

# Disaster Epidemiologist: Natural Disasters

**NGSS Standard: MS-ESS3-2**



## Adventure Description:

In this adventure, you will think like a disaster epidemiologist and create a new type of technology that can track health and predict future natural disasters.

## Activity

### Step 1: Background on Disaster Epidemiologists and Natural Disasters (5 minutes)

- Show [Video: Natural Disasters](#).
- Remind students that a disaster epidemiologist studies how natural disasters, like earthquakes and hurricanes, affect people's health.
- Ask students why it would be important for epidemiologists to study health after a natural disaster occurs. Show [Handout: Health Problems after Natural Disasters](#).
- Next, explain that technology has been created to monitor natural disasters and human health. Show [Handout: Current Technology Available](#). As a class, discuss how there are many types of technology that can be used. However, most of these pieces of technology can only perform one job. This is a problem because it means that aid workers need to carry lots of different devices around when helping after an emergency.
  - Teacher note: Students will need to look at this handout during the activity. You can show it on a smart board, print it, or email it to students.

### Step 2: Activity Set Up (5 minutes)

- Explain to students that they will be designing a new piece of technology that disaster epidemiologists can use to monitor human health after a natural disaster occurs and predict if another natural disaster will occur.
- The goal of the technology is to be able to perform multiple functions all related to one specific natural disaster. That way, a disaster epidemiologist only needs to bring one tool to a disaster site.
- Provide students with [Handout: Steps to Create a New Piece of Technology](#). Read through the steps as a class.
- Students can work individually, in pairs, or in small groups for this activity.

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



## **Step 3: Brainstorming and Planning (15 minutes)**

- Have students complete Steps 1-4 on the handout.
- As students are working, ask the following questions:
  - Disaster epidemiologists have to think about how people who speak different languages will understand what to do if a natural disaster occurs. How can your technology be used by people who speak different languages?
  - When a natural disaster occurs, power can go out. Sometimes, there isn't electricity for weeks or months. How will your technology work if there isn't a way to charge it?
  - Natural disasters happen all over the world. How will you consider the shape and size of your device so it can be shipped anywhere?
  - How will your technology predict if a natural disaster is going to happen in the future?

## **Step 4: Building a Prototype (20+ minutes)**

- Have students build complete Step 5, building a prototype of their device.
- Put out the following supplies on a table so all groups can access:
  - Role of tape (students will use a ruler to measure their own tape and cut 6-inch pieces)
  - Scissors
  - Pieces of cardboard smaller than the size of your palm
  - Pipe cleaners
  - Popsicle stick
  - Straws
  - Paper towel tubes
  - String (students will use ruler to cut 12-inch pieces)
- Provide each group with a ruler. They will need this ruler to measure how long the pieces of tape and string are that they are using!
- As students are working, ask the following questions:
  - Are there any ways you can reduce the cost and use less materials?
  - How will your device help prevent or identify health issues after a natural disaster?
  - How will your device predict when future natural disasters could occur?

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

## Step 5: Class Discussion (5 minutes)

- Have students present their prototypes to the class and explain how they will work.
- Have a concluding class discussion about how new technology is constantly improving how we are able to react to natural disasters.

## Materials List

### Provided online:

- Video: Natural Disasters
- Handout: Health Problems after Natural Disasters
- Handout: Current Technology Available
- Handout: Steps to Create a New Piece of Technology

### Not Provided online (each student or group needs):

- Role of tape (students will use a ruler to measure their own tape and cut 6-inch pieces)
- Scissors
- Pieces of cardboard smaller than the size of your palm
- Pipe cleaners
- Popsicle stick
- Straws
- Paper towel tubes
- String (students will use ruler to cut 12-inch pieces)

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