

Human Robot Advanced

Conditionals

Target group:	For children from 8 years, should already be able to read Also suitable for secondary level 1
Timeframe:	Together with the Human Robots 2-3 lessons
Subject:	Computer Science, Digital Basic Education
Curriculum relevance¹ (scope Austria):	5th grade: comprehend, execute and independently formulate clear instructions for action (algorithms). 6th grade: create simple programs using a suitable development environment , test and debug them (detect and fix errors). 8th grade (preparatory): Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.
Competencies/ Learning Objectives	Algorithmic thinking, grasping problems, taking all situations into account and presenting the solution in a structured way.
Required prior knowledge	This work package builds on the sequential approach of the human robot. Both in terms of content and materials.
Computer Science Concepts	Algorithms, Modelling, Programming
Type/type of teaching material:	Unplugged Activity
Required files:	- Material from the work package Human Robot Preliminary Exercise MO_M_flowchart-cards MO_M_arrows MO_M_net-of-die MO_B_example
Social form:	Group work
Sources:	VS Curricula Federal Law Gazette II No. 204/2024: https://www.ris.bka.gv.at/NormDokument.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10009286&Artikel=&Paragraf=&Anlage=1&Uebergangsrecht (21.10.2024) AHS curricula in Federal Law Gazette II No. 133/2000: https://www.bmb.gv.at/schulen/unterricht/lp/lp_ahs_unterstufe.html (19.4.2018) Digital Basic Education Federal Law Gazette II No. 71/2018: https://www.ris.bka.gv.at/eli/bqbl/II/2018/71/20180419 (19.4.2018) All images CC-BY-NC-SA Informatik-Werkstatt 2026 or other sources
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¹ or reference to the educational framework plan for the elementary level
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Preparation:

This work package is based on the sequential Human Robot ([Human Robot Preliminary Exercise](#)). The cards with movements, the mats and also the game cards should therefore already be prepared. You can do both work packages in two to three lessons.

Furthermore, the materials are **MO_M_flowchart-cards**, **MO_M_arrows**, **MO_M_net-of-die** to be printed, (optionally) laminated and cut out. The cube tear can also be printed out in large size. Another help in understanding is the example **MO_B_example**, which can also be used printed out to show it.

Furthermore, it is useful (but not necessary) to teach the topic of [flowcharts](#) beforehand.

Use/handling:

The **setting** is the same as for the human robot. However, the tasks are different. There are also situations where a decision is made. The outcome of the condition is randomly determined by a die. The students must therefore record all possible situations in advance in their programmed programs.

In addition to the human robot, it should be noted that the programs that students create can be interpreted as **flowcharts**. Ideally, this can or should be introduced in the sequential part of the human robot.

Only after tasks with sequential programs is the branching built in and after a trial round with example (**MO_B_Beispiel**), the groups are supposed to program processes for the following tasks themselves. As a teacher, you should check all possibilities (priority for the branching) for correct placement and consideration. At the end, the procedures are read out in plenary and followed up on the map. Errors and ambiguities can be addressed and discussed here.

Variants and supplementary options:

New tasks, installation of loops, nested branches,... the work package or material can be extended in all directions.