Robotics and Asturian Bowling

Main Theme

Fusion of traditional sports with technology and programming.

Learning Objectives

1. Understand and appreciate traditional games as part of cultural heritage.

2. Introduce basic programming and computational logic concepts applied to a practical context.

3. Develop problem-solving and teamwork skills.

4. Apply physics and mathematics concepts to the game of bowling.

Adapted Activity

Introduction (10 minutes)

1. Presentation of the traditional Asturian bowling game: a brief history and its cultural importance.

2. Explanation of the challenge: design and program a robot to simulate bowling throws.

Development (40 minutes)

1. **Programming with Robotics**:

   o Students will use an application or software to program a robot to perform the simulated motion of a bowling throw.

   o Variables such as direction, speed, and angle of the throw will be set.

2. **Design and Play**:

- o Create a bowling circuit in the classroom or the playground (may include obstacles to add complexity).
- o Conduct trials and make adjustments to the programming to optimize the robot's performance.

3. **Mathematical and Physical Components**:
   - o Measure distances and calculate the points scored.
   - o Analyze how forces and trajectories affect the knocking down of bowling pins.

Closure (10 minutes)

1. **Points Review**:
   - o Reflect on the results obtained, highlighting teamwork and the learning achieved.

2. **Cultural Discussion**:
   - o Talk about how technology can help preserve and modernize traditions.

Resources and Materials

- Programmable robots.
- Programming application.
- Bowling pins and ball (adapted materials can be used).
- Measuring tape to calculate distances.

Expected Outcomes

- Creation of basic programs simulating bowling throws.
- Practical application of mathematical and physical concepts.
- Greater appreciation for cultural heritage and the use of technology to innovate it.