

# GLOSSARY

## A

**amphibian** a class of vertebrates that is born in water, but develops legs and can walk on land; examples include frogs, toads, and salamanders

**Animalia** part of the scientific system of classification; one of the five kingdoms; examples include insects, birds, fish, and mammals

**atom** the tiny building block that makes up everything around you; the air you breathe and the clothes you wear are made up of atoms

## B

**battery** an energy source that uses a chemical reaction to create an electric current; is actually two or more electric cells connected together; term is commonly used to refer to one cell

**behaviour** the way an organism responds to its environment

**biomass** any type of plant or animal tissue, such as wood, straw, and crop waste; biomass can be burned to heat water and create steam to turn turbines and generate electricity

**bird** a class of vertebrates with feathers, wings, and a beak; examples include eagles, parrots, and cardinals

**buoyancy** the ability to float in water

## C

**camouflage** the colouring of an animal that allows it to blend into its environment

**Canadarm** a robotic manipulator arm developed by the Canadian Space Agency that is controlled by astronauts inside the space shuttle

**cell** a microscopic structure that is the basic unit of all living things; organisms can be made of as little as one cell (some types of bacteria) or as many as several trillion cells (human beings)

**cell membrane** a thin covering around an entire cell that acts as a gatekeeper by controlling which materials move into and out of the cell

**chlorophyll** a green pigment found in chloroplasts that gives plants and some protists their green colour

**chloroplast** the cell structure containing chlorophyll; found in plant cells and some protists

**circuit** made of a source of electricity, a pathway, and an electrical device to operate; electric current flows around a complete circuit

**classification system** the organization of living or non-living things according to their similarities and differences

**closed circuit** a circuit that is complete; allows the current to flow along the pathway

**coal** a hard fossil fuel made of ancient plants such as trees and ferns

**colouration** an adaptation of an organism's colour to help it survive in its environment; mimicry and camouflage are examples of colouration

**conductor** a material that lets electricity flow through it easily; for example, metals are good conductors

**conservation** the careful and responsible use of energy resources; for example, turning out the light when you leave a room

**consumption** the amount of electricity used by a household; determined by meters placed on the transmission line that comes into your home

**cover slip** a small, thin piece of glass used to cover an object or specimen on a microscope slide

**current electricity** electricity produced by a flow of electrons through a conductor, such as a wire

## D

**direct current** current that flows in one direction; a battery produces electric current

## E

**electric current** the continuous flow of electrons from one place to another along a pathway

**electrocute** death caused by electric current

**electromagnetism** magnetic forces produced by electricity

**electron** a negatively charged particle that makes up an atom

**environment** your surroundings; other living organisms, non-living objects, and weather all make up your environment

**exploration** voyage into unknown territory to investigate new frontiers and to search for new discoveries

**extreme** harsh; beyond normal limits; to the greatest degree

**extreme environment** a place where the conditions are so harsh that human survival is difficult or impossible; for example, deserts, volcanoes, and space are extreme environments for humans

## F

**fish** a class of vertebrates with gills and fins that lives in water; examples include salmon, whale sharks, and rays

**fossil fuels** the most common non-renewable energy sources used to produce electricity; made from the remains of dead organisms that lived millions of years ago; coal, natural gas, and oil are the three types of fossil fuels

**Fungi** part of the scientific system of classification; one of the five kingdoms; examples include yeast and mushrooms

## G

**geothermal energy** energy from deep inside Earth that heats water and produces steam, which can then be used to turn turbines and produce electricity

## H

**hibernation** a method of coping with winter where an animal's body temperature drops, and its heartbeat and breathing slow down; chipmunks and ground squirrels are animals that hibernate

**hydro** refers to hydroelectric energy, which is the electricity generated by the conversion of energy from moving water; accounts for approximately 85% of all electricity generated in British Columbia

**hydroelectric dam** a barrier that stops the flow of water on a river; an electricity generating station that converts the energy of moving water into electricity

## I

**indigenous knowledge** understandings, values, and beliefs about the natural world that are unique to a particular group or culture who have lived for a very long time in a particular area; this specialized knowledge is passed from generation to generation in the form of stories told, experiences shared, or songs sung by Elders or other people

**insulator** a material that resists the flow of electricity (such as wood) and prevents heat from escaping (such as a winter jacket)

**invertebrate** an animal that does not have a backbone, or spinal column; examples of invertebrates include insects, worms, and crabs

## K

**kingdom** the most basic grouping of all living things in the scientific system of classification (taxonomy); this text uses the five-kingdom system of classification—Plantae, Fungi, Animalia, Protista, and Monera

## L

**life-support system** a system that helps astronauts to survive in space; for example, life-support systems allow astronauts to breathe easily in space where there is a lack of air

**lift** the movement of air around an airplane's wing creating an area of low pressure under the wing and an area of high pressure over the wing; the high pressure under the wing pushes the wing up and forces the airplane upward

**light bulb** electrical device that changes electricity into light and heat

## M

**magnetism** the property of attracting or repelling iron

**magnify** to make objects appear larger, as with a lens

**mammal** a class of vertebrates that breathe oxygen from the air and are warm blooded; examples include bats, mice, and humans

**micro-organism** a very small living thing that can only be seen with a microscope

**microscope** a device used for viewing very small objects or specimens

**migration** the seasonal movement of animals to a less harsh environment; for example, the elk moves from the mountains to spend the winter in the lowlands

**mimicry** an adaptation where an organism looks like another organism

**Monera** part of the scientific system of classification; one of the five kingdoms; example includes bacteria

**multicellular** made of more than one cell; humans, for example, are multicellular

## N

**natural gas** a fossil fuel that comes from plankton (tiny plants and animals) that lived in ancient seas and lakes; usually found with oil, often in deep wells

**negative** the kind of electric charge carried by electrons

**non-renewable** something that once used up cannot be replaced; coal is an example of a non-renewable resource

**nuclear energy** energy that uses uranium as a fuel to heat water and produce steam, which turns a turbine and produces electricity

**nucleus** the cell structure that acts as the control centre by directing all of the cell's activities, such as movement and growth

## O

**open circuit** a circuit that is incomplete, current cannot flow along the pathway

**organism** a living thing, such as a plant or an animal

## P

**parallel circuit** a type of circuit in which current can travel through more than one pathway

**Plantae** part of the scientific system of classification; one of the five kingdoms; examples include mosses, trees, and flowers

**positive** the kind of electric charge carried by protons

**Protista** part of the scientific system of classification; one of the five kingdoms; examples include algae and paramecia

## R

**radar** an acronym for RAdio Detection And Ranging; a device that sends out radio waves and picks up any echoes that are

bounced back off objects to tell the distance, speed, direction of motion, and shape of the object; boats and ships searching for land, ice, and other ships use radar

**recycle** to reuse something rather than discarding it; for example, water on the International Space Station is recycled

**renewable** something that is constantly being replaced and is always there to use; water is an example of a renewable resource

**reptile** a class of vertebrates that breathe through lungs and has a body temperature that depends on the external temperature; examples include crocodiles, alligators, and snakes

## S

**satellite** an object in space that revolves around Earth or any other planet

**scuba** an acronym for Self-Contained Underwater Breathing Apparatus; allows divers to carry their air supply on their backs

**series circuit** a type of circuit in which current has only one pathway to travel through

**slide** a piece of glass that an object, or specimen, is placed on to be viewed under a microscope

**solar energy** energy from the Sun; can be used to produce electricity by using mirrors to focus sunlight on water tanks and heat the water, producing steam which turns the turbines to generate electricity

**sonar** an acronym for SOund NAvigation and Ranging; a device that ships use to chart the depth of oceans using the echoes of sound waves

**species** organisms that are capable of breeding together and having fertile offspring

**spinoff** an everyday use of a technology that was first developed for another purpose; for example, bar codes used in grocery stores were first developed by NASA for space exploration

**static electricity** electricity where the electric charges are at rest, or not moving; caused by negative charges transferring from one object to another through rubbing; for example, electric charges built up in the clothes dryer or rubbing a balloon against your pet's fur

**switch** a device used to control the flow of electric current

## T

**technology** tools that make it possible to survive in challenging environments

**tidal energy** energy created by filling a reservoir with ocean water at high tide, and later releasing the water through hydroelectric turbines as the tide goes back out in order to produce electricity

**thrust** an upward force

## U

**unicellular** made of only one cell; a characteristic of organisms in the Kingdom Monera and most organisms in the Kingdom Protista

## V

**vertebrate** animal with a backbone, or spinal column; birds, fish, and mammals are examples of vertebrates

**voltage** the force or push that moves electrons in a circuit

## W

**water pressure** the application of force by water that increases with depth

**wind power** energy created by wind pushing against the blades of a wind turbine and turning it, which then turns a magnet that generates electricity