

Robot: Ozobot

Activity: Ozobot Olympics



Grade Level	3-4	Difficulty	Intermediate
Subject	Robotics and Coding, Art Education, English Language Arts, Science		
Description	This project provides the opportunity for students to get hands on with Ozoblockly, an online block based programming language for Ozobot. Students work in teams as they try to complete challenging tasks. They will program their Ozobots to make music, dance, curl, bowl, navigate mazes, and race.		
Outcome(s)	Math SS3.3 Demonstrate understanding of linear measurement (cm and m) SS5.2 Demonstrate understanding of measuring length (mm) SS6.1 Demonstrate understanding of angles Art CP3.5 Demonstrate basic skills in use of voice and a variety of sound objects and instruments (traditional and/or homemade) using the environment (e.g., natural, constructed, imagined) as inspiration. CP3.6 Create and perform music (vocal and instrumental) that demonstrates knowledge of: form, rhythm, pitch, dynamics, texture, tone colour. CP4.6 Create and perform music (voice and instrumental) CP5.6 Create sound compositions (vocal and instrumental) that draw inspiration from pop culture and demonstrate knowledge of form. CP6.8 Investigate and manipulate elements of music and principles of composition including repetition and variety. CP6.12 Demonstrate increased skills and problem-solving abilities in a variety of visual art media. English Language Arts CC3.3 Speak to present ideas and information appropriately in informal and some formal situations (e.g., giving oral explanations, delivering short, simple reports, demonstrating and describing basic procedures) for different audiences and purposes. CC4.3 Speak to present and express a range of ideas and information in formal and informal speaking situations (including giving oral explanations, delivering brief reports or speeches, demonstrating and describing procedures) for differing audiences and purposes. CC4.4 Use a writing process to produce descriptive, narrative, and expository compositions that focus on a central idea, have a logical order, explain point of view, and give reasons or evidence. CR5.4 Read and demonstrate comprehension of a range of contemporary and classical grade-appropriate fiction, script, poetry, and non-fiction (including magazines, reports, instructions, and procedures) CR6.7 Read independently and demonstrate comprehension of a variety of information texts with some specialized language including grade level instructional materials, non-fiction books, reports and articles from magazines and journals, reference materials, and written instructions. CC6.5 Use oral language to interact appropriately with others in pairs, and small and large group situations (e.g., asking questions to explore others' ideas and viewpoints, discussing and comparing ideas and opinions, completing tasks and contributing to group success). PAA - Robotics Modules - ROBA7, ROBA21, ROBA23A, ROBA28A;		

Required Prior Learning	Activity - Introduction to Colour Codes Activity - Ozobot Shape Tracer Activity - Introduction to Ozoblockly
Time Frame	~2-3 Hours (Ozobots need to be charged after ~1 hour 15 min of use)
Materials	1 Evo Ozobot per student, 1 computer device per team, Ozobot markers, paper, scissors, glue, ruler, Ozobot Olympics Student Handout, Ozobot Curling , Ozobot Figure Skating Games , Ozobot Slalom Template , Ozobot Ice Dancing Rink Ozobot Bowling Ozobot Olympics Rubric

The Plan

1. **INTRODUCE:** Read through the Olympic challenges with students. Review how to download a program to an Ozobot robot from online using ozoblockly.com
2. **DIVIDE:** Divide class into teams of 2. Each student team needs a team name. You can display these team names on the board and create a table if you choose to have teams earn points per challenge.
3. **OLYMPIC EVENTS:** There are a few ways that teachers can roll out the Ozobot Olympics in their classroom. You can have all student groups do the same challenge. Once students have completed the challenge, you could have them share with the class or just with the teacher. Then provide the next challenge. Or, you can turn these challenges into stations and place them around your classroom. You can plan this activity so that student teams earn points after completing each event, and have an award ceremony to wrap up the Ozobot Olympics. Events include: Team Anthem, Curling, Skating, Ice Dancing, Slalom Ski Race, Bowling, and Bobsled Race.
4. **OBSERVE.** Evaluate the class through observation and discussion. Use the linked rubric to assist with your evaluation.

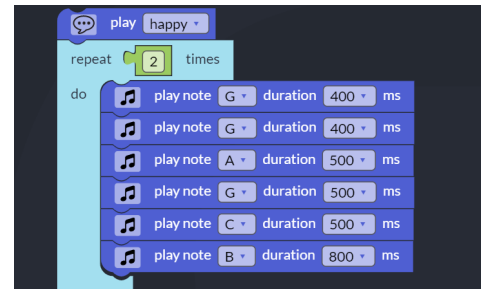
Ozobot Olympics

Student Handout

ozoblockly.com



Team Anthem Challenge



Task: Create a team song by experimenting with the sound blocks in Ozoblockly. The

required length of the song is 30 seconds. Once the task has been completed, share with your teacher and get the check box below marked off.

The Plan: (describe below what you want your team anthem to sound like: fast tempo? Funky? Familiar? Happy Birthday?)

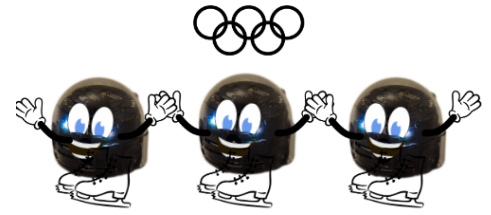
Improvements: (Did your team's plan work out? Did you make any improvements to your original plan? Provide details.)

Approved by

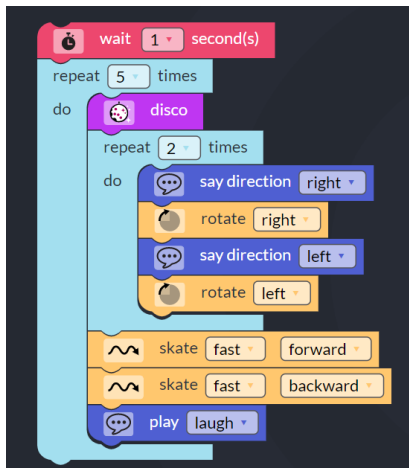
Teacher:



Olympic Event: Ice Dancing with Ozobot



Task: Program your Ozobots to create a dance routine. The required amount of time is 30 seconds. Make sure to utilize the effects in Ozoblockly like flashing lights and cool moves. Your Ozobots must stay within the boundaries of the rink.



Make sure to use the
Ozobot Ice Dancing Rink



The Plan: (Describe your team's ice dancing routine. Do you want all of the Ozobots to be synchronized or each doing different movements?)

Design Sketch: (sketch a diagram or a map of the skating/dance routine)

Improvements: (Did your team's plan work out? Did you make any improvements to your original plan? Provide details.)

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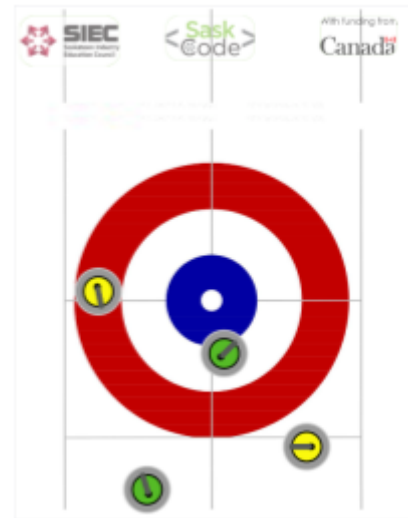


Olympic Event: Curling with Ozobot



Task: Teams will take turns trying to code their Ozobot to get the closest to the button. Each team will get three curling rocks. You can choose to get closest to the button or knock the other rocks out of the way. Wherever their Ozobot lands, they mark the spot with a 3D printed curling rock. Get your rulers ready and watch out for the other rocks!

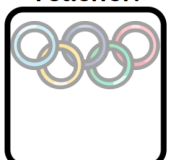
**You will need a
Curling Template**



The Plan: (You will need to determine what strategy, speed, distance, or whatever is needed to get in the middle of the target or button. What is your team's strategy?)

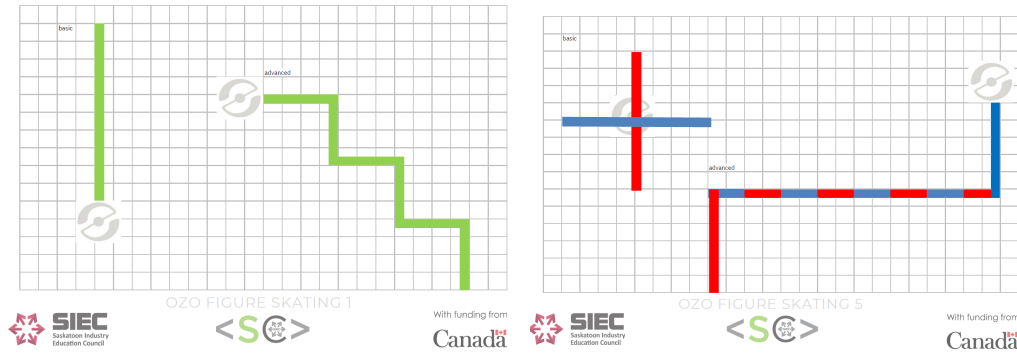
Improvements: (Did your team's plan work out? Did you make any improvements to your original plan? Provide details.)

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Teacher:



Olympic Event: Skating with Ozobot

Task: Using Ozoblockly, program your team's Ozobots to follow the shape while flashing Ozo's top light the indicated colour. No line following! The first team to solve every given shape gets the points! Each team will need the 5 figure skating maps.

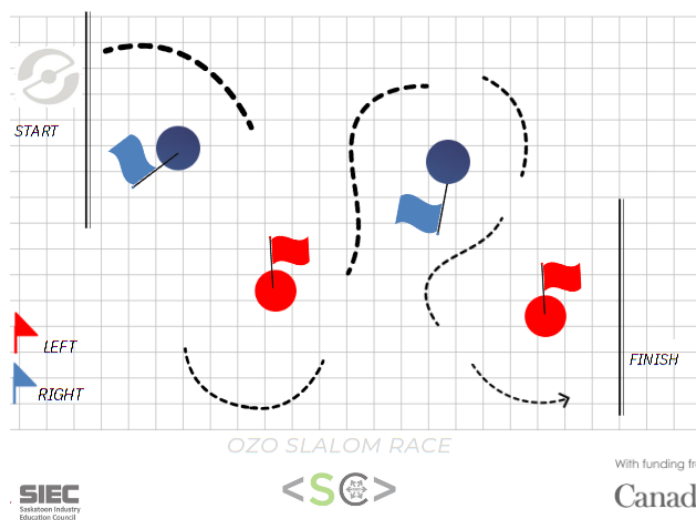


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Teacher:



Olympic Event: Slalom with Ozobot

Task: Using the Slalom Ski Map, code your team's Ozobots to move from the start position, around the slalom flags to the finish line. Each team gets 4 test runs to determine what strategy, speed, or whatever is needed to get the slalom race finished. To begin the official slalom race, each team gets one ride. If your team passes the finish line, you win!!



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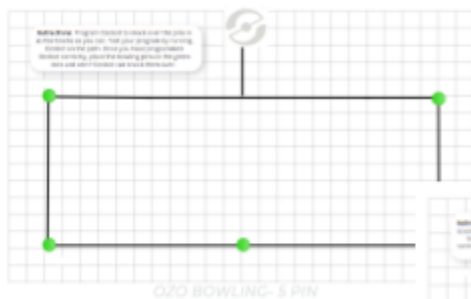


Olympic Event: Bowling with Ozobot



Task: Program Ozobot to knock over the pins in as few blocks as you can. Test your program by running Ozobot on the path. Once you have programmed Ozobot correctly, place the pins on the dots and see if Ozobot can knock them over. If you successfully knock down all the pins, add a happy dance with sounds, lights, and moves at the end.

Try all three bowling challenges:



With funding from
Canada

The Plan: (For one of the bowling challenges, write out the instructions that would direct an Ozobot to knock over all of the pins. Use those written instructions to help find the corresponding blocks in Ozoblockly.)

Improvements: (Did your team's plan work out? Did you make any improvements to your original plan? Provide details. How many blocks did you use? Could you have used fewer blocks?)

Approved by
Teacher:

