Children

Technical competences

Awareness of the human input behind a robots behavior.

Technical competences

Understanding that actions of robots base on their programming

Technical & Communicative competences

Learning to programme basic codes and to understand how commands are translated into code correctly

Metacognitive competences

Understanding, that as a human being I can make my own decisions

Goals

Pedagogical professionals

Technical competences

Knowledge about the technical basis of robots and AI

Didactic competences

Reflecting on different pedagogical methods in the context of promoting knowledge about robots and AI

Didactic competences

Training differentiated observation skills

Playing Robots Level 1

Materials

Cloths to blindfold

Preparation

Remove all dangerous objects/obstacles from the play space.

Implementation

- The children get together in pairs of 2. One of them is blindfolded with a cloth and is led by the hand of his/her partner through the room.
- After a few minutes, the kids change their roles.

Reflection

After the activity meet the children in a circle and let them express their feelings about the play. Consider to name both, positive and negative emotions during the play. Ask them about the roles in the play and in which role they felt more comfortable. Which senses did you use during the play? Relate the play to the role of a robot. Which role do sensors play? Which sensors/senses are needed to orientate? Could you imagine that also humans could need some sensors instead of only senses?

Exercise

Level

I'm not a Robot

Tips for in-depths study

Literature

„Digital Genial“
by Antje Bostelmann and Michael Fink, 2018

„Einfach machen. Den digitalen Wandel im Kindergarten gestalten“
by Antje Bostelmann, 2021

„Hello Ruby. Programmier dir deine Welt“
by Linda Liukas, 2021

„Hello Ruby. Wenn Roboter zur Schule gehen“
by Linda Liukas, 2019

„Programmieren im Kindergarten“
by Karin Sönnerås, 2020

Imprint

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www.im-not-a-robot.eu

Toolbox #3
Let us play robots

Introduction

Exercise

Level

What we know

What is this about?

How do children recognise how they can play with a robot or AI-controlled device?
How do they identify differences in the opportunities and limitations of play? What conclusions can they draw from this?

In dealing with the topic area of Toolbox No 3, the pedagogical professionals support the children in their reflections on the differences between robots or AI-controlled devices and humans. In addition, they reflect on the ethical and moral prerequisites for the development of digital technology.

Children's point of view

What kind of robots do children know?
What do children understand by programming?
Can children take on the perspective of the robot and programmer in a role-play?

Questions from Children

Can I play with a robot?
Can a robot play with me?
What kind of games can I play with a robot?
Can I also become a robot?

Dancing Robots

Materials

Graphic symbol cards
showing dance moves and number cards showing repetitions

Optional:
speakers and a song playing device

Preparation

Tidy up the room, thus, there is a lot of space in the middle of the room for showing a dance performance.

Implementation

- At least 3 kids per group.
- Let the groups pick at least 3 different symbol cards and 3 different number cards.
- The kids must choose an order of the dance moves and link a number card with the number of repetitions. This will be one choreography sequence which can be repeated as long as the song lasts.
- Let them practice their dances

Showtime

- One group shows its dance to the other kids.
- The other kids must guess which movement cards were used and how often repeated
- Afterwards the group shows what their cards have been. Have the other kids guessed right?

Reflection

Where can you find repeating activities in the everyday life?

Variation

Let the kids design their own dance move cards

Level

Exercise

Playing Robots Level 2

Materials

Cloths to blindfold
Obstacles (chairs, cushions, balls, etc.)

Preparation

- If possible, run the activity in a bigger room/sport room, so the children have enough space to move.
- Position obstacles in the room.
- Prepare commands the children should use in the play (f.e. touching on the head means "stop")

Implementation

- The children get together in teams of 2. One of them is blindfolded with a cloth and is led by the tractile commands
- Define a task where the kids must start and end their play without running over the obstacles.
- The leaders follow their robot all the time behind and interacts with the robots by touches.

Reflection

- Discuss with the children about the activity and the various roles they had during the play. What were their feelings about the different roles?
- Is a robot free?

Variation

1. Add to the blindfold ear taps, so that children can't hear. This way their senses are more limited, and they must focus differently on the exercise.
2. Let's be abstract and reverse all meanings of the touches.

What we know

Playing with robots fascinates kindergarten children and the toy market offers great variety of products. Although children will not make this separation, a general distinction can be made between robots as toys and robots that can be used in a learning situation. Always check wether a product is hiding its functionality from the children or can they understand how the programming behind the functionality is working.

Programming & Coding in kindergarten without a computer
To introduce children to programming, however, it is not necessary to work with computers/tablets or learning robots. It is possible to start very simply, for example with the body, space-related movement games or tricky logic games. Games that focus on solving cognitive problems together and, above all, creatively are ideal. By doing things together, these games always combine communication and social learning with the promotion of problem-solving skills.

A particularly popular offline coding game is „Programming robots". Here, the children are robots themselves and navigate each other through the room. However, various elements such as sequences or conditions („if-then") can also be incorporated into music-stop games.

On the one hand, offline-coding games can be used for this, on the other hand, other materials such as the Hello Ruby book series.

The children will be fascinated by the robots. It is important to give the the chance to „feel" like robots and to understand their limitations.

Instruction

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

Fold