ERASMUS+ ARTIE
ARTIFICIAL INTELLIGENCE IN EDUCATION

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ARTIE: Artificial Intelligence in Education - challenges and opportunities of the new era:
development of a new curriculum, guide for educators and online course for students
Project co-funded by European Union under Erasmus+ Programme, 2020-1-HR01-KA201-077800

TITLE: Codey Rocky meets sequences and loops

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

Essential Question:	**What are sequences and loops?**

Topics:

- designing, creating and writing in a visual programming language: ideas, stories and solutions to problems of varied complexity
- experimenting with AI
- civilization related implications of AI

Aims:

- to understand the concept of sequence and loop, use the sequence and loop blocks to create buttons that can function as you would like

Outcomes:

- design, create and test simple program in a graphic environment to create animations

Work forms:

- individual work, work in pairs, group work

Methods:

- presentation, talk, discussion, interactive exercise

ARTICULATION
The course of action (duration, minutes)
INTRODUCTION

The teacher starts a discussion:
What is an Event?

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Can you think of any events in daily life?
What events were used in the last lesson?
Sample answers:
An event is an action that can cause things to happen.
Pressing the button leads to the light bulb lighting up.
In this case, pressing the button is an event and that the light bulb is turned on is the result.
Events that are used in the last lesson include: when the program starts up, when button A/B/C is pressed.

What are the steps to put milk into a refrigerator?
Explain to students:
To put the milk into the refrigerator, you need to take these steps: open the refrigerator, put the watermelon into the fridge, close the fridge door. If you are not taking the steps, you will be not able to put the water into the fridge.
Can you think of any cases in which you need to follow a set of steps to achieve something?

Announcement of the goal of the lesson:
The goal of this lesson is to understand the concept of sequence and loop, as well as to develop a program to use it.

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MAIN PART

The teacher explains:
When we are programming, we arrange the blocks in order from top to bottom to form a set of steps. In this way, robots can follow the steps to perform a task. We refer to the set of steps as a Sequence.

Traditionally, animation designers would make animations by following these steps:
Put a sheet of static drawing on the table first and unfold a new drawing paper on top of the first paper. Designers would outline the frame and then change the drawing bit by bit at a time. Then another piece of paper, outline the frame and change the drawing slightly again. Designers repeat the steps over and over again until they complete a series of pictures that are slightly different from each other. Then, they flip the drawings quickly to animate the pictures. Based on the same principle, we use the block "show image ( ) for ( ) secs" in our program to create animations.

Task 1: Winking Eyes
Create animations using the block "show image ( ) for ( ) secs". The method is simple: Use the image of the block as the base, duplicate the block, and change the image slightly. Repeat the steps and then arrange those blocks in sequence.
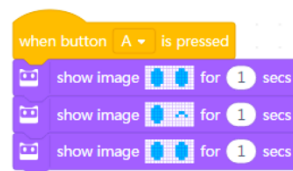
Task 2: Growing Tree

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Task 3: Walking

Students can show some well-done projects. When sharing the projects, students are supposed to give their answers to the questions proposed by others.

About Loops

In programming languages, a Loop refers to a set of instructions that need to be executed repeatedly. When writing programs, we can use the Repeat block to replace those instructions that are executed repeatedly, making the code clean and concise. With the Repeat block, we can also create fun projects.

We can use a loop to make the beats look neat and the game easier to play. In programming, the Repeat block is frequently used to make the code neat. With the Repeat block, Codey Rocky can carry out the same sequence of actions repeatedly. When the Repeat block is executed once, we count it as one cycle or one iteration.

Task 4: The Steamed Bread Can't Jump

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Infinite Loop refers to a piece of code that is repeated endlessly. Take a close look at the Forever block. It doesn't have a bump at the bottom, which means you can't add another block to the end. This is because the code inside the Forever block will be executed endlessly. Using the Forever block, you will be able to create projects that are engaging and fun.

Task 5: The Jumping Steamed Bread
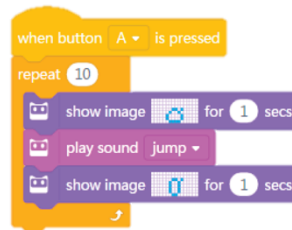
Task 6: Animation
Design two animations. Give each animation a specific event (button pressed). But use the Repeat block to create one animation and use the Forever block to program the other animation.
You can give the animations storylines, like one being The Steamed Bread Can't Jump and the other being The Jumping Steamed Bread; or the two animations can be mutually independent.

Students can show some well-done projects. When sharing the projects, students are supposed to give their answers to the questions proposed by others.

CONCLUSION

Sequence refers to a series of steps that are carried out to complete a task.
In computer programming, a Loop means the computer repeats a piece of code over and over again.
We use the Forever block to repeat a piece of code endlessly.

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

Material
●

Literature
●

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PERSONAL OBSERVATIONS, COMMENTS AND NOTES