

EXTRA Review for Quiz #1 on Observations and Variables

Scenario: Flower time

Sarah was interested in how the amount of water given to a plant affects the way it grows. She decided to choose the same type of flower, the daisy, and give it different amounts of water over 3 weeks. She had 1 daisy in each pot and each daisy had the same amount of soil in the same size and type of pot. Week one she gave daisies 100 mL of water. Week two she gave the daisies 150 mL of water. Week three she gave the daisies 200 mL of water. At the end of each week she measured the height of the daisies.

- 11. What is the Independent Variable?
- 12, 13, 14. How is the Independent Variable being changed?
- 15, 16, 17. How many trials of each level of the Independent Variable are being performed?
- 18. What is the Dependent Variable?
- 19. What is ONE constant/controlled variable in this experiment?

Independent Variable: 11			
Levels	12	13	14
Trials	15	16	17
Dependent Variable: 18			
Constant/Controlled Variable: 19			

20. What is the Testable Question for this experiment?

Name _____ Class _____ Date _____

Scenario: Time to bake!

John was interested in how baking soda affects the way cupcakes rise in the oven. He made 3 batches of cupcakes. Each batch makes 12 cupcakes. Batch #1 had no baking soda. Batch #2 had 1 tsp baking soda. Batch #3 had 2 tsp baking soda. After he was done baking each batch, he measured the height of each cupcake. He made sure to use the same size muffin tin, and cook them for the same amount of time.

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Answer Key

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Independent Variable: 11 THE AMOUNT OF WATER			
Levels	12 100 ML WATER	13 150 ML WATER	14 200 ML WATER
Trials	15 1	16 1	17 1
Dependent Variable: 18 THE HEIGHT OF THE FLOWERS			
Constant/Controlled Variable: 19 SAME AMOUNT OF SOIL, SAME SIZE POT, SAME TYPE OF FLOWER			

20. What is the Testable Question for this experiment?

WHAT IS THE EFFECT OF THE AMOUNT OF WATER ON THE HEIGHT OF THE PLANT?

HOW DOES THE AMOUNT OF WATER AFFECT THE HEIGHT OF THE PLANT?

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- 19. What is ONE constant/controlled variable in this experiment?

Independent Variable: 11 THE AMOUNT OF BAKING SODA IN THE CUPCAKE MIX			
Levels	12 NO BAKING SODA	13 1 TSP BAKING SODA	14 2 TSP BAKING SODA
Trials	15 1 BATCH, OR 12 CUPCAKES	16 1 BATCH, OR 12 CUPCAKES	17 1 BATCH, OR 12 CUPCAKES
Dependent Variable: 18 THE HEIGHT OF THE CUPCAKES			
Constant/Controlled Variable: 19 SAME AMOUNT OF TIME, SAME SIZE MUFFIN TIN			

20. What is the Testable Question for this experiment?

WHAT IS THE EFFECT OF THE AMOUNT OF BAKING SODA ON THE HEIGHT OF THE CUPCAKES?

HOW DOES THE AMOUNT OF BAKING SODA AFFECT THE HEIGHT OF THE CUPCAKES?

Identifying IV, DV + CV in an Experiment

<p>Independent Variable</p> <p>(CHANGE)</p>	<p>The IV + DV have a cause and effect relationship. The IV is the <u>CAUSE</u>. (different)</p>
<p>Dependent Variable</p> <p>(MEASURE)</p>	<p>Signal words to look for:</p> <p><u>calculate</u> <u>measure</u> <u>observe</u> <u>weigh</u> <u>add</u> <u>record</u> <u>count</u> <u>total</u></p>
<p>Constant Variable(s)</p> <p>(SAME)</p>	<p>Signal words to look for:</p> <p><u>equal</u> <u>same</u> <u>all</u> <u>each</u> <u>identical</u></p>

- ①
- ②
- ③
- ④
- ⑤
- ⑥