**KEY: Growing and Flowing Study Guide**

Open Ended Question:

1. The processes of photosynthesis and respiration are essential to the survival of all living organisms on Earth.

* State the substance that enter and exit each of these chemical reactions.
* Explain how each process is necessary to the survival of all living organisms.

**Photosynthesis:**

Enters (Reactants): carbon dioxide, sunlight, water

Exits (Products) : oxygen and glucose

Photosynthesis is necessary for the survival of all living organisms because it is the process by which green plants make their own food. Other organisms eat plants so if plants couldn’t make their own food and survive, all other organisms couldn’t survive since we all depend on plants for food.

**Respiration:**

Enters (Reactants): glucose, oxygen

Exits (Products) : carbon dioxide, water, energy

This process is necessary for the survival of all living organisms because this is how our cells get the energy they need to perform life processes. Without the energy in cells, plants and animals would not be able to survive.

Vocabulary for Multiple Choice Questions:

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| **Word** | **Definition** |
| Angiosperms | Plants that produce seeds inside of a flower |
| Gymnosperms | Plants that do not produce flowers |
| Anther | Sac at the end of a stamen that holds pollen |
| Petals | A colorful part of the flower used to attract pollinators |
| Pollen | A powdery grain that contains the male reproductive cells |
| Pollinator | An organism that transfers pollen from one plant to another |
| Stem | Main body of the plant that provides support for leaves |
| Root | Anchors the plant into the ground and absorb water |
| Leaf | The primary location of photosynthesis |
| Fruit | The ripened ovary of a flowering plant |
| Seed | Part of the plant that contains the embryo and food |
| Pistil/Carpel | Female part of the flower |
| Ovary | The enlarged lower part of the pistil that contains ovules or eggs of the plant |
| Sepals | Thick leaves at the base of flower that protect the developing seed |
| Stamens | Male reproductive part/system of a flower |
| Cuticle | Waxy layer that covers leaves to prevent the evaporation of water |
| Photosynthesis | The process by which green plants make their own food |
| Respiration | Process by which plants and organisms use the energy stored in glucose |
| Stomata | Tiny openings in the leaves of plants that allow water and gases to enter and exit |
| Glucose | The sugar formed during photosynthesis |
| Transpiration | Process in which water is pulled through the plant |
| Chloroplast | Tiny structures in the cells of green plants that contain chlorophyll |
| Filament | Male part of the plant that holds up the anther |
| Style | Female part of the plant that holds up the stigma |
| Stigma | Sticky opening at the end of the style that catches pollen |
| Ovule | Egg of a plant that is contained in the ovary |
| Fertilization | the process by which the egg and sperm cell meet to create a seed |
| Flower | The reproductive system of plants |
| Germination | Beginning of the growth of a seed |
| Pollination | Process in which pollen from the anther is sent to the stigma |
| Chlorophyll | The green pigment in plants |
| Guard Cells | Cells that open and close the stomata |