matatalab

Matatalab Edu Activity/Lesson Plan:

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Classroom Key Information

Content-Related:

Computer Science☑ Math☐ Art☑ Music☐

Science☐ ELA☐ Social Study☐ Other _____

Time: 10 hours Grade: Compulsory Secondary Education

Complexity: ★☐ ★★☐ ★★★☑ ★★★★☐ ★★★★★☐

(★stands for the easiest)

Activity/Lesson Key Information

Project Name: Cultural and Artistic Heritage of Extremadura.

Big Idea: With the help of Coding Set the students will work on the Artistic and Cultural Heritage of Extremadura, specifically the one closest to our area “CampoArañuelo”. First we must teach how Coding Set works (what are the commands that we can use, how to make an algorithm, how to identify errors and be able to solve them...) to later use it to draw the letters of our institute "IES Albalat" and as a culmination create algorithms more complex using the Sensor and Animation plugins.

Concepts: Coding Set, command, algorithm, conditionals, Extremadura, art and monuments.

Main Objectives:

The students will design routes to visit different monuments and places working on the Artistic and Cultural Heritage of Extremadura.

Learning Outcomes:

Management and operation of Condig Set to move through the different squares that make up the mat made with MatatMap.Know how to program so that our robot draws letters with its movements.Use algorithms with conditionals, through the Coding Set plugins, so that our MataBot robot performs a tour.Identify wrong and correct algorithms.Artistic and Cultural Heritage of Extremadura.

Key Vocabulary:
Coding Set.
Rug.
Commands: Go forward, Go backward, turn right, turn left
Conditionals.
Algorithm.
Loop.
Monuments.

Prior Knowledge:
Name of the monuments and their location. Work on the directions and experience how our robot moves.

Standards(ISTE, CSTA, CCSS, NGSS, etc.):

K-2.AP.17- Describe the steps taken and choices made during the iterative process of program development.

Matatalab Products & Supplementary Materials

Coding Set☑ Music Add-On☐ Artist Add-On☑ Pro Set☐
Animation Add-On☑ Sensor Add-On☑ Lite☐ MATATA Map☑
Tale-Bot Pro☐

Supplementary Materials
No additional materials needed

Detailed Activity/Lesson Plans

Matatalab Edu classic lesson

	Instructions step by step	Time
Lead in & Guided Activity	1.- Get to know the Coding Set kit: First, we are going to show the robot so that the students can observe it, explore it and touch it (initially without it being turned on). We will tell them to look at the different parts that make up the kit: MatataBot, Command Tower, Control Board, Maps/Mats, Coding Blocks, Obstacles, Flags... Later we will turn on MatataBot and Command Tower and teach them how to pair them. , to later introduce them to the use and management of the different coding blocks that we have available, for this we will use the mat that is included.	30 minutes
	2.- First commands: We are going to work with the nature mat that is included in the Coding Set kit. We will start with small algorithms and later we will take advantage of the session to explain the loop and numerical coding blocks.Time: 1 session of 1 hour.	1 session of 1 hour
	3.- Teaching the Cultural and Artistic Heritage of Extremadura mat: with the MataMap plugin we create a mat with which we will work on the curricular content mentioned above. It is important to know for each monument, the province and municipality in which it is located, the region to which it belongs... in order to later have our robot make tours that group together monuments from the same province or other conditions.- Time: 30 minutes.	30 minutes
Independent Activity	1.- Starting the work with the Cultural and Artistic Heritage of Extremadura mat: Once the boxes that make up our mat have been shown, we are going to carry out simple algorithms where the teachers are the ones who will mark the path/algorithm that MatataBot will carry out.	1 session of 1 hour
	2.- We modify the created mat thanks to the fact that with the MataMap plugin it is very easy to do so and we have a new mat with the same images that we had created. For these new activities we are going to let the students take the route they want, explaining the reason for this algorithm, nearby places, same province.	2 session of 1 hour
	3.- Using the Artist plugin, we are going to make our Matatabot write the letters of the name of our institute “IES Albalat”. To achieve this, the students will work in groups. To do this, we divide the entire class into as many groups as there are letters in the name of our center.	1 session of 1 hour
	4.- Coding of greater complexity using the Animation and Sensor plugins. Working with the selected images, we will create different variables so that the students have to include conditionals within the algorithm created to be able to carry out the proposed path with MatataBot. We will take advantage of the color cards that are included in the accessories and the MatataMap to make routes with walls.	4 session of 1 hour
Feedback & Extension	It is highly recommended before working with the kit that the students know the programming sheets perfectly, so that when they have to do the algorithm they do not make mistakes for this reason.	

Essential Questions:

- Do you know the monuments in each square?
- What "procedure" did we use to get Matatalab to draw a rectangle and a square?
- What did you use to make the algorithm?
- How did you identify the errors?
- How can we see that you have programmed the created algorithm well?

Any others you would like to share

Link Classroom video(s): Because the file takes up more space than allowed, I am giving you the link to it.
https://youtu.be/9dLOKdgfoac

Link Supplementary Materials 2 (materials that can be downloaded. e.g. Clip cards, maps instruction videos, PPT, etc.): Because the file takes up more space than allowed, I am giving you the link to it.
https://drive.google.com/file/d/1LJu8XXN02QBF_b1RqPmW14B1FpmT-DP9/view?usp=sharing

The design of MatataBot with the circle in the center to place the marker to write, paint, draw is unique in floor robots and has made it easier to be able to write the letters with the name of my institute.

I would also like to point out that it is very difficult to explain the difference between loop and function, in the included manual you could make the function with loops and vice versa. I think it should be better explained what objective is intended to be achieved with each concept.

My last comment is a request, I would like that, as with TaleBot, the robot could be configured to havethe possibility of changing the cm of advance of the robot by 10-15 cm.