

CONTEXT

Topic: Computational Science

Total learning time: 210 minutes

Number of students: 20 primary school pupils (6/7 aged)

Description: Easy and fun activities that introduce very young children to some of basic concepts of computational science, without using a computer. Particularly, focus is on the concept of algorithm and on the importance of following and giving strict and correct instructions.

AIMS

Understand what algorithms are.

OUTCOMES

Comprehension: to demonstrate to understand instructions and be able to follow them.

Application: to give instructions in order to go somewhere or make a drawing. Analysis: to examine a drawing and be able to divide the work in a sequence of actions.

TEACHING-LEARNING ACTIVITIES

Read Watch Listen

30 minutes 20 students Tutor is available

The teacher asks children if they know what the meaning of the term «Instructions» is. Children tell and compare their experience at home and at school. Someone could tell about a school experience during which they had to follow instructions given by some teachers. The teacher shows on the interactive board some images related to the term "instructions" e highlights the structure of sequence (numbered or bulleted list).

Explore:

Investigate

30 minutes 20 students Tutor is available

The teacher makes a game and tells to the children, in turn, that they have to pretend to be robots. They have to follow the instructions given by the teacher in order to get a mystery location in the classroom or in the school. The teacher sometimes gives wrong instructions and then asks children which should be the right one.

Map:



Collaborate 30 minutes 2 students Tutor is not available

Children works in pair. They try to design an activity in which one child is the driver and the other one is the robot. The activity has to be simple and short and they have to write the sequence of instructions in a piece of paper. At the end, each group shows the activity to the other children. The other children check if the instructions are correct.

Make:

Practice 30 minutes 20 students Tutor is available

The teacher suggest an activity in which children have to make drawings following some written numbered instructions. E.g.: 1.Draw a circle. 2. Draw a square under the circle. 3. Draw a triangle over the circle. Or 1.Draw a medium sized square. 2. Draw a circle inside the square. 3. Draw a triangle inside the circle. Or 1.Draw a house. 2. Draw a tree on the right of the house. 3. Draw a seesaw on the left of the house. 4. Draw a grey cloud on the sky, on the left. 5. Draw the sun on the right. Teacher can start with very easy and simple instructions and gradually increase the number and complexity of the sequence of instructions.

Discuss 15 minutes 20 students Tutor is available

Collaborate 30 minutes 2 students Tutor is not available

Show:

Read 45 minutes 20 students Tutor is available

Collaborate 15 minutes 2 students Tutor is available

[View this lesson plan online.](#)

This lesson plan was created as part of the online course '[How to Teach Computing: An Introduction to Concepts, Tools and Resources for Secondary Teachers](#)', funding for which was provided by the Grand Coalition for Digital Jobs.



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