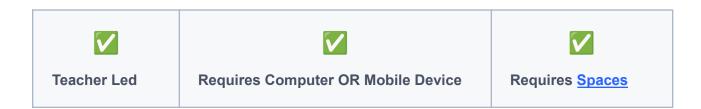


# STEAM Math Lesson: Gummy Bear Experiment - Grades 6-8

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.



**Spaces Prep** 

Create your Activity in Spaces before the lesson. Not sure how to create an Activity? Check out this <u>short video tutorial</u> on assigning and managing activities.

## **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**

Student Handouts	<ul> <li>Handout [A] - Gummy Bear Experiment for each student (page 4-5, printed double-sided)</li> <li>Handout [B] - Gummy Bear Experiment Reflection for each student (page 6)</li> </ul>
Technology Requirements	<ul><li>Mobile device, tablet, or laptop</li><li>Projector or Smartboard</li></ul>
Video/Audio Clips	What is Density? video from The Science Classroom
Additional Materials	<ul> <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 <a href="What is Density?">What is Density?</a> 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**

Name
<ul> <li>Experiment:</li> <li>On Day 1, measure the gummy bear before putting it in water.</li> <li>After taking and recording all measurements, put gummy bear in 50 mL of water and leave overnight.</li> <li>On Day 2, remove gummy bear from the water to take and record all measurements.</li> </ul>
<b>Hypothesis:</b> what do you think will happen to a gummy bear when you leave it in water overnight? Explain your thinking in 3-5 sentences.

**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 I x h x w, and round to the nearest hundredth (cm)
- 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 (g/cm³)

Day	Color	Length	Height	Width	Volume	Mass	Density
1							
2							



Volume (day o	one)			Volume (day two)				
Density (day o	one)			Density (day two)				
Data Compar	rison (use	space below	chart to sho	ow calculatio	ns):			
	Color	Length	Height	Width	Volume	Mass	Density	
Difference Between Day 1 & Day 2								
Length difference:					Height difference:			
Width difference:				Volume difference:				
Mass difference:					Densit	y 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 V Next
  - e. Choose the Class Space or Individual Space
  - f. Click V Post