

Name:

Date:

Class:

Gummy Prototype Investigation Worksheet **Answer Key**

Question: Which gummy prototype composition best maintains balanced osmolarity in the tested solutions?

Hypothesis: A _____ (select one: water, salt, sugar) composition gummy prototype will best maintain osmolarity in the _____ (select one: water, salt, sugar) solution.

Materials: 3 plastic cups, 50 mL of water, salt water, and/or sugar water, 3 gummy prototypes, centimeter ruler, and gram scale

Procedure:

1. Label one cup water, one salt, and one sugar.
2. Measure 50 mL of the corresponding solutions into each cup.
3. Place one prototype gummy bear in each cup.
4. Measure the length and weight of the control gummy bear.
5. Allow cups to remain undisturbed for 24 hours.

Gummy Prototype Data				
*Answers will vary based on prototype composition selected (water = W, salt = SA, sugar = SU). Sample answers provided based on author-run experiments.				
Solution	Mass		Length	
	Before	After	Before	After
Water	W 4 g, SA 3 g, SU 5 g	W 5 g, SA 4 g, SU 3 g	W 1.5 cm, SA 3 cm, SU 1.7 cm	W 2.2 cm, SA 2.2 cm, SU 2 cm
Salt	W 4 g, SA 3 g, SU 5 g	W 1 g, SA 1 g, SU 3 g	W 1.5 cm, SA 3 cm, SU 1.7 cm	W 1.4 cm, SA 0.9 cm, SU 1.8 cm
Sugar	W 4 g, SA 3 g, SU 5 g	W 1 g, SA 1 g, SU 4 g	W 1.5 cm, SA 3 cm, SU 1.7 cm	W 1.5 cm, SA 1.5 cm, SU 1.9 cm

Conclusion: Answers will vary: The _____ (select one: water, salt, sugar) gummy prototype composition best maintained balanced osmolarity when placed in the _____ solution because it only changed by _____ g in weight and only _____ cm in length.