

Gummi Bear Lab

Purpose: What will happen to gummi bears when placed in oil, water, salt water, and vinegar.

Research: When in 6th grade we placed gummi bears in water and they increased in size.

Hypothesis: I think that the gummi bear will expand in size when placed in oil.

Materials:

regular sized gummi bears	room temperature water
8 plastic dixie cups	vegetable oil
3 graduated cylinders	NaCl
2 beakers	tray
scale	towels
ruler	pencil
oil	sharpie

Experiment:

Variables: color of bears, flavor of bears, amount of NaCl, temperature of liquids, time, weight of gummi bear, size of gummi bear (volume)

Procedure:

1. Place 60mL of each liquid into separate cups.
2. Mix Salt Water by adding 30mL NaCl to 60mL water.
3. Label each cup with the liquid.
4. Get 4 red colored bears.
5. Measure the volume of each bear (mm) – $l \times w \times h = V$
6. Weigh each bear (g).
7. Place one red bear into each type of liquid – drop into the liquids at the exact same time.
8. Place cups in tray, leave over night for 24 hours.
9. Measure each empty plastic cup, record.
10. Remove bears from liquids.
11. Place into plastic cups.
12. Weigh the cup with the bear in it.
13. Calculate new weight of bear. (Subtract empty cup mass from cup and bear weight)
14. Measure volume of the bear. (mm)
15. Record data, make conclusion.

Analysis:

<i>Initial Mass</i>	<i>Liquid</i>	<i>Final Mass</i>
2.3g	Oil	2.4g
2.3g	Vinegar	1.8g

2.4g	Salt Water	2.6g
2.4g	Water	3.0g

<i>Initial Volume</i>	<i>Liquid</i>	<i>Final Volume</i>
2000mm ³	Oil	1050mm ³
2000mm ³	Vinegar	500mm ³
2000mm ³	Salt Water	1070mm ³
2000mm ³	Water	3000mm ³

Conclusion: The gummi bear did not expand in the oil. Instead it decreased in size but increased in mass. This means that the oil increased the density of the gummi bear.