Coding Animal Life Cycles

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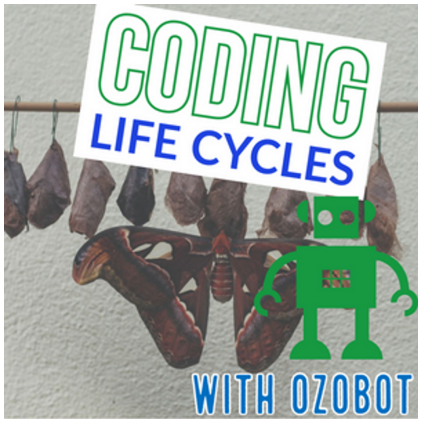

Grades: **2—6**

Subjects: **Science, ELA**

Coding Methods: **Color Codes, OzoBlockly**

Robots: **Evo, Bit**

Brief Summary

Students will use ozobots to mimic the transformation of different animals and their life cycle.

Pre-Reader/ESL: **No**

Required Materials

- 1 Evo or Bit Ozobot per group
- 1 Chromebooks, Nonfiction books about animal life cycles, or textbooks per group
- 1 Large Paper per group
- 1 Avery address labels per group

Lesson Objectives

- Develop a model to compare the stages of growth and development in different animals.
- Explain the stages of growth and development of a specific animal.

Preparation

Background Knowledge

(None)

Lesson Tips

- To build in opportunities for student ownership through voice and choice, let students choose the animal group they are most interested in learning more about!
- Pull a few nonfiction text sets about different animal groups to have on hand in case of any internet or research issues.

Direct Instruction (Teacher Facing Instructions):

1. Animals have different life cycles! Think about a human, we are mammals and we start out as a baby. We give birth to live young. Next, we grow into an adult then have babies and the cycle continues. Here's what that might look like in a cyclical model. Think about other animals, which ones have a different cycle? Do we experience much change throughout our life cycle? Metamorphosis is the change that animals experience during their lives. What do you know about other animals and their life cycles?
2. Here are a few different animal families to consider:
   Mammal, Reptile, Amphibian, Insect, Bird, Fish

   You can choose to collaborate or work alone to research and create a model of a life cycle of a specific animal within the animal family.
3. Get in groups of no more than 3.

   Research using your chromebook, nonfiction text sets, or your textbook to find out the stages of the life cycle for your animal.
4. Create an illustration, or print images to use in your physical model of the life cycle. Be sure to label the name of the animal, the animal family, and the stages included. Use arrows to indicate the direction of the cycle.

Lesson Closure (Optional)

Set up a classroom gallery walk or have groups come to the front one at a time to share their findings and teach each other about their animal family's life cycle. Prompt students to have conversations with each group about how the life cycle compares to the life cycle they created. Have a class discussion to identify similarities and differences within the life cycles of various animal families and specific animals.

Student Practice (Student Facing Instructions):

1. Use reliable research tools to find out each of the stages of the life cycle of your animal. Find out what the animal looks like at each stage, how the animal changes, what each stage is called. Are there any examples of metamorphosis for your animal?
   Goals: The student will research to find out all of the stages of the life cycle of their animal within a certain animal family.
2. Draw or print pictures of your animal at each stage of the life cycle to use in your model.
   Goals: Illustrate how an animal changes at each stage of a life cycle.
3. On a giant piece of paper, lay the pictures or drawings out in the order of development within the cycle. Add labels to include each stage and the name of the animal. Use arrows to illustrate how the cycle progresses and continues.
   Goals: Illustrate the order of the stages of development within a life cycle.
4. Using ozo color codes or ozoblockly, code your ozobot to travel through the life cycle, stopping at each stage to perform a "cool move" symbolic of the change. Test the code. Revise the code if you run into any "bugs." Retest until your life cycle program runs smoothly! Be prepared to present your life cycle and explain each stage to the rest of your classmates.

Supplements

Additional Attachments

- https://docs.google.com/document/d/1QKuVBSdf6EnRkeqJcqkMhZabekvF4y7PTaP5Z7xRaNY/edit?usp=sharing

Academic Standards

- Other: 4.L.5A.3: Develop And Use Models To Compare The Stages Of Growth And Development In Various Animals.

CODING LIFE CYCLES WITH OZOBOT

Group Members:

Animal:	
Animal Family: (i.e. Mammal, Reptile, Amphibian, Insect, Bird, Fish, other)	
Important Stages of Development for your animal:	
Sample Model of the Stages of Development: (Include sketches and labels with arrows)	
Codes to include on Life Cycle: (these will represent the changes in the animal at each stage of development) Ozocolor Codes or Ozoblockly	

4.L.5A.3: Develop and use models to compare the stages of growth and development in various animals.

Next, build a prototype of your model on big chart paper with an ozobot. You can use ozocolor codes or ozoblockly to code the ozobot.

Compare your animal's life cycle to the other teams.