytical knowledge of its chemical properties, acidity, pH value, carbonate content, etc. **Collection of water samples and water tests** - e.g. water color, transparency, solid pollutant content, extraction of dissolved mineral content, etc. - **completion.**

(Student pair and/or group task planning can be organized based on the number of participants in the forest school program by forming student pairs and/or homogeneous and/or heterogeneous groups of 3-5 people.)


● Active tourism module :

- **Discovering and exploring the forest/woodland environment of the forest school** within the framework of active tourism **during nature walks, walking and/or cycling tours** . (E.g. forest orienteering run and local orienteering race and/or cycling / Kerekerdő Tourist Center / Harangodi Forestry School and its surroundings / Harangodi reservoir.)
-


3 DAY

► SUBJECT / SUBJECT ELEMENT: **Forest and wildlife management in the forestry school.**

● Methodology :

○ **Application of different forms of work** : **Frontal class/group work** (class/group size of 24 – 26 people), **individual work** , **differentiated individual work** , **student lecture/presentation** (preliminary goal and/or task definition), **pair work** (2 – 2 students with the same task definition activity), **group work** (minimum of 2-3, maximum of 4-5 students with homogenous and/or differentiated tasks).

○ **Application of different methods** : **Teacher explanation, student experiment/short lecture, investigation and observation, presentation** , **smartphone, interactive whiteboard, film/video, map, mineral and rock collection,** application and use of models and weather measuring devices.

○ **Applying/developing various logical-thinking operations** : **Applying/developing the ability to think logically/creatively** . **Application/development of analytical and deductive skills** (recognition, understanding and interpretation of whole-part relationships and correlations). **The ability to synthesize, the application/development of inductive thinking** (creating hypotheses based on cause and effect relationships, making forecasts, creating systems). **Application/development of the ability to systematize, infer** and **generalize** (extrapolation) . **Application/development of problem-solving thinking ability** and **sustainability approach .**

● GENERAL PROFESSIONAL CONTENT: **Forestry and wildlife management, knowledge about hunting in the forestry school.**

○ **Forestry and wildlife management, knowledge about hunting in the forestry school.** Humanity and hunting. Getting to know **the basics of game management** and **the work of a professional hunter** . (Lifestyle, hunting or former hunting of pheasant, partridge, quail, wood grouse, magpie, jay, crow, hare, roe deer, fallow deer, grouse, mouflon, fox, badger, wild boar, weasel and wild cat.) **Trophy knowledge** . **Hunting dog presentation** . Training and education of **hunting dog breeds used in hunting** and **learning about their use.**

● Interactive student/student pair/group - task/tasks :

- Geography : **Traces of game and wildlife in the forest. Study and recognition of wildlife tracks** . Getting to know the **huntable game species** and wild boar species, some **protected game species** , practical wildlife protection, and hunting methods. **Getting to know the basics of archery as an ancient hunting method.** Shooting at a target with a traditional Hungarian bow. **Hunting weapon demonstration.**

- Biology : **Getting to know the animals of the forest in the environment of the forest school** . The importance of **observation as scientific work** . **The functioning of living things, the examination of similarities and differences** . Exploring the various **environmental needs** , examining **the connections between lifestyle and body structure . Establishing food chains and food webs** among naturally occurring organisms. Construction of the **nutritional pyramid** , recognition of the importance of different nutritional levels.

- Physics : **Study of wild tracks** . **Animal remains, bones, small trophies, snail shells, seashells, etc. the measurement of its physical properties.** Overview and understanding of the concept of density. **Density measurement using various animal remains, bones, small trophies, snail shells, and seashells.** Drawing conclusions from the density measurement of animal remains on the way of life of animals. **Recording the role of environmental changes and human activity in influencing the density of animal remains.** Emphasizing the importance of measuring the density of animal remains and objects in scientific research and environmental protection.

- Chemistry : **Recording traces** by taking preliminary photos and **plaster casting** . **Chemical analysis of found and collected bones and remains** of calcareous skeletons (e.g. snails, shells) .

(Student pair and/or group task planning can be organized based on the number of participants in the forest school program by forming student pairs and/or homogeneous and/or heterogeneous groups of 3-5 people.)

● Active tourism module :

- **Getting to know the forester's work and sustainable forest management through the planning and implementation of active tourism programs** , nature walks and walking tours planned in the forest. (E.g. Kerekerdő Tourist Center / Harangodi School of Forestry, Napkor / "Pagony" forestry trail!)

4 DAY

► TOPIC / THEME ELEMENT: **The characteristics of native Hungarian pet breeds and their care. Typical elements of village gastronomy and culture.**


● Methodology :

○ **Application of different forms of work** : **Frontal class/group work** (class/group size of 24 – 26 people), **individual work** , **differentiated individual work** , **student lecture/presentation** (preliminary goal and/or task definition), **pair work** (2 – 2 students with the same task definition activity), **group work** (minimum of 2-3, maximum of 4-5 students with homogenous and/or differentiated tasks).

○ **Application of different methods** : **Teacher explanation, student experiment/short lecture, investigation and observation, presentation** , **smartphone, interactive whiteboard, film/video, map, mineral and rock collection,** application and use of models and weather measuring devices.

○ **Applying/developing various logical-thinking operations** : **Applying/developing the ability to think logically/creatively** . **Application/development of analytical and deductive skills** (recognition, understanding and interpretation of whole-part relationships and correlations). **The ability to synthesize, the application/development of inductive thinking** (creating hypotheses based on cause and effect relationships, making forecasts, creating systems). **Application/development of the ability to systematize, infer** and **generalize** (extrapolation).**Application/development of problem-solving thinking ability** and **sustainability approach .**


● GENERAL PROFESSIONAL CONTENT:

○ **The development, characteristics, familiarization and care of native Hungarian pet breeds** . Animal protection, **keeping pets, rules of responsible animal husbandry** . The role and importance of preserving our indigenous domestic animal species. **Falconry, the history of falconry in Hungary** . Birdwatching, birdwatching and bird protection.

Collecting rocks in the forest and getting to know and practice the rules of safe fire building. Learning about village gastronomy and culture. **Baking bread** in the forest school. **Introducing the method of making homemade bread baked in a traditional oven.**

● Interactive student/student pair/group - task/tasks :

- Geography : **Observing plants and animals in the forest** . Forest botany, getting to know the wild plants in the forest and their practical application. **Edible and poisonous plants in the forest** . Shrubs, mushrooms and their fruits. Composting. **Spotting woodpeckers, observing reptiles and amphibians in the forest** . How do animals find their way around? **Getting to know the recipes and preparation of simple "pot" dishes.**

- Biology : **Getting to know the medicinal and spice plants of the forest, with particular attention to native species** . Effects of plants and fungi and their importance for humans. **The use of the characteristic mushrooms, herbs and spices of the given area in folk gastronomy and medicine. Practicing and deepening the steps of plant identification.** Possibilities, methods and rules for collecting wild plants and mushrooms. Soap and essential oil production.

- Physics : **Recognizing, discussing and practicing the importance of physical measurements** (temperature, mass, volume) **during the preparation of traditional dishes and baking bread .** Temperature control and regular measurement play an important role **in the preparation of food and** bread baking . **Determining the weight and volume of** the ingredients and exact quantities is also essential to achieve the right result . (Seeing the relationship between the boiling point of water and cooking. Recognizing the relationship between air pressure and cooking time. Recipes often require measuring the volume of liquids or dry ingredients.) Preparing traditional foods over an open fire and in a crock pot.

- Chemistry : **Discussing the conditions of combustion and highlighting the role of fire in human life** . Overview of combustible materials in the environment of the forest school. Experiments to demonstrate the conditions of combustion, fire fighting. **The role of baking powder, salalkali and baking soda in the preparation of bread and cakes.** What happens to the dough under the influence of yeast and what happens under the influence of heat? Carrying out experiments to detect thermal decomposition and gases. **The role of cooking in preparing food. Overview and discussion of foods that can be eaten raw and/or cooked and fried** . In the forest school, the ingredients of the dishes typical of the area - e.g. proteins, fats, oils, carbohydrates, vitamins, etc. – and the examination of its characteristics and changes during cooking.

  (Student pair and/or group task planning can be organized based on the number of participants in the forest school program by forming student pairs and/or homogeneous and/or heterogeneous groups of 3-5 people.)


● Active tourism module :

- Getting to know **the domestic animals living around the forest school and bred in the forest school during the active tourism program, nature walk and/or walking tour organized** in the environment of the forest school . Active **participation in the practice of home**

gastronomy (baking bread and "making pots and pans") **.** (E.g. Kerekerdő Tourist Center / Harangodi School of Forestry, Napkor / "Őzike" and "Pagony" forest trail, Harangodi - reservoir!)

-



5 DAY

► SUBJECT / THEME ELEMENT: **Complex geographical environmental features and geographical characteristics of settlements.**

● Methodology :

○ **Application of different forms of work** : **Frontal class/group work** (class/group size of 24 – 26 people), **individual work** , **differentiated individual work** , **student lecture/presentation** (preliminary goal and/or task definition), **pair work** (2 – 2 students with the same task definition activity), **group work** (minimum of 2-3, maximum of 4-5 students with homogenous and/or differentiated tasks).

○ **Application of different methods** : **Teacher explanation, student experiment/short lecture, investigation and observation, presentation** , **smartphone, interactive whiteboard, film/video, map, mineral and rock collection,** application and use of models and weather measuring devices.

○ **Applying/developing various logical-thinking operations** : **Applying/developing the ability to think logically/creatively** . **Application/development of analytical and deductive skills** (recognition, understanding and interpretation of whole-part relationships and correlations). **The ability to synthesize, the application/development of inductive thinking** (creating hypotheses based on cause and effect relationships, making forecasts, creating systems). **Application/development of the ability to systematize, infer** and **generalize** (extrapolation) . **Application/development of problem-solving thinking ability** and **sustainability approach .**

● GENERAL PROFESSIONAL CONTENT: **Complex geographic environmental features and geographical characteristics of settlements.**

○ **Local knowledge, local and settlement history** . The discovery of **the forest school** and its environment, **the complex study of the natural and social geography and history of the settlement connected to it** . The features and features of the forest school and its immediate environment, characteristic of natural geography. **Getting to know the socio-economic geographical connections of typical natural geographical features and features** . Ethnographic characteristics of the settlement connected to the forest school. **Settlement history, memories of the historical past in a nutshell** (eg Nyírség and Napkor, GULÁG - world's local history aspects, the history of the forest school!)

● Interactive student/student pair/group - task/tasks :

- Geography : **Visit the permanent exhibition of local history GULÁG-GUPVI created in the forest school** . The processing and presentation of the exhibition's memorial site and material, tableaux **within the framework of individual, pair and/or group work.**

- Biology : **Learning about environmentally conscious behavior and the development of a sustainable way of life** . Exploring the relationship between consumption and environmental resources, the importance of the principle of sustainable consumption. **Recognizing human responsibility, respecting nature, developing responsible thinking through drama games.** Emphasizing the clear and hidden values of the forest using the discussion method. **Examining the similarities and differences between the natural and the built environment with simple experiments.** Possibilities of using natural materials in the artificial environment. "Eco-conscious" house design.

- Physics : "Map Measurement Adventure" in the natural and artificial **environment of the forest school .** holding **a team competition with map reading, various mathematical and physical measurements, developing creativity and scientific thinking. Participating** groups **/teams**

have to perform different physical measurements at different checkpoints, such as determining the north direction using a dial clock or measuring the density of gravel. The goal is to achieve the most accurate results, to follow the correct order and to complete tasks quickly. **During the program and the competition, the strengthening of cooperation and communication also appears, and the development of digital competences is realized by downloading and using phone applications.**

- Chemistry : **Mapping and characterizing the materials of the buildings in the forest school and its surroundings** . Photographing the buildings in and around the original school. **The construction materials of the individual buildings** - e.g. reeds, reeds, twigs, wood, adobe, bricks, tiles, concrete, reinforced concrete, glass, plastics, etc. - **its recognition and investigation** . (What is it made of? How was it produced? What is its composition and based on what properties was it used during construction?

(Student pair and/or group task planning can be organized based on the number of participants in the forest school program by forming student pairs and/or homogeneous and/or heterogeneous groups of 3-5 people.)


● Active tourism module :

- **Discovering and wandering around the forest school and the settlement connected to it as part of an active tourism program, nature walk, walking and/or cycling program** . **Getting to know the architectural and cultural monuments of the settlement** . (E.g. Kerekerdő Tourist Center / Harangodi School of Forestry / Napkor and its surroundings!)