

Lesson Plan



2023-1-SK01-KA220-SCH-00015112

Topic	Lifestyle	
Block Title	Decorate with a micro-bit	
Age category 8-15	Duration(min) 180 min	Number of teaching hours 4
Student-oriented educational goals (content and performance standards) <u>Performance standard:</u> - Design and create a fashion accessory using a microbit. <u>Content standard:</u> - clothing design clothing, part of clothing, accessory history of clothing clothing design Science: physics Technology / ICT: microbit Art and Design: Art education 21st century skills: - the ability to create new ideas and solutions to problems, - the ability to adapt to new situations and changes, - the ability to inspire and motivate others		
Didactic aids and didactic technology:		

- micro:bit,
- 3D printer,
- led strip

References / Resources (videos, methodology):

- <https://www.youtube.com/watch?v=aie-awKSSZI>
- <https://www.youtube.com/watch?v=R70VdiEg4gU>
- <https://www.youtube.com/watch?v=TIhqq26Yl6M>

Motivational phase:

- the teacher comes to the classroom wearing a cap in which is placed a micro:bit that reacts to light and movement
- the teacher introduces the students through demonstrations of light art and textile design and the combination of these two topics
- samples
- the teacher will present his accessory that reacts to light and movement.
- the teacher will pass the fashionable accessory around to the students

Duration (min): 15min

Objective (student-oriented): to get the students' attention, to arouse the students' interest in creative work.

Introductory activity - motivation:

Introduction to the issue (key words): fashion accessories; light, movement, LED strips

Interactive questions and answers (teacher, student):

What is unusual about me?

- yes, you have a cap on your head

What do you think will happen when I turn off the light with my hat on?

- lights up

Do you think the led light could change color when I turn my head to the left?

- yes, we think so

Do you think the led light could change color when I turn my head to the right?

- yes, we think so

Where do you encounter ice light that reacts to movement and light in a normal environment?

- street light, arrival to space

Can you imagine wearing a fashion accessory with electronic elements?

- yes

Source view:

Explanation of the purpose of the activity: introduction to the issue of light art in fashion

Setting expectations: students' interest in practical activities

Exposure Phase (Exploration):

- according to the instructions in the tinkercad program, they will create a headband, which will then be continuously printed in a 3D printer (30 min)
- students' familiarization with the functioning of the motion sensor and reaction to light intensity (15 min)
- the programmed led strips are placed on the headband using a melting gun (40 min)
- we will then decorate the headband with textile accessories (35 min)
- presentation in the form of a fashion show (10 min)
- evaluation (5 min)

It will create a cross-sectional space in the field of physics, chemistry, informatics and environmental education. Students will gain an understanding of the intersection of these areas. The evaluation of the measured results measured by the students deepens their analytical thinking and teaches them to process and evaluate the obtained data. Pupils form groups with the number of S pupils.

Science integration (main subject): Environmental Education

Activities: Use micro:bits to create measuring devices for measuring pH, CO₂, light intensity and environmental noise. Carry out measurements of individual factors and write the measured data in the table.

Practical measurement of noise intensity, lighting, CO₂ concentration and subsequent evaluation of the measured data. From the measured data, students will learn to evaluate the values of the measured parameters depending on the environment (space). At the same time, the influence of external factors such as the location of the measurement, traffic intensity, measurement time, etc.

will be pointed out.

Computer Science integration (use of micro:bit)

Activities: Implement a measurement system based on micro:bit according to the given task (measuring noise, light intensity, CO₂ concentration).

Activities: Implementation of the connection of the measuring system based on the micro:bit according to the assigned task (measurement of noise, light intensity, CO₂ concentration).

Review and evaluation of the exposition phase (from the pupil's point of view): Students will evaluate the measured data with respect to the measurement conditions (environment, time of measurement).

Fixation phase (fixing and deepening):

Duration (min): 50

Goal: Analysis and interpretation of measured data, subsequent comparison of the results of individual groups.

Activities:

- Analysis of measured data and creation of outputs in the form of a presentation. Data interpretation
- Group discussion

Pupil assessment:

1. Programming the micro:bit (functionality 100 percent, 0 percent)
2. Presentation (formal content page)
3. Work in a group
4. Group voting

Attachments:

Table for measured data

	C02	lighting intensity	environmental noise
Classroom			
Corridor			
Street			

Table for Ph measuring

WATER sample	pH value