ALL for Science™
Authentic Literacy and Language for Science

Baylor College of Medicine CENTER FOR EDUCATIONAL OUTREACH

Science Language for Matter and Energy in Ecosystems
Alphabetical List

- The **abiotic**, or nonliving, components in soil include rocks and minerals, water, and air.
- **Algae** are producers capable of making their own food using energy from the Sun.
- **Anaerobic digestion** is a form of waste disposal conducted without the presence of oxygen by different types of bacteria and other microorganisms in special containers or vessels called digesters.
- **Bacteria** are organisms so small they can only be seen through a microscope. Some are decomposers that break down dead organisms. **Aerobic bacteria** need oxygen to live. **Anaerobic bacteria** do not.
- **Biogas** is a carbon-based fuel produced when organic matter is broken down by microorganisms in a process called anaerobic digestion.
- **Biotic** components in soil include all the living and dead organisms and their waste.
- **Carbon dioxide** is a colorless gas produced when organisms break down the sugars in food into simpler products.
- **Collaboration** occurs when two or more people work together, learn from each other, and communicate with each other**.**
- **Composting** is a managed, aerobic decomposition of organic materials by microorganisms.
- **Consumers** cannot make their own food. They get their energy from eating producers and other consumers.
- In nature, **cycling** refers to the recurring flow of matter and energy through ecosystems.
- **Decomposers** secrete substances to chemically break down organic matter and recycle nutrients from the decaying material.
- **Decomposition** is the breaking down of certain types of matter, including dead organisms like plants and animals.
- **Detritivores** are animals that physically break down dead organic matter into smaller particles as they eat it.

- Scientific **diagrams** are drawings or representations that can help us understand an object, relationship, or a process, such as the cycling of matter and flow of energy.
- An **ecosystem** is a community of organisms that live and interact with each other and their nonliving environment.

- **Energy** is the ability to do work or cause change and can be transferred through the interactions of organisms in an ecosystem.

- **Feedstock** are the raw materials added to an anaerobic digester and decomposed by the microorganisms.

- A **food chain** describes the sequence of who eats whom that transfers energy between organisms.

- A **food web** is made up of many different food chains in a single ecosystem.

- **Fungi** are a group of decomposers that feed on decaying matter. Mushrooms are a type of fungi.

- **Incineration** is the burning of waste materials.

- A **landfill** is a system of garbage disposal in which the waste is buried between layers of earth in a cell or hole. Decomposition is generally anaerobic.

- **Leachate** is a liquid that results from rainfall seeping from and through waste.

- **Matter** is anything that takes up space and has weight. It can be in the form of a liquid, solid, or gas.

- A **microbiologist** is a scientist who studies microorganisms such as bacteria, fungi, and algae and their processes.

- **Models** in science help us understand objects, systems or events that are difficult to observe directly in the natural world.

- **Nutrients** are nourishments and substances found in food that help organisms survive and grow.

- **Observing** is carefully looking at something or someone to gather information.

- **Organisms** are living things that are able to carry out the actions needed to live, grow, and survive.

- **Producers** make their own food from simple substances and energy from the Sun. Plants are producers.

- A **scientific argument** uses evidence to make a case for whether an idea or claim is accurate or inaccurate.

- A **scientific report** describes all aspects of a science investigation and research.

- **Soil** is made up of both biotic and abiotic components and is constantly being changed by the action of weather, water and organisms.

- **Species** refers to a group of organisms that share similar characteristics and can reproduce offspring.

- A **team** is a group of people who work together to accomplish a goal.

- **Vermicomposting** is a process that relies on worms to decompose organic waste. **Vermicompost** is the rich, dark material left after worms break down organic waste.

- A **Winogradsky column** is a column of mud and water with added nutrients used to produce a diversity of microorganisms.

- **Sergei Winogradsky** was a microbiologist in the 1880s known for inventing the Winogradsky column to study sediment microbes.

- **Worm castings** are the waste material (poop) produced by worms**.**