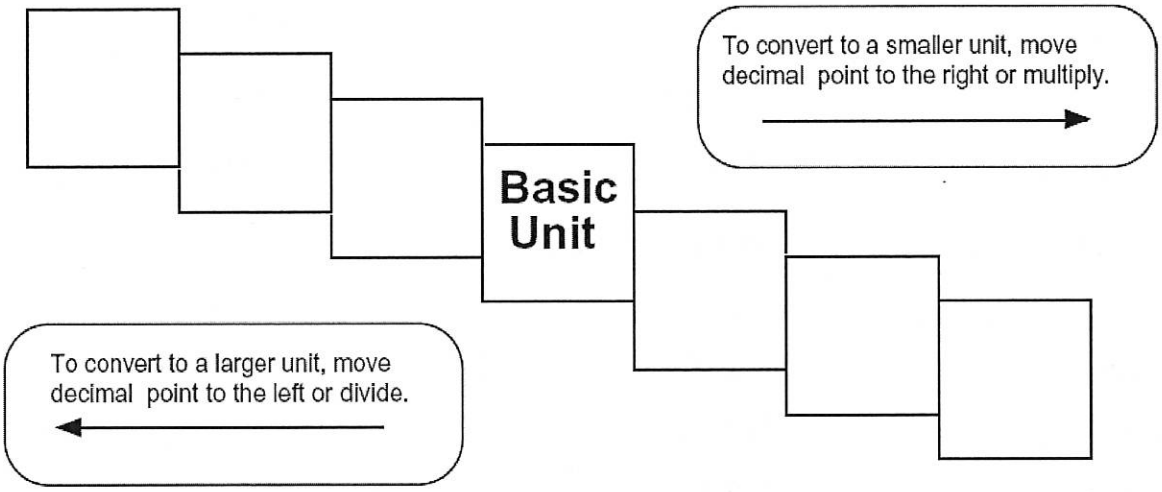
Metric Mania

Name _____

Metric Conversions

Fill in the boxes in the stair step diagram.



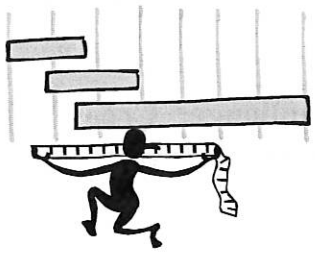
Try these conversions using the ladder method.

1000 mg = _____ g 1 L = _____ mL 160 cm = _____ mm

14 km = _____ m 109 g = _____ kg 250 m = _____ km

Compare using <, >, or =.

56 cm ◯ 6 m 7 g ◯ 698 mg



Metric Mania

Name _____

Metric Conversion Practice

Write the correct abbreviation for each metric unit.

1) Kilogram _____
2) Meter _____
3) Gram _____
4) Milliliter _____
5) Millimeter _____
6) Liter _____
7) Kilometer _____
8) Centimeter _____
9) Milligram _____

Try these conversions, using the ladder method.

10) 2000 mg = _____ g
11) 104 km = _____ m
12) 480 cm = _____ m
13) 5.6 kg = _____ g
14) 8 mm = _____ cm
15) 5 L = _____ mL
16) 198 g = _____ kg
17) 75 mL = _____ L
18) 50 cm = _____ m
19) 5.6 m = _____ cm
20) 16 cm = _____ mm
21) 2500 m = _____ km
22) 65 g = _____ mg
23) 6.3 cm = _____ mm
24) 120 mg = _____ g

Compare using <, >, or =.

25) 63 cm ◯ 6 m
26) 536 cm ◯ 53.6 dm
27) 5 g ◯ 508 mg
28) 43 mg ◯ 5 g
29) 1,500 mL ◯ 1.5 L
30) 3.6 m ◯ 36 cm

Challenge: Create three conversion problems for your classmates along with the correct answers.

Name _____

Metric Conversion practice

k	h	da	u	d	c	m

1. 724 cm to m =
2. 9.581 km to m =
3. 4.69 m to cm =
4. 9.863 L to mL =
5. 0.9 cm to mm =
6. 53.6 cm to mm =
7. 7.4 L to mL =
8. 2 daL to cL =
9. 8 km to m =
10. 3 g to cg =
11. 143 ks to das =
12. 5.4 g to mg =
13. 324 hm to km =
14. 2143 km to m =
15. 321 m to mm =

Name _____

Scientific Inquiry

Key Concepts

- How do scientists investigate the natural world?
- What role do models, laws, and theories play in science?

Scientific Inquiry refers to the diverse ways in which scientists study the natural world and propose explanations based on evidence they gather. **The processes that scientists use in inquiry include posing questions, developing hypotheses, designing experiments, collecting and interpreting data, drawing conclusions, and communicating ideas and results.**

Scientific inquiry often begins with a problem or questions about an observation. A scientific question is one that can be answered by making observations and gathering evidence. A **hypothesis** is a possible explanation for a set of observations or answer to a scientific question. In science, a hypothesis must be testable.

Any factor that can change in an experiment is called a **variable**. The variable that is purposely changed to test a hypothesis is called the **independent variable** (or manipulated variable). The factor that may change in response to the independent variable is the **dependent variable** (or responding variable). All other variables should be held constant. An experiment in which only one variable is manipulated at a time is called a controlled experiment.

A controlled experiment produces data. **Data** are facts, figures, and other evidence gathered through observations. A data table provides an organized way to collect and record observations. One useful tool in interpreting data is a graph. Graphs can reveal trends or patterns in the data. After gathering and interpreting data, a scientist draws conclusions about the hypothesis.

An important part of the scientific inquiry process is communicating the results. **Communicating** is the sharing of ideas and experimental findings with others through writing and speaking.

Scientists use models and develop laws and theories to increase people's understanding of the natural world. A **scientific law** is a statement that describes what scientists expect to happen every time under a particular set of conditions. A scientific law describes an observed pattern in nature without attempting to explain it. Sometimes, a large set of related observations can be connected by a single explanation. A **scientific theory** is a well-tested explanation for a wide range of observation or experimental results.

Questions

Answer the following questions using complete sentences.

1. Why is it important to control variables in an experiment?

2. When you begin an experiment, why should you create a table to record your data?

Fill in the Blank to complete each statement

3. A(n) _____ is a possible explanation for a set of observations or answer to a scientific question.

4. Factors that can change in an experiment are called _____.

5. A _____is a statement that describes what scientists expect to happen every time under a particular set of conditions.

6. Facts, figures, and other evidence gathered through observations are called _____.

7. The factor that may change in response to the manipulated variable is called the _____.

8. An experiment in which only one variable is manipulated at a time is called a(n) _____ experiment.

9. A _____ is a well-tested explanation for a wide range of observations or experimental results.

10. The one variable that is purposely changed to test a hypothesis is called the _____.

Match the term with its definition.

_____11. dependent variable
_____12. independent variable
_____13. controlled experiment
_____14. variable

a. the one variable that is purposely changed to test a hypothesis

b. a factor that can change in an experiment

c. the factor that may change in response to the manipulated variable

d. an experiment in which only one variable is changed at a time

15. Is the following sentence true or false? If you do not control variables in an experiment, there will be no way to know which variable explains your results. _____

16. A(n) _____ is a summary of what you have learned from an experiment.