SCENARIO		
Title	**Straight line motion.**	
Summery	Students will learn the concept of uniform uniform motion, the concept of speed and its units in the SI system. They will learn to plan tasks to determine the speed. Based on their experience, they will learn to read and make graphs of the speed versus time versus distance.	
Author/s	Jarosław Szczęsny	Date: 06/01/2020

Didactic objectives
General objectives: - Introduction of the concept of uniform linear motion. - Introduction of the concept of speed and its units in the SI system. -Planning, conducting and analyzing experiments related to determining speed. - Reading and plotting speed versus time versus time graphs. Specific lesson objectives: Students will be able to: - indicate examples of movement in the surrounding reality, - use physical quantities: route, speed, time, to describe uniform linear motion; - calculate the speed units in the SI system, - make graphs of the dependence of the road and speed on time for uniform linear motion - plan experience related to determining the speed of movement (e.g. during walking, running, cycling); estimates the order of magnitude of the expected result; - read data from the table; read the speed and distance traveled from diagrams of the dependence of the road and speed on time in uniform linear motion, -draw graphs of the dependence of the road and speed on time in uniform linear motion, - use physical quantities: path, speed, time to solve simple computational tasks related to uniform linear

motion,

- solve problems using the relationship between road, speed and time in straight line traffic.

Physics☒ Mathematics☐ Information Technology☐ Robotics☐ Programming☐

Education Level: 10-12 years☐ 12-14 years ☒

Problem Statement

- What is straight line motion?
- What is speed and what is its unit in the SI system?
- How to determine the speed?

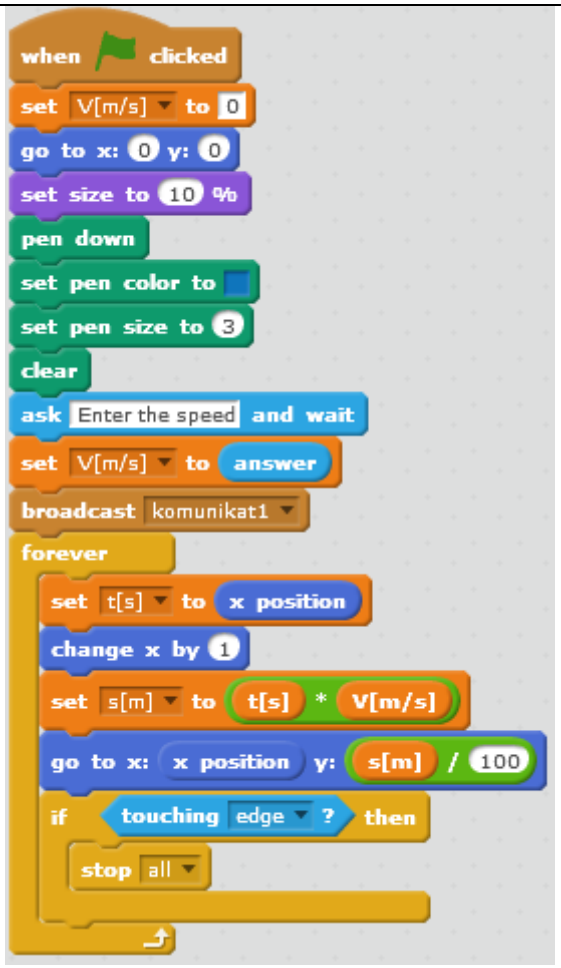
BOM (Bill Of Materials needed)

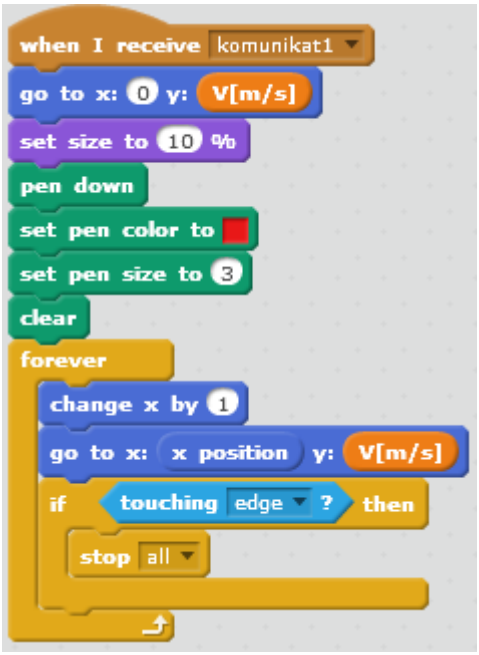
tube with water and air bubble, stopwatches, highlighters.

Activity description

Lesson flow:

1. Organizational and organizational activities
2. Introduction to the topic - a reminder of the basic concepts describing movement.
3. Performance demonstration examining uniform motion.
4. Introduction of the concept of speed and its unit and formula.
5. Exercise in reading and drawing graphs of speed versus time and road versus time
6. Planning and conducting by the students an experiment on determining the speed of movement, e.g. during walking, running (group work)
7. Simulation in the SCRATCH environment of creating graphs for uniform linear motion.

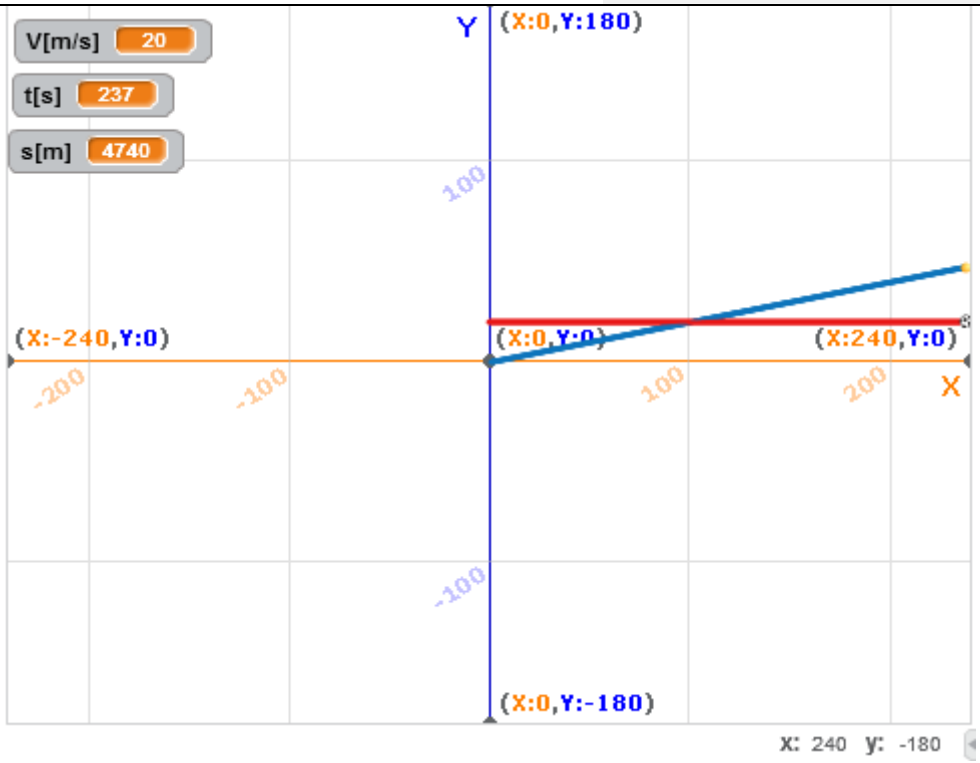




8. Summary and end of the lesson.

Resources

- computer stadion
- SCRATCH environment installed or Internet Access
- instruments for experiments: tube with water and air bubble, stopwatches, markers.



Students' Evaluation
The student is assessed for active work, involvement in classes.
Bibliography
Spotkania z fizyką - Podręcznik do fizyki dla klasy siódmej szkoły podstawowej Authors: Grażyna Francuz-Ornat, Teresa Kulawik, Maria Nowotny-Różańska https://scratch.mit.edu
Scalability
Script modification and improvement.
More information
Solving tasks using the program.