

BotSTEM – Erasms+ KA2 Project

2017-1-ES01-KA201-038204

Good practice template

1. Title of the activity / practice	Programming with Next 2.0: Program directions, movements halts, eye colors, sounds
2. Origin of the activity	Next2.0 is part of the Robotics Edelvives project for kids 6-7 years old. It introduces new and more complex challenges than Next 1.0. Now students will not only learn to program directions and movements but also halts, change eye colors and different sounds to reach the challenges set by the school teacher. Students can program using Next.2 buttons on its head or tablets.
3. Age of the students	6-7 y.o.
4. Target group (type of the learners, size of the group)	A Student's class in groups of 3-4
5. School subjects + topics concerned	Robotics, Programming, Science
6. Educational goals of the practice	<ul style="list-style-type: none"> • Enhance the development of skills and abilities by fostering research, cooperative work, autonomy, solving challenges or critical analysis • Generation of strategies, logical understanding of things and abstract thinking. • Acquire programing basic concepts • Get into programming directional language in a ludic and natural way
7. Duration	100 minutes aprox.
8. Place	In the classroom



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9. Short description of the activity



Students from 6 to 7 y.o are given the specific mission of identifying the water states, cycles and uses and programming Next 2.0 to achieve the challenges defined by the teacher. They will have to understand the concepts of this specific topic and program Next 2.0 commands in order to make it move and reach the correct place for a positive challenge result. The teacher has a didactic guide to follow the progression of each challenge.

In order to achieve the defined challenges the students will have to:

- Read the challenge
- Identify, in the mat, Next 2.0 starting and final point.
- Represent Next 2.0 routes using the programming cards taking into account the steps Next 1.0 has to follow.
- Place Next 2.0 in the mat and program it using the buttons in its head so that it moves to the specific programmed place.

A Practical example: Identify water states, cycles and uses.

- The teacher makes several questions to the students: Do you know in which situations you can use water? Where can we find water? Can it change its shape? What is the water shape when it's frozen? What is the water shape when it's melted? Tell us about the stages, how are they called?
- From that point on new challenges start. Students will have to identify the water cycles, stages and uses and program Next 2.0 according to the sequences required.

Challenge 1: Water Cycles.

- Place Next 2.0 over a square where you see a tap running and program it to move to a place where you can see the sun making the water evaporates. Once it reaches the correct place program it to turn on its eyes color blue. How do you call this water Cycle?
- Now program Next.2.0 to move to a place where you can see the next water cycle. You have to find a square where you can see clouds formed by millions of water drops. How do you call this water Cycle?
- Now program Next.2.0 to move from the condensation cycle to the square where you can see water drops falling to the land and make it stop during 3 seconds in a square where you see no water. How do you call this water Cycle?
- Program Next.2.0 to move from the precipitation cycle to the collection cycle. What should you see in the square?

Challenge 2: Water States

- Place Next 2.0 over a square where you see a tap running and program it to move to a square where water is frozen. How do you call this water State?
- Program Next 2.0 to turn on its eyes light red and then move to a square where you can see the water so hot that is changing into vapour.
- Now, program Next 2.0 to move to a square where you can see the water in a room temperature. And also program it to make an applause sound when it reaches the square. How do you call this water State?

Challenge 3: Water Uses

- Place Next 2.0 over a square where you see a tap running and program it to move to a square where you can see a plant being watered.
- Make Next 2.0 halt during 5 seconds in the square where you see a cloud in its way to a square where somebody is taking a shower. Also program it to clap when you reach this square.
- Make Next 2.0 go to the following squares: somebody washing hands, and then drinking a glass of water.
- Program Next 2.0 to turn on the eyes light green and then move to a washing machine, and laugh when it reaches the square. Then make it move to the square where you see somebody cleaning the floor.
- Program Next 2.0 to move to the square where you see a fire being put out and somebody cooking.



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10. Evaluation



The students have to: ***Program directions, movements, halts, eye colors, sounds and at the same time identify the Water cycles, states and uses.***

-Place Next 2.0 in one of the water cycles and make it go to the other squares where you identify water cycles. Also program Next 2.0 to stop 3 seconds on each square except for the last square.

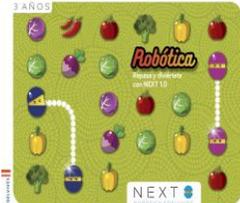
-From the previous square make Next 2.0 clap hands and then move to a water state. Make it stop there for 5 seconds and then make it go to other water states and make it stop during 2 second on each square except for the last one.

-From the previous square make Next 2.0 move to one square where you identify water uses. From there make it turn on the red light eyes and move to the other water uses squares and make it stops 3 second on each square except for the last square.

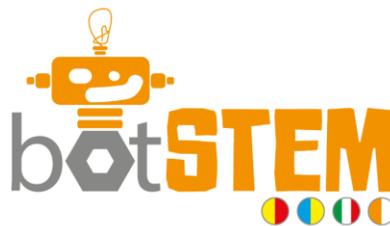


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<p>11. Materials / Resources / technical requirements</p>	<p>Workbook</p> 	<p>Programming cards</p> 	
	<p>Tablet</p> 	<p>Mat</p> 	<p>Next 1.0</p> 
<p>12. Tips for educators / theoretical background (if applicable) or curriculum context</p>	<p>Comprehensive Educational Robotics project for Young learners https://www.edelvives.com/pr/edelvives/robotica/indexEN.html</p>		

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