

Ainevaldkond: Gümnaasiumi valikaine

Aine: How good is our water - practical studies

Klass/Kursus: gümnaasiumi valikkursus (35 tundi)

Toimumine: September 2024 – January 2025

Hindamine: Regular participation and passing of theory checks

TEEMA: Introduction to water quality	
Õpitulemus	Õppesisu- ja tegevused
<ul style="list-style-type: none">Understanding the relevance of water quality in everyday life.	<ul style="list-style-type: none">Discussion about the importance of water quality. Creating a mind map.
TEEMA: Physical, chemical and biological parameters of water quality	
Õpitulemus	Õppesisu- ja tegevused
<ul style="list-style-type: none">Understanding and ability to perform simple physical measurements.Understanding chemical parameters and their influence on water quality.Ability to identify microorganisms and their significance.	<ul style="list-style-type: none">Experiments: measuring pH, making an indicator, temperature and turbidity in water samples.Theory of water as a chemical compoundExperiment: Determination of nitrate, nitrite, ammonium, carbonate and phosphate content and total hardness in water samples.

<ul style="list-style-type: none"> Understanding the impact of human activities on water quality. 	<ul style="list-style-type: none"> Theory and experiment: Microscopic examination of water samples for microorganisms. Group work: Research about local water sources and their pollution
TEEMA: Collection of samples from water bodies in the Tallinn area	
Õpitulemus	Õppesisu- ja tegevused
<ul style="list-style-type: none"> Ability to plan an experimental investigation Ability to analyze and interpret experimental results Knowledge and application of plant preservation methods 	<ul style="list-style-type: none"> Creation of a uniform examination protocol Excursion to self-selected waters and sampling Creation of a herbarium of indicator plants Carrying out water analyzes under field conditions Identification of plants and animals using appropriate specialist literature
TEEMA: Evaluation and presentation of data	
Õpitulemus	Õppesisu- ja tegevused
<ul style="list-style-type: none"> Ability to analyze and interpret experimental results Develop presentation skills and teamwork. Promote communication skills through group projects 	<ul style="list-style-type: none"> Evaluation of the data collected from the experiments. Preparation of a presentation on the results of the experiments Discussion about the results and their significance for the environment.

The overarching themes addressed in teaching and education are:

- 1) Lifelong learning and professional development
- 2) Environment and sustainable development
- 3) Information environment and media use
- 4) Technology and Innovation
- 5) Health and Safety

General competences developed in students (application):

- 1) Value competence – the ability to classify human actions and their consequences for the environment and society
- 2) Social competence – the ability to act as a responsible citizen through active, knowledgeable actions
- 3) Learning skills – understanding facts under guidance
- 4) Communication skills – processing collected information, prioritizing it and presenting it to other people
- 5) Competence in mathematics, natural sciences and technology – applying subject-specific techniques and questioning them critically
- 6) Digital competence – transferring information into digital materials and using them for design