

Technical competences
Understanding the different forms of technological assistance to humans

Children

Metacognitive competences
Reflecting own reservations and inner conflicts about seeking help for yourself and dealing with people needing help

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

Technical competences
Knowledge about voice-controls digital assistants, automated vehicles and facial recognition

Pedagogical professionals

Goals

- Variation**
1. As an alternative the children could play the scenes as a small theater or draw a little comic.
 2. Do the exercise in reverse and describe for already existing robots in which situations they help.

Reflection
Robots are always developed for a special purpose. To play the role of a developer the first step is to identify situations in which robots could be helpful.

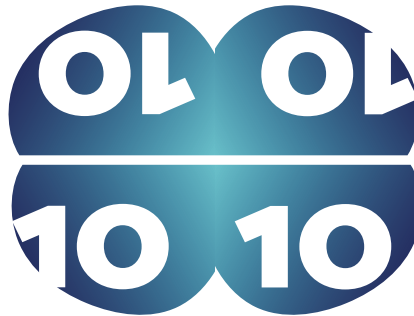
- Implementation**
- Send the children on a discovery in which they have to find situations where a robot could help.
 - They can document the situations with help of photos or videos.
 - As a second step let the kids discuss how a robot could help in the situation.
 - Example for a comic story where a robot device could help.

Preparation
No special preparations needed

Materials
iPad or camera

Assisting robots

Exercise Level ● ●



I'm not a Robot

Tips for in-depths study

Literatur

Medienpädagogik in Kindergarten und Grundschule

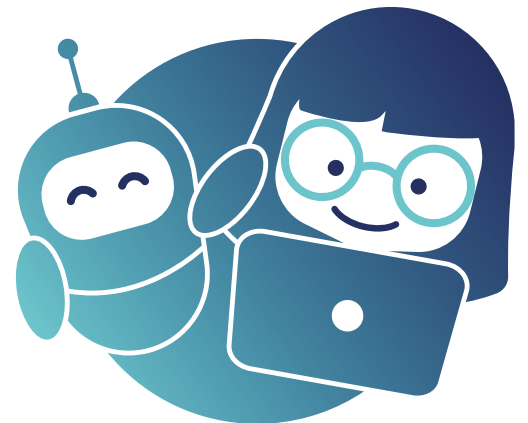
by Antje Bostelmann, 2019

Einfach machen. Den digitalen Wandel im Kindergarten gestalten

by Antje Bostelmann, 2021

Hello Ruby. Wenn Roboter zur Schule gehen

by Linda Liukas, 2019



Imprint

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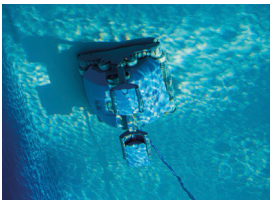
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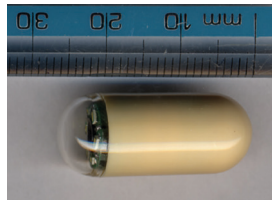
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Toolbox #10 How can a robot help?



Pool cleaning robot



Endoscope-Bot

Source: Adobe Stock | Schorfsinn86



Autonomous driving

Application fields of robots and AI controlled technologies They can enter collapsed buildings and map them, fly over fires or measure radioactive radiation and thus sound out the potential danger for the rescue forces on site. Even the cleaning up of certain - for example contaminated - areas is conceivable with semi-automated robotic vehicles. The area of application is sometimes only of very specific use or of general social value.

What we know

Introduction

What is this about?

This toolbox is about exploring purposes and areas in which robots can help us - and in which they cannot. In the discussion with the materials and didactic offers, children gain an insight into different areas of application of robots. By talking about the intended use and the result of the help, children can decide whether the robot is reliably doing a good job. In addition, they have the opportunity to identify side effects and make suggestions for improvement. In this way, the view of a robot changes: a mere existing object becomes an object to be designed. These activities and conversations will raise awareness of the technology and how to deal with it critically.

Children's point of view

- What is help?
- Where do people around the world need help?
- What does a robot need technically to help?
- How does a robot need to be programmed to help?

Questions from Children

- How can I help? How can other people help? How can robots help?
- Can robots also do sports/homework/dishes for me?
- What tasks or problems can a robot not solve?
- Are robots only made for a specific purpose?
- What happens when you use a robot vacuum cleaner to mow the lawn?

Can they imagine a world without smartphones? How was the idea of a smartphone created?

All robot inventions start with an idea. Feel the process of development! The children should reflect on other technological inventions.

Reflection

- The children shall develop imagine a machine to sort toys in the kindergarten (for example a machine to sort LEGO).
- How would this machine look like?
- Which parts are needed?
- Don't look for realistic answers and imagine all kind of futuristic or crazy solutions.
- Create a carton prototype of it or a big picture or poster about it!

Implementation

No special preparations needed

Preparation

Nothing special equipment needed

Materials

Crazy Inventions

Exercise

Level ● ● ●



Exercise

Level ● ○

Visit a local center for robot development

Materials

Nothing special equipment needed

Preparation

No special preparations needed

Implementation

Visit a local center for robot development with your class. This can be for example a local Makerspace, RepairCafé, FabLab, University, company, media centers etc. Book a tour and ask if they can show you their work in a interactive way.

Reflection

Get to know how people develop robots and reflect with the kids about their experience. What can be limits for inventions? What is important to know as a developer?

Variation

Invite a local robot development institution to your kindergarten.

Instruction

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

Fold

