Experimental Design Worksheet 1 Name_____Pd_____Date_____
Scientific Method

Definitions: Define the following words and concepts related to the scientific method.

1. Hypothesis: _____

2. Independent Variable: _____

3. Dependent Variable: _____

4. Control Group: _____

5. Experimental Groups: _____

6. Constants: _____

7. Trials: _____

8. Variables (use a dictionary if necessary): _____

In the statements below, write the hypothesis, variable, control groups and experimental groups.

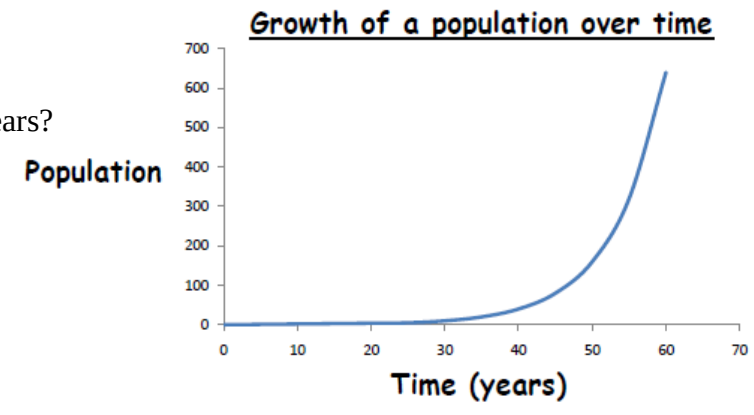
1. Cigarette smoking increases the risk of lung cancer.
Hypothesis: If _____, then _____
Independent Variable: _____ Dependent Variable: _____
Control Group: _____ Experimental Group: _____

2. Eating breakfast increases performance in school.
Hypothesis: If _____, then _____
Independent Variable: _____ Dependent Variable: _____
Control Group: _____ Experimental Group: _____

3. Hummingbirds are attracted to the color red.
Hypothesis: If _____, then _____
Independent Variable: _____ Dependent Variable: _____
Control Group: _____ Experimental Group: _____

4. Bats locate food using sound waves.
Hypothesis: If _____, then _____
Independent Variable: _____ Dependent Variable: _____
Control Group: _____ Experimental Group: _____

5. Use the graph
Independent Variable_____
Dependent Variable _____
What happens to the population growth after 40 years?
_____
_____
_____



Experimental Design Worksheet 2 Name_____Pd_____Date_____
Scientific Method
In the statements below, write the hypothesis, variable, control groups and experimental groups.
1. Plants grow best in white light.

Hypothesis: If_____, then _____

Independent Variable: _____ Dependent Variable: _____

Control Group: _____ Experimental Group: _____

2. The deer population decreases in the winter due to the lack of food.

Hypothesis: If_____, then _____

Independent Variable: _____ Dependent Variable: _____

Control Group: _____ Experimental Group: _____

3. Students who study perform better in school.

Hypothesis: If_____, then _____

Independent Variable: _____ Dependent Variable: _____

Control Group: _____ Experimental Group: _____

Read the following situation and answer the following questions.

Suzie Q wants to know the effect of different colors of light on the growth of plants. She believes that plants can survive best in white light. She buys 5 ferns of the same species, which are all approximately the same age and height. She places one in white light, one in blue light, one in green light, one in red light and one in the closet. All of the ferns are planted in Miracle-Grow and given 20 mL of water once a day for 2 weeks. After the two weeks, Suzie observes the plants and makes measurements.

Hypothesis: If_____, then _____

Independent Variable: _____ Dependent Variable: _____

Control Group: _____ Experimental Group: _____

Constants: _____

What types of measurements can Suzie make on the plants to determine how they did in different types of light?_____