## Hypothesis and Variables Worksheet One

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### Directions

Use the information in the box above to help you determine the variables and write a good hypothesis for each scientific question below.

1. Can nonsmokers hold their breath longer than people who smoke?
   - **IV:**
   - **DV:**
   - **Hypothesis:**

2. What affect does attendance have on students’ grades in science class?
   - **IV:**
   - **DV:**
   - **Hypothesis:**

3. In what grade level do students grow the quickest?
   - **IV:**
   - **DV:**
   - **Hypothesis:**

4. Is riding the bus or riding a bike a quicker way to get to school?
   - **IV:**
   - **DV:**
   - **Hypothesis:**

### Definitions

- **A hypothesis** is a(n) ____________________________
- **An independent variable** is ____________________________
- **A dependent variable** is ____________________________

To determine the **independent variable**, what question can you ask yourself? ____________________________

To determine the **dependent variable**, what question can you ask yourself? ____________________________

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5. Do rabbits have shinier fur when they eat cabbage or carrots?
   IV: 
   DV: 
   Hypothesis: 

6. Does Iams dog food, Purina dog food, or Kibbles and Bits dog food cause dogs to live the longest?
   IV: 
   DV: 
   Hypothesis: 

7. Does a person’s heart rate influence how long a person will live?
   IV: 
   DV: 
   Hypothesis: 

8. Does napping during the day affect how many hours a person sleeps at night?
   IV: 
   DV: 
   Hypothesis: 

9. Does a person with a family history of breast cancer have a higher chance of developing breast cancer during her life?
   IV: 
   DV: 
   Hypothesis: 

10. Does grass grow faster under the shade of a tree or in the direct sunlight?
    IV: 
    DV: 
    Hypothesis:
Hypothesis and Variables Worksheet One

A hypothesis is a(n) **educated guess or prediction**.

An **independent variable** is **what is changed in an experiment**.

A **dependent variable** is **what is measured in an experiment**.

To determine the **independent variable**, what question can you ask yourself? **What is being changed in this experiment?**

To determine the **dependent variable**, what question can you ask yourself? **What is being measured in this experiment?**

**Directions**: Use the information in the box above to help you determine the variables and write a good hypothesis for each scientific question below.

1. Can nonsmokers hold their breath longer than people who smoke?
   - **IV**: smoking or not smoking
   - **DV**: how long a person can hold his or her breath
   - **Hypothesis**: If a person does not smoke, then he will be able to hold his breath longer.

2. What affect does attendance have on students’ grades in science class?
   - **IV**: attendance
   - **DV**: students’ grades
   - **Hypothesis**: If a student attends science class every day, then she will have a higher grade.

3. In what grade level do students grow the quickest?
   - **IV**: grade level
   - **DV**: speed of growth
   - **Hypothesis**: If a student is in eighth grade, then he will grow quickest.

4. Is riding the bus or riding a bike a quicker way to get to school?
   - **IV**: bus or bike
   - **DV**: time it takes to get to school
   - **Hypothesis**: If a student rides the bus, then she will get to school faster.
5. Do rabbits have shiner fur when they eat cabbage or carrots?

IV: cabbage or carrots

DV: shininess of fur

Hypothesis: If a rabbit is given carrots, then it will have shinier fur.

6. Does Iams dog food, Purina dog food, or Kibbles and Bits dog food cause dogs to live the longest?

IV: dog food brand

DV: length of life

Hypothesis: If a dog eats Iams dog food, then he will live longer.

7. Does a person’s heart rate influence how long a person will live?

IV: heart rate

DV: length of life

Hypothesis: If a person has a high heart rate, then she will have a shorter lifespan.

8. Does napping during the day affect how many hours a person sleeps at night?

IV: napping during the day

DV: how many hours a person sleeps at night

Hypothesis: If a person takes a nap during the day then he will sleep fewer hours at night.

9. Does a person with a family history of breast cancer have a higher chance of developing breast cancer during her life?

IV: family history of breast cancer

DV: chance of developing breast cancer

Hypothesis: If a person has a family history of breast cancer, then she is more likely to develop breast cancer during her life.

10. Does grass grow faster under the shade of a tree or in the direct sunlight?

IV: where the grass is growing or sunlight and shade

DV: how fast the grass grows

Hypothesis: If grass is growing under the shade of a tree, then it will grow slower than the grass in direct sunlight.
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