



# STEM Career Adventures: Wildlife Specialist

## Protecting African Elephants

### Adventure Description

Illegal poaching is currently on pace to cause the complete extinction of African Elephants within the next 20 years. As a wildlife preservationist, your task is to create a collar that will detect the firing of any type of bullet near African Elephant populations.



### Background Information

- A wildlife preservationist is a type of biologist whose job is to protect animals and their habitats for the survival of future generations.
- Show **Discovery Video: Poaching**
- Explain to explorers that between 2010 and 2012, 100,000 African Elephants were killed for their ivory tusks.
- One problem preservationists are facing is that it is difficult to monitor herds of elephants because they are spread out across a large continent.
- Current technology that detects poaching activity can be outsmarted when poachers use silencers. Silencers are devices that reduce the noise emitted by a gun.
  - Explain to explorers that they will create prototypes of devices that will detect shock waves from the projectiles rather than the blast from the muzzle of the poachers. Shock waves are waves created in the air when a bullet travels faster than the speed of sound. These waves can be seen and heard.



### Activity (60 mins)

#### Step 1: Brainstorm and Sketch (15 minutes)

- Explain to explorers that they will design a collar that is comfortable for the elephant, adjustable for growth, and possesses wireless technology. The collar must not inhibit the animal from eating or drinking or from carrying out day to day tasks.
- Provide explorers with **Discovery Handout: Elephant Collar Criteria**. Explain to explorers that they must include these things when creating a new collar.
- Divide explorers into pairs. Have explorers sketch out what the collar will look like. Provide explorers with **Discovery Page: Collar Prototype**.

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### **Step 2: the Prototype (35 minutes)**

- Have explorers work in pairs to design their collar. Explorers will use art supplies and building materials to create their prototype.
- Remind explorers that they should look at the handout to make sure they include all necessary components for the collar.
- If explorers need help, ask them the following questions:
  - Regarding Collar Size: How they will accommodate for elephants' growth over time? Will they need a second collar after a certain age? Will the collar expand with the elephant?
  - Regarding Collar Technology: How will technology alert wildlife preservationists once bullets are fired?

### **Step 4: Explain your Design (15 minutes)**

- After the build, each pair will explain their technology and the design of the prototype to their classmates and facilitator.

### **Extra Time?**

- Have groups research other types of endangered animals and think of ways to protect them using technology.

## **Materials List:**

### Provided online:

- **Discovery Handout: Elephant Collars**
- **Discovery Page: Collar Prototype**
- **Discovery Video: Poaching**

### Not provided:

- **Art Supplies**
- **Building Materials**