**Assignment 52 – Interpreting Diagrams – Plant Parts and Processes**

Diagram 1- Plant Parts

1. Leaves- have chlorophyll; collect sunlight; leaves is where photosynthesis occurs; food produced in the leaves
2. Flowers- attract pollinators; flowers contain reproductive organs for the plant; flowers produce seeds so plant can reproduce
3. Fruit- is the mature ovary; fruit contains seeds for reproduction; fruit is stored glucose
4. Stem – supports the plant; contains xylem and phloem for transporting water and food
5. Seeds- contain the genetic material of the plant; seeds are fertilized ovules; become a new plant
6. Roots – absorb water and nutrients from the soil; roots anchor the plant

Diagram 2 –Xylem and Phloem

1. Xylem- one way transport tube for water and nutrients (upward from roots)
2. Phloem – tube which transports glucose from leaf to all parts of plant; two way flow

Diagram 3 –Transpiration

The process where water is absorbed by the roots and pulled upward through the plant; this process keeps water moving through the plant; water evaporates from the leaf through the open stomata. Transpiration increases humidity in the air.

Diagram 4 – Transpiration

This experiment proves that plants transpire because the bell jar that contains the plant has water vapor condensing on the bell jar. The bell jar with no plant contains no water.

Diagram 5 = Chloroplast

Chloroplast are structures in the plant cell that contain a green pigment called chlorophyll. The chloroplasts absorb sunlight and this is where photosynthesis takes place.

Diagram 6 = Gas Exchange at Stomata (Stoma)

Carbon dioxide enters the plant and oxygen and water vapor leave the plant through the stomata.

Diagram 7 = Open Stomata (Stoma)

Stomata opens when plant is fully hydrated (has lots of water) and will release water vapor and oxygen to atmosphere.

Diagram 8 = Closed Stomata

Stomata closes when plant is dehydrated to keep water in.

Diagram 9 = Proof of Photosynthesis

Experiment shows that the plant is photosynthesizing because it is releasing oxygen. Bubbles of oxygen float to the surface and the test tube collects the oxygen.

Diagram 10 = Flower Parts

P= Pistil

H= Stamen

D= Petal

L= ovary

O = ovules

C =sepal

B = receptacle

Diagram 11 = Flower Parts

A = anther

F=filament

J=stigma

K=pollen tube

L = ovary

O=ovule

Diagram 12 = Self Pollination versus Cross Pollination

Self-Pollination occurs when pollen is transferred from the anther to the stigma on the same plant.

Cross Pollination occurs when pollen is transferred from the anther to the stigma on a different plant of the same species.

Diagram 13 = Thigmotropism

Vines clinging to a wall (response to touch).

Diagram 14 = Thigmotropism

Mimosa Leaf (Touch-Me-Not) – leaves close when touched

Diagram 15 = Thigmotropism

Plant tendrils growing on a stake (response to touch)

Diagram 16 = Gravitropism (Geotropism)

Roots grown downward toward the soil to gather nutrients and water from the soil (even if root is initially pointing upward)

Diagram 17= Gravitropism and Phototropism

Roots growing down=gravitropism

Plants grow toward sunlight so they can photosynthesize (Phototropism)

Diagram 18 = Phototropism

Even a plant turned on its side will eventually grow upward toward sunlight

Diagram 19 = Phototropism

Plant grows toward the window with sunlight

Diagram 20 = Self Pollination

Pollen can fall with gravity onto the stigma easily because stamen is taller than stigma

Diagram 21 = Cross Pollination

Stamen is not yet mature so this plant will have to rely on cross pollination

Diagram 22 = Cross Pollination

Pistil is taller than stamen so it will have to rely on cross pollination