

Scientific Method

1. Define the term scientific method.
2. List the steps that comprise a scientific method.
3. Mrs. Jones is investigating how the amount of time spent studying would affect students' test scores. Identify the independent and dependent variables. If the experimental results were graphed, which data would appear on the x-axis? The y-axis?
4. You are asked to study the effect of temperature on the volume of a balloon. The balloon's size increases as it is warmed.
 - a. What is the independent variable?
 - b. The dependent variable?
 - c. What factor is held constant?
 - d. How would you construct a control?
5. How does qualitative data differ from quantitative data? Identify the following as qualitative or quantitative.
 - a. Litmus paper turns blue.
 - b. The substance tastes sweet.
 - c. A man is 6 feet 6 inches tall.
 - d. A substance is boiling.
 - e. A substance is boiling at 100°C.
6. What is the purpose of a control in an experiment? What is a placebo?
7. Define the term hypothesis.
8. Noah's mom placed a pot of flowers by the mailbox, but they began to die. Noah thinks that they may be getting too much sunlight or not enough water. He moves the pot to a shady area and waters them twice each day instead of once. What did Noah do wrong?
9. Define the terms theory and scientific law.