Study Guide for CA#2 Ecosystem Dynamics

Date received \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date of assessment \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Essential Vocabulary**

* Ecosystems
* Trophic level
* Producers
* Photosynthesis
* Consumers
* Primary Consumers
* Secondary Consumers
* Tertiary Consumers
* Carnivores
* Omnivores
* Decomposers
* Detritivores
* Cellular respiration
* Aerobic respiration
* Anaerobic respiration
* Food Chain
* Food web
* Nutrient cycles
* Water (hydrological) Cycle
* Carbon cycle

**SC.912.L.18.9** *Explain the interrelated nature of photosynthesis and cellular respiration.* DOK 2

***Textbook Reference: Unit 1 Ecology and the Ecosystem: Chapter 3 Ecosystem Dynamics pages 72-78***

* Be able to explain how the products of photosynthesis are used as reactants for cellular respiration and vice versa.
* Be able to describe how energy is transferred through photosynthesis and cellular respiration. (stores or releases energy)
* Be able to explain how photosynthesis stores energy in organic compounds.
* Be able to identify the reactants and products of photosynthesis.
* Be able to identify the basic function of photosynthesis.
* Be able to identify the organelle where photosynthesis & cellular respiration occurs.
* Be able to explain how cellular respiration releases energy from organic compounds.
* Be able to identify the reactants and products of aerobic and anaerobic cellular respiration.
* Be able to identify the reactants, products of fermentation.
* Be able to identify the basic functions of aerobic and anaerobic cellular respiration.
* Be able to compare and contrast the processes of aerobic and anaerobic cellular respiration.
* Items will not require the memorization of the stages, specific events, or intermediate molecules produced during these processes.

**SC.912.L.17.9** *Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels. (DOK 2)*

***Textbook Reference: Unit 1 Ecology and the Ecosystem: Chapter 3 Ecosystem Dynamics pages 72-81***

* Describe the energy pathways through the different trophic levels of a food web or energy pyramid.
* Know how much energy on average is passed from one energy level to the next. Scenarios will express energy in joules (J).
* Given a diagram, determine the greatest amount of energy and least amount of energy in an energy pyramid.
* Given a scenario, be able to determine what would happen if a food web was disrupted.
* Items addressing food webs will require application of the knowledge of roles of organisms in a food web to describe energy pathways rather than the identification of producers, consumers (primary, secondary, tertiary), and decomposers in isolation.
* Items referring to organisms in food webs are limited to the impact of changes in energy within different trophic levels.
* Items will not require knowledge of specific organisms or their feeding habits.

**SC.912.E.7.1** *Analyze the movement of matter and energy through the different biogeochemical cycles, including water and carbon. (DOK 3)*

***Textbook Reference: Unit 1 Ecology and the Ecosystem: Chapter 3 Ecosystem Dynamics pages 82-86***

* Be able to identify and analyze the movement of matter through water cycle.
* Be able to identify and analyze the movement of matter through carbon cycle.
* Understand how photosynthesis and cellular respiration are key components of the carbon cycle.
* Be able to explain that matter cycles and energy flows through the ecosystem.