

## Logic

Year	Field of study, subject	Subject connections
1.	Mathematics	Digital culture, : environmentally aware, lifestyle and technology

### The purpose and didactic tasks of the lesson

Observation of planar shapes (square, rectangle, circle, triangle)  
Their properties. Identities, differences. Sorting and distinguishing flat shapes. Sorting logical cards by color, size and shape. Mastering logical operations.

### The effect of the clock

Thinking and cognition methods: comparison, identification, differentiation, logical operations. Recognizing and naming common properties. Ability to connect different conditions. Be able to think, help peers, and cooperate in joint activities.

Thanks to the color-coded controls of the INDI toy car, the track can be changed, so children can even create different tracks themselves.

### Tools and resources used

	<i>State curriculum, local curriculum, textbooks</i>
	<i>INDI robot and color code cards, logic kit</i>
	<i>INDI robot track, worksheets</i>

## Occupation plan

3 minutes	<b>Introduction and motivation</b>	<ul style="list-style-type: none"> <li>Building shapes from logic tiles</li> <li>Attention, motivation, repetition</li> <li>Pair work</li> <li>Device: Logical set</li> </ul>
10 minutes	<b>Getting to know logical operations</b>	<ul style="list-style-type: none"> <li>Sorting the elements of a logical set according to the presence of several properties. E.g. Blue and holey shapes. Yellow triangles. etc.</li> <li>Experiential learning, new knowledge</li> <li>Individual work, then frontal discussion</li> <li>Device: Logic set and its elements in board size</li> </ul>
5 minutes	<b>Introduction to the INDI robot, explanation of the purpose of the course</b>	<ul style="list-style-type: none"> <li>Digital device use.</li> <li>Frontal work.</li> <li>Tools: INDI robot, track.</li> </ul>
10 minutes	<b>Collecting plane objects on the robot track</b>	<ul style="list-style-type: none"> <li>The groups draw from task cards, and the robot must "collect" the corresponding plane shapes.</li> <li>Logical operations, algorithmic thinking, practice</li> <li>Pair or small group work, problem solving.</li> <li>Tools: INDI robot, track, task cards</li> </ul>
10 minutes	<b>Card chain using logic cards and INDI</b>	<ul style="list-style-type: none"> <li>Shape, color, size and quality recognition. Each child draws a card and must go through the logic tiles in the order shown on the cards.</li> <li>Pair work</li> <li>Tools: INDI robot, track, logic set, task cards, colored pencils</li> </ul>
8 minutes	<b>Summary and closing of the lesson</b>	<ul style="list-style-type: none"> <li>Systematization of knowledge, feedback</li> <li>Reflection, self-reflection.</li> <li>Frontal activity.</li> </ul>

## INDI-PROBLEM CARDS – Logic



Collect all the blue squares with INDI!



Collect all the little triangles with INDI!



Collect all the hole shapes with INDI!



Collect all the big yellow shapes with INDI!



Collect all the blue non-holed shapes with INDI!

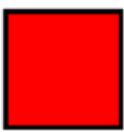


Collect the red circles and squares with INDI!

Here is the beginning.

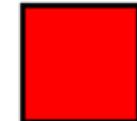


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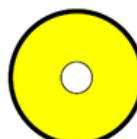


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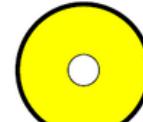


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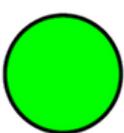


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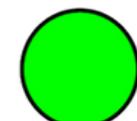


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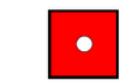


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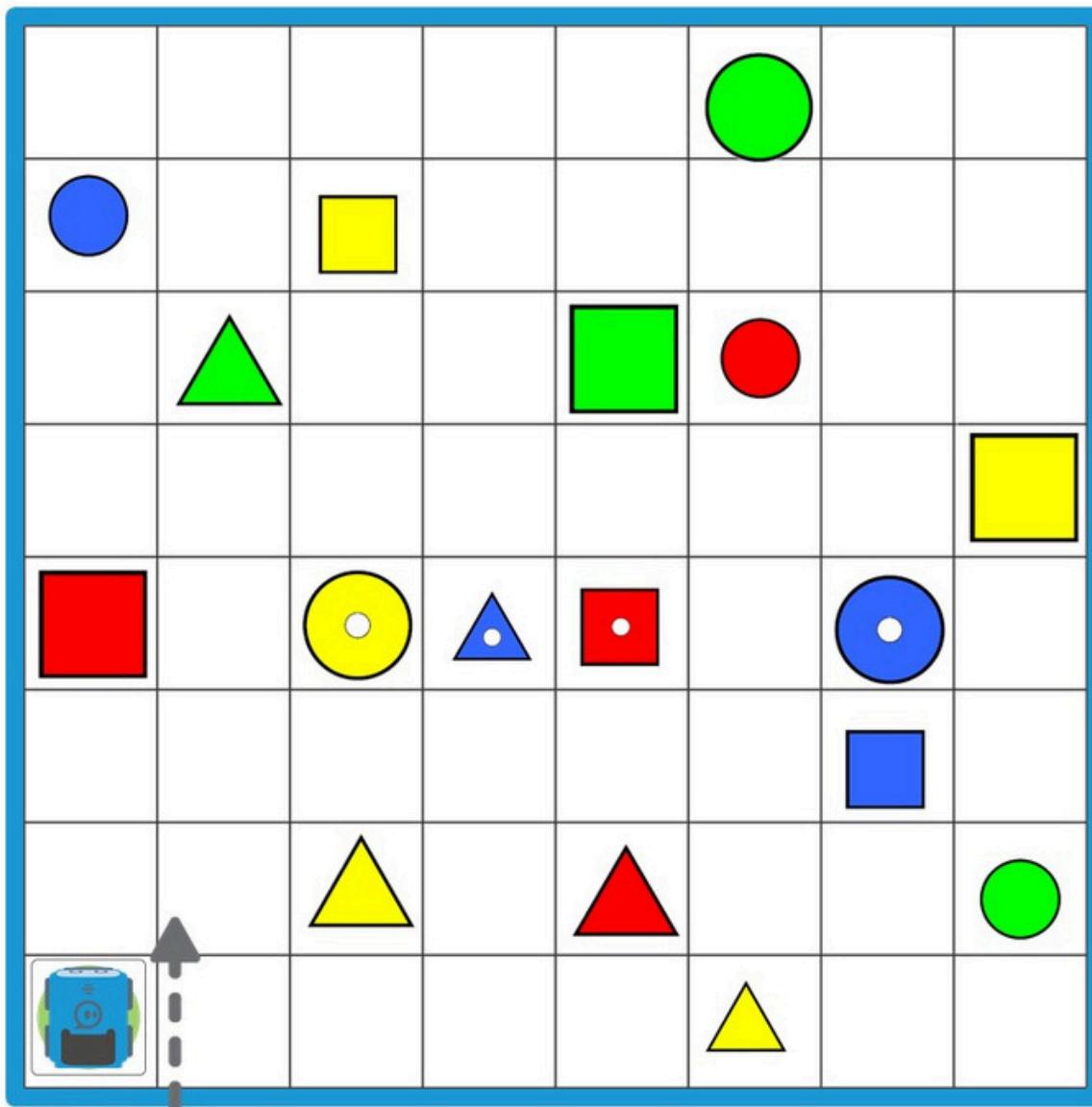


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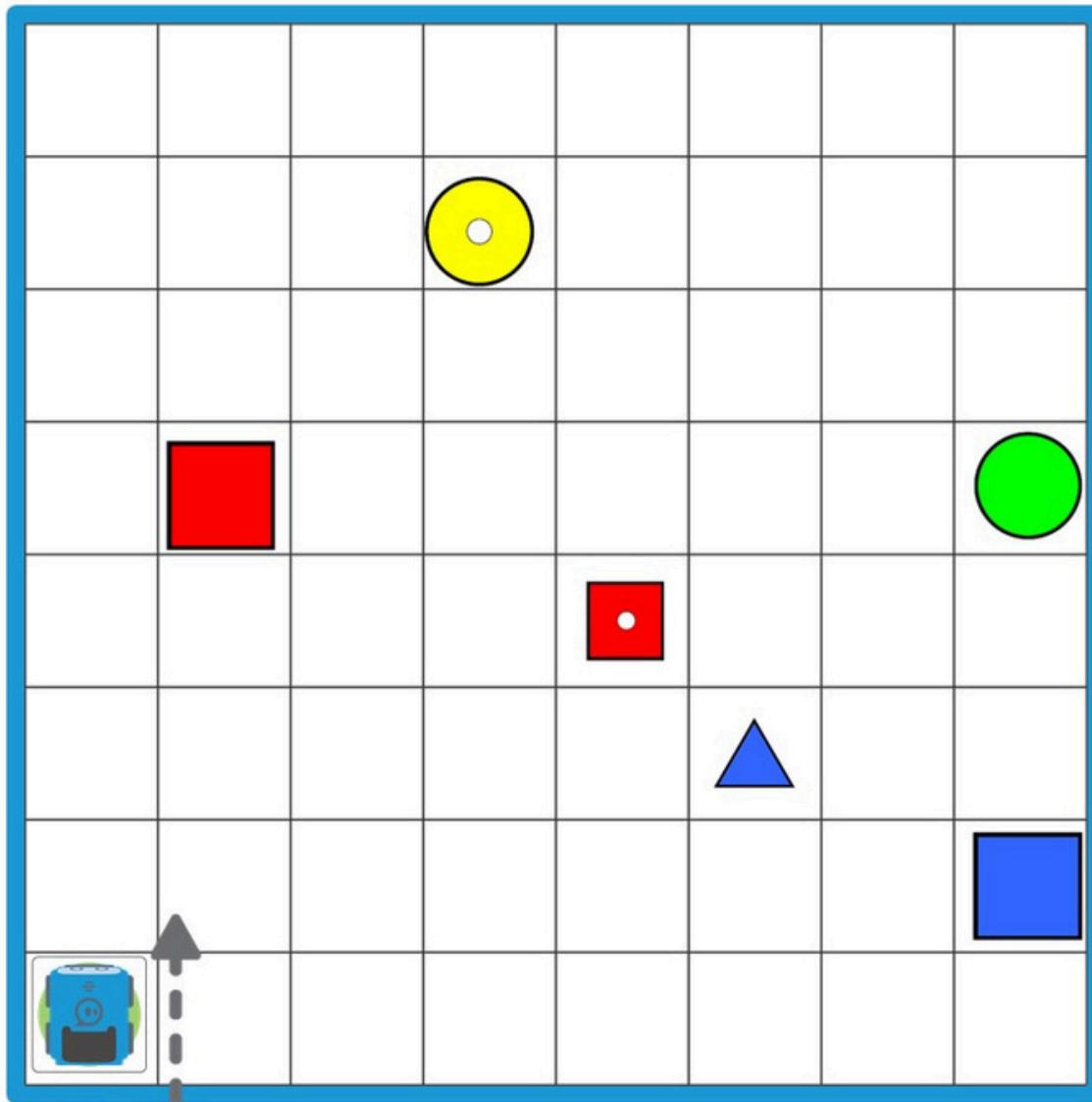
## Methodological advice for creating a robot track



### 1. Differentiation options:

We can adjust the number and variety of ski shapes placed on the course to the students' abilities and knowledge. We can increase or decrease the number of skis placed on the track.

- If necessary, we can create additional task cards for practice.
- Have the children create tasks and challenges for each other
- During the collection, say out loud the name of the plane, its color, size, and the direction of the robot - for language development
- we can limit the number and type of color code sheets that can be used



### 1. Differentiation options:

The number and variety of ski shapes placed on the course, as well as the length of the card chain, can be adjusted to the students' abilities and knowledge.

we can increase or decrease the number of skis placed on the track

- If necessary, we can create additional task cards for practice.
- During the collection, say out loud the name of the plane, its color, size, and the direction of the robot - for language development
- we can limit the number and type of color code sheets that can be used