Lesson Plan

2023-1-SK01-KA220-SCH-00015112

CODING GIRL

GIRLS JUST WANT TO HAVE FUN CODING

Topic	Health - Health protection	
Block Title	Measuring UV radiation intensity	
Age category 13-15	**Duration(min)** 135 min	**Number of teaching hours** 3

Student-oriented educational goals (content and performance standards)

Science: being able to explain the meanings of the terms pH, carbon dioxide, light intensity as a physical quantity, noise as a physical quantity.

Mathematics: calculation of CO2 content in the air based on measured data Technology / ICT: micro:bit programming, micro:bit connection

Art and Design: creation of the packaging of the measuring device

21st century skills: master the basics of programming, application of programming as part of everyday life

Didactic aids and didactic technology:

- Microbit,
- Analog UV sensor (Smart health kit)
- computer/notebook
- video:
  - https://www.youtube.com/watch?v=xcOKOll_kow,
  - https://rlx.sk/sk/microbit/8536-microbit-smart-health-kit-without-microbit- board-ef08256.html

References / Resources (videos, methodology):

- ISCED 2,
- https://www.youtube.com/watch?v=xc0K0II kow,
- https://rlx.sk/sk/microbit/8536-microbit-smart health-kit-without-microbit-board-ef08256.html

Motivational phase:

Duration (min): 20-25 min

Objective (student-oriented): can distinguish the danger of UV radiation, knows how to protect against UV radiation, can distinguish UVA/UVB

Introductory activity - motivation:

Introduction to the issue (key words): The use of images (Microbit) to estimate the topic of block teaching Interactive questions and answers (teacher, student):

- How does sunlight affect a person?
- What are the risks associated with UV radiation (diseases, skin disease...)?
- What is the difference between UVA and UVB radiation?

- How can you protect yourself from sunlight? What does the SPF factor mean?

Source view: video

Explanation of the purpose of the activity: The pupils should find out what the topic of the lesson is based on the pietures in Microbit and based on the questions.

Setting expectations: Pupils understand the importance of UV protection

Exposure Phase (Exploration):

Duration (min): 90-100 min

Objective: Spark interest in programming.

Science integration (main subject): Activities: Determine UV radiation levels (safe, unsafe).

Computer Science integration (use of micro:bit): Activities: Program a micro:bit to measure UV radiation and, at a certain threshold, alert users to apply protection.

Group discussion: What they enjoyed the most, how they felt about the work/programming (challenging or not challenging), and whether they were motivated by the prize (beach gear).

Exposure phase (exploration}:

Duration (min): 145

Objectives: make a headband using a 3D printer, program a miere-bit with an ice band, and decorate it with textile elements.

Integration of science (major subject): Activities: creation of a headband, application of physical phenomena

Informatics integration (micro:bit integration): Activities: microbit programming

Group discussion: Review and evaluation of the exposition phase (from the pupil's point of view): evaluation of pupils, use of the fashion accessory produced to evaluate the activity, Criteria for evaluating the student's work:

- functionality
- aesthetics
- creativity

Fixation phase (fixing and deepening}:

Duration (min): 30

Objective: to design own fashion accessory using microbit

Activities: Design your own fashion accessory with microbit application.

Pupil assessment:

Criteria for evaluating the student's work:

- functionality
- aesthetics

- creativity

Attachments: