**LIVING SYSTEMS STUDY GUIDE- TEST ON \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

You should be able to answer the questions below based on what you have learned over the course of this unit. Below each questions are supporting concepts to be understood in order to understand the full concept. Please use other resources to study the content such as the Foss textbook which can also be found on [www.fossweb.com](http://www.fossweb.com), the games and tutorials on [www.fossweb.com](http://www.fossweb.com), and the “Investigation Check” packet that we completed and reviewed in class.

**SYSTEMS**

**How can you identify a system?**

* A system is a collection of interacting objects, ideas, and/or procedures that together define a physical entity or process.

**Is planet Earth a system?**

* Earth can be described as the interaction of four earth systems: the rocky part (the geosphere), the atmosphere, the water (the hydrosphere), and the complexity of living organisms (the biosphere).

**What organisms are both predators and prey in a food web?**

* Food webs are made up of producers (organisms that make their own food), consumers (organisms that eat other organisms to obtain food), and decomposers (organisms that consume and recycle dead organisms and organic waste).
* A kelp forest (marine ecosystem) has many similarities to a rainforest (terrestrial ecosystem)
* Phytoplankton are the major producers in most aquatic systems (both marine and freshwater).
* Food webs and competition for resources exist in both marine and terrestrial systems.

**What happens when compost (red) worms interact with organic litter?**

* The worms help to break down organic litter into tiny pieces
* They help make room for air and water in the soil

**NUTRIENT SYSTEMS**

**What does yeast need to break its dormancy?**

* Yeast is a single-celled fungus. Dormant yeast cells can become active when provided with water, warmth, and sugar as a food source. Carbon dioxide is a waste byproduct of yeast metabolism.

**How do plants get the food they need?**

* Chlorophyll is the green pigment that absorbs sunlight in the cells of producer organisms.
* A nutrient is a substance, such as sugar or starch, that is used by a cell to produce the energy needed to perform the functions of life.
* Plants make their own food by photosynthesis. Green plant cells make sugar (food) from carbon dioxide and waterin the presence of sunlight, and release oxygen.

**How do animals get the nutrients they need?**

* Animals obtain nutrients by eating other organisms.
* Digestion is the process used by animals to break down complex food items into simple nutrients.

**TRANSPORT SYSTEMS**

**How are nutrients transported to cells in a plant?**

* In vascular plants, xylem tubes carry water and minerals from the plant’s roots to all the cells in a one-way flow; phloem tubes carry sugar from the leaves to all the cells that need it.
* Vascular bundles are arranged in predictable patterns of veins in the leaves of vascular plants. Plant vein patterns are classified as pinnate, palmate and parallel.
* In the human circulatory system, blood transports resources to the cells and waste from the cells.

**How do humans transport nutrients to all their cells?**

* In humans, the respiratory system transports oxygen to the blood and carbon dioxide from the blood.
* All cells have basic needs: water, food, gas exchange, and waste disposal. Multicellular organisms have systems for transporting nutrients and wastes.

\*\*NOTE*\*\*You will need to know the function of the following structures in the human body: heart, kidney, lung, stomach, capillary, artery, blood, small intestine*

**SENSORY SYSTEMS**

**In dodgeball, how are you able to avoid being hit?**

* The function of the central nervous system is to coordinate action from the brain to other parts of the body.
* A stimulus is something that triggers (starts) a response. A stimulus is often information received through the senses.
* A response is a reaction of a living thing to a stimulus.

**What features of organisms attract attention?**

* Animal adaptations include pattern and color that attract attention to warn predators off or to attract a mate. These features are important for the following reasons: to aid in plant pollination, to aid in seed dispersal, to warm of a bad taste, to attract a mate, to distract predators, to warn of danger.
* Animals communicate to warn others of danger, scare predators away, or locate others of their kind, including family members.

**What behaviors are instinctive and what behaviors are learned?**

* Instinctive behaviors, such as knowing what to eat, how to find shelter, and how to migrate, help organisms survive.

**What are the parts of a marine ecosystem?**

* Marine ecosystems have biotic (living) and abiotic (nonliving parts). The ocean plays an important role in the carbon cycle.