



Lesson

NON-STANDARD MEASUREMENT USING OZOBOTS

CREATED BY

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TOPICS

Mathematics, Art

AGES

Grades K-2

METHOD

Color Codes

DURATION

60 Minutes

Non-Standard Measurement Using Ozobot:

How many Ozo-loops tall are you?

By Laura Collins

SUMMARY Students are challenged to create a loop track for Ozobot with an OzoCode and use it as a non-standard measurement tool.

OVERVIEW This lesson tasks students with demonstrating their understanding of non-standard measurement by using it as a tool that can measure their height. Students create Ozobot non-standard paper Ozobot loops which include 1 code for Ozobot to travel in, as well as cut out their body shape from brown kraft paper (not mandatory). Then place the Ozo-loop, with the Ozobot inside where the measuring will begin at the students' feet. Turn on Ozobot and watch the Ozobot roll towards the head. Count how many Ozo-loops it will take for Ozobot to travel from the students' feet to the top of their head.

LESSON OUTLINE

1. Students trace their bodies on brown craft paper, cut them out and paint/decorate them (optional - students can lay on the floor to be measured).
2. Students create Ozo-loops from strips of paper and draw a line in the centre with one type of speed OzoCode.
3. Students place the Ozo-loop with the Ozobot at the students' feet and then count how many Ozo-loops it will take for Ozobot to travel from the student's feet to their head.

PREREQUISITES

Experience drawing lines and OzoCodes for Ozobot with markers.

GRADE LEVEL

Kindergarten to 2nd Grade

GROUPING

Individuals or small groups

MATERIALS

- Ozobot Bit or Evo per group
- Markers, 1 set per group
- Blank paper, scissors, tape and pencils
- Optional: White Avery label stickers
- Optional: Ozobot Tips <http://files.ozobot.com/stem-education/ozobot-tips.pdf>

DURATION

60 minutes (could an additional day if you choose to trace bodies and paint them)

Non-Standard Measurement Using Ozobot (How many Ozobot loops tall are you?)

LESSON STEP 1(Optional)

Have students trace out their bodies out of brown craft paper, cut them out and decorate them using markers, stickers and/or paint

LESSON STEP 2 - CREATE OZO-LOOPS

“Today, you will create a non-standard measuring tool. We will create Ozo-loops for Ozobot to walk on.” First, students draw a line on a strip of paper (at least 11 inches long and about 2- 3 inches wide), and add 1 OzoCodes Speed code “Be careful to keep your Ozobot line in the centre of the loop so that your Ozobot won’t fall out when it travels in it” Next, they draw a black line going across the backside of the loop. This will help identify how many times Ozobot has completed a full looped rotation. Tape the loop together. Test Ozobot inside the loop. Does Ozobot get stuck on any thin lines, or codes? Is the loop long enough for Ozobot to travel in (Watch out for any wrinkles in the loop. This may prevent it from working)

STEP 3 MEASURING WITH OZO-LOOPS

Have either a student or the body shape placed on the floor. Use painters tape or a meter stick to show the start and finish positions. Place the Ozobot loop with the Ozobot inside at the student’s feet. Have students make their predictions about how many loops it will take for Ozobot to travel. Turn on the Ozobot and count how many rotations it will take for Ozobot to travel to the top of the students’ head. Record the results.

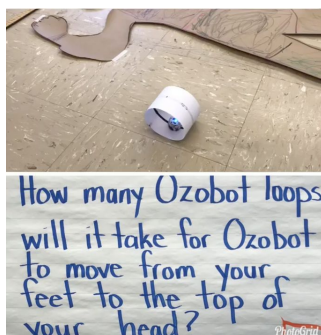
Guidelines:

1. Ozobot needs to begin at the students’ feet (use painters tape, string, meter stick etc, to identify the start.
2. Ensure the line that will help identify the number of rotations is facing down and the Ozobot is sitting inside the loop.
3. Align the Ozoloop so it will travel in a straight line
4. Turn on the Ozobot
- 5 Count How many Ozo-loops it will take to reach the top of the student’s head.

Example:

<https://youtu.be/taZhJ04HYaY>

<https://twitter.com/Ozobot/status/968902491843657728>



EXTENSION: Can be used as a form of standard measurement for Junior Grades to measure distance, and perimeter.