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

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

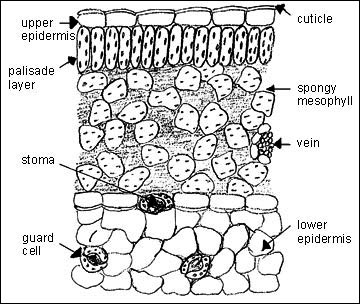
* Occupies the space between the vascular tissue and the dermal tissue  
  Functions:  
  **\_\_\_\_\_\_\_\_**– roots and stems  
  **\_\_\_\_\_\_\_\_**– stems  
  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**– leaves and some stems

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

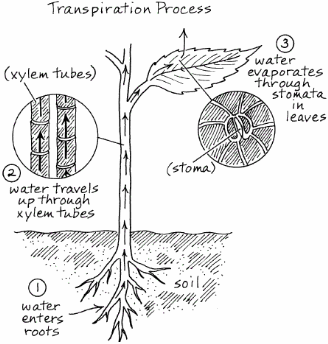
**Roots**:   
Functions:  
 - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  
 - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  
 - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**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**

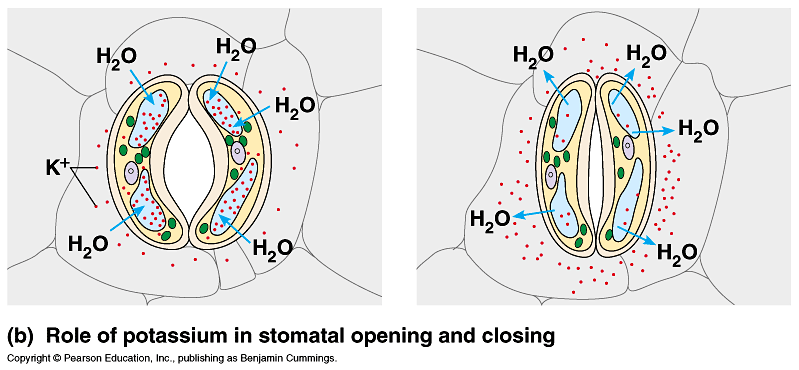
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**: Regulate the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**– responsible for the photosynthesis/transpiration compromise

**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

