

Animals and Ozobots Grade 2: Growth & Changes in Animals

<h2 style="margin: 0;">Lesson Plan</h2>	Coding Tool	Ozobots
	Cross-curricular	Language: Procedural Writing
<p>Big Ideas</p> <ul style="list-style-type: none"> Animals have distinct characteristics. There are similarities and differences among different kinds of animals. Humans need to protect animals and the places where they live. <p>Overall Expectations</p> <p>1. assess ways in which animals have an impact on society and the environment, and ways in which humans have an impact upon animals and the places where they live.</p> <p>2. investigate similarities and differences in the characteristics of various animals;</p>	<p>Specific Expectations</p> <p>1.2 identify positive and negative impacts that different kinds of human activity have on animals and where they live form an opinion about one of them, and suggest ways in which the impact can be minimized or enhanced</p> <p>2.2 observe and compare the physical characteristics and the behavioural characteristics of a variety of animals, including insects, using student-generated questions and a variety of methods and resources</p> <p>2.5 investigate the ways in which a variety of animals adapt to their environment and/or to changes in their environment, using various methods</p> <p>2.7 use appropriate science and technology vocabulary, including life cycle, migration, adaptation, body coverings, and classify, in oral and written communication</p>	
<p>Description</p> <p>Using Ozobots, students will create paths to help animals collect food, avoid predators and reach their habitats. This lesson requires some basic student knowledge of Ozobots. The Ozobot website has a few lessons plans to help students become acquainted with the Ozobots and how to use them.</p>		
<p>Materials</p> <ul style="list-style-type: none"> Ozobot(s) Animal mazes Markers or code stickers Colour code reference sheet Construction paper 	<p>Computational Thinking Skills</p> <ul style="list-style-type: none"> Algorithmic Thinking 	

Introduction

Review: Discuss what you already know about Ozobots, the paths they follow and the codes that direct them. If you have not completed any Ozobot lesson, take time to play and explore with the Ozobots and their colour codes.

Task: Take your students on a walk through the hallways of the school. Students will act as Ozobots and follow the path outlined by the construction paper codes. Plan the route before the class begins and using the colour code reference sheet and construction paper, place codes down to direct your path. Plan the route however long or short as you would like and try to pass by some important landmarks in the school. End the path back at the classroom which can take on the role as the student's habitat.

Extension: Have students take on the role of an animal and move through the halls like that animal. Be mindful of the noise volume as you move through the halls and near other classes.

Action

Task: Using directional colour codes (go left, go right, go straight), students will complete a path to help the animals reach their habitats. The paths can also include the appropriate food for the animal, as well as avoid predators, negative human impacts or food the animal does not eat. These animals, habitats, food, impacts and predators will be represented by either pictures or words.

Use the provided mazes or use the blank sheet to create one specifically for a certain animal that your students are familiar with. Focus on vocabulary, characteristics or human impacts that students are familiar with to help ensure success. Ask students to determine the path first, before they starting colour coding. This will help to avoid mistakes. The use of white stickers can help to erase codes that do not work. Cover up the code with the white sticker and write the colour code on top.

When they think their path is complete, they can use the Ozobot to check their work.

After students have completed the colour coding on their maze, they can create a maze for someone else. Using pictures they draw or by writing words on the blank grid sheet, have them make their own maze. They can swap mazes with another student when they have finished. This will allow them to continue to demonstrate their understanding of coding and of animal characteristics.

Consolidation/Extension

Discussion: Create a chart to use for discussion of the animals and their paths. While discussing one animal at a time, complete the chart mentioning each item that the animal collected and which habitat it belongs to. When the chart is completed, discuss any similarities or differences that the students notice. Try to include animals that eat similar food or have similar habitats to help enhance this discussion. While reviewing the paths ask students:

- What did you avoid along the path?
- Why did the (animal) need to avoid that?
- What impact does it have on that animal?

Extension: For classes that are very familiar with Ozobots, write the steps out as a list in word form. Start from the beginning and move throughout the path, recording each movement and code that the Ozobot reads. This list will act as an introduction to OzoBlockly, which is a different way to code the Ozobot. This extension will help students see coding in a new way.

Assessment

Observe students as they complete the paths. Look for the correct path avoiding obstacles and collecting food and the proper colour codes.

Use the discussion time to assess students' understanding of the similarities and differences of animal characteristics as well as the impact that humans have on animals. Students will give their opinion on why different human impacts are positive or negative to the animals.

Additional Resources

Sample Animal Maze (attached): Use this maze as a guide or for your students if it suits their learning needs. The attachment also includes a solution to that maze.

Blank Maze (attached): Create your own mazes for your students with animals and challenges of their own.

Chart Example (attached): An example of the chart used in the consolidation portion of the lesson.
