

<b>Subject</b>	<b>Ecology</b>
<b>Time Range</b>	1; 1 lesson a week, 66 lessons a year
<b>Grade</b>	First, second
<b>Code and name of the field of study</b>	7237 M information system and services
<b>Language</b>	Slovak

#### Characteristics and objectives of the teaching subject

The subject ecology in the first and second year of the study field 7237 M information system and services is intended to be motivational and educational, its aim is to deepen and develop the knowledge of ecological laws and their importance for the protection of the environment and human health. It is intended to provide students with knowledge and skills that will enable them to correctly understand and explain natural phenomena and processes in mutual contexts. The goal is for students to learn to understand nature as a source of sustainable life on Earth and to be able to apply the acquired knowledge in the real world. The student should know and be able to evaluate the possible consequences of ill-considered interventions in nature. The aim of the subject is also to acquaint students with climate change, with the consequences of climate change on life. . Students should understand that we all live on one planet Earth and therefore we should respect and protect it. Knowing the laws governing living nature is the basis for understanding its functioning as a whole and a prerequisite for forming a relationship with it and a responsible approach to the surrounding world and to oneself. In the second year, part of the curriculum will be taught in the form of excursions, discussions and lectures (activities of the Sewage treatment plant in Holíč, waste management, protected areas in the region, ...)

#### Overview of education and training strategies:

In the teaching subject of ecology, we use educational and training strategies to create and develop the following key competences, which enable students to:

##### Problem solving skills

- to recognize problems in the course of their education by using all the methods and means available to them at the given moment (observation, testing, etc.),
- to express or formulate (unequivocally) a problem that will arise during their education,
- to search for, propose or use additional methods, information or tools that could contribute to the solution of the given problem, unless the methods, information and means used so far did not lead to the goal,
- to assess the solution of the given problem from the point of view of its correctness, clarity or efficiency and, on the basis of these aspects, possibly compare different solutions to the given problem,
- to correct incorrect solutions to the problem,
- to use the acquired methods of solving problems in other areas of student education, as long as the given methods are applicable in these areas.

##### Ability to use information technology

- to obtain information in the course of their professional education by using all the methods and means available to them at that moment,
- to collect, sort, assess and use information that could contribute to the solution of the given problem or acquire new knowledge.

#### General assessment guidelines:

Student evaluation will be based on evaluation criteria in each educational output. The teacher continuously checks the knowledge and skills of the students mainly with short written assignments and written tests. Oral answers, written assignments and written tests will be used as means of assessment. The classification and assessment of pupils will be governed by the current Methodological Instruction for the assessment and classification of secondary school pupils issued by the Ministry of Education of the Slovak Republic.

#### Teaching strategy

The following methods and forms of teaching will be used during teaching:

---

**Project:** ACC03P30 „Awareness raising on climate change mitigation and adaptation among school pupils and the public“. The project has been co-financed from the Norway Grants and from the State Budget of the Slovak Republic

**Applicant:** Spojená škola, Námestie sv. Martina 5, 908 51 Holíč

**Programme:** „Climate Change Mitigation and Adaptation“

ACC

Methods:

Information receptive - interpretation

Reproductive - guided interview

Heuristic - interview

Forms of work:

Frontal teaching

Frontal and individual work of pupils

Group work of pupils

Working with a book

Excursion to the region

**Learning resources**

The following learning resources will be used to support and activate the teaching and learning of students:

Literature:

Vladimír Krejčí: Rastlinná výroba pre pre 2.a 3. ročník SOU, Bratislava, PRÍRODA 1991

Jozef Riman ,Lubomír Brtek: Základy ekológie pre SOŠ a SOU, IMPRO, spol .s r.o., Litera 1994

Danuše Kvasničková: Základy ekológie, SOŠ a SOU,1990 SPN Bratislava

Kvasničková D.: Základy ekológie, SPN. Bratislava 1991

Riman J., Brtek L.: Základy ekológie IMPRO, s.r.o. Bratislava 1995

Kvasničková D., Mikulová V., Plachejdová E., Kalina V., Jedlička L., Alföldiová A., Gubová D.: Životné prostredie, SPN, Bratislava 2002

Didactic technique:

Data projector

PC

Blackboard

Teaching materials:

Models, pictures, diagrams

Other resources:

Internet, Brochures, Posters, Maps, CDs, Specialized literature

Professional magazines, Current articles in newspapers related to the environment

---

**Project:** ACC03P30 „Awareness raising on climate change mitigation and adaptation among school pupils and the public“. The project has been co-financed from the Norway Grants and from the State Budget of the Slovak Republic

**Applicant:** Spojená škola, Námestie sv. Martina 5, 908 51 Holíč

**Programme:** „Climate Change Mitigation and Adaptation“

ACC

SUBJECT: <b>Ecology</b> Study field: 1st grade			1 lesson a week, 33 lessons a year			
Topic	Number of lessons	Intersubject relations	Expected learning outcomes	Criteria for evaluating educational outcomes	Evaluation methods	Means of assessment
<b>Ecology as a scientific discipline</b>	<b>20 h</b>		<b>Student should:</b>	<b>Student:</b>		
Basics of general ecology  Abiotic (inanimate) components of the environment: water, soil, air, sunlight  Biotic (living) components of the environment: plants, animals			<ul style="list-style-type: none"> <li>Explain what ecology deals with, who is an ecologist</li> <li>Characterize living systems</li> <li>Describe the structure of organisms</li> <li>Characterize abiotic and biotic conditions of life</li> <li>Explain the relationships between organisms</li> <li>Characterize the ecosystem</li> <li>Describe the diversity of the biosphere</li> <li>Get to know the causes of the extinction of organisms</li> </ul>	<ul style="list-style-type: none"> <li>Explained what ecology deals with, who is an ecologist</li> <li>Characterized living systems</li> <li>Described the structure of organisms</li> <li>Characterized abiotic and biotic conditions of life</li> <li>Explained the relationships between organisms</li> <li>Characterized the ecosystem</li> <li>Described the diversity of the biosphere</li> <li>Got to know the causes of the extinction of organisms</li> </ul>	Written examination Oral examination	Written exam Oral answers
<b>Man and environment</b>	<b>13 h</b>		<b>Student should:</b>	<b>Student:</b>		
Human environment Care for the environment  Impact of climate change		Technology Surface treatment of materials Grade: first	<ul style="list-style-type: none"> <li>Characterize the environment</li> <li>Describe the development of man's relationship with the environment</li> <li>Explain the nature of the relationship between man and the environment</li> <li>Describe the current human impact on the environment</li> <li>Name the substances with which people pollute the air</li> <li>Diagnose the environment</li> <li>Familiarize himself with the Act on Nature and Landscape Protection</li> <li>Explain the consequences of climate change</li> <li>Explain the manifestations of climate change at the global level</li> <li>List human activities that worsen the environment /focus on our region/</li> </ul>	<ul style="list-style-type: none"> <li>Characterized the environment</li> <li>Described the development of man's relationship with the environment</li> <li>Explained the nature of the relationship between man and the environment</li> <li>Described the current human impact on the environment</li> <li>Named the substances with which people pollute the air</li> <li>Diagnosed the environment</li> <li>Familiarized himself with the Act on Nature and Landscape Protection</li> <li>Explained the consequences of climate change</li> <li>Explained the manifestations of climate change at the global level</li> <li>Listed human activities that worsen the environment /focus on our region/</li> </ul>	Oral frontal examination Oral examination Written examination	Oral answers Oral answers Group written work

**Project:** ACC03P30 „Awareness raising on climate change mitigation and adaptation among school pupils and the public“. The project has been co-financed from the Norway Grants and from the State Budget of the Slovak Republic

**Applicant:** Spojená škola, Námestie sv. Martina 5, 908 51 Holíč

**Programme:** „Climate Change Mitigation and Adaptation“

ACC

			<ul style="list-style-type: none"><li>List activities that can protect the environment /focus on our region/</li></ul>	<ul style="list-style-type: none"><li>Listed activities that can protect the environment /focus on our region/</li></ul>		
--	--	--	--	--	--	--

---

**Project:** ACC03P30 „Awareness raising on climate change mitigation and adaptation among school pupils and the public“. The project has been co-financed from the Norway Grants and from the State Budget of the Slovak Republic

**Applicant:** Spojená škola, Námestie sv. Martina 5, 908 51 Holíč

**Programme:** „Climate Change Mitigation and Adaptation“

ACC

SUBJECT: <b>Ecology</b> Study field: 2nd grade			1 lesson a week, 33 lessons a year			
Topic	Number of lessons	Intersubject relations	Expected learning outcomes	Criteria for evaluating educational outcomes	Evaluation methods	Means of assessment
<b>Man and his environment</b>	<b>20 h</b>		<b>Student should:</b>	<b>Student:</b>		
Human activity and its impact on the environment The atmosphere Water Soil Consequences of human activity on flora and fauna		Physics Laws of energy conservation Grade: first Engineering Technology Plastics  Grade: first	<ul style="list-style-type: none"> <li>Evaluate the impact of various human activities on individual components of the environment</li> <li>Define negative human impacts on air, water, soil, flora and fauna</li> <li>Explain how soil degradation affects soil fertility and properties</li> <li>Determine the main factors of water ecosystem pollution</li> <li>Characterize natural sources of raw materials and energy from the point of view of their renewability</li> <li>Characterize individual types of waste</li> <li>Explain the concept of waste sorting</li> <li>Know the options for sorting waste at school and in the city (municipality)</li> <li>Know the activities of the Sewage Treatment Plant in Holíč</li> <li>Explain the terms low-waste and zero-waste technology</li> </ul>	<ul style="list-style-type: none"> <li>Evaluated the impact of various human activities on individual components of the environment</li> <li>Defined negative human impacts on air, water, soil, flora and fauna</li> <li>Explained how soil degradation affects soil fertility and properties</li> <li>Determined the main factors of water ecosystem pollution</li> <li>Characterized natural sources of raw materials and energy from the point of view of their renewability</li> <li>Characterized individual types of waste</li> <li>Explained the concept of waste sorting</li> <li>Knew the options for sorting waste at school and in the city (municipality)</li> <li>Knew the activities of the Sewage Treatment Plant in Holíč</li> <li>Explained the terms low-waste and zero-waste technology</li> </ul>	Oral frontal examination Oral examination Written examination	Oral answers Oral answers Written exam
<b>Global ecological problems</b>	<b>13 h</b>		<b>Student should:</b>	<b>Student:</b>		
Global ecological problems Threatening basic conditions of life Social tools for environmental care		Ethics  Grade: first	<ul style="list-style-type: none"> <li>Explain basic ecological terms</li> <li>Characterize global problems on Earth</li> <li>Describe the basic pollutants in air, water and soil.</li> <li>Describe the basic economic, legal and informational tools of society for the protection of nature and the environment</li> </ul>	<ul style="list-style-type: none"> <li>Explained basic ecological terms</li> <li>Characterized global problems on Earth</li> <li>Described the basic pollutants in air, water and soil.</li> <li>Described the basic economic, legal and informational tools of society for the protection of nature and the environment</li> </ul>	Oral frontal examination Oral examination Written examination	Oral answers Oral answers Written exam

**Project:** ACC03P30 „Awareness raising on climate change mitigation and adaptation among school pupils and the public“. The project has been co-financed from the Norway Grants and from the State Budget of the Slovak Republic

**Applicant:** Spojená škola, Námestie sv. Martina 5, 908 51 Holíč