Lesson 1.3: The SI System

Practice – III

1. Explain the advantages of having a common system of measurement throughout the world.
With a common system, people all over the world are familiar with the same measurement units. This makes communication about measurement much easier.

2. All of the unit conversion strategies shown in this *Lesson* used conversion ratios. Describe how you can tell if you have chosen an appropriate format of a conversion ratio for a conversion.
If the correct conversion ratio is chosen, all of the unwanted units will be eliminated, leaving just the desired unit.

3. Complete each of the following unit conversions using different strategies.

   a. How many centigrams are equal to 9.95 milligrams?

   Strategies will vary. A sample is shown.

$$\frac{x}{9.95\text{ mg}} = \frac{100\text{ cg}}{1000\text{ mg}}$$

$$\frac{x}{9.95\text{ mg}} \cdot 9.95\text{ mg} = \frac{100\text{ cg}}{1000\text{ mg}} \cdot 9.95\text{ mg}$$

$$\frac{x}{9.95\text{ mg}} \cdot 9.95\text{ mg} = \frac{100\text{ cg}}{1000\text{ mg}} \cdot 9.95\text{ mg}$$

$$x = 0.995\text{ cg}$$

   b. 921 dam = _____ dm

   Strategies will vary. A sample is shown.

$$921\text{ dam} \cdot \frac{10\text{ dm}}{0.1\text{ dam}} = 921\text{ dam} \cdot \frac{10\text{ dm}}{0.1\text{ dam}}$$

$$= 92100\text{ dm}$$

   c. Convert 66.5 kilowatts to hectowatts. (The symbol for watt is "W".)

   Strategies will vary. A sample is shown.

   0.001 kW = 0.01 hW

   Move the decimal point to the right one time to convert kilowatts to hectowatts.

   66.5 kW = 665 hW

4. A pharmaceutical company has designed a pill that contains 25 mg of a drug. If the company produces 367 kg of the drug, how many pills can the company make?

   Express both masses in terms of the same unit.

   0.001 kg = 1000 mg, so kilograms can be converted to milligrams by moving the decimal 6 places to the right.

   367 kg = 367000000 mg

   $$\frac{367000000\ \cancel{\text{mg}}}{25\ \cancel{\text{mg}}} = 14680000$$

   The company can make 14 680 000 pills.

Please complete *Lesson 1.3 Explore Your Understanding Assignment* located in *Workbook 1.3* before proceeding to *Lesson 1.4*.

Lesson 1.4: The Imperial System

Practice – IV

1. State an imperial unit that is appropriate for each of the following measurements.

   a. the length of a city block

      yard

   b. the width of your pencil

      inch

   c. the weight of a loaded semi-trailer

      ton

   d. the amount of gasoline used to fill a vehicle's gas tank

      gallon