

Lesson Plan



2023-1-SK01-KA220-SCH-00015112

Topic	Lifestyle and technology	
Block name	<i>MoveApp – track your movement</i>	
Age category 12-15 years	Duration (min) 135	Number of teaching hours 3
Educational goals Content standard: <ul style="list-style-type: none">• The importance of exercise for physical and mental health.• Possibilities of using digital tools to track sports activity. Performance standard: <ul style="list-style-type: none">• Design and create an application that measures the number of steps and the length of movement (in the form of a simulation).• Evaluate the collected data and present it in a clear visualization.• To realize the connection between movement and overall health. Integration of subjects: <ul style="list-style-type: none">• Physical education,• Biology,• Informatics,		

- Mathematics

21st century skills:

- Digital literacy,
- Data visualization,
- Self-reflection,
- Cooperation

Tools:

- Computers with internet,
- MIT app inventor,
- Canva,
- Mobile phones

Didactic aids and teaching techniques

- Blackboard or flipchart – for recording estimates and results of students' physical activities.
- Mobile phones or tablets – for testing app prototypes.
- Computers with internet and access to MIT App Inventor – for creating applications.
- A computer with internet and access to Canva – for creating visualizations and infographics.
- Printed worksheets – with helpful questions like: "How many steps will I take today?", "How many calories will I burn in 30 minutes of exercise?"
- Timer or stopwatch – for measuring the time of physical activities or simulating clicks in the application.

References/Resources (videos, methodologies)

Motivational phase

Duration (min): 35 minutes

Goal:

Introductory discussion:

The teacher begins the lesson with questions:

- How much time do you spend exercising each day?
- How many steps will you take?

Students make guesses, write down estimates, and together guess the average daily value.

Video and reflections:

- The teacher will give a short talk on the topic "health benefits of daily exercise"? They can use, for example, [Eating Well](#) or [Exercising for 30 minutes improves memory](#) or helpful websites or videos of their own choice
- After listening to the lecture, they discuss how technology (smartwatches, apps, phones) helps monitor fitness and motivates a healthier lifestyle.

Defining the goal:

- Students formulate a common question: "How could a mobile app help people move more?"
- The teacher will present the task - to create your own simple pedometer in MIT App Inventor.

Exposure phase (discovery)**Duration (min): 50 minutes****Goal:**

Students will connect scientific knowledge about physical activity with practical digital creation and learn to simulate movement measurement in a mobile application.

Science Integration:

- Students use knowledge from biology about muscle function, the circulatory system, and metabolism during movement.
- They discuss the recommended number of steps per day (10,000) and how different forms of activity affect energy burn.
- At the same time, they follow up on mathematics - they calculate distance and calories from the number of steps using simple formulas.

Informatics integration:

The teacher will introduce the basic principle of motion sensors and how they are used in real-world applications.

Students work in MIT App Inventor, where they learn:

- create a "Step" button and display a variable for the number of steps,
- add automatic calculation of distance and calories burned,
- insert a conditional block (if-then) – e.g. "If the user has less than 5000 steps, show motivation to move",
- add a visual motivator – a picture of a runner or a changing medal icon based on results.

Activities:

- Demonstration of the principle (10 min): The teacher will project a brief diagram of a real-world pedometer application and explain how the accelerometer in a mobile phone works.
- Group Creation (30 min): Students in groups design the look and functionality of their "MoveApp." Each group adds at least three features: a step counter, distance calculation, motivation, or visual graph.
- Testing and editing (10 min): Groups test each other's applications and provide feedback - what is clear, what doesn't work, what could be improved.

Fixation phase (fixing and deepening)

Duration (min): 45 minutes

- Project Presentation: Each group will present their version of MoveApp and explain how it motivates users to lead a healthier lifestyle.
- Visual output: Students will use Canva to create an infographic "My Week in Motion" - in which they will show the number of steps or time spent on an activity.
- Reflection: Discussion: "How does technology help us track our movement? And when does it hinder our healthy lifestyle?"

Student evaluation

- App functionality and creativity (40%)
- Understanding the principles of movement and health (30%)
- Collaboration and data visualization (30%)

Attachments:

<https://appinventor.mit.edu>

www.canva.com