

# Physicist: Creating a Halloween Catapult



## Adventure Description:

In this adventure, students will think like a physicist and create a Halloween pumpkin catapult.

## Activity

### Step One: Background Information on Physicists, Halloween, and Catapults (5-10 minutes)

- Explain to students that physicists study physics, which is a branch of science that studies how matter behaves. Matter is anything that takes up space. Matter behaves by moving throughout the universe. For example, an apple that is thrown into the air will always fall back down and hit the ground. A ball that is rolled across the floor will always come to a stop.
- Next, explain to students that physicists often do “consulting” work, where different companies hire them and ask for their opinion or expertise on a project. Show [Handout: Physicist Consulting](#). Discuss how physicists can be hired to offer their expertise on lots of different projects, from building bridges to making the world’s tallest skyscraper!
- Tell students that sometimes, physicists get wacky consulting requests. Show [Handout: Circus Request](#). Discuss the request from the circus with students.
- Explain to students that today, they will think like a physicist and create a catapult for the circus.

### Step Two: Testing Catapult Materials (20-25 minutes)

- Explain to students that they will now build their catapult!
- Divide students into pairs or small groups.
- Provide groups with the following materials:
  - Popsicle sticks
  - Rubber bands
  - Water bottle lid
  - Scissors
  - Masking tape
- Tell students that they should work together as a group to figure out how to create a catapult for the Halloween show at the circus.

### Step Three: Testing Candy Catapult (10 minutes)

- Explain to students that they will now test their catapult to see how far they can send a candy pumpkin.
- Teacher Note: For this step, you will need to clear the area of desks and chairs, or go outside for testing.
- Provide each group with three candy pumpkins.

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

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- Have groups line up with their catapult on one side of the room.
- Ask each group to launch one candy pumpkin. Have one group member mark where the pumpkin landed on the floor.
- Have the groups move in order down the line. There should be a tape mark placed where each pumpkin lands.
- Have each group send three candy pumpkins. The group with the pumpkin that flies the furthest wins!

## **Step Four: Decorating Circus Catapult for Halloween (10 minutes)**

- Explain to students that they will now decorate their catapult for the Halloween circus show!
- Provide students with art supplies (such as crayons, pipe cleaners, pom-poms, and markers) to decorate their catapults for the Halloween circus show. Encourage students to be creative, but remind them that their decorations can't impede the way the catapult works!
- Have a concluding class discussion about how physicists are often asked to consult on different projects that require a physics perspective, like roller coasters and catapults!

## **Materials List**

### **Provided online:**

- Handout: Physicist Consulting
- Handout: Circus Request

### **Not provided (Each group needs):**

- Popsicle sticks
- Rubber bands
- Water bottle lid
- Masking or painter's tape
- Scissors
- Candy pumpkins

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