



## NGSS Standard: MS-LS2-2



### Adventure Description:

In this adventure, you will think like an entomologist and create a robot that helps track invasive species across multiple ecosystems!

## Activity

### Step One: Background Information on Entomologists and Invasive Species (5 minutes)

- Show [Video: Insect Interactions](#)
- Explain to students that an entomologist is a scientist who studies insects and the ecosystems that they live in. An ecosystem is an area made up of living and non-living things that work together. For example, an ecosystem includes plants, animals, the air, water, and soil.
- Every ecosystem has a specific set of organisms that live in the ecosystem. For example, a forest ecosystem has trees, low-growing plants like bushes, deer, and bobcats. African savannas have grasses, trees, lions, and gazelles. Both of these ecosystems have a balance based on all of the organisms that naturally live there, called native organisms. If someone introduced a lion to a forest ecosystem, it would throw off the balance in the ecosystem, because the lion could hunt the prey animals in the forest very easily!
- Explain to students that species that are introduced to an ecosystem and cause harm (like a lion eating all the deer in a forest ecosystem) are called invasive species. Show [Handout: Invasive Species](#). Discuss how invasive species cause harm to different environments.
- Tell students that because of all of these issues, entomologists want to create a robot that can track invasive species through an area. This will help them figure out what damages the invasive species has caused to the area. If they can create a robot, they may be able to predict the path of the invasive species and help save the ecosystem!

### Step Two: Brainstorming and Planning (10 minutes)

- Explain to students that they will now brainstorm ideas for a robot that can track invasive species through different ecosystems all over the world.
- Divide students into pairs or small groups.
- Provide students with [Handout: Steps to Create a Robot](#). Walk through the steps together as a class.
- Have students complete Step 1 and Step 2 on the handout.

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

## Step Three: Building a Robot (20–25 minutes)

- Explain to students that they will now build their robot!
- Provide students with the following materials:
  - Art supplies (examples include crayons, colored pencils, markers, construction paper, scrap paper, etc.)
  - Building materials (recycled plastic containers, cardboard, pipe cleaners, etc.)
  - Tape and scissors
- Have students complete Step 3 on the handout.

## Step Four: Discussion (5–10 minutes)

- Have students showcase their robots to the class. Students should discuss how their robots are able to track invasive species and how their robot sends messages to scientists.
- Have a concluding class discussion about how invasive insect species can enter new environments and cause damage. Remind students that invasive species are species that are introduced to an ecosystem and cause harm to the environment. Explain to students that invasive species can move from ecosystem to ecosystem and cause harm. This harm could include eating food sources of other animals, killing trees and other plants, and transmitting diseases to organisms in different ecosystems.

## Materials List

### Provided online:

- Video: Insect Interactions
- Handout: Invasive Species
- Handout: Steps to Create a Robot

### Not Provided (Each student or group needs):

- Art supplies (examples include crayons, colored pencils, markers, construction paper, scrap paper, etc.)
- Building materials (recycled plastic containers, cardboard, pipe cleaners, etc.)
- Tape and scissors

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