

Name _____ Date _____ Period _____

PLANNING AN INVESTIGATION

FORMING A HYPOTHESIS AND IDENTIFYING THE VARIABLES IN SCIENTIFIC INVESTIGATIONS

1. What is a hypothesis? What are the two parts that should be included in a good hypothesis?
2. What is a manipulated (independent) variable?
3. Why is it important that an experiment have only one manipulated variable?
4. What are controlled variables?
5. What is a responding (dependent) variable?

6. Why are experimental control groups important?

Below is a list of experimental questions. For each question, make a hypothesis (giving both a prediction and your reasoning for making this prediction). Also, explain what would be the manipulated variable, responding variable and at least 4 controlled variables in an experiment to test this hypothesis.

6. Does the type of music played while a person is eating affect the rate at which he/she eats?
 - a. My hypothesis:
 - b. Manipulated variable:
 - c. Responding variable:
 - d. Controlled Variables (minimum of 4)
 - e. Experimental Control group:

7. Do plants grow faster when grown under red light compared to green light?

a. My hypothesis:

b. Manipulated variable:

c. Responding variable:

d. Controlled Variables (minimum of 4):

e. Experimental Control group:

8. Does salt water have a higher boiling point than fresh water?

a. My hypothesis:

b. Manipulated variable:

c. Responding variable:

d. Controlled Variables (minimum of 4):

9. Do heavy objects always fall faster than light objects on Earth?

a. My hypothesis:

b. Manipulated variable:

c. Responding variable:

d. Controlled Variables: