

***Scenario title/name of the game:*** Count my blocks

***Children’s age (primary school students):*** 6-7 years old

***Time needed:*** 15 minutes

***Content/Subject:*** Develop a fundamental understanding of number sense

# Introduction

## This activity teaches the concept of representing basic, measurable quantities with numbers. For simplicity, it is limited to discrete sets of counted objects or events. The student can both initiate the counting process by the robot and deliver objects or events in the number suggested by the robot. The fun strengthens the student's knowledge of the meaning of numbers and their use in the real world. Due to the target group, no programming of the robot by the student is assumed, but only interaction with the toy. It is also not assumed that the number itself is symbolically represented by a sequence of digits.

## Resources:

1. **Robot equipped with a button or two buttons and flashing LEDs in the eyes of the robot.**
2. **A scale connected to a robot and a function that returns the number of objects of known mass on its pan.**
3. **Microphone inside a robot and a function that counts the occurrence of loud noise, e.g. the number of claps.**
4. **A container with balls or blocks of equal, known mass.**

# A detailed description of the scenario

## The student turns on the robot, which welcomes him and encourages him to play together. The student selects the type of activity by pressing any button. Each time you press it, the name of the activity is spoken. If it is "I will count your claps", then the student starts clapping and the robot counts, saying the number of claps with each clapping. In order for the game not to be too boring, the robot can interrupt it, e.g. after 10 claps and propose another activity. If it says "I'll count how many times you press the button on my head", then the student presses the button multiple times and the robot counts the presses. If it is "I will count the blocks on the scale pan", then the student takes the blocks and puts them on the pan, each change in the mass of the blocks triggers a new statement. The child can place the blocks individually or several pieces at once. To increase the level of difficulty of the game, subsequent activities can test the ability to count. For example, the robot says "clap 7 times" and starts counting each clap. A pause of more than 2 seconds stops counting and the robot says whether the student counted the claps correctly. A similar scenario may apply to the number of blocks on the weighing pan. The robot can either ask to place a certain number of blocks, add or remove a certain number, or take such a number of blocks that the number is indicated by it. A student can also place as many blocks as the number of times the LEDs flash or beep.

# Steps

1. Preparation of the robot and blocks
2. Turn on the robot
3. The robot greets the child and explains how to use it
4. Selecting an activity
5. Instruction given to the student by the robot
6. Action of the child in accordance with the instructions
7. The robot counts blocks, claps or button presses
8. Return to activity selection

# Tips and tricks for the teacher

In most cases, your child will be able to interact with the toy on their own and observing their progress will suffice

If a child cannot cope with more advanced activities, they can be encouraged to undertake simpler ones

It will be good to watch the process of learning more and more numbers and manipulating them to see which activities are the most difficult for the child

# Scenario implementation and other resources

Maps, arrows, other materials especially created for this scenario

# Variants of the scenario/the game

A more advanced use of the robot can be to find the numerical equivalent of different quantities, e.g. the robot will say: "clap as many times as blocks you put on the weighing pan" or "take as many blocks from the pan as many times I lit eyes". In an even more advanced version, the student may be asked to add up the light and sound signals. It is also possible to involve older children in the play process of younger children by providing initial guidance, and in a more advanced variant by programming new activities.