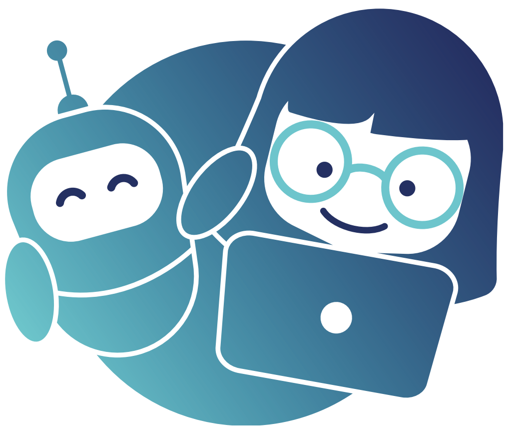
I'm not a Robot



Toolbox #4

How does a robot think

Tips for in-depths study

Links

Robotics and programming in Pre-K
https://youtu.be/w6h7JG4Dyis

BYOR Basics - Program your own robot from cardboard (English)
https://youtu.be/yX2D9NGYIno

Imprint

Toolbox #04 was created in 2022 by Renata Bernotienė, Ieva Pažusienė, Birutė Vitytė from the project partners.

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www.im-not-a-robot.eu

Introduction | What we know | Goals | Erxercise

Goals

Pedagogical professionals

Technological significance
Understand the importance of programming and coding for the future of children.

Critical evaluation of AI
Recognise the importance and role of humans behind robots and AI-controlled devices.

Didactic innovations
Create games and educational activities to learn the principle of programming and coding.

Children

Programming and coding
Learn the basic principles of programming and coding.

Different roles
Recognise differences between commands I give as a programmer and commands I give as a human.

Exercise

Level

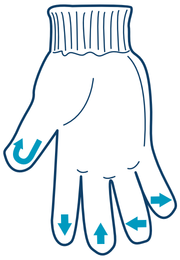
Experimental approach

Materials

Paper, paints, scissors
Pictures of the bewitched castle

Pictures with directional arrows
Gloves

Preparation
Ensure that children have a glove and cards for different directions.



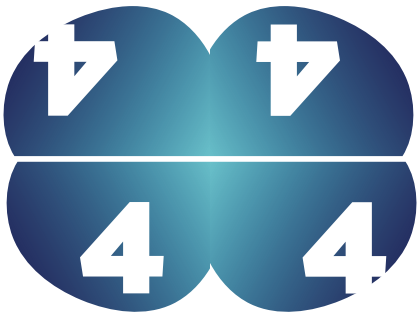
Implementation
The child „programmer" programs the five fingers of the child „robot" so that the child „robot" moves in space by naming directions.

Reflection
How did the use of five fingers went?

Variation
The children learn the basics of algorithms by doing activities without a computer, e.g. acting out a story based on their own drawings or photos, acting it out with movements.

Introduction | What we know | Goals | Exercise

Introduction



What is this about?

Robots or AI-supported devices can only work if a human has taught them to „think“. Robots do not think on their own, but follow instructions.
Through the activities in this toolbox, children should understand how a robot or AI-powered device works and how it can act autonomously to achieve certain goals and get the expected results.

The creation of certain templates, sequences and algorithms is necessary for the robot to act according to human instructions. So it‘s all about programming and coding.

When introducing children to programming, it is important to start with simple things that children are familiar with, such as physical, spatial movement games or clever logic games.

Children‘s point of view

What are robots thinking about?
How do they know what to do?

Questions from Children

How does the robot figure out what to do?
How does a robot decide where to go?
How does a robot know which way is best?

Exercise

Level

Experimental approach

Materials

Pictures
of the bewitched castle

Paper and paints
Self-made glove

Preparation

Children must have participated in level 1 activities.

Implementation

A child invents a path to an enchanted castle. Writes the path with arrows. Then „blows up“ the robot child. The robot has to follow the commands and reach the castle. The child-robot then writes the code for its path. Later, the children compare what they wrote before and after the action.

Reflection

- Why is it important for the „programmer“ and the „robot“ to follow the rules/guidelines?
- What if the desired result is not achieved - to go in the direction indicated?

Variation

Children swap roles, trying their hand at being a „programmer“ and a „robot“.

What we know

Children generally have different abilities. While some already have basic technical skills in kindergarten that they can and should use and improve later in school, some children's skills are not yet sufficiently developed.

It is important to find out what the children already know about creating algorithms/sequences, whether they are able to name the directions of movement correctly and how they apply this knowledge when playing and participating in educational activities.

They should also find out what they know about how the robot works and what needs to be done to make the robot perform the actions in the intended sequence and achieve a certain result.

Instruction

Print front and back on one sheet. (Turned over long side)

Fold