Honors Biology Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
NDHS Per: \_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Plant Transport**

**Plant**: terrestrial (mostly), multicellular, photoautotrophic, eukaryote, true tissues and organs

Plant Structure:

Tissue Basic Tissue Types: give rise to specialized cells

**\_\_\_\_\_\_\_\_** - outer coat – **\_\_\_\_\_\_\_\_**  **\_\_\_\_\_\_\_\_** – **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
**\_\_\_\_\_\_\_\_** – between Dermal and Vascular

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **\_\_** :

* **\_\_\_\_\_\_\_\_**Function: **\_\_\_\_\_\_\_\_\_\_\_**: secretes the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**:

**\_\_\_\_\_\_\_\_**: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**– unidirectional (up)
**\_\_\_\_\_\_\_\_**: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**– bidirectional

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**:

* Occupies the space between the vascular tissue and the dermal tissue
Functions:
**\_\_\_\_\_\_\_\_**– roots and stems
**\_\_\_\_\_\_\_\_**– stems
**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**– leaves and some stems

**Plants Roots, Leaves, and Stems:**

**Roots**:
Functions:
 - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
 - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
 - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Stems**:
Function:
 - **\_\_\_\_\_\_\_\_**leaves and flowers
 - **\_\_\_\_\_\_\_\_** **\_\_\_\_\_\_\_\_** (non-woody plants – herbaceous)
 - **\_\_\_\_\_\_\_\_**: food (tubers – potato) and water (cactus)

**Leaves**:
Functions:
 - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
 - **\_\_\_\_\_\_\_\_** (succulent leaves, Aloe)
 - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**: spines, toxins, trichomes
 - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**: flowers (modified leaves)



**Transpiration**:

* + Transpiration: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ regulation of the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**by the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**- Proper **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**from the air spaces in the spongy mesophyll
	**- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**which gets the water **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* Transpirational pull results from the properties of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ As one water molecule moves out of the xylem **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** because they are **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ Water does not move down the xylem because it is **\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ 
* **Factors Affecting Transpiration:**Temperature: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Humidity: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
Air flow (wind): **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Regulation of Transpiration**

* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**: Regulate the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**– responsible for the photosynthesis/transpiration compromise

**Anatomy of Guard Cell**:

* + **\_\_\_\_\_\_\_\_** **\_\_\_\_\_\_\_\_** **\_\_\_\_\_\_\_\_** **\_\_\_\_\_\_\_\_** (stomatal side is thicker)

**Physiology of Guard Cell**:

* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**of the guard cell from surrounding cells
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**More water causes the **\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_**
* Uneven thickness of the cell wall causes the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



**Translocation in Phloem**

* Movement from **\_\_\_\_\_\_\_\_\_\_\_\_**
	+ **\_\_\_\_\_\_\_\_**: Location of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
		- Photosynthesis: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
		- Starch Metabolism: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ **\_\_\_\_\_\_\_\_**: Location of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
		- **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
		- **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* Sugar is produced and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**inside of the cell
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**through the cells to the sink

