1.1 SI Measurement

Measurement Brainstorm?
Opener: Discussion about
"What would you measure using meters? Cm? Mm? Km?"

Measuring activity with calipers
Complete student notes
Assignment attached: Do we need more conversion questions?

NOTE: Need calipers for this lesson.

Date: _____ Name: _____

Chapter 4: Rational Numbers
4.0 – SI Measurement

Skills

A3: I can estimate reasonably
A5: I can use tools and technology to explore
C2: I can apply multiple strategies

SI Measure

SI Système International d'Unités, metric system uses multiples of 10, metre is the base unit.

Referent measurement tool used to estimate some unit of measurement.

Eg. door knobs → 1 m off ground, width of pinkye / cm

Example 1: Estimate and Measure using SI units

Use a referent to estimate each distance. Then, measure each distance.

a) The thickness of your desktop

b) The height of the seat of a chair

c) The width of the cover of your textbook

Converting between SI Units:

1 km = 1000 m

1 m = 100cm

1 cm = 10 mm

Recall: $\frac{1}{2}\times\frac{5}{4}=\frac{5}{8}$

If we travel for 2 hours at 100 km/h, how far will we have travelled?

Notice: $\frac{100\ km}{1\ hour}\times\frac{2\ hours}{1}=200\ km$

Example 1: Convert Between SI units of Length:

A newspaper reported the following measurements in different stories below. For each measurement, state a more appropriate SI unit. Convert to that measurement.

The distance from Earth to the moon is 38 440 300 000 cm.

convert to km

$38\ 440\ 300\ 000\ \text{cm} \times \frac{1\ \text{km}}{100\ 000\ \text{cm}}$

384 403 km

A worm measures 0.0019 m.

convert to cm

$0.0019\ \text{m} \times \frac{100\ \text{cm}}{1\ \text{m}}$

0.19 cm

Practice: WS

4.0 Worksheet

1. Use your collection of SI measurement references to estimate each measure in your classroom. Justify your choice of unit.
    a. The height of a light switch from the floor
    b. The width of your classroom
    c. The length of your desk or table

2. Measure each distance in #1 and compare the measurement to your estimate.

3. State an appropriate SI unit for each measurement.
    a. The diameter of a quarter
    b. The length of a car
    c. The thickness of a quarter
    d. The diameter of Earth

4. Convert each measurement

a. 6 cm = _____ mm	b. 4 m = _____ cm	c. 7 km = _____ m
d. 0.5 cm = _____ mm	e. 0.5 m = _____ cm	f. 500 m = _____ km
g. 0.345 km = _____ cm	h. 3246 cm = _____ km	i. 750 cm = _____ m

5. Convert each measurement to a more appropriate unit. State why you think this is a better unit to use.
    a. Mount Logan, in southwestern Yukon, is 595 900 cm tall.

    b. The diameter of an apple is 0.064 m.

    c. The largest brown bear, the Kodiak, is 2440 mm in length.

    d. A large pizza is 0.3 m in diameter.

    e. A human eye is approximately 0.024 m in diameter.

The units for SI are as follows

km hm dam m dm cm mm

Knowing the conversions for km to m, m to cm, and cm to mm. Find a pattern for how we would convert to through the all of the SI units. In doing so, fill in the following conversions.

1 hm = _____ m

1 km = _____ dam

1 dam = _____ cm

1 dm = _____ mm

1 km = _____ dm

1 hm = _____ mm

Answers

1.	a.	b.	c.		
2.	a.	b.	c.		
3.	a. mm or cm	b. m	c. mm	d. km	
4.	a. 60 mm	b. 400 cm	c. 7000 m	d. 5 mm	e. 50 cm
	f. 0.5 km	g. 34 500 cm	h. 0.03246 km		
5.	m, 5959 m	b. cm, 6.4 cm	c. cm, 244 cm	d. cm, 30 cm	e. cm, 2.4 cm