**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hr:\_\_\_ Plants and Photosynthesis Lab**

**What do you already know about plants?**

**Draw a Plant and label any parts you know:**

**Where does a plant get MATTER? VanHelmont’s Great Experiment…Represent his experiment below:**

**What was his Question?**

**How did he test his Question?**

**Represent his Results and Conclusion using pictures below:**

**Station 1: Leaves**

Use the microscope and look at the underside of the leaf.

1. Draw what you see. Label the stomata.

2. What do you think they are used for?

Use the examples to identify the following leaves:

Maple leaf

Jacaranda leaf

Dandelion leaf

White pine

Also determine if the leaf is simple or compound and the type of margins .

**Station 2: Roots**

1. Which plant has a tap root?

2. Which plant has a fibrous root?

3. Which root is better for accessing deep water?

4. Which root is better at reaching shallow water?

5. Which root will prevent erosion better? (stop soil and sediment from being washed away)

6. What is stored in some roots like carrots or potatoes?

7. Why does the plant do this?

**Station 3: Stems** (Use green book p.482, bee book p.346)

1. What are the 2 purposes for stems in plants?

2. What is xylem?

3. What is phloem?

4. What is the difference between how monocots and dicots have their xylem/phloem arranged?

***Using the cup and straw gently lift the straw out of the liquid.***

5. What happens? What is this phenomenon called?

6. Explain how a plant moves water from the roots to the leaves.

**Station 4: Flowers and cones** (green book p.338, bee book p.327)

1. Explain the difference between fruit and cones.

2. Why do plants go through the effort to make flowers attractive?

3. Why do plants spend the energy to create fruits?

4. What is the male part of the flower?

5. What is the female part of the flower?

6. Where is the pollen (sperm) located?

7. Where is the egg located?

**Station 5: Seeds**

***Using the bean, locate the various parts of the embryo.***

Draw and label.

***Follow the directions for the seed, starch, and iodine test.***

1. Why do seeds have starch in them?

2. Why is this imperative to survival?

***Seed dispersal***

3. What are the different methods of seed dispersal?

4. Why do plants need to disperse their seeds?

5. What is the advantage to long distance travel?

6. How do plants that create fruit help with dispersal?

**Station 6: Life cycle of Plants**

1. Draw a simple diagram of a plant life cycle. Include both plant growth and seed formation.

**Station 7: Photosynthesis**

1. What do you think plants use to make their own food?

2. What are the reactants?

3. What are the products?

4. What is the chemical formula?

5. How is photosynthesis related to cellular respiration?

6. What does the sun provide the plants with to complete photosynthesis?

7. Where in the plant cell does this take place? (organelle)