

Example Lab Report

Title: _____

Introduction paragraph:

- *State observations.*
- *State your question.*
- *State your hypothesis.*

Procedure:

- *Describe your experiment.*

Results:

- *Describe the data collected.*

Conclusions:

- *Write your conclusions.*
State whether your hypothesis was correct or incorrect.
- *Make a new hypothesis.*

Lithospheric Plates



The Scientific Method

1. Make observations



The grass is brown at the area where students wait for the bus (Location A) and green in an area closer to the school building (Location B).

2. Ask a question



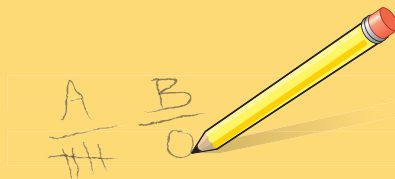
Why is the grass brown near Location A where students wait for the bus?

3. State a hypothesis



The grass is brown at Location A because students walk on the grass there.

4. Collect data



For his experiment, Sam observes students for three days while they wait for the bus. During this time, he records that students walk on the grass at Location A, and no students walk on the grass at Location B.

5. Draw conclusions



Sam concludes that his hypothesis is correct. The grass is brown at Location A because students are walking on the grass.

English and SI Units

Wrenches in inches (English units)



$3/8''$



$7/16''$

Wrenches in millimeters (SI units)



11



10

Which is the biggest wrench?

Measuring Volume

Two ways to measure volume in SI Units:

1

There are 1000 cm³ in a liter.

The volume of this 1-liter cube is:

Length × width × height

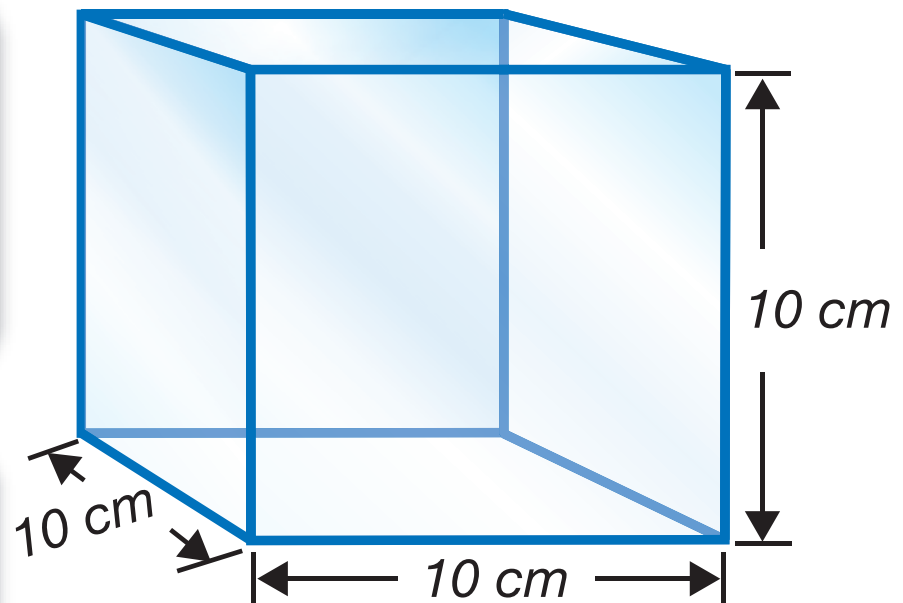
$$10 \text{ cm} \times 10 \text{ cm} \times 10 \text{ cm} = 1000 \text{ cm}^3$$

2

There are 1000 milliliters in a liter.

$$1000 \text{ milliliters} = 1000 \text{ cm}^3$$

$$1 \text{ milliliter} = 1 \text{ cm}^3$$

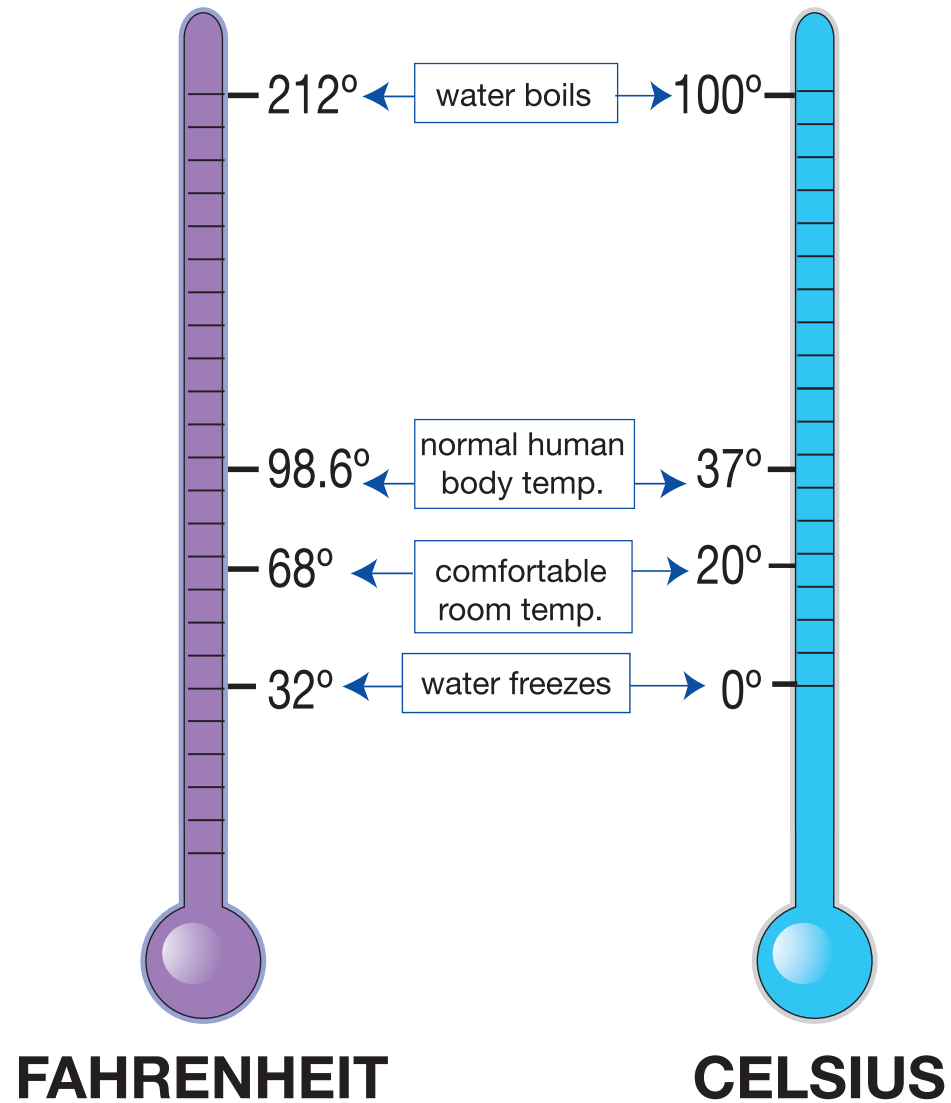


A cube that measures 10 cm on each side holds 1 liter.

Table of Units Prefixes

Prefixes	Prefix + meter	Compared to a meter
milli-	millimeter	1,000 times smaller
centi-	centimeter	100 times smaller
kilo-	kilometer	1,000 times bigger

Celsius and Fahrenheit Temperature Scales



Scales of Systems

Small scale



Photo courtesy of NPS/DOI

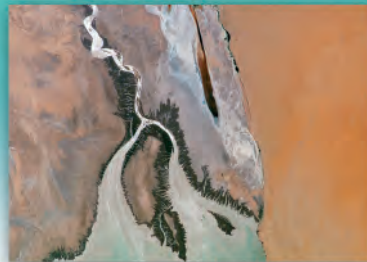
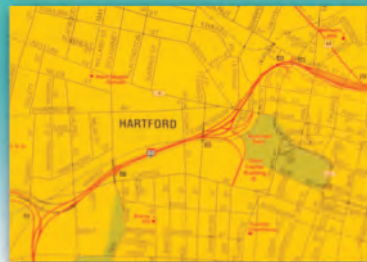
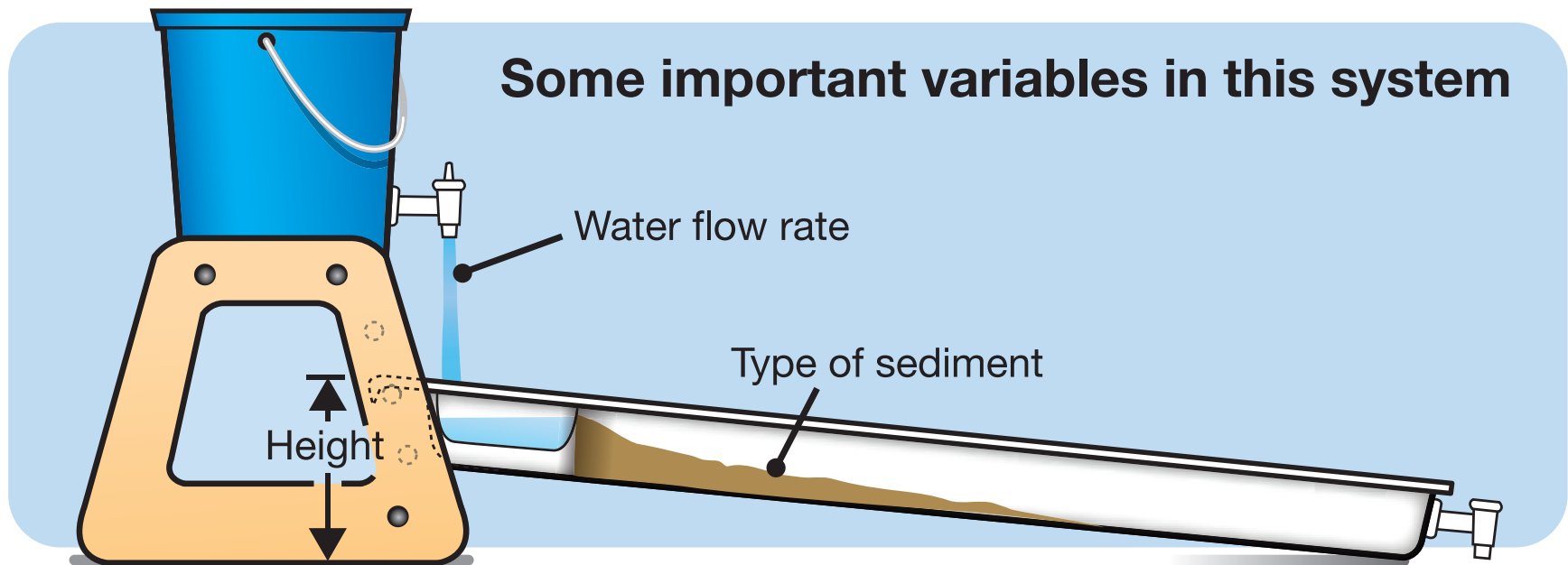


Photo courtesy of NASA

Large scale

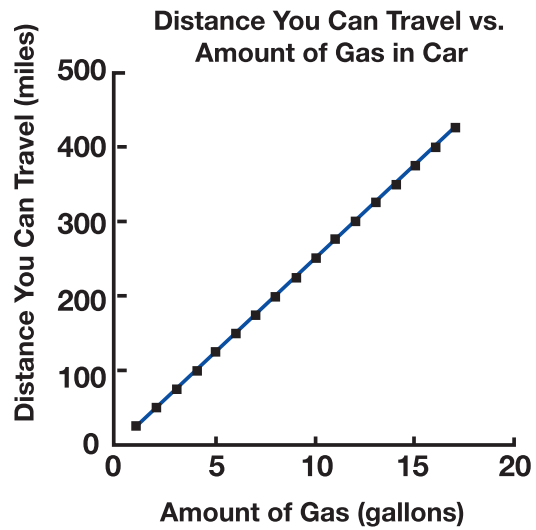


Stream Table System

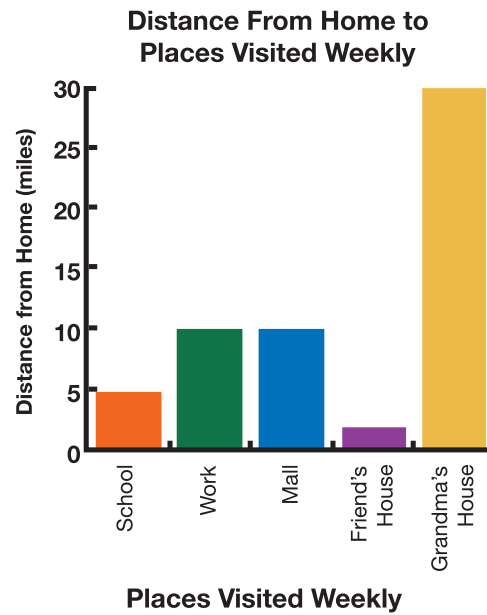


Graphs

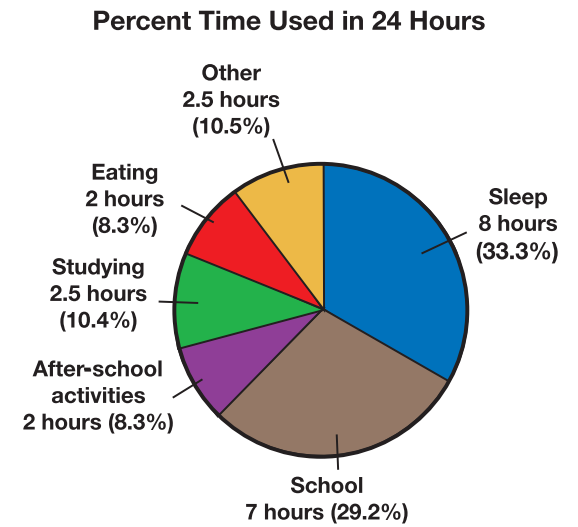
(A) Line Graph



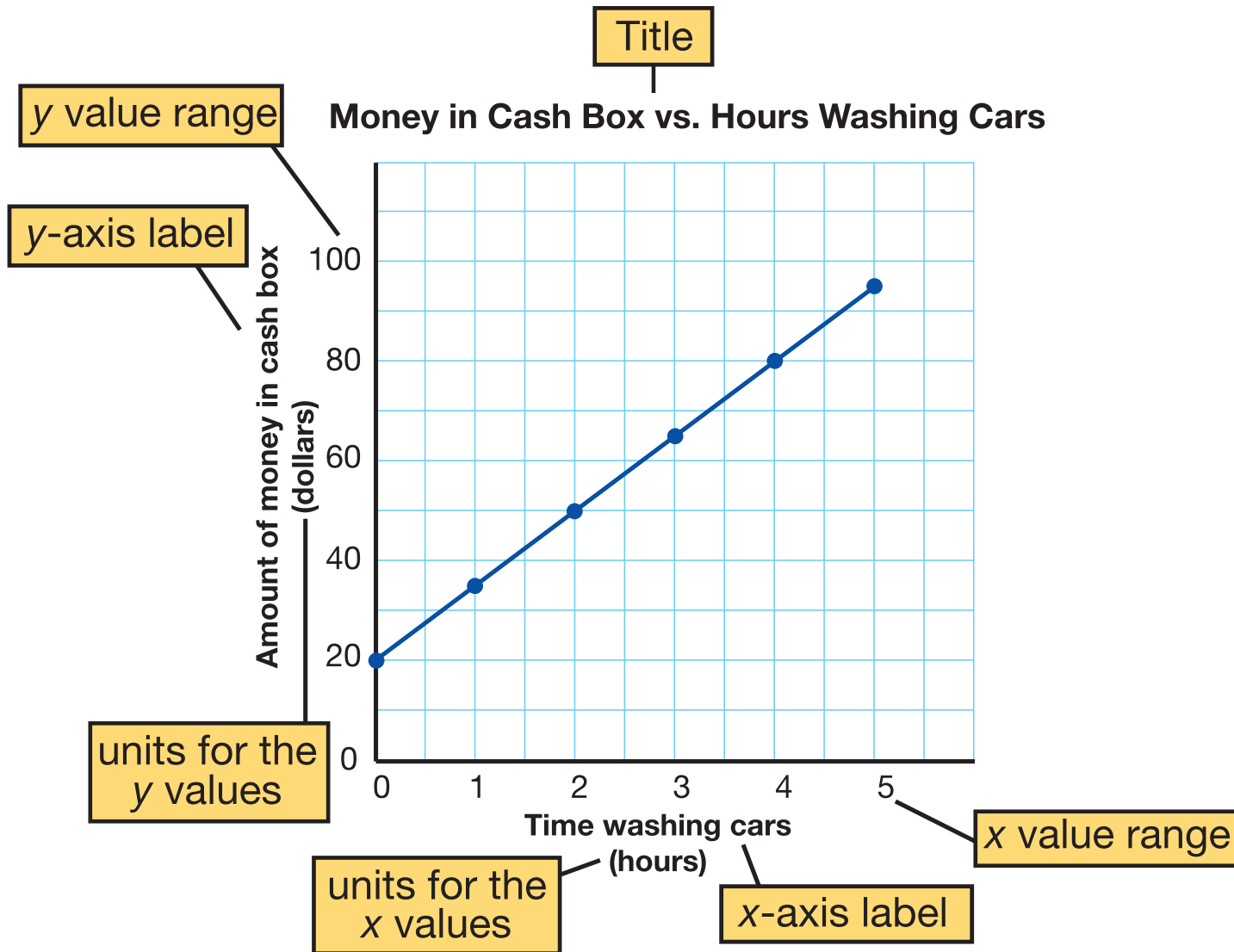
(B) Bar Graph



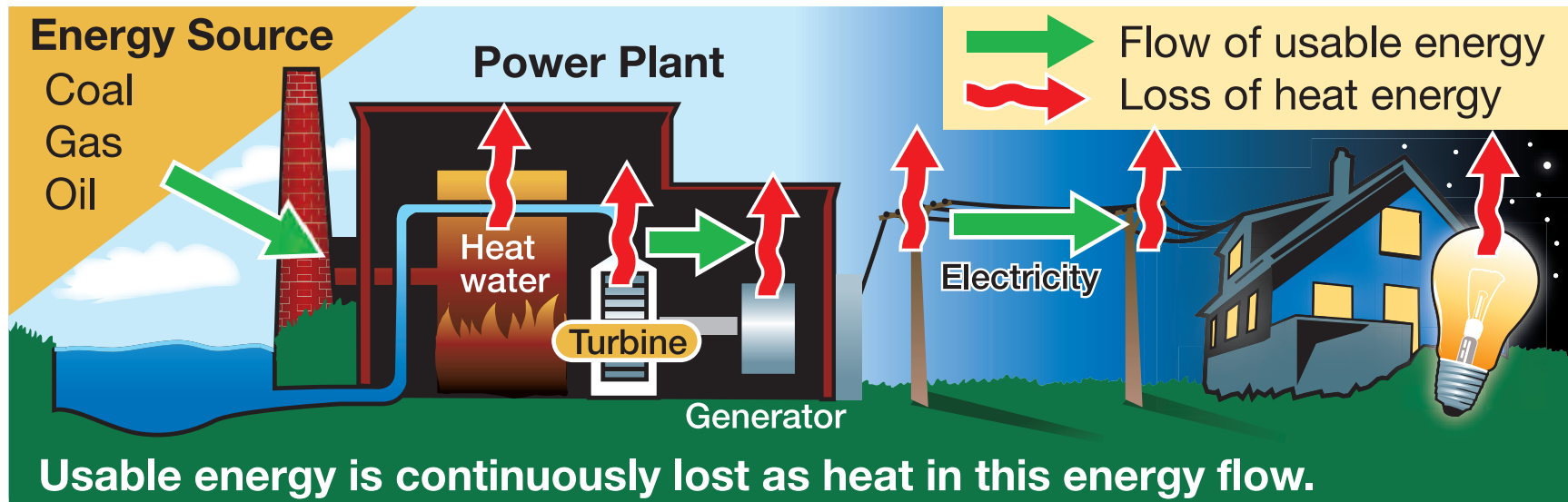
(C) Pie Graph



Parts of a Graph

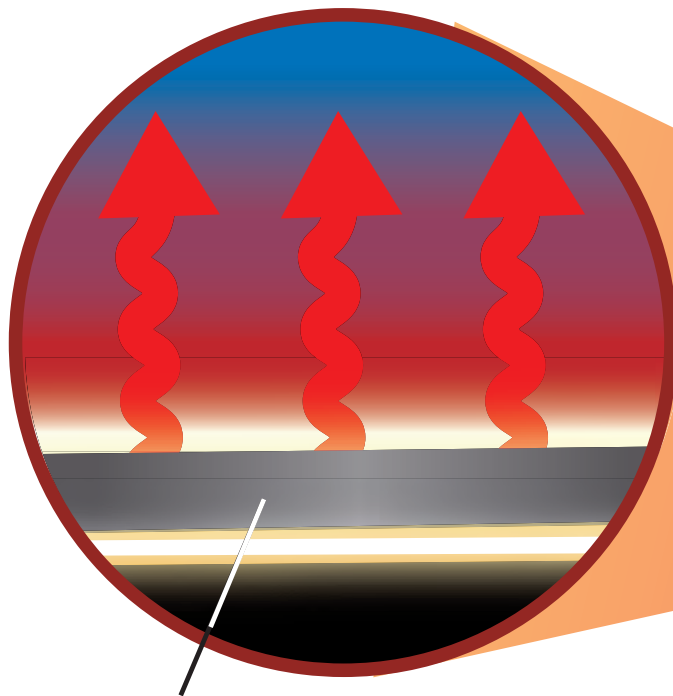


Power Plant



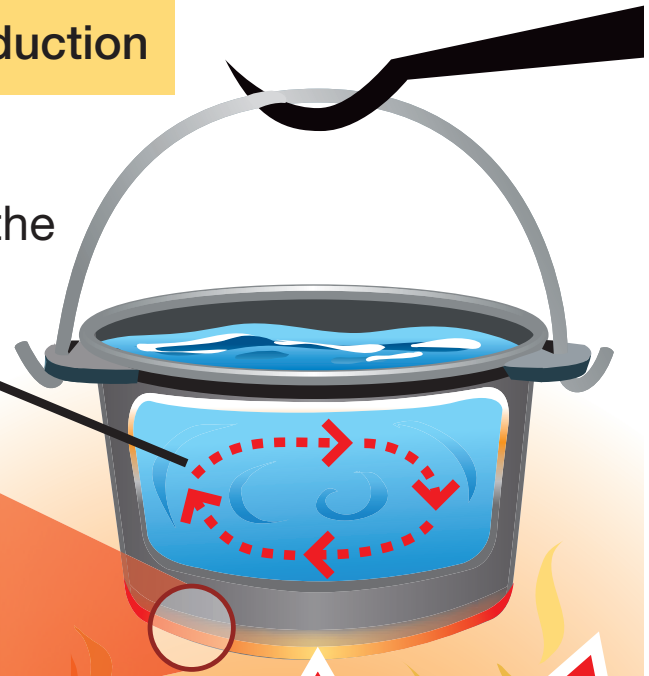
Heat Transfer

⇒ Radiation - - - - - ⇒ Convection 🔴 Conduction

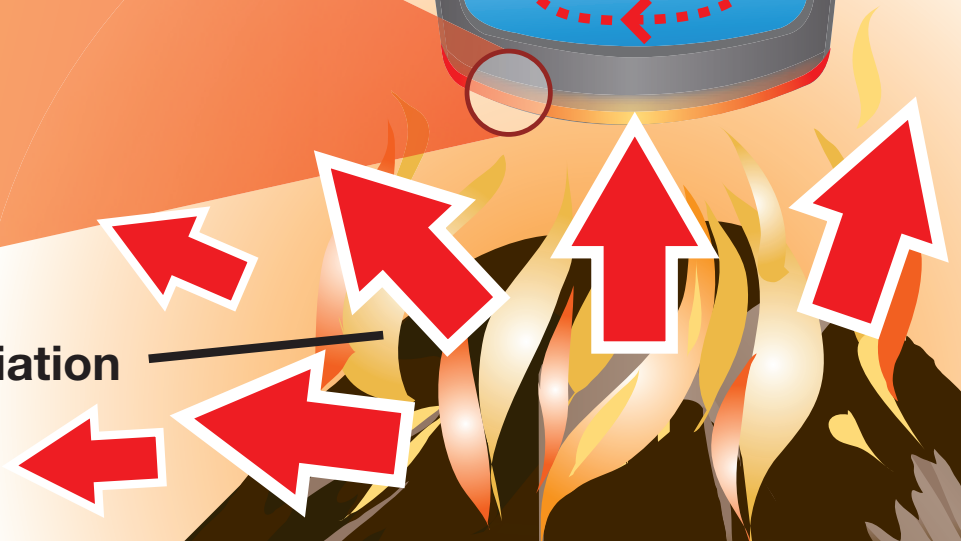


Conduction of heat from the pot to the water

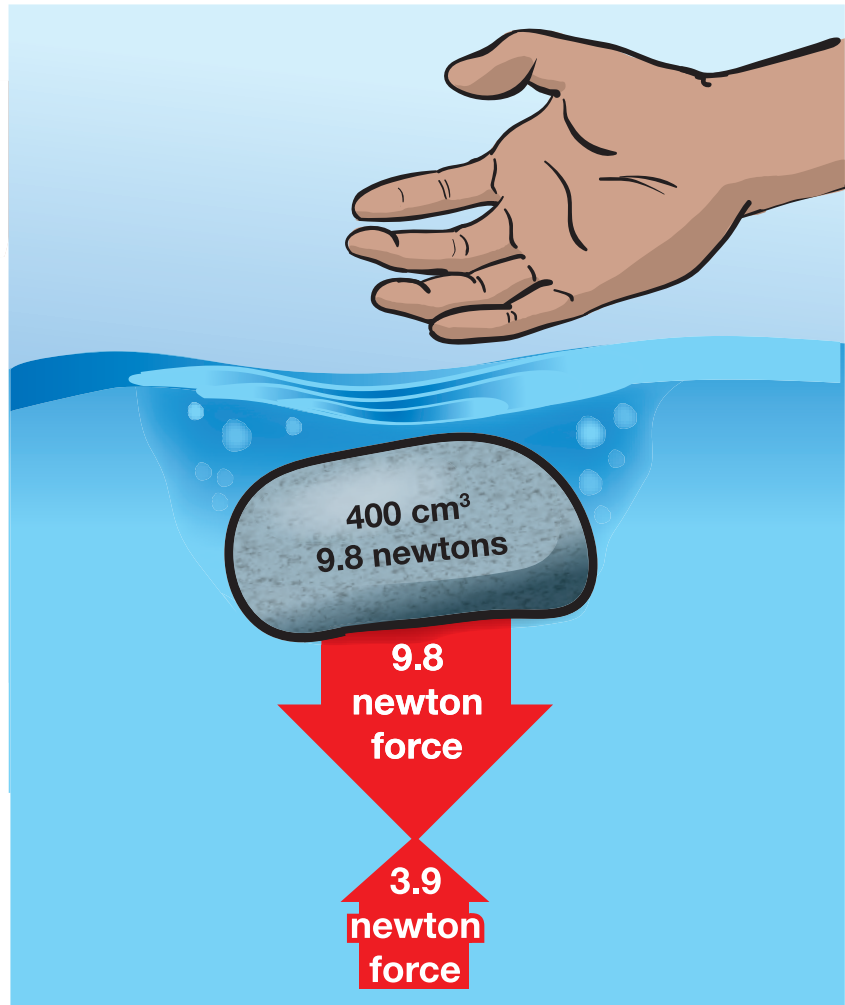
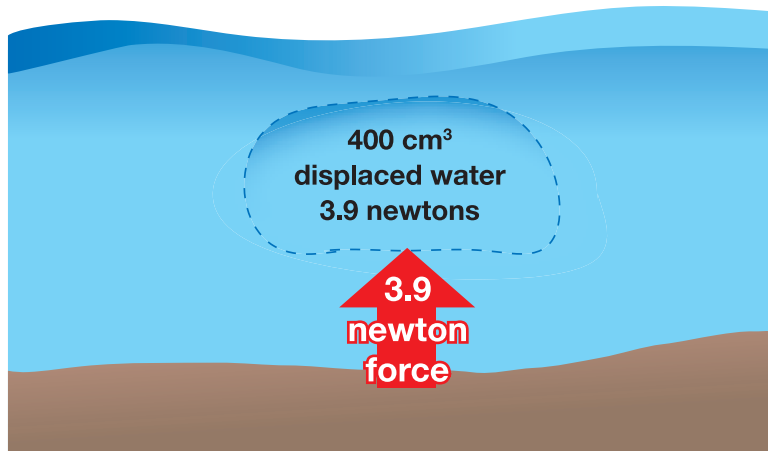
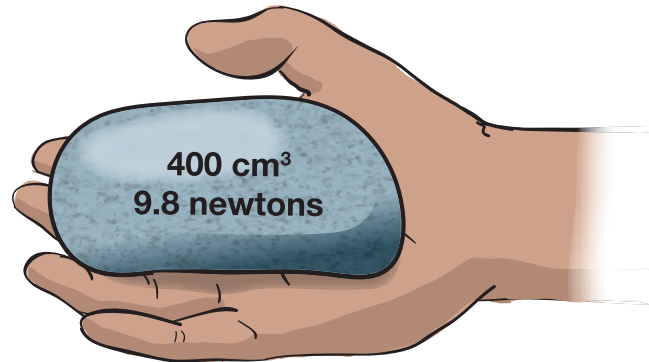
Convection of the heated water



Radiation



Buoyant Force



Finding Density

DENSITY

$$\begin{array}{l} \text{Density} \\ (\text{g/cm}^3) \end{array} \longrightarrow \mathbf{D} = \frac{\mathbf{m}}{\mathbf{V}} \begin{array}{l} \longleftarrow \text{Mass (g)} \\ \longleftarrow \text{Volume (cm}^3\text{)} \end{array}$$