STEM LITTLE EXPLORERS

Gummy Bear Osmosis Lab

Predict, measure and compare what happens when gummy bears spend the night in different liquids.

Name: Date: Soak time:

Safety first Do not eat the experiment gummy bears. Wash your hands after handling them and ask an adult to help if you use glass containers.

OUR BIG QUESTION

How does the liquid around a gummy bear affect its size, mass and texture?

Meet the four gummy bears

1. **Control: no liquid**
2. **Plain water**
3. **Salt water**
4. **Vinegar**

Plan a fair test

Change	The liquid around each gummy bear
Measure	Length, width, mass or another observation you choose
Keep the same	Brand, starting size, liquid volume, container, soak time and temperature

Make a prediction

I predict that the gummy bear in _____ will change the most because:

Starting measurements

Gummy bear	Length	Width	Mass, optional	Color, shape and texture
Control: no liquid				
Plain water				
Salt water				
Vinegar				

Choose millimeters or centimeters for size and grams for mass. Use the same method before and after.

Results and conclusions

Measure carefully, compare with the starting table and use your observations as evidence.

Follow the same procedure

1. Label four containers and place one gummy bear in each.
2. Leave the control gummy bear dry. Add equal amounts of each liquid to the other containers.
3. Measure and record the starting gummy bears before soaking.
4. Leave them for the same amount of time, ideally 8 to 12 hours.
5. Remove each gummy bear carefully, blot it once and record the final measurements.

Final measurements

Gummy bear	Final length	Final width	Final mass	Color, shape and texture	Biggest change
Control: no liquid					
Plain water					
Salt water					
Vinegar					

What does the evidence show?

1. Which gummy bear changed the most? Use a number or observation as evidence.

2. How did the gummy bear in salt water compare with the one in plain water?

3. What happened to the texture or shape of the gummy bear in vinegar?

4. Did the evidence support your prediction? Explain.

5. What would you keep the same or improve if you repeated the experiment?

Science note

A gummy bear is a model, not a real cell. Water can move into its gelatin network, while dissolved substances change how much water moves. The vinegar can also weaken the gelatin structure.

Try another investigation

Add sugar water or change the salt concentration. Change only one factor at a time, write a new prediction and compare the result with this test.