TITLE: The Maze Game

LEARNING SCENARIO		
School:	***Duration (minutes):***	**90**
Teacher:	***Students age:***	**10**

Essential Idea:	**Creating your own computer games is fun.**

Topics:

- Pupils can solve more complex logical problems with and without technology.
- Step-by-step, conditional instructions and events are utilized in problem solving tasks.

Aims:

- Pupils design and program in a visual programming environment using input values.

Outcomes:

- Pupils describe the situations in their program, where the decision and input values should be used.

Work forms:

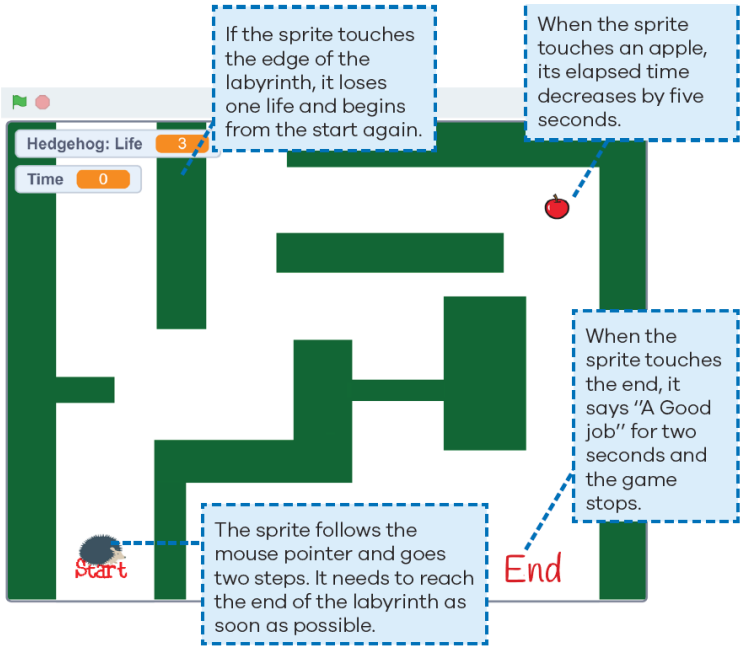
- individual work
- work in pairs

Methods:

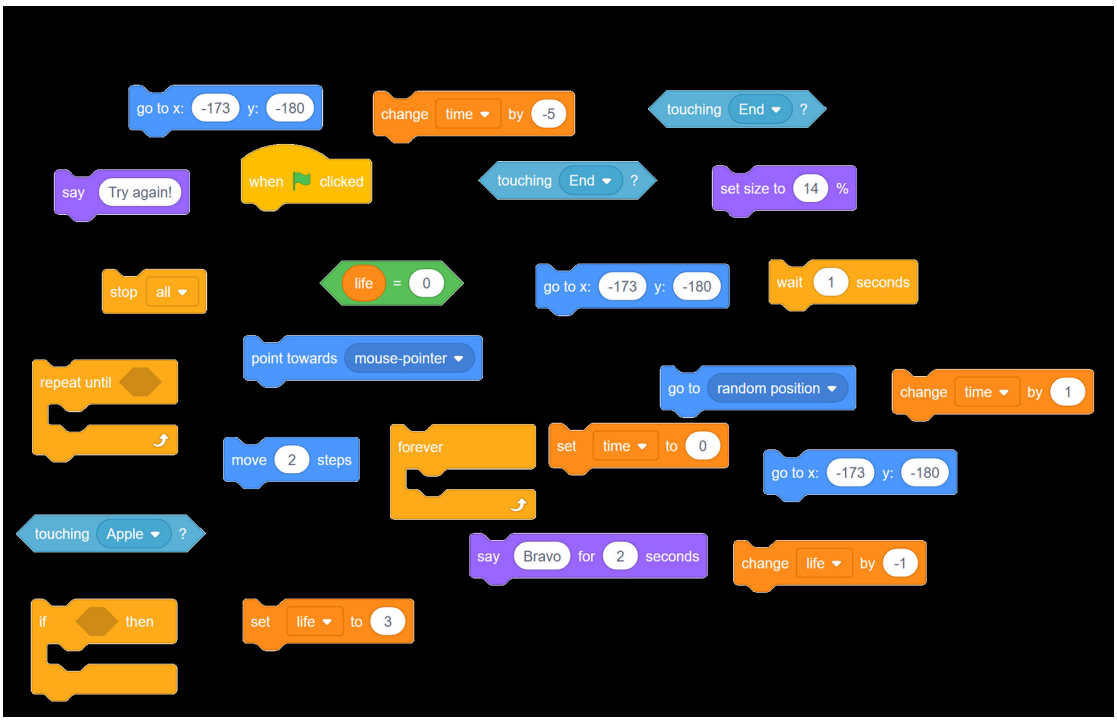
- presentation
- discussion
- graphic work

ARTICULATION
Course of action (duration, minutes)
INTRODUCTION Teacher starts discussion: What is a maze (labyrinth)? Where can we see the maze? Did you see the maze? Did you play a maze game? Do you know the legend of the minotaur and the maze?      Teacher introduces and tells the legend of the minotaur: *„Prisoner of the maze, the half man, half bull was a favorite legend for centuries, revealing the intertwined cultures of the Mediterranean world.“* Teacher announces the task: Today we will create our own maze game in the Scratch programming language.
MAIN PART Teacher presents and explains how to create a maze game: A sprite needs to pass through a maze from start to finish as fast as possible. If the sprite touches the apple, its time decreases for five seconds. The sprite always follows a mouse

pointer. If it touches the edge of the labyrinth, it returns to the start and loses a life. The total number of lives is three.



You will use the following blocks:



Working steps:

1. Colour the labyrinth background in green.
2. Load any sprite you like and the apple sprite.
3. The sprite should keep following the mouse pointer and make two steps.
4. If it touches the edge of the labyrinth, the sprite returns to Start and loses a life. The total number of lives is three.
5. Apples will appear in random positions for one second.
6. When the sprite touches the apple, elapsed time decreases by five seconds.
7. When it reaches the end, it says “A good job” for two seconds and the game stops.
8. Add more apples to give the sprite more chances for extra seconds.
9. Add an orange sprite that will add five seconds to your sprite’s total time, each time it touches it.
10. Add another sprite and race against it through the maze. The second sprite should start from the position (-170, 160).

If the sprite touches the edge of the labyrinth, it loses one life and begins from the start again. When the sprite touches an apple, elapsed time decreases by five seconds. When the sprite touches the end, it says ‘’A good job’’ for two seconds and the game stops. The sprite follows the mouse pointer and takes two steps. It needs to reach the end of the labyrinth as soon as possible.

Pupils solve tasks and present their games.

Pupils and teacher discuss and evaluate the presented solutions.

CONCLUSION

To successfully complete the task, it is necessary to set the steps in the correct order.

The teacher controls the pupils' solutions to the tasks.

Together they repeat the strategy they used in solving today’s tasks.

Methods		***Work forms***
presentation	interview	individual work
discussion	demonstration	work in pairs
work on the text	role playing	group work
graphic work		frontal work
interactive exercise /simulation on the computer		

Material:

- Scratch, Srcatch Online

Literature

- https://www.nationalgeographic.com/history/magazine/2019/09-10/minotaur-in-greek-roman-mythology/
- https://www.e-sfera.hr/prelistaj-udzbenik/46eb0ba9-475b-4d5f-ab77-a264ae54f6a7

PERSONAL OBSERVATIONS, COMMENTS AND NOTES