**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**(6.L.1) - Plant Study Guide – Answer Key**

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| Draw and Label the parts of a plant, includingthe roots, stem, leaves, and flower. |  |
| What is the function (job) of the root? | To anchor the plant in the soil and to absorbwater and nutrients from the soil |
| What is the function (job) of the stem?See picture above. | To provide support for the plant and movewater and nutrients from the roots to the rest of the plant |
| What is the function of flowers? | Where plant makes seeds |
| What is the function of leaves? | Absorb sunlight and carbon dioxide so theplant can make its own food |
| Plants can be divided into what two groups? | Plants that produce SEEDS and plants thatproduce SPORES |











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| What is photosynthesis? | Process that plants use to make their own food |
| What is chlorophyll? | Green material in plants that is used duringphotosynthesis. |
| What 4 elements mix during photosynthesis? | Water, nutrients, carbon dioxide, and sunlight |
| What is produced during photosynthesis? | Sugar and oxygen |
| Where does photosynthesis occur? | In leaves |
| Why are animals/people and plantsinterdependent? | Animals/people breathe in oxygen and give offcarbon dioxide. Plants breathe in carbondioxide and give off oxygen. They depend on each other! |
| What is dormancy? | A period of suspended life processes broughton by changes in the environment (plants “rest”…causing them to lose their leaves during the winter) |



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| What is the function of the sepal? | It protects the flower petals before theflower opens |
| What is the function of the petals? | The colors attract insects and protect thestamen and pistil |
| What is the function of the stamen? | Produces pollen |
| What is the function of the pistil?(see picture above) | Pollen sticks to the pistil and is sent inside ofthe pistil where it goes to the ovary |
| What is the function of the ovary?(see picture above) | Place where the pollen fertilizes the ovule(egg) |
| What is the function of the ovule? | This is the egg inside of the ovary. Once it isfertilized by the pollen, it grows into a seed. |



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| What is the function of the seed? | When scattered on the soil, it produces newplants |
| What is pollination? | Part of the reproductive process for floweringplants, when pollen is transferred from the stamen to the pistil |
| How can plants be pollinated? | By wind, insects, or birds that land on theflowers and transport the pollen. |
| What are 2 examples of plants that reproducewith spores? | Ferns and mosses  |
| How do plants with spores reproduce? | Spores are produced on the plant. When thespores are scattered on soil, they produce new plants. They DO NOT have flowers or seeds! |
| Draw and label the parts of a FLOWER.Include the stamen, pistil, sepal, ovary, ovule, and seed |  |



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| You should be able to EXPLAIN photosynthesisin complete sentences. | Photosynthesis is the process that a plant goesthrough to make it’s own food. Chlorophyll (found in the leaves) absorbs sunlight. The leaf uses energy from this trapped sunlight to combine carbon dioxide (gas breathed out by humans), water, and nutrients. Together, these things create sugar (glucose) and oxygen. The plant uses the sugar as food andreleases the oxygen back into the air. Humans breathe in the oxygen which they need to live. |
| You should be able to EXPLAIN thereproductive processes in flowering plants incomplete sentences. | The stamen of a plant produces pollen. Theovary of a plant produces ovules (eggs). Pollenhas to travel from the stamen to a pistil (pollination). After landing on the pistil, the pollen goes down into the ovary where it fertilizes the ovule (egg). The ovule then becomes a SEED. When the seed falls on the ground it may germinate into a new plant. |
| Explain the difference between vascular and non-vascular plants. | **Vascular** - They consist of vascular tissues made of phloem and xylem, and are responsible for translocation of nutrients and water throughout the plant. Vascular tissues provide support and rigidity to the plant, other than the circulation of food and water.**Non-vascular** - They do not have vascular systems and are called lower plants. These plants do not contain xylem or phloem tissues and they do not have true stem, root system or leaves.   |

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| Explain the difference between a gymnosperm and angiosperm. | **Angiosperms**, also called **flowering plants**, have seeds that are enclosed within an ovary (usually a fruit).**Gymnosperms** have no flowers or fruits, and have unenclosed or “naked” seeds on the surface of scales or leaves. Gymnosperm seeds are often configured as cones. The characteristics that differentiate angiosperms from gymnosperms include flowers, fruits, and endosperm in the seeds. |
| Explain stomata and guard cells? | [**Guard cells**](http://www.phschool.com/science/biology_place/glossary/g.html#guard cell) are cells surrounding each **stoma**. They help to regulate the rate of transpiration by opening and closing the stomata.  |
| Explain plant transpiration. | **Transpiration** is the process by which moisture is carried through plants from roots to small pores on the underside of leaves, where it changes to vapor and is released to the atmosphere. **Transpiration** is essentially evaporation of water from plant leaves |
| Explain plant respiration. | 1. In **respiration**, plants (and animals) convert the sugars (photosynthesis) back into energy for growth and other life processe.
2. The chemical equation for **respiration** shows that the photosynthates are combined with oxygen releasing energy, carbon dioxide, and water.
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| Explain how plants defend themselves. | * Thorns, prickles, spines, trichome
* Indioblast
* Poison
* Play dead
* Commensalism – enlist others to help
* Chemical signaling – tell plants others to help so they can release concentrations of toxins
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