



## Adventure Description:

In this adventure, students will think like a wildlife specialist and design a robot that can count penguins!

## Activity

### Step One: Background Information on Wildlife Specialists and Penguins (5-10 minutes)

- Explain to students that wildlife specialists are experts on wildlife! They study all different kinds of wildlife, from zebras to snails. Show [Handout: Wildlife Specialists](#). Wildlife specialists study where different animals live, what they eat, and how they spend their day!
- Next, explain that some wildlife specialists learn about penguins. Show [Handout: Penguins](#). Discuss how penguins live in large groups. Sometimes, there are so many penguins in one area that a human can't count them all! Ask students why a wildlife specialist would want to count how many penguins are in a location.
- Explain that wildlife specialists count penguins so that they can keep track of how many penguins live in an area. Over time, the number of penguins that live in one spot can help wildlife specialists know if the penguins are healthy or if lots of them are getting sick.
- Explain to students that wildlife specialists want to create a robot that can travel to different places and count the number of penguins in each location. Robots are helpful because they can do jobs that are too hard, too boring, or too dangerous for humans. Show [Handout: Robots](#).
- Explain to students that they will think like a wildlife specialist and design a robot that can count penguins!

### Step Two: Designing a Robot (10 minutes)

- Explain to students that they will be designing and planning what their robot will look like before they build it.
- Show [Handout: Robot Requirements](#). These are the requirements that student's robots must meet. Explain each one to the class.
  - Must have a sensor that can count penguins: Explain that a sensor is a piece of technology that gives you information. This sensor must be able to count the number of penguins on a piece of land.

Please contact Allison Bischoff, Director of Teacher Support , at [allison@rozzylearningcompany.com](mailto:allison@rozzylearningcompany.com) or 314-272-2560 with questions.

# Wildlife Specialist: Counting Penguins

- Must be smaller than the size of a shoebox. Explain that the robot must be small in size so that it doesn't scare the penguins.
- Must be able to get from place to place to count different groups of penguins. Explain that the robots must be able to move to different locations. Student's robots can either fly or swim through the ocean.
- Provide students with **Handout: My Robot**. Explain that students will use this space to draw a picture of their robot before they build it. Tell students that this will help them plan what their robot will look like.

## **Step Three: Building a Robot (20 minutes)**

- Explain to students that they will be using art supplies and building materials to build a robot.
- Provide students with art supplies and building materials. Examples include cardboard, recycled plastic containers, crayons, markers, pom poms, popsicle sticks, tape, and scissors.
- Give students time to build their robots. Encourage students to be creative and decorate their robot.
- While students are working, ask them how they are designing the robots to meet the requirements that the class discussed.
- When students are finished, ask them to present their robots to the class. Make sure students explain how their robot moves from place to place to count penguins.

## **Materials List**

### **Provided Online**

- Handout: Wildlife Specialists
- Handout: Penguins
- Handout: Robots
- Handout: Robot Requirements
- Handout: My Robot

### **Not Provided (each student needs):**

- Art supplies (crayons, markers, pom poms, glitter)
- Building materials (cardboard, plastic containers, popsicle sticks)
- Tape and scissors

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