Robotics and Programming IV
Teaching Guide

AGE GROUP: 10 to 14 years old.

INTRODUCTION

Information and Communication Technologies have become a fundamental piece for the improvement of educational quality, since they represent a definitive methodological change. Our current regulatory framework strongly supports their widespread incorporation into the education system. For this reason, we will use "Robotics and Programming" as an interdisciplinary tool to develop different skills and competencies in our students. Various studies have shown improvement in logical reasoning, problem solving, teamwork ability, or increased motivation.

With this fourth unit of work, we will continue a small project that will consist of creating a simple game. We will do it through the "Scratch" programming tool. This project will be developed gradually over the following work units, this being the fourth one.

OBJECTIVES

- Understand the importance of programming languages.
- Learn basic programming language in a fun and easy way.
- Know the "Scratch" programming tool.
- Start the "block programming" and the use of the "Scratch" programming tool.
- Develop a positive attitude towards the English language, since in most programming languages that language predominates.

KEY COMPETENCES

This work unit is designed with integrated activities that allow students to advance in the development of the following skills:

- Digital.
- Learning to learn.
- Mathematical competence and basic competences in science and technology.
- Sense of initiative and entrepreneurial spirit.

TIMING

The development of this work unit is organized in 1 session of 45 minutes.

SESSION 1

This session is, in turn, divided into three parts:

PART I. PRESENTATION OF THE BLOCKS. (15 minutes)

In the first part of the presentation, we will explain the different blocks that we will use to program the movement of one of the characters in the game.

PART II. STEP BY STEP (10 minutes)

In the second part of the presentation, we will develop, step by step, the movement programming in 4 different blocks (one for each key of the computer that we are going to use). At this point, you can encourage your students to try to carry out said programming without having seen the steps to follow previously, viewing only step 1 (so that they can try to do the rest independently) or view all the steps so that later do the homework.

PART III. TASK. (20 minutes)

Finally, the students must carry out the task proposed for this session.

MATERIALS

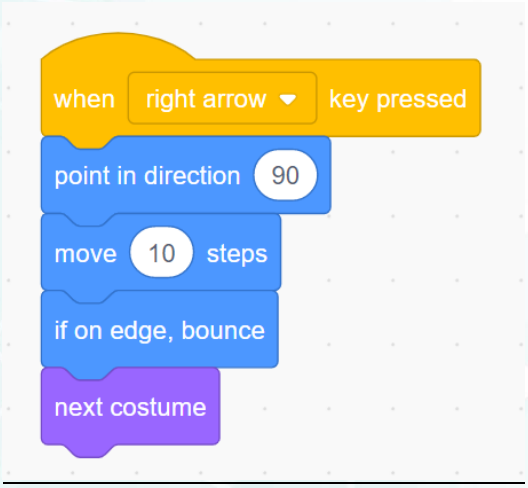
- Presentation.
- Computer with Internet connection.
- Annex I. Solutions. (Attached in this same document).

RECOMMENDATIONS

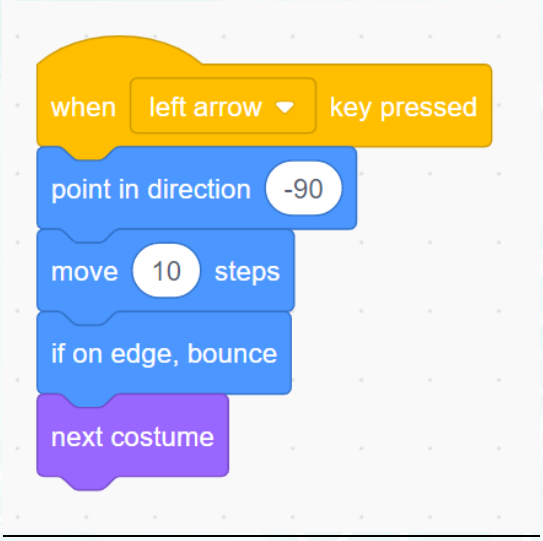
- The groupings in the development of the task are flexible. You can organize your students into small groups (no more than three), or do individual work (depending on the level of your students).
- Encourage them to be creative on the task.

ANNEX I. SOLUTIONS.

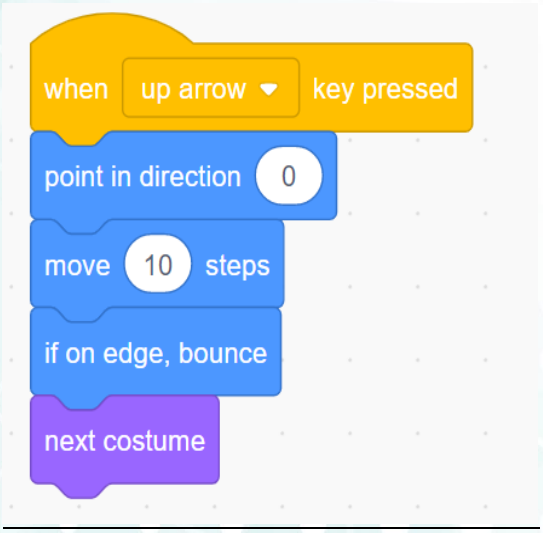
RIGHT ARROW MOVEMENT PROGRAMMING



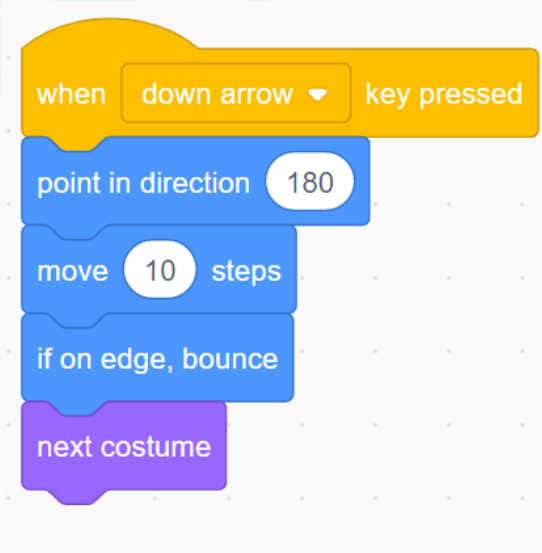
LEFT ARROW MOVEMENT PROGRAMMING



UP ARROW MOVEMENT PROGRAMMING



DOWN ARROW MOVEMENT PROGRAMMING



Castilla-La Mancha

NUESTRA SALUD ESTÁ EN TUS MANOS