

Weigh my blocks

SAN

Scenario title/name of the game: Weigh my blocks

Children’s age (primary school students):6-8 years old

Time needed:20 minutes

Content/Subject: Collect and analyze data relevant to primary school contexts

# Introduction

## This activity teaches children to solve problems using objects from the world around them. In particular, it develops the child's ability to analyze the number and size of objects, both by comparing their size and mass. The child's task is to assess how many blocks of mass and unit size are able to replace blocks with twice the mass and size. The task develops the ability to compare sets of objects, evaluate their "value", the ability to replace objects of one type with objects of another type while maintaining the total mass or side area (wall built of blocks).

## Resources:

# 1. Robot equipped with a scale, two buttons (green and red) and speech synthesis or the ability to play recorded messages

# 2. A container with blocks of two different weights and sizes, optionally in two different colors

# A detailed description of the scenario

## The task is to count and weigh blocks of two sizes: small blocks and large blocks with twice the weight of the small blocks and twice the length of the small blocks.

## 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 "swap small bricks for large" the student presses the button, starting the activity, the robot says "take the pan of the scale, take some bricks from the container and weigh them", after the action the student presses the button and receives the response "there are X units of blankets on the pan , replace the small blocks with the same number of units of large blocks", the student completes the task, but it may turn out that the number of units was odd and one small block must remain, after weighing the robot says if the number of units is correct and asks if the student succeeded change all the small blocks to big ones. If yes, the student presses the green button, if not - presses the red button, and the robot evaluates the correctness of the answer. If it will be "build a square with an area of ​​X units, use as many large bricks as possible", then the student selects the appropriate number of large bricks, and if it is not possible to build a square with only large bricks, then he selects the appropriate number of small bricks, then the robot asks to take large blocks from the square and weigh them, and finally weigh the small blocks and assess the correctness of the task. If it says "Put X units of bricks on the scale", the student puts both small and large blocks on the scale. The robot then asks to take all the small blocks, weighs the remaining large blocks, and asks to put as many small blocks as the number of large blocks on the pan. After completing the task, the robot evaluates its correctness, at the same time telling the number of all blocks and the number of units on the pan.

# 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. Robot weighing blocks
8. Further instructions depending on the task
9. 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

# Scenario implementation and other resources

Maps, arrows, other materials especially created for this scenario

# Variants of the scenario/the game

More advanced use of the robot may consist in composing tasks consisting of more operations on blocks, building rectangles of given dimensions or using three sizes of blocks. Activities can be programmed by older children.