**Glossary**

**At Home Activities**

**Absorption**: The removal of water from the soil by roots of a plant.

**Bacteria:** Bacteriaare microscopic living organisms, usually one-celled, that can be found everywhere. They can be dangerous, such as when they cause infection, or beneficial, as in the process of fermentation (such as in wine) and that of decomposition.

**Biodiversity:** All the variety of life that can be found on Earth (plants, animals, fungi and micro-organisms) as well as the communities that they form and the habitats in which they live.

**Biomes:** A Biome is a large region of Earth that has a certain climate and certain types of living things. Major biomes include tundra, forests, grasslands, and deserts. The plants and animals of each biome have traits that help them to survive in their particular biome. Each biome contains many ecosystems.

**Biota:** Soil biota is made of all soil living organisms from microorganisms to macroorganisms, including roots. Plants need biology in the soil to do its job before they can do theirs. Bacteria and fungi need to be present in soils to break down these valuable nutrients and convert them to a form the plants can uptake.

**Carbon Cycle:** The process in which carbon travels from the atmosphere into organisms and the Earth and then back into the atmosphere. Plants take carbon dioxide from the air and use it to make food. Animals then eat the food and carbon is stored in their bodies or released as CO2 through respiration.

**Carbon dioxide**: A colourless, odourless gas produced by burning carbon and organic compounds and by respiration. It is naturally present in the air, and is absorbed by plants in photosynthesis. CO2 is the chemical symbol.

**Climate:** The usual condition of the temperature, humidity, atmospheric pressure, wind, rainfall, and other meteorological elements in an area of the Earth's surface over a long period.

**Climate Change:** Refers to any significant change in the measures of climate lasting for an extended period of time. In other words, climate change includes major changes in temperature, precipitation, or wind patterns, among other effects, that occur over several decades or longer.

**Climate Stability:** The state of being resistant to change and not prone to wild fluctuations for our climate.

**Compost:** A mixture of decayed or decaying organic matter used to fertilise soil. Compost is usually made by gathering plant material, such as leaves, grass clippings, and vegetable peels, into a pile or bin and letting it decompose as a result of the action of aerobic bacteria, fungi, and other organisms.

**Condensation:** The process by which water vapor in the air is changed into liquid water. The water in the air, a gas known as water vapor, from your hot shower cools when it meets the surface of the cold wall or mirror. This causes the water vapor to condense, or turn into its liquid form.

**Decomposition**: The process of breaking down or rotting. Decomposition of dead organic matter happens because of certain bacteria and fungi.

**Ecosystem:** A biological community of interacting organisms and their physical environment.

**Erosion:** the process of breaking down by wind, water, or other natural agents. **Soil erosion** is the washing or blowing away (usually by water or wind) of the top layer of **soil**. This is a serious problem for plant life.

**Evaporation:** The process of a substance in a liquid state changing to a gaseous state due to an increase in temperature and/or pressure (water turning into steam). Evaporation is a fundamental part of the water cycle and is constantly occurring throughout nature.

**Fertiliser:** A chemical or natural substance added to soil or land to increase its fertility.

Fertilisers are generally used to add nutrients to soil such as nitrogen or phosphorous.

**Fertility:** Soil fertility refers to the ability of a soil to sustain plant growth and the ability to supply essential plant nutrients and water adequate for plant growth and reproduction.

**Fungi:** Fungi are a group of living organisms which are classified in their own kingdom. This means they are not animals, plants, or bacteria.  Fungal species include microorganisms such as yeasts and molds, as well as mushrooms.

**Genetic diversity:** The total number of genetic characteristics in the genetic makeup of a species. Genetic diversity serves as a way for populations to adapt to changing environments. Genetic diversity is the reason we have different breeds of dogs, and different types of roses.

**Humus:** The dark, organic material that forms in soil when plant and animal matter decays. The thick brown or black substance that remains after decomposition is called humus. You will find this if you have an active compost bin.

**Macroorganism:** An organism large enough to be seen by the normal unaided human eye, such as most insects like mites, millipedes, spiders, scorpions, and beetles.

**Microorganism**: a microscopic organism, especially a bacterium, virus, or fungus. Also called a microbe.

**Nematode:** Also known as roundworms, nematodes are not closely related to true worms. They are multicellular insects with smooth, unsegmented bodies. Many nematode species are found in soil, many also feed on plants. Nematodes are microorganisms, so you will only see them under a microscope.

**Nutrient:** A substance that provides nourishment essential for the maintenance of life and for growth. The three main soil **nutrients** are nitrogen (N), phosphorus (P) and potassium (K). Other important **nutrients** are calcium (Ca), magnesium (Mg) and sulphur(S).

**Organic matter:**  Refers to the large source of carbon-based compounds found within soil, such as decomposed organic material, plant and animal material and waste (such as manure), dead plants or plant waste (such as leaves or bush and tree trimmings).

**Oxygen:** A colourless, odourless, gas, represented by the symbol “O”. It constitutes about 21% by volume of the atmosphere, and is biologically important for its role in various biochemical and physiological processes, especially aerobic organisms.

**Photosynthesis: T**he process by which green plants and some other organisms use sunlight to synthesize nutrients from carbon dioxide and water.

**Pollution:** The presence in or introduction into the environment of a substance which has harmful or poisonous effects.

**Pore:** Pore space in soil contains liquids and gases in soil. Soil pores contain the groundwater that many of us drink and the oxygen that plants need oxygen for respiration. Soil pores vary in size and shape, and determine soil texture.

**Precipitation**: The water released from clouds in the form of rain, sleet, snow, or hail. It is part of the water cycle, and provides for the delivery of atmospheric water to the earth.

**Rigidity:** The inability of the **plant** cell walls to bend. A plant with high rigidity will not wilt. The increased pressure due to turgidity makes this happen.

**Soil:** The upper layer of earth in which plants grow. Soil is a mixture of organic matter, minerals, gases, liquids, and organisms that together support life.

**Soil organism:** Soil organismsrange in size from microscopic cells that digest decaying organic material, to small mammals. They play an important role in maintaining fertility, structure, drainage, and aeration of soil.

**Soil Texture:** Soil texture indicates the particles of various sizes in a soil, such as sand, silt and clay. Soil texture influences the ease with which soil can be worked, the amount of water and air it holds, and the rate at which water can enter and move through soil.

**Species:** A group of closely related organisms that are very similar to each other and are capable of interbreeding and producing fertile offspring. The species is the fundamental category of taxonomic classification, ranking below a genus or subgenus.

**Stomata:** A tiny opening or pore that is used for gas exchange. They are mostly found on the under-surface of **plant** leaves. Air enters the **plant** through these openings in photosynthesis.

**Transpiration:** Transpiration is the process of water movement through a plant and its evaporation from leaves, stems and flowers.

**Turgid:** Turgid means swollen and hard. If plants do not receive enough water they will lose turgidity and wilt. When the plant cell is placed in water, it takes up the water by osmosis and starts to swell, but the cell wall prevents it from bursting. The pressure inside the cell rises until this internal pressure is equal to the pressure outside.

**Well-Being:** The state of being comfortable, healthy, or happy. Aspects of well-being include physical, mental, and social wellbeing.