Graphical user interface, text

Description automatically generated with medium confidence

**Age:** Preschoolers (5-6 years old)

**Purpose:** Language, social and math competences. To work the knowledge of laterality through the use of a robot

**Material:** Robot, pen, White paper, flashcards

**Skills:** 1. Developing the ability to understand and use notions of direction (left, right, forward, backward).

2. Reinforce laterality by identifying the difference between left and right.

3. To introduce basic programming concepts by coding directions for the robot.

**Time:** 30/45min

1. start the activity by explaining to the students the importance of laterality and spatial awareness when programming robots.

2. Show them examples of simple lines drawn on paper, such as straight lines, curves and angles.

3. Divide the students into small groups and provide each group with a programmable robot, a pen and white paper.

4. Ask the groups to draw simple paths on the paper, using colored pens, such as straight lines, curves, and angles.

5. Then instruct the students to program the robot to follow the paths they have drawn, specifying the correct directions (left, right, forward, backward) for each part of the path.

6. Students should test their programming and adjust as necessary until the robot precisely follows the drawn path.

7. Encourage the exploration of different paths and challenges, gradually increasing the complexity of the directions and drawings.

8. Promote the sharing of results between the groups, encouraging discussion about the strategies used to program the robot.

**Evaluation**

- Evaluate the students' performance by observing the precision with which they program the robot to follow the paths drawn.

- Observe the students' ability to understand and apply notions of laterality and spatial notion.

- Evaluate the creativity of the designs and the students' problem-solving skills by adjusting the programming as necessary.

**Importance of the Activity**

The proposed activity of programming a robot to follow designed paths is important in today's educational context. It not only integrates the areas of computer science and mathematics, but also promotes the development of fundamental cognitive skills, such as laterality and spatial awareness, which are essential for students' all-round education.

Through this exercise, students are challenged to understand and apply concepts of direction, which stimulates their capacity for logical reasoning and problem solving. In addition, by working in groups, they have the opportunity to improve their communication and collaboration skills, which are fundamental to success in today's world.

Programming the robot to follow designed paths also encourages the students' creativity, as they can create complex paths and explore different solutions to make them work. This activity prepares students for an increasingly technological future, where understanding programming concepts becomes a valuable skill.

In short, this activity not only meets the curriculum objectives, but also promotes students' cognitive, social and technological development, preparing them for the challenges of the 21st century.