



TanglIn

Tangible Programming & Inclusion

TanglIn Toolbox

Words

6-12 years old

Itineraries

Probotic

Loops



www.tangin.eu



/tanginproject



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Summary

Game of finding words according to the theme and spell them with the Bot's help.

Expected duration: **50 min.** (the lesson plan duration is flexible, and teachers can adapt them accordingly to their needs and class duration).

Learning Outcomes

At the end of the session, students are expected to:

- Extend their vocabulary related to the chosen theme/topic;
- Improve their spelling skills;
- Deepen knowledge in the theme/topic focused on the lesson;
- Program the robot adequately, taking advantage of the looping tool;
- Value STEM areas;
- Develop transversal competencies such as problem-solving, communication and reasoning;
- Develop group work skills, namely to respect and favor the inclusion of all elements, regardless of gender, culture, etc.

Links With Curriculum Topics

Covered Curriculum Topics	
Subject	Topics
Engineering	Science Any
	Mathematics Geometry <ul style="list-style-type: none"> • Localization and orientation – itineraries Any others
	Technology Programming <ul style="list-style-type: none"> • Concepts of programming • Programs – Results, errors, and troubleshooting • Loops Robotics <ul style="list-style-type: none"> • Programming objects to solve challenges

Notes for Teachers

The teacher should prepare, in advance, all the materials needed and the classroom according to the activities to be developed.

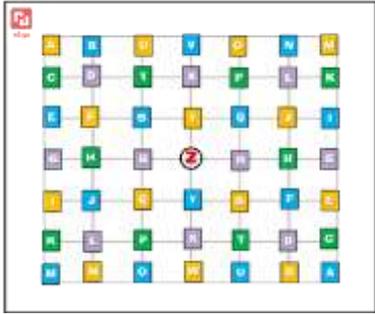
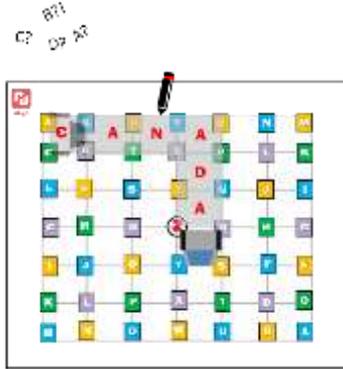
The teams should be as heterogeneous as possible to foster the integration of all students. It's important that clear rules are established in terms of group work. This way, it avoids the most active children assuming the lead and the quieter ones only observing.

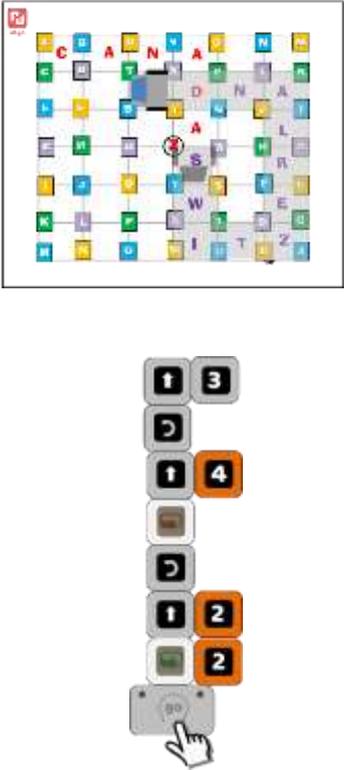
You can adapt the Set for a different distribution of letters or even alphabet. Take the opportunity to bring up recently studied subjects. Try to help the students to come up with words by giving hints and clues.

The teacher must circulate through the various groups to support the activities and the dynamics of each one. In the end, it should promote a collective discussion of the main issues focused and the constraints and difficulties experienced.

Lesson Plan

				
Intro	5	Class	<p>Today's goal is to help MI-GO to enrich his vocabulary. Choosing a Theme at will, the students will be challenged to go through their mental dictionary for this mission. Altogether, we are an encyclopedia!</p> <p>Take the opportunity to bring up recently studied subjects. As an example, we will use for this lesson the topic Countries. If you find it too difficult, you can combine more than one topic (ex: Countries + Animals).</p>	

				
Prep	10'		<p>The first step is to prepare the <i>Set</i> (6x6 grid). The idea is to have every letter of the alphabet on it and to do this you can ask each group to write one letter per vertex (as in the image) or write them in the small color paper, cut and put underneath the <i>Set</i>. In this image, you can find a possible (almost) symmetric configuration for the English alphabet (26 letters), but you can adapt your own.</p>	
Play	25'	Group	<p>Each group will be divided into two teams. The <i>Bot</i> starts in the top left corner. Each team will have a different color marker and will play at turns.</p> <p>Goal: On every turn, the team playing has to choose from one of the 4 letters in the vertex of the square where the <i>Bot</i> currently is and try to form a word starting with this letter and related to the chosen theme.</p> <p>Rules: They will program the Bot to go through as many steps/squares as the number of letters of the word chosen (direction at will, just cannot repeat same two squares in the same move). While it is executing, the team will write the correspondent letter to the squares already traveled. Where it stops is where the next team will pick over and starts everything again.</p>	 <p>Points: 6 (letters) + 1 (crossing Z) = 7</p>

				
			<p>Same rules apply to the next team. They can write new letters on the same squares of the other team but, if they use some of the other team's or their own letters from previous plays, they will obtain a higher score.</p> <p>If the team cannot come with a new word starting with one of the 4 letters, they can pass to the other team. If they also cannot find one, then it will pass again and, this time, they can move the bot to start from any square they want.</p> <p>If one team spelled wrongly the word, then they will put the Bot back on its original position and clean the written letters (0 points).</p> <p>Scoring: For every letter (written correctly) the team will have one point. If they pass through the Z letter, will have an extra point. If they use their own previous letters, will have 2 points extra (per letter) and if it is from the other team, 3 points extra (per letter). First team reaching 30 points win.</p>	 <p>Points: 12 (letters) + 3 (using other's team letter) = 15</p>
Share	10'	Class	<p>In the end. the groups can share and write on the board all the words that they came up with.</p>	

Resources List & Support Material

For the teacher or per each group:

- A robot Kit with drawing capabilities;
- Black markers for each group (easy to erase/clean);
- Colour markers for typing the alphabet
- Alcohol for cleaning the scenarios (for teacher use only);
- Transparent scenario with a 6x6 grid.