

# Children

**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

# Pedagogical professionals

## Goals

**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?

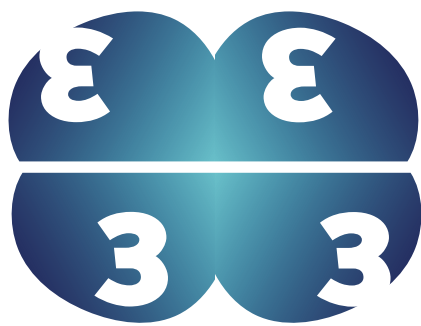
**Implementation**  
• The children get together in pairs of 2. One of them is blindfolded with a cloth and is led by the hand of his/her partner through the room.  
• After a few minutes, the kids change their roles.

**Preparation**  
Remove all dangerous objects/obstacles from the play space.

**Materials**  
Cloths to blindfold

# Playing Robots Level 1

Exercise Level 1



# 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 Sönnerräs, 2020

## Imprint

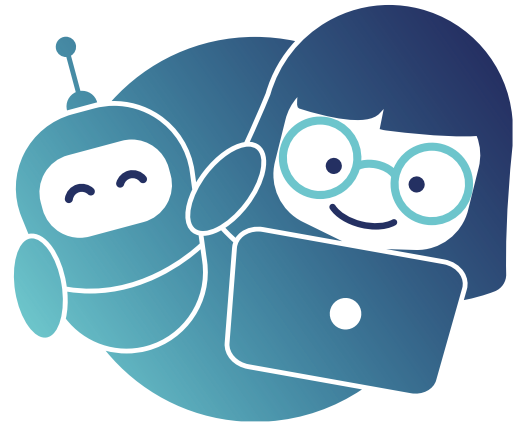
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# Toolbox #3 Let us play robots



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

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.

A particularly popular offline coding game is "Program-ning 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.

Program-ning & 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.

Playing with robots fascinates kindergarten children and the toy market offers a 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 whether a product is hiding its functionality from the children or can they understand how the programming behind the functionality is working.

## What we know



## Introduction

### 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?

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.

#### Variation

- 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?

#### Reflection

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

#### Implementation

- 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 (e.g. touching on the head means "stop").

#### Preparation

**Obstacles** (chairs, cushions, balls, etc.)

#### Cloths to blindfold

#### Materials

## Playing Robots Level 2

### Exercise

Level ● ●

### Exercise

Level ● ●

## 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

# Instruction

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

Fold

