

## Instructional Vocabulary

### Grade 8 Science

#### Unit 1: Science Safety and Procedures

- **Procedures** – set of specific steps that must be completed to reproduce the same result under the same conditions
- **Protective safety equipment** – equipment, such as goggles and aprons, used for protection in an investigation

#### Unit 2: Atoms

- **Atom** – a unit of matter; the smallest unit of a chemical element
- **Proton** – a positively charged particle within the atomic nucleus
- **Neutron** – a particle without an electrical charge within the atomic nucleus
- **Electron** – a negatively charged particle; can be either free (not attached to any atom) or bound to the nucleus of an atom
- **Subatomic particle** – a particle smaller than an atom, such as a proton, neutron, or electron

#### Unit 3: Periodic Table

- **Periodic trend** – a regular variation of certain characteristics of elements to increase or decrease along a row or column of the periodic table of elements
- **Atomic number** – the number of protons in the nucleus of an atom; used to determine that element's position in the periodic table
- **Valence electrons** – electrons in the last shell or energy level of an atom
- **Reactivity** – tendency of a substance to undergo chemical changes in a system

#### Unit 4: Chemical Formulas, Equations, and Reactions

- **Chemical formula** – a representation of a molecule in which the elements are represented by their symbols
- **Chemical equation** – a representation of a chemical reaction by symbols and numbers

#### Unit 5: Force and Motion

- **Speed** – distance traveled by an object in a given amount of time
- **Unbalanced force** – when the net force on an object does not equal zero
- **Velocity** – vector quantity that measures speed and gives direction
- **Acceleration** – change in speed and/or direction of an object's motion

#### Unit 6: Newton's Laws

- **Inertia** – the tendency of an object to resist change
- **Law of inertia** – every object in a state of uniform motion tends to remain in that state of motion unless an external force is applied to it

- **Law of force and acceleration** – an object with a certain velocity maintains that velocity *unless* a force acts on it to cause an acceleration (that is, a change in the velocity)
- **Law of action-reaction** – for every action, there is an equal and opposite reaction

#### Unit 7: Forces that Change the Earth

- **Theory of plate tectonics** – explanation for continental drift and seafloor spreading, as well as the formation of the major physical features of the Earth's surface
- **Topography** – the shape of the Earth's surface and the way its physical features are arranged, especially in terms of their positions and elevations

#### Unit 8: Climatic Interactions

- **Convection current** – when temperature differences cause fluids to expand and move; the less dense areas continually rise, and the more dense areas continually sink creating a cyclical current
- **Atmosphere** – an envelope of mixed gases are held to the Earth by gravity; the most dense gases are near the surface of the Earth

#### Unit 9: Earth Cycles

- **Axis** – imaginary line about which an object rotates
- **Gravitational attraction** – force of attraction between all masses in the universe, especially the attraction of the Earth's mass for bodies near its surface
- **Eclipse** – the partial or complete hiding from view of an astronomical object, such as the Sun or Moon, when another astronomical object comes between it and the observer

#### Unit 10: Light Years and Theories

- **Light year** – distance light can travel in a vacuum in one year; equal to approximately  $9.5 \times 10^{12}$  km

#### Unit 11: Characteristics of the Universe

- **Electromagnetic spectrum** – a classification of all forms of forms of radiation by wavelength and frequency; used to study components of the universe
- **Star** – luminous globe of gas which produces its own heat and light by nuclear reaction
- **Universe** – all of space and its contents

#### Unit 12: Interdependence Among Living Systems

- **Ecosystem** – the living and nonliving components of an environment

#### Unit 13: Experimental Design

- **Scientific inquiry** – the diverse ways in which scientists study the natural world and propose explanations based on the evidence derived from their work