Life Science Study Guide

Environment – Everything that *surrounds* and *influences* (has an effect on) an *organism*.

Organism – Any living thing, including *plants* and *animals*.

Environmental Factor – An environmental factor is *one part of an environment*. It can be *living* or *non-living*. Examples of *living factors* are *plants and animals*. Examples of *non-living factors* are *light, water, temperature, salt, and soil*.

Terrestrial Environments- "Terra" means earth or land, "arium" means a place. Examples of terrestrial environments are:

Tropical rainforests

Deserts

Grasslands

Deciduous Forests

Taigas

Tundra

Isopods – Small *land crustaceans* (also known as roly-poly bugs, or sow bugs).These crustaceans *breathe through gills* and must live in *moist soil* in order to survive.

Darkling Beetles – Darkling beetles are *insects* that live in almost every part of the world, from deserts to rainforests. The *four stages of a beetle's life* are *egg*, *larva* (mealworms), *pupa* (resting stage when the body begins to change), and *adult*.

How do Plants and Animals Depend on Each Other for Survival?

- Plants provide *food* and *shelter* for animals.

- Animals help plants reproduce through *seed dispersal*. Seed dispersal is the *movement of seeds away from the parent plant*. Birds, squirrels, chipmunks, and other animals will eat the fleshy soft parts of the fruit and the hard undigested seeds will pass through their digestive tract and be eliminated far away from the parent tree. These same animals often drop the fruit or seeds when trying to carry them off as well as forget where they stored or hid the seeds. All of this movement and dropping of seeds helps improve a tree or plant's chances of reproducing.

- Bees and birds help move pollen from flower to flower which *fertilizes* or *pollinates* the flowers. *Pollination* is necessary for the *production of seeds*.

- Some insects and plants have a special relationship, such as the Acacia tree of the Costa Rican Rainforest and guard ants. The tree produces special sugar syrup that the ants eat for food. In return, the ants will attack any other organism that tries to harm the tree in anyway. This protects the tree from being destroyed by millions of hungry plant eating insects and tree chocking vines, thus insuring the acacia tree's survival.

An acacia (guard) ant faces off against a more fearsome enemy

Freshwater – Fresh water is water that has *little to no salt*. There are two kinds of fresh water environments, *standing-water environments* and *flowing- water environments*.

Standing Water Environments consist of lakes, *ponds*, and *vernal pools* (shallow temporary ponds).
Flowing Water Environments consist of *rivers*, *streams*, *brooks*, and *creeks*.

Ecosystems – An ecosystem is a *community of organisms interacting with each other* and with the *non-living environment*.

Terrariums and Aquariums are examples of *manmade ecosystems*.

Matter – Matter is anything that *takes up space*.

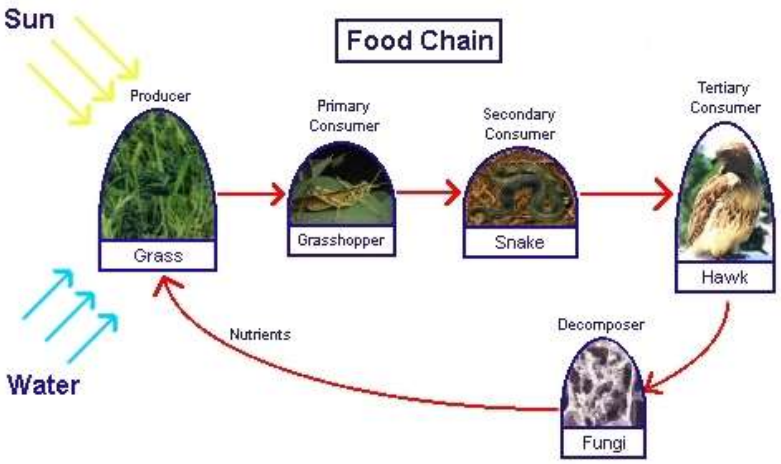
Energy – Energy is the ability to do work and is what makes an organism *grow* and move.

Food – Food is a form of *chemical energy* that organisms need to survive. Plants make their own food and animals must eat other organisms for food.

Photosynthesis –Photosynthesis is the process by which plants make their own food. Plants take in water, carbon dioxide (CO_2) and sunlight and turn it into sugar. Plants use the energy from the sugar to live. The sun is the primary source of energy for most organisms on the Earth.

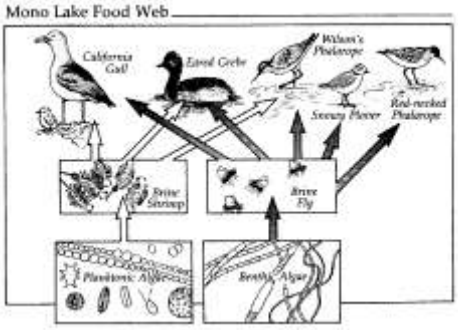
Food Chain – A food chain is description of the feeding relationship between a set of organisms in an ecosystem. The arrows in a food chain show the flow of energy from one organism to another. It represents who eats whom.

Example: North American Wood's Food Chain



Food Web – A food web is a description of feeding relationships between all of the organisms in an ecosystem. All food webs begin with a producer.

Example:



Producers – Producers are organisms, such as plants or algae, which make their own food.

Consumers – An organism that cannot make its own food. Consumers eat other organisms.

Decomposer – An organism that breaks down dead plants and animals and returns the nutrients to the soil. Bacteria, fungi (mushrooms and yeast), termites, and earthworms are examples of decomposers. Plants then use the nutrients in the soil to help them grow.

Herbivore – An herbivore is an organism that eats and derives its energy from plants. Examples of herbivores are rabbits, horses, deer, and cows.

Carnivore – A carnivore is an organism that eats and derives its energy from the flesh or meat of animals. Examples of carnivores are tigers, wolves, coyotes, and sharks.

Omnivore – An omnivore eats and derives its energy from both plants and the flesh or meat of animals. Examples of omnivores are bears, pigs, raccoons, and most humans.

Brine – Brine is salt water.

Brine Shrimp – Brine shrimp are small crustaceans that live in salt water lakes and ponds.

Range of Tolerance – The range of tolerance is the varying conditions of one environmental factor in which an organism can survive.

Example: Brine shrimp can live in salt concentrations of between 20 to 100 parts of salt per 1000 parts of water. Optimum salt concentrations for survival would be around 80 parts of salt to 1000 parts of water. Optimum means the conditions that work best for the survival of the organism.

Microscopic – Microscopic means to too small to be seen by the bare human eye.

Microorganisms – Microorganisms are organisms that are too small to be seen by the bare human eye. Most microscopic organisms are harmless to humans.

Bacteria, fungi, yeast, and algae are examples of microscopic organisms which are not only harmless to humans but also helpful. Bacteria turn milk into cheese and yogurt. Bacteria are

also inside our bodies and are needed to digest our food. Yeast is a type of fungus used to make bread. Many types of algae are found in drinks, medicines, and ice cream.

Trait – A trait is a distinguishing characteristic or quality of an organism. One trait of crustaceans, such as brine shrimp, lobsters, crabs, and isopods is their hard external skeleton.