

Study Guide for Chapter 1 Test: *The Nature of Science*

Be able to do the following:

- Explain the difference between mass and weight.
- Explain the difference between scientific theory and scientific law.
- According to your text or notes, list the logical set of steps in the scientific method.
- Explain the difference between accuracy and precision
- Explain how technological design differs from scientific investigation
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- **Know the definition for each of the following terms:**
- Scientific Method
- Theory
- Experiment
- Dependent Variable
- Standard
- Constant
- Control
- Bias
- Model
- Hypothesis
- Technology
- Variable
- SI
- Independent Variable
- Mass
- Volume
- Density
- Graph
- Scientific Law
- Precision
- Accuracy
- Scientific investigations vs. technological design
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Know all of the following:

Models, controls, and variables are standard components of the experimental process.

Observation, hypothesis, and theory development are some of the features that should be included in the scientific process.

When glass breaks or spills during a lab, the first step is to tell the teacher, your lab partners, and then clean it up.

In general, models benefit scientific investigation the most by representing ideas, events, and objects.

In the “To Pop or not To Pop” lab investigation, the dependent variable was the amount of popped popcorn and the independent variable was the temperature of the popcorn.

When doing laboratory investigations, chemicals that you are finished working with should be disposed of as directed by your teacher.

SI is the unit system used by scientists.

To show trends and how the data changes over time is the best application of a line graph.

When beginning a lab investigation the first step is to read all the instructions before starting the lab.

The names of these pieces of equipment are Erlenmeyer Flask, triple beam balance, graduated cylinder, beaker

Metric Conversions

Be able to convert the following and show **ALL** work.

1. 35,000L = _____kl
2. 45mm = _____cm
3. 140g = _____cg
4. 5,347L = _____ml
5. 2km = _____m
6. 74kg = _____g