ozobot edu

EVO THE TROLL

Grades 5-8	Ozobots Evo	Coding Method OzoBlockly
Pre-Requisites OzoBlockly Basic Training	**Timing** 55 minute lesson	**Topics** Computer Science
Learning Outcomes: Modify a program that teaches Evo how to be a troll by editing inputs and outputs of functions. Understand the difference between fairytale and Internet trolls, and what to do about the second.		
Teacher Resources: Good and bad fairytale trolls: https://bit.ly/2RlOhM1 Student-written essay on different Internet trolls: https://bit.ly/2ybJvYK History of Internet trolls (not for students, includes adult language): https://bit.ly/2DRios2		

Introduction

The programming portion of this lesson is teaching Evo how to be a helpful troll that can defend the student's property from others using its proximity sensors. Students will edit a premade program's inputs (sensors) and outputs (movement, sound and light) to create their own helpful troll. If students have not learned some of the concepts used in this program, like loops, conditional logic, variables and sensor values, that's okay. They can still make edits to the easy-to-read function blocks and find out how code can create a fun robotic companion.

Before that, students will get the chance to explore what Internet trolls are, and how to deal with them. An "Internet troll" is an internet bully. Many students have seen "troll" behavior in their games, apps and maybe even school. The anonymity of the internet makes it possible for people to get away with cruelty, and for whatever reason this has become very common. Part of the widely adopted CSTA computer science standards is about learning how to behave on the Internet with other people because of situations like trolling. This lesson for Evo will help students see the difference between helpful trolls and Internet trolls, and identify ways to deal with the mean ones.

To plan this lesson, read SETUP, ABOUT THE CODE and LESSON OUTLINE, below. Questions or comments about this lesson? We'd love to hear from you! Email us at ozoedu@ozobot.com

SETUP

REQUIRED MATERIALS

- **FOR DEMO:** 1 Evo (pre-programmed, link above)
- 1 Evo per student or group,
- 1 computer or tablet with wifi per group (Time-saving tip: set all devices to the program link, above),
- 1 printed copy of ABOUT THE CODE, and optionally the poem, per student or group.

STUDENT GROUPING

- 1:1 student to robot ratio or groups of 2-3 students.

TIME MANAGEMENT

- This lesson is planned for 50 minutes. See the LESSON OUTLINE headers for a breakdown.
- If your classes are short (30 mins), or very busy, split the lesson in half; do the demo and code explanation first, and the code editing and playing second (with a little refresher on the program).

DEMONSTRATION STEPS

- Run the program on Evo, then set it down where the front and back sensors won't be activated.
  - Let Evo 'scan' by looking back and forth.
  - Place your hand in front of Evo; it will jump at you then spin.
  - Let Evo sit; it will start scanning again.
  - Activate the back sensors, or hold Evo in your hands, to help it fall asleep (turn off).

ABOUT THE CODE

TROLL OZOBLOCKLY PROGRAM https://ozo.bot/evo-troll-program

This original program makes Evo launch quickly at an intruder that crosses its front proximity sensors, then tries to scare them by spinning and making noises. It can be put to sleep by holding the back sensors. The program has variables, functions, variables, loops, proximity sensors, movement and lights. You don't have to know how each of these concepts work to change the program.

FUNCTIONS

ABOUT. Functions allow parts of a program to be reused in different areas of the program with different input values. They also let you give a descriptive name to sections of code so programmers understand what the program will do. Here's what each of them do in this program:
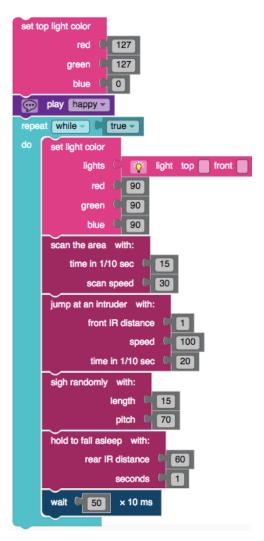
Set (top) light color lets you create any color. **Red**, **green** and **blue** take between 0-127, where 0 is off, 1 is a little, and 127 is the most. If all colors are the same number, you get white.

Scan the area makes Evo turn side to side. **Time in 1/10 sec** chooses for how long Evo will turn in 1/10s of a second (so 10 makes 1 second). **Scan speed** changed how fast it moves.

Jump at intruder makes Evo move forward when its front sensors are activated. **Front IR distance** changes how far away Evo can see; 0 means it sees nothing, 1 is the furthest away, and 127 is the closest. **Speed** changes how fast Evo moves forward. **Time in 1/10 sec** is the time it takes to jump.

Sigh randomly generates sound on the speaker to go up and down, like a sigh. **Length** is the number of different sounds. **Pitch** is the starting tone.

Hold to fall asleep makes Evo turn off. Change **rear IR distance** to edit how close something needs to be (0 is never, 1 is very far, 127 is very close). **Seconds** is how long it takes to fall asleep, in 1/10th of a second.

Want to change what Evo does? Edit the function definitions (below the program), or add new code to the main program. Remember, the **undo** button is your friend. **Save** the program by creating a link and writing down its special code from the new URL (example, #1212aa)

LESSON OUTLINE

Have one programmed Evo ready to demonstrate to the class (see SETUP, above).

1. **Introduce the topic.** There are two types of trolls: good (or not aggressive) trolls from fairytales that can protect an area or person, and bad trolls on the Internet that go out of their way to make people feel bad. The class will discuss these two types of trolls, then program Evo to teach it to be a good, helpful troll that can protect the students and/or their belongings.

2. **Share the poem** (attached) out loud or on a screen.

   a. *(Optional) You can come back to this poem in Step 4 and have students rewrite the last line to rhyme and to give people advice for how to deal with trolls.*

3. **Draw a chart** on a board to write comparisons between good (or at least 'not aggressive' in fairy tales) and bad (Internet) trolls. Ask students what they know about trolls in fairy tales, then ask what they know about Internet trolls (see this lesson's introduction for a short explanation).

   a. The goal is for students to actively identify what behavior on the Internet is inappropriate and hurts people's feelings, even if it makes other people laugh.

   b. *(Optional) Trolls say hurtful things because they can't see the other person and can't be seen by them. This anonymity is conducive to mean behavior. If you and your class are comfortable about it, you can also ask students to share what troll comments they've received and have them explain how it made them feel. You can share yours (or at least how you felt).*

4. **Ask students** to suggest ways to deal with Internet trolls. As the poem suggests, one way is to let them know that their comments are unwelcome and that they should leave the game, forum or other place. The more this happens, the more they will leave. *(Students can rewrite the last line of the poem now)*

5. **Demonstrate** the original troll program: watch it scan, touch its front sensors, then the back.

6. **Show students** the original program in OzoBlockly to explain the parts of the program. Use ABOUT THE CODE to point out each code type.

7. **Hand out** an Evo, copies of ABOUT THE CODE and a computer or device to each group.

8. **Students edit** original program, especially the inputs (the number values) and the outputs (the 'do' section of the conditional logic) to create their own personalized, helpful troll.

   a. **Students can share** at the end what makes their personal troll helpful.

TROLLS

the role of a troll is to guard what it has.

it rumbles and grumbles and whines and it cries.

but an internet troll doesn't stay where it should;

then makes you feel bad instead of feel good!

so what can you do when you face this lost creature?

(and I think we all know it's a bug, not a feature.)

recall, you're a stranger, and so is the troll,

so tell it quite calmly to 'turn 'round and go.'

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