1. Make 1 qualitative observation, 1 quantitative observation, and 2 inferences about the image above.

Qualitative Observation:

Quantitative Observation:

Inference:

Inference:

1. For the following statement, propose a scientific question, identify the independent variable, identify the dependent variable, and create a **measurable** hypothesis (hint: use if/then/because).

“Music may have an effect on concentration.”

Question:

Independent Variable:

Dependent Variable:

Measurable Hypothesis:

*Use the following scenario to answer questions 3 and 4*

You want to find out how water can affect the growth of bean sprouts. So you have 2 pots for this experiment, Pot A and Pot B. Pot A has a usual volume of 1 cup watered every time, and Pot B having a higher than usual volume of 2 cups watered every time.

1. What is your control group?
2. List 3 variables that you can keep constant in this experiment.
3. What is something that is produced during the Engineering Method but is not produced during the Scientific Method?
4. In the Engineering Method you start the process with a problem, but in the Scientific Method you start the process with a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. How many kilometers (km) are in 150 centimeters (cm)?
6. How many milligrams (mg) are in .0519 kilograms (g)?
7. What basic unit would be used to measure the capacity or volume of a liquid?

*For Problems 10 and 11, please identify the independent and dependent variables in the following descriptions of experiments. Then create a measurable hypothesis.*

1. A comprehension test was given to students after they had studied textbook material either in silence or with the television turned on.

Independent Variable:

Dependent Variable:

Measurable Hypothesis:

1. Some elementary school teachers were told that a child’s parents were college graduates, and other teachers were told that the child’s parents had not finished high school; they then rated the child’s academic potential.

Independent Variable:

Dependent Variable:

Measurable Hypothesis:

1. Try and design an experiment from the following hypothesis

“Spending time with a cat or dog decreases the amount of stress someone is feeling and allows them to perform better on tests.”

Experiment:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Independent Variable:

Dependent Variable: