




# STEAM Math Lesson:

## Gummy Bear Experiment - Grades 6-8

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In this hands-on, two-day activity, students will practice using and calculating precise metric measurement, as well as scientific skills of making a hypothesis and comparing data. They will also love that it includes candy! This lesson is designed for students in grades 6-8 but can be adapted for younger ages.

 Teacher Led	 Requires Computer OR Mobile Device	 Requires <a href="#">Spaces</a>
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### Spaces Prep





Create your Activity in Spaces before the lesson. Not sure how to create an Activity? Check out this [short video tutorial](#) on assigning and managing activities.

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### Learning Goals

1. Students will **hypothesize** what they think will happen when a gummy bear is left in water.
2. Students will **collect and record initial data** through precise measurement and calculations.
3. Students will **compare data** after collecting and recording measurement changes of the gummy bear.

## Materials

 <b>Student Handouts</b>	<ul style="list-style-type: none"><li>● <b>Handout [A] - Gummy Bear Experiment</b> for each student (page 4-5, printed double-sided)</li><li>● <b>Handout [B] - Gummy Bear Experiment Reflection</b> for each student (page 6)</li></ul>
 <b>Technology Requirements</b>	<ul style="list-style-type: none"><li>● Mobile device, tablet, or laptop</li><li>● Projector or Smartboard</li></ul>
 <b>Video/Audio Clips</b>	<ul style="list-style-type: none"><li>● <a href="#">What is Density?</a> video from The Science Classroom</li></ul>
 <b>Additional Materials</b>	<ul style="list-style-type: none"><li>● Gummy bears (1 per student for the experiment, plus more for eating)</li><li>● 100 mL beakers filled with 50 mL water (1 per student)</li><li>● Rulers (1 per student)</li><li>● Pencils</li><li>● Scale</li></ul>

## Instructions

### Day One

1. Introduce the experiment by explaining to students that they will see what happens to a gummy bear's measurements, including volume, mass, and density, after being placed in water overnight.
2. Most of the measurements students will be taking are pretty straightforward, but density is a little more complex. Before starting the experiment, show the [What is Density?](#) video from The Science Classroom. Consider doing some practice problems together as a class to build students' comfort with finding density.
3. Do the experiment:
  - Give each student **Handout [A] - Gummy Bear Experiment** (page 4-5, printed double-sided). Have them read the experiment directions, make a hypothesis, then take and record measurements in the table for Day 1.

- Once measurements are recorded, students should place their gummy bear in a beaker with 50 mL of water, and leave overnight.

### ***Day Two***

1. The next day, students should remove their gummy bear from the water and re-take and record all measurements in the table for Day 2 on **Handout [A] - Gummy Bear Experiment** (page 4-5, printed double-sided).
2. Next, students should find the difference of each measurement and record their findings in the Data Comparison table on **Handout [A] - Gummy Bear Experiment** (page 4-5, printed double-sided).
3. Last, distribute **Handout [B] - Gummy Bear Experiment Reflection** (page 6) and have students answer the reflection questions. For the last question, they should compare their data with a partner.

# Worksheet

## Handout [A]: Gummy Bear Experiment

Name \_\_\_\_\_

### Experiment:

- On Day 1, measure the gummy bear before putting it in water.
- After taking and recording all measurements, put gummy bear in 50 mL of water and leave overnight.
- On Day 2, remove gummy bear from the water to take and record all measurements.

**Hypothesis:** what do you think will happen to a gummy bear when you leave it in water overnight? Explain your thinking in 3-5 sentences.

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### Data Recording (use space on the backside to calculate volume and density):

- Measure length, height, and width to the nearest tenth of a centimeter
- To find volume, multiply  $l \times h \times w$ , and round to the nearest hundredth ( $\text{cm}^3$ )
- To find mass, weigh on a scale and round to the nearest tenth of a gram
- To find density, divide mass by volume, and round to the nearest hundredth ( $\text{g}/\text{cm}^3$ )

Day	Color	Length	Height	Width	Volume	Mass	Density
1							
2							

Volume (day one)

Volume (day two)

Density (day one)

Density (day two)

**Data Comparison** (use space below chart to show calculations):

	Color	Length	Height	Width	Volume	Mass	Density
<b>Difference Between Day 1 &amp; Day 2</b>							

Length difference:

Height difference:

Width difference:

Volume difference:

Mass difference:

Density difference:

## Documenting in SpacesEDU

**Teacher Tip!** The instructions for this lesson involve adding to the Class or Individual Space in SpacesEDU. You can adapt the instructions if you'd prefer to make this an Activity.

1. Students will document their learning in SpacesEDU by following these guidelines:
  - a. Click **+ Create** > Choose **Camera** > Take a photo of the completed handouts
  - b. Add a **Title**
  - c. Post a Description > Have students answer the following prompts:
    - Was your hypothesis correct? Explain.
    - What change was great – volume or mass? Explain why you think that is.
    - Was there a change in density? Why do you think that is?
    - How did changes from Day 1 to Day 2 compare between yours and your classmate's?
  - d. Click **✓ Next**
  - e. Choose the **Class Space** or **Individual Space**
  - f. Click **✓ Post**