Chapter 1: Matter and Measurement

Chapter 1: Matter and Measurement

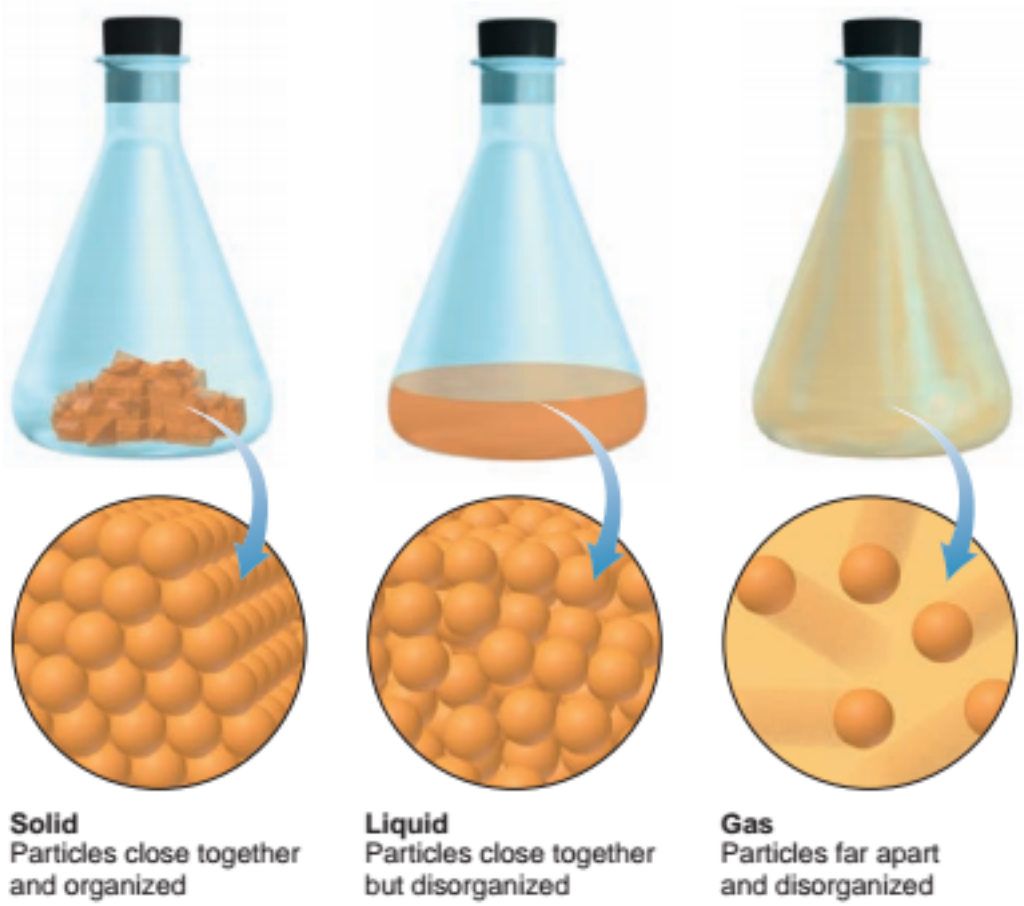


Figure 1: The Physical State of Matter

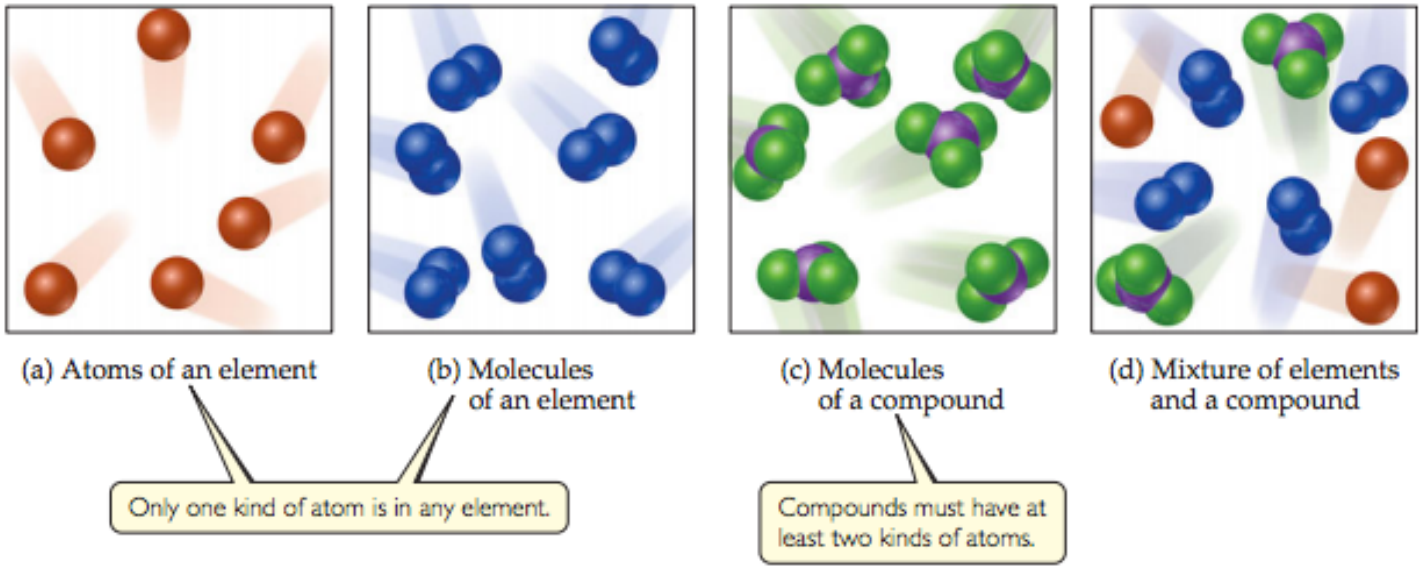


Figure 2: Element, Compound, Mixture

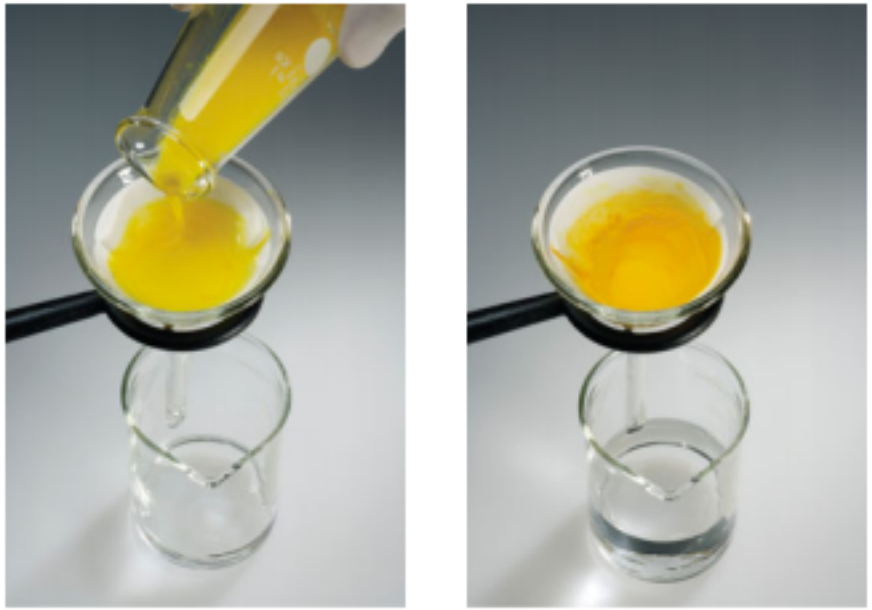


Figure 3: Filtration

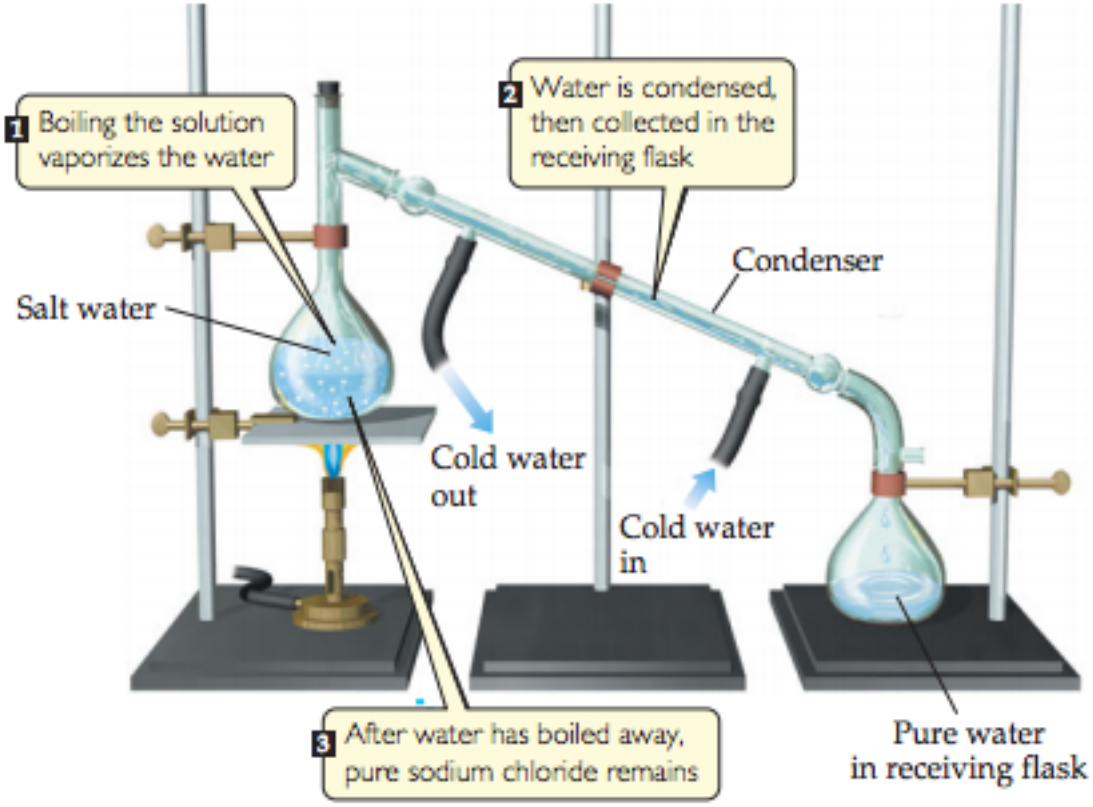


Figure 4: Distillation

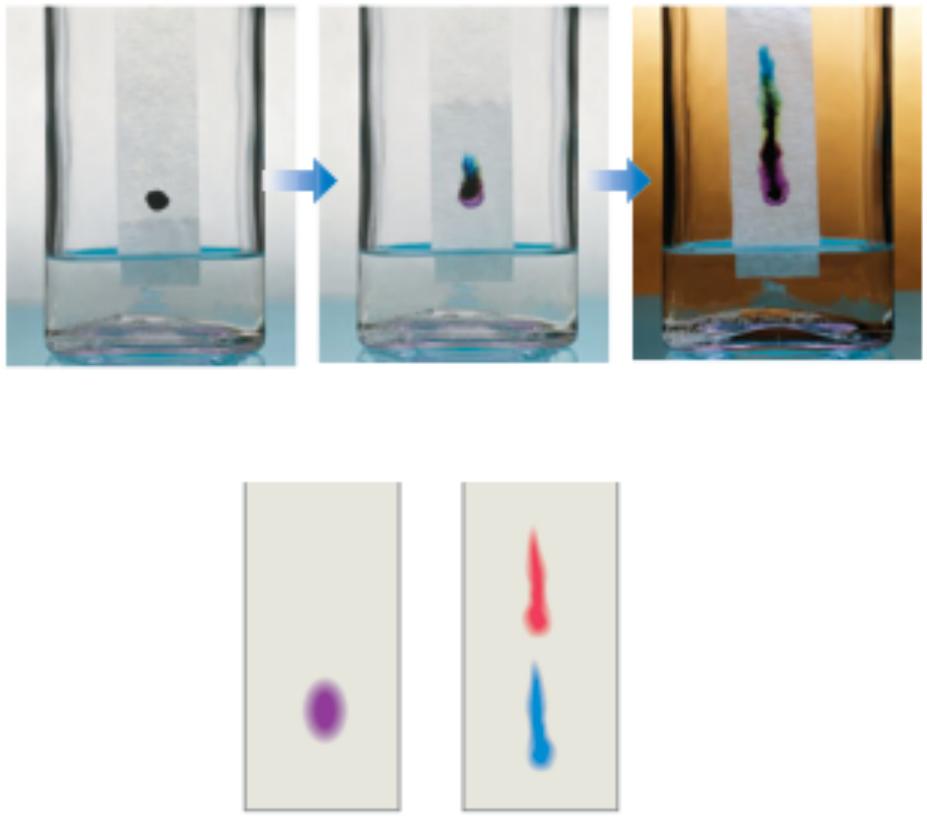
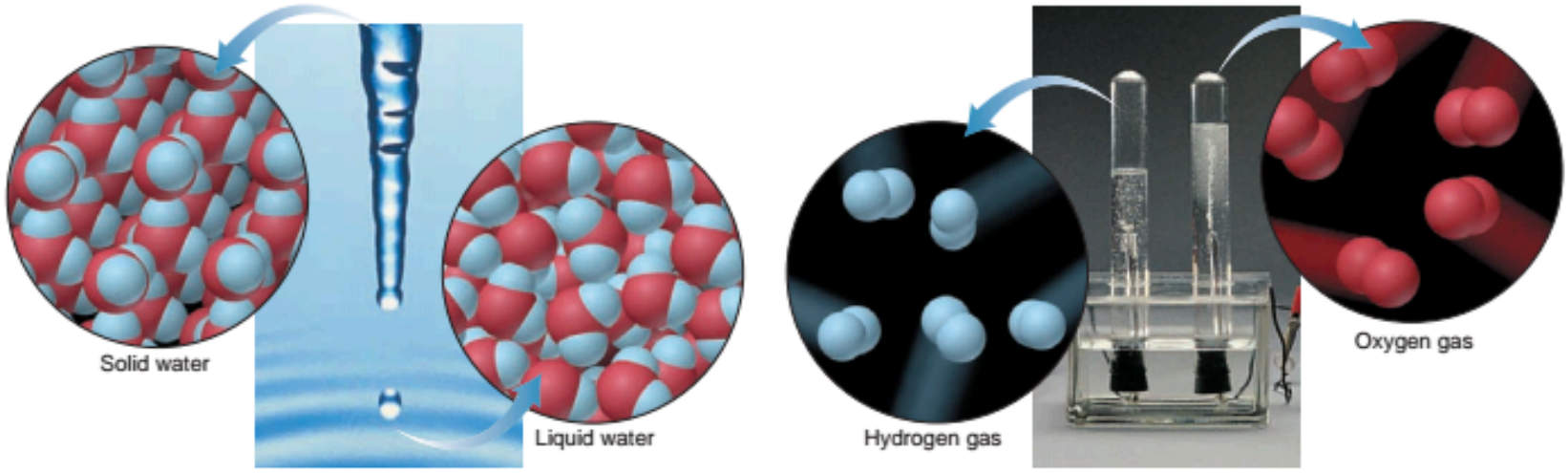


Figure 5: Chromatography



A Physical change:
Solid form of water becomes liquid form; composition does *not* change because particles are the same.

B Chemical change:
Electric current decomposes water into different substances (hydrogen and oxygen); composition *does* change because particles are different.

Figure 6: Physical and Chemical Changes

Chapter 1: Matter and Measurement

Quantity	SI	SI Equivalents	English Equivalents	English to SI Equivalent
Length	1 kilometer (km)	1000 (10^3) meters	0.6214 mile (mi)	1 mile = 1.609 km
	1 meter (m)	100 (10^2) centimeters	1.094 yards (yd)	1 yard = 0.9144 m
		1000 millimeters (mm)	39.37 inches (in)	1 foot (ft) = 0.3048 m
	1 centimeter (cm)	0.01 (10^{-2}) meter	0.3937 inch	1 inch = 2.54 cm (exactly)
Volume	1 cubic meter (m^3)	1,000,000 (10^6) cubic centimeters	35.31 cubic feet (ft^3)	1 cubic foot = 0.02832 m^3
	1 cubic decimeter (dm^3)	1000 cubic centimeters	0.2642 gallon (gal)	1 gallon = 3.785 dm^3
			1.057 quarts (qt)	1 quart = 0.9464 dm^3
				1 quart = 946.4 cm^3
	1 cubic centimeter (cm^3)	0.001 dm^3	0.03381 fluid ounce	1 fluid ounce = 29.57 cm^3
Mass	1 kilogram (kg)	1000 grams	2.205 pounds (lb)	1 pound = 0.4536 kg
	1 gram (g)	1000 milligrams (mg)	0.03527 ounce (oz)	1 ounce = 28.35 g

Figure 7: Units of Measurement

Figure 8: Precision and Accuracy

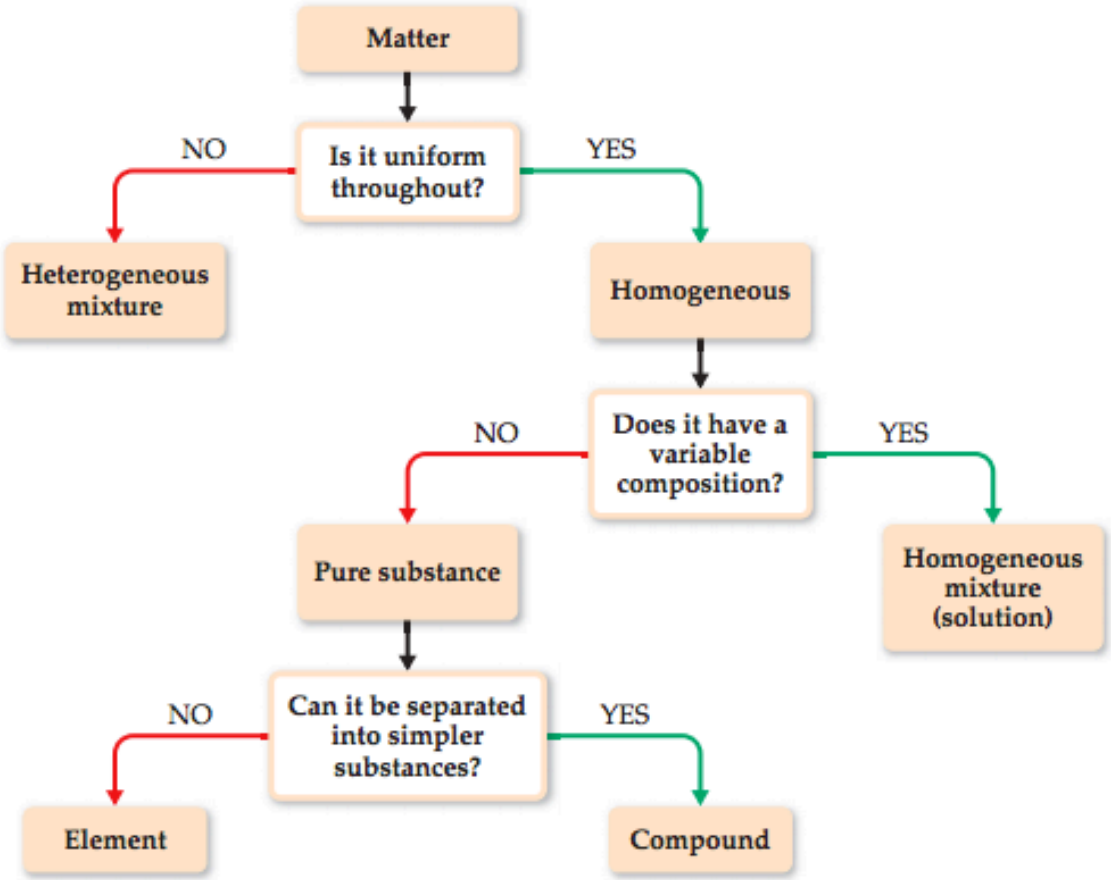


Figure 9: Concept Map