Important Definitions From Chapter 1

Atom (noun) – the particle which is the building block of matter; the smallest piece that an element can be broken down into and still retain the fundamental properties of that element.

Molecule (noun) – a particle that is formed by connecting together two or more atoms in a fixed arrangement; atoms may be of the same or different elements.

Compound (noun) – a pure substance that is formed by combining atoms of two or more elements in small, fixed ratios.

Element (noun) – one of about 100 fundamental substances of nature; every atom can be characterized as a particular element.

Matter (noun) – anything that has mass and occupies space; three common states of matter are solids, liquids and gases.

Scientific method (noun) – the general technique used to solve scientific questions. The main steps are (1) asking a question, (2) forming a hypothesis, (3) doing an experiment to test the hypothesis, (4) using the results of the experiment to develop a theory and to ask more questions.

Hypothesis (noun) – a tentative explanation for a scientific question; may be based on preliminary scientific evidence or on previous knowledge.

Qualitative (adjective) – describes data which is descriptive and not numerical (color, for example).

Quantitative (adjective) – describes data which is numerical (mass, for example).

Theory (noun) – an explanation of observations based on a large body of scientific evidence; a theory can never be proven absolutely to be correct, but it can be shown to be incorrect.

Mixture (noun) – a combination of two or more pure substances which can be separated into the original pure substances by physical means (without performing any chemical changes).

Homogeneous mixture (noun) – a mixture which has constant composition throughout any given sample.

Solution (noun) – a homogeneous mixture (usually a substance dissolved in water).

Heterogeneous mixture (noun) – a mixture which does not have constant composition throughout any given sample.

Pure substance (noun) – an element or compound; a substance that can only be broken down into other substances by a chemical reaction.

Chemical property (noun) – a property of matter that involves a change in the identity of the object of interest; a chemical reaction that the substance can undergo (combustion, decomposition).

Reactants (noun) – the chemicals that are mixed together at the start of a chemical reaction and which undergo a chemical change during the reaction.

Products (noun) – the chemicals that form as the result of a chemical reaction.

Physical property (noun) – a property of matter that can be observed or measured without changing the identity of the substance of interest (color, mass, temperature, density).