Grade 7 Science **Organization Levels of Life**

Name: **Class:** **Date:**

Ecology: Studying the relationships between living organisms and their environment.

Ecosystem: A place where interactions between biotic (living) and abiotic (non-living) things occur.

Living Things:

- are made of cells
- require energy
- grow and develop
- respond to their surroundings
- have adaptations to survive
- produce waste

All organisms are classified using the seven levels of classification:

Kingdom, Phylum, Class, Order, Family, Genus and Species

All along the way, individual organisms interact with other organisms. Sometimes they interact with members of their own population to survive or reproduce and they must also interact to provide their own needs for life or provide that for other organism populations. Scientists have names or terms for these interactions and the roles that certain organisms fill in the ecosystems around the biosphere.

Organization

When an organism is consumed by another organism, it is to provide energy and nutrients for that organism's survival. We call this energy transfer. The food that a series of organisms provide/consume is called a food chain. In every ecosystem, there are a number of interconnected food chains that create a food web. A population can continue to support another population as long as it remains healthy.

Ecological Balance

Some individuals are eaten but not the entire population. If too many of the individuals are eaten, then they cannot reproduce and decline in numbers. This depletes the food supply of the predator and then the predator population decreases. This decreased predator population allows the prey population to increase. Think about urban populations or rabbits and foxes. Food chains and populations are constantly adjusting to the levels of organisms. If there are not a lot of organisms in a food web (only a few chains), this is a Fragile Web since the loss of one organism will affect a large part of the web. A Resilient Web is one in which there are a large number of chains having a rich biodiversity. If there is a change in one food chain (e.g., a loss of one organism or an introduction of an invasive species), the entire food web will be fine.

Read pages 256 – 259 in the textbook and explain how we organize life from individual organisms to all organisms (the biosphere). Use all the following terms: **individual, population, community, ecosystem, biome and biosphere**. You may want to define each word or write an explanation out.

Scientists refer to the layer of all life on the planet as the ***biosphere****. The biosphere is divided into areas that have the same environmental conditions and they are called* ***biomes****. These biomes contain many related* ***ecosystems*** *that have adapted to the conditions within the biome. All organisms that are in the ecosystems are called the* ***community****. The community is broken down to the* ***population*** *of organisms of different types. A single member of a specific population is known as an* ***individual****.*