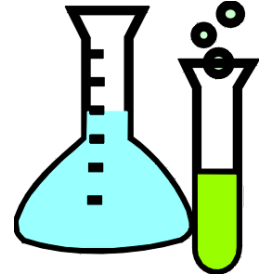


Name: \_\_\_\_\_ Period: \_\_\_\_\_

## Practice Forming Hypotheses and Identifying Variables



Write a hypothesis as an **if-then-because** statement for each of the following scientific questions. Identify the dependent and independent variables of the experiment testing the hypothesis.

**Example:** What effect does the weight or type of paper have on the length of paper airplane flight?

Hypothesis: If the paper is heavier, **then** the paper airplane will fly longer **because** the paper is stiffer.

Independent variable: Type or weight of paper (for example: newspaper vs. cardstock)

Dependent variable: Time of paper airplane in flight

### 1. What effect does high temperature have on the growth of strawberries?

Hypothesis: If: \_\_\_\_\_

Then: \_\_\_\_\_

Because: \_\_\_\_\_

Independent variable: \_\_\_\_\_

Dependent variable: \_\_\_\_\_

### 2. What effect does studying with music playing have on student test scores?

Hypothesis: If: \_\_\_\_\_

Then: \_\_\_\_\_

Because: \_\_\_\_\_

Independent variable: \_\_\_\_\_

Dependent variable: \_\_\_\_\_

### 3. What effect does the color of food have on the amount of food that a fish eats?

Hypothesis: If: \_\_\_\_\_

Then: \_\_\_\_\_

Because: \_\_\_\_\_

Independent variable: \_\_\_\_\_

Dependent variable: \_\_\_\_\_

### 4. What effect does light have on plant growth in your front yard?

Hypothesis: If: \_\_\_\_\_

Then: \_\_\_\_\_

Because: \_\_\_\_\_

Independent variable: \_\_\_\_\_

Dependent variable: \_\_\_\_\_

**5. What effect does students' smiling have on the amount of homework Mrs. H?**

Hypothesis: If: \_\_\_\_\_

Then: \_\_\_\_\_

Because: \_\_\_\_\_

Independent variable: \_\_\_\_\_

Dependent variable: \_\_\_\_\_

**Now for something a bit more challenging!** Read the descriptions of the following experiments. For each, write what the hypothesis would be (**Remember IF, THEN, BECAUSE**), identify the independent and dependent variables AND at least 2 controlled variables for the experiment.

**6. Two groups of rats are run in a maze with a food reward. The time that it takes for each rat to reach the goal box is recorded. One groups of rats is deprived of food for 24 hours before being run on the maze. The other group is fed 1 hour before the maze trials. All other conditions for the two groups are the same.**

a. Hypothesis: \_\_\_\_\_

\_\_\_\_\_

b. Independent variable: \_\_\_\_\_

c. Dependent variable: \_\_\_\_\_

d. Controlled variables: \_\_\_\_\_

**7. One-half of the Honors Biology students at OJH were provided additional study materials and study techniques to prepare for a test. The remaining half of the students used only the textbook and lecture notes from class. Both groups studied for the same amount of time and were then tested using the same test.**

a. Hypothesis: \_\_\_\_\_

\_\_\_\_\_

b. Independent variable: \_\_\_\_\_

c. Dependent variable: \_\_\_\_\_

d. Controlled variables: \_\_\_\_\_

**8. One group of dogs is given 2 cups of food twice a day. A second group of dogs is given 3 cups of food twice a day. A third group of dogs is given 1 cup of food twice a day, which is recommended by the dog food manufacturer. The dogs in all three groups are weighed once a week for three months to observe any change in weight.**

a. Hypothesis: \_\_\_\_\_

\_\_\_\_\_

b. Independent variable: \_\_\_\_\_

c. Dependent variable: \_\_\_\_\_

d. Controlled variables: \_\_\_\_\_