

Science Practice - Variables

Name: _____ Date: _____

Directions: Read each situation. Identify the **Manipulated Variable**, **Responding Variable**, and **Control Variables**.

Remember: Manipulated = what changes | Responding = what is measured | Control = what stays the same

1. Turtle Eggs

A biologist is studying how different temperatures affect the hatching rate of turtle eggs. They place eggs in incubators set to different temperatures.

Manipulated Variable:

Responding Variable:

Control Variables:

2. Algae and Light

A scientist wants to find out if the color of light affects the growth of algae. They use red, blue, and green lights on three different tanks containing the same species of algae.

Manipulated Variable:

Responding Variable:

Control Variables:

3. Candy and Cavities

Mary asks: If a person eats too much candy, will they have more cavities?

Manipulated Variable:

Responding Variable:

Control Variables:

4. Water and Apples

Joe asks: If a tree receives more water, will it grow more apples?

Manipulated Variable:

Responding Variable:

Control Variables:

5. Sunlight and Apples

Joe asks: If a tree receives more sunlight, will it grow more apples?

Manipulated Variable:

Responding Variable:

Control Variables:

6. Exercise and Weight

Kathy asks: What time of day should I exercise in order to lose the most weight?

Manipulated Variable:

Responding Variable:

Control Variables:

7. Sleep and Concentration

A student wants to find out if the amount of sleep affects their ability to concentrate in school. They vary the amount of sleep they get each night but keep their diet, study habits, and daily schedule the same.

Manipulated Variable:

Responding Variable:

Control Variables:

8. Music and Test Scores

A researcher wants to know if the type of music played during study time affects students' test scores. They play classical music for one group, rock music for another group, and no music for a third group, while keeping the study material, study time, and testing conditions the same.

Manipulated Variable:

Responding Variable:

Control Variables:
