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Percentage calculation practice

Year	Field of study, subject	Subject connections
6.	Mathematics MATHEMATICS	Hungarian language and literature, singing and music, visual culture, digital culture

The purpose and didactic tasks of the lesson

Practicing percentage calculations with the help of robots.
Reverse work. Returning to the definition. Establishing analogical thinking. Interpreting the read text. Developing the skills necessary for cooperation. Highlighting the essence, developing communication skills.

The effect of the clock

"Percentages are all around us - let's understand them so we can make smart decisions in our everyday lives!" - raising awareness of this idea in students.
Using robots in an experiential way

Tools and resources used

	State curriculum, local curriculum, textbooks
	INDI, WINE robot
	Cardboard, felt, Indi track, Vinu track

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abacusan STÚDIÓ
WE TEACH ROBOTICS

Lesson plan

5 minutes	**Attunement, goal setting**	• Discussing the “Big Idea” • Activating prior knowledge • Motivation, communication, questions and answers • Frontal work
3 minutes	**Group formation**	• Formation of groups: heterogeneous groups (2-3 people/group). Task description: The robots must be guided through the course, while solving percentage calculation tasks. • Understanding the task, preparing for group work
25 minutes	**Group work**	• The groups work with the robots. They make a plan, solve percentage problems, and move forward on the course. • Applying percentage calculations in practical situations. • Developing problem solving and collaboration. Discovery learning, practice • Group work • Equipment: INDI, VINU, Ozobot robot, color cards, worksheets
10 minutes	**Report**	• The groups report on their experiences. The robots are guided along the course. • Discussion, reflection • Developing reflection, self-assessment, recording what has been learned • Frontal work • Equipment: INDI, VINU, Ozobot robot, color cards, worksheets, own notes
2 minutes	**Summary**	• Summarizing what has been learned, preparing for home practice • Frontal work

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Group tasks

Group	Individual tasks	Tools
Group 1 You have 15,000 HUF in play money. Calculate which items you can buy based on the new prices. Make a track for Indi the robot where you place the items and Indi will only go past the stations where you placed the selected items.	1. Calculate the discount prices of the products! 2. Build the robot track, guide INDI through the shopping mall	INDI robot, track, color cards, cardboard, felt
Group 2 Our good friend "Giant Chicken" has just been put up for sale. His selling price is 3000 HUF, but the sellers wanted to please him, so they are giving him a 15% discount. "Monster Elek" is also waiting for sale, his price is 3180 HUF and he has been discounted by 12%.	1. Calculate which popular item became cheaper at the sale price! 2. Record your calculations and solutions! 3. Plan your route 4. Prepare the delivery route for the cheaper goods using Vinu robot. Vinu should deliver the pet you want to buy to the green square 2.	VINU robot, track, pencils
Group 3 It's time for big decisions. Should we update our wardrobe? Should we go to a movie? Should we buy a nice green "Grinch" dress?... or Should we buy a carnival costume for the fun and travel to Pest for a super cool robotics class?	1. Calculate the discounted prices! 2. Record your calculations and solutions! 3. Create a course for Ozobot, guide it along it, slowing down for the product you want to buy, and speeding up for the rest.	**Ozobot robot, empty track, felt**

Differentiation options:
The composition of the groups is heterogeneous, so the children help each other and learn from each other.

- The individual subtasks are distributed among the children in the group according to their strengths and areas for development.

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