

Name _____

period _____

Science Skills-6

Two Kinds of Variables

As you know, whatever can change or vary in an experiment is called a variable. When a scientist designs an investigation one of the first tasks is to identify the variables in question. Then the scientist determines which variable she wants to change. Then she determines which variable might respond to the change she made.

Read the following experiments and determine what the experimenter changed.

Jose wanted to find out if putting different amounts of water in glasses would make a different sound when a metal spoon was tapped against the side of the glass. Jose used five glasses, each the same size and shape - 16 cm tall. There were filled to the heights of 2, 4, 6, 8 and 10 cm. He tapped the glasses and categorized the sounds as high, medium and low.

1. What did Jose deliberately change? _____
2. What responded to the change? _____

Daisy wanted to find out if different places on the tongue tasted different flavors. She used a cotton swab and touched four places on her tongue (tip, each side and the back) with salt water, sugar water, lemon water and quinine water. She found that she could taste the sugar water only on the tip of her tongue and the quinine water only at the back of her tongue.

3. What did Daisy deliberately change? _____
4. What responded to the change? _____

Christopher wanted to find out what types of food attracted houseflies. He placed a plate on the counter in the kitchen with the following foods: a slice of ham, a piece of cheese, a slice of a banana and a cooked green bean. When he returned he found flies only on the slice of ham.

5. What did Christopher deliberately change? _____
6. What responded to the change? _____

Michelle wanted to find out how long batteries lasted. She placed the D-cell batteries in flashlights and turned them on. She timed how long they stayed on. She used Duracell, Ray-O-Vac, Energizer and Dollar Store batteries. She found that Duracell stayed on the longest.

7. What did Michelle deliberately change? _____
8. What responded to the change? _____

Maria wanted to find out if temperature had an effect on how fast water evaporated. She placed 2 ml of water in a Petri dish and put the Petri dish under different light bulbs. She timed how long it took for the water to evaporate. She used 60, 75, 100 and 150watt light bulbs. She found that the water evaporated faster under the 150watt light bulb.

9. What did Maria deliberately change? _____

10. What responded to the change? _____

Oscar wanted to find out if the amount of water had any effect on how tall bean plants grew. He grew five bean plants. He gave a different amount of water to each bean plant. He gave the bean plants 10ml, 20ml, 30ml, 40ml and 50ml of water. He found that the plants that were given 40ml of water grew the tallest.

11. What did Oscar deliberately change? _____

12. What responded to the change? _____

Jude wanted to find out which objects conducted electricity. He set up a battery and light bulb that would light up if the object conducted electricity. He tested a penny, a nickel, a Popsicle stick, his finger and a rubber ball. He found that the penny and nickel made the light bulb light up.

13. What did Jude deliberately change? _____

14. What responded to the change? _____

Vanessa wanted to find out if soda was bad for your teeth. She got 4 of her baby teeth and placed one in a glass of Coca-Cola, one in Sprite and one in water. She waited 5 days and took them out of the soda. The teeth had been completely dissolved in all but the glass of water.

15. What did Vanessa deliberately change? _____

16. What responded to the change? _____

Carlos wanted to find out which mosquito repellent worked the best. Each day for he put on a different brand of repellent. He used Off, Deepwoods Off, Avon Skin So Soft and Repell. He found he had fewer bites on the days he used Off.

17. What did Carlos deliberately change? _____

18. What responded to the change? _____

Pamela wanted to find out if bees were attracted to different brands of perfume. Each day she put on a different perfume. She used White Shoulders, Brittany, Tabu and Liz. She found more bees buzzed around her when she wore Tabu.

19. What did Pamela deliberately change? _____

20. What responded to the change? _____