

Children

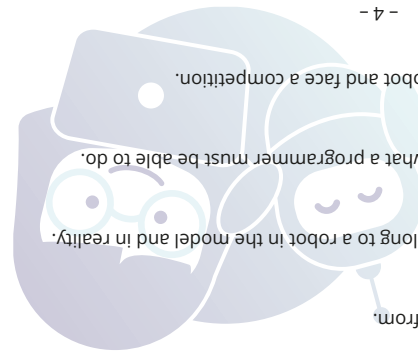
Learn, what it takes to design and build a robot.

Investigate, where a robot comes from.

Recognize, which components belong to a robot in the model and in reality.

Develop an understanding of what a programmer must be able to do.

Have fun, creatively building a robot and face a competition.



Pedagogical professionals

Recognize, how knowledge about robots and AI-based devices can be creatively connected.

Understand, how children's enthusiasm for robots leads to an increase in their learning in terms of knowledge, skills and abilities.

Upcycling-robots

Materials

cardboard boxes, tins in

different sizes

paint

glue as much used material as possible (waste)

Preparation Make the materials accessible

Implementation

The children work in a group and decide whether they want to build the robot alone or in a team. All materials are laid out on a table. The children use their imagination and create their individual robot. They may want to be supported by the pedagogical staff. There is no specific outcome. The only requirement is it has to be a robot.

The children slip into the role of designers, constructors, technicians, mechatronics engineers, according to their individual wishes.

Variation

It is helpful if during the creation of the robot, the purpose of the robot is always considered with the: for cleaning, transport, pleasure.

Goals

12

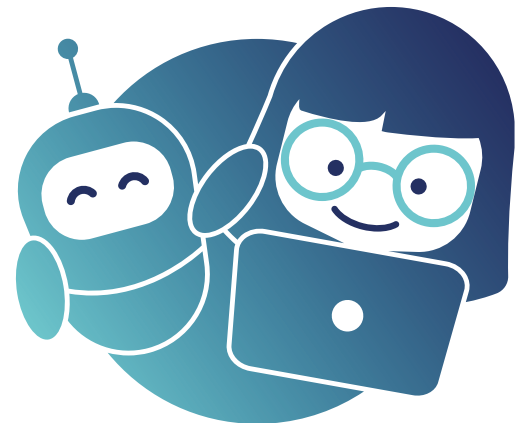
12

Exercise

Level



'I'm not a Robot



Imprint

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Toolbox #12 Let's create a robot

Introduction

What is this about?

Knowledge about robotics and AI-based devices are combined with creativity and ingenuity to build a robot. Different levels of difficulty can be chosen and tried out according to the children's level of knowledge and age.

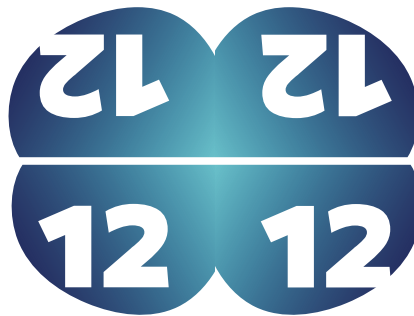
In the process, the children can help each other and work together as learning partners. All kinds of material are used.

Advanced and experts can use programming, coding and electrical circuits.

Many features of a robot have been worked on with the children in Toolboxes 2-1. Now this knowledge can be activated. In addition, a robot centre could be visited, because children are interested in how a robot works and have their own, usually very concrete ideas of what a robot should look like. So it is about bringing together all the impressions from the work with the toolboxes and beyond:

- to create something that has no purpose
- to feel what it is like to build a robot
- to pass a robot competition.

What we know



Variation
Have the children come up with a problem or a challenge they face in their everyday

Implementation
• Same as exercise1

Preparation
Make the materials accessible

The same as exercise 1
Increase the challenge other materials such as iron, wood, metal, parts of broken toys, etc. can be used. Batteries, wind, water or other types of energy sources can be added to this.

Materials

Upcycling-robots 2

Exercise Level ● ●

Exercise Level ● ●

Upcycling-robots 3

Materials

The same as exercise 1
Increase the challenge other materials such as iron, wood, metal, parts of broken toys, etc. can be used. Batteries, wind, water or other types of energy sources can be added to this.

Preparation

Make the materials accessible

Implementation

• Same as exercise1

Variation

Shitty robot challenge: Instead of making useful robots, robots that can help people or solve different problems in your kindergarten, have the children create shitty robots. Robots that have no point, no purpose.

Instruction

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

Fold

