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 shapes through the use of a robot

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

**Skills:** 1. Identify and say the different shapes (circle, rectangle, triangle, oval, square..)

2. Understand the different characteristics of each shape.

3. Introduce basic coding concepts.

**Time:** 30/45min

1. Start the activity by introducing students to the concepts of geometric shapes, highlighting their properties and characteristics.

2. Show examples of different geometric shapes using cards or pictures.

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

4. Ask the groups to draw different geometric shapes on the paper using colored pens.

5. Instruct the students to program the robot to follow the paths of the geometric shapes drawn, specifying the correct directions (e.g. right, left, forward, backward).

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

7. Encourage the exploration of different geometric shapes.

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 how accurately they program the robot to follow the trajectories of the geometric shapes.

- Observe the students' ability to identify and name the geometric shapes correctly.

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

**Importance of the Activity**

The activity of programming a robot to follow paths that represent different geometric shapes draws a valuable bridge between computer science and geometry, providing students with a practical and interactive approach to understanding these concepts.

Through this exercise, students have the opportunity not only to identify and name geometric shapes, but also to explore their properties and characteristics while developing programming skills. This hands-on approach makes learning more engaging and tangible, contributing to a deeper understanding of geometric concepts.

In addition, the activity promotes the development of essential skills such as problem-solving, logical thinking and teamwork, as students collaborate on programming the robot and share their discoveries.

In the context of an increasingly digital and technology-oriented world, the ability to combine computer science and geometry becomes crucial. This activity prepares students to face future challenges, where an understanding of geometric shapes and programming will be valuable skills.

In short, this activity not only fulfills the curriculum objectives, but also stimulates critical thinking, creativity and the ability to apply interdisciplinary knowledge, preparing students for a complex and constantly evolving world.