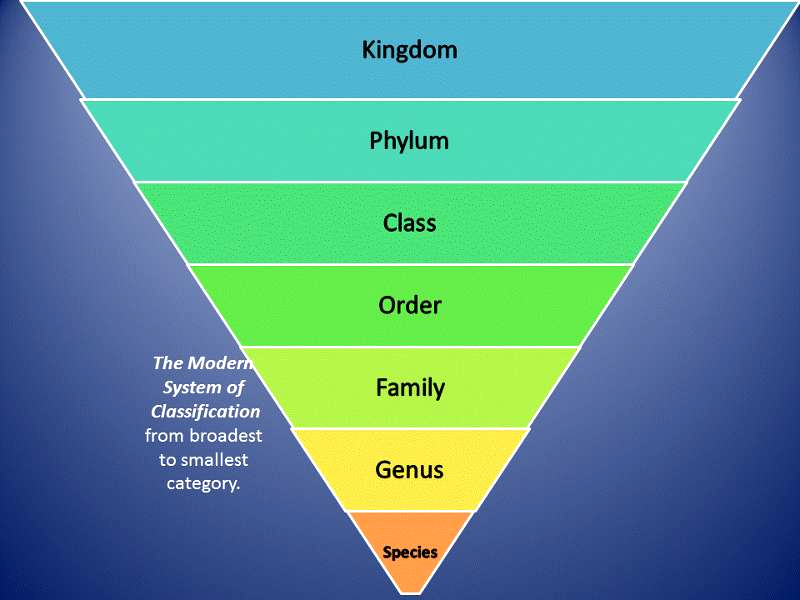
**SBI 3U Monocot and Eudicot Plants and Seeds**  Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Review:Organizing Living Organisms:



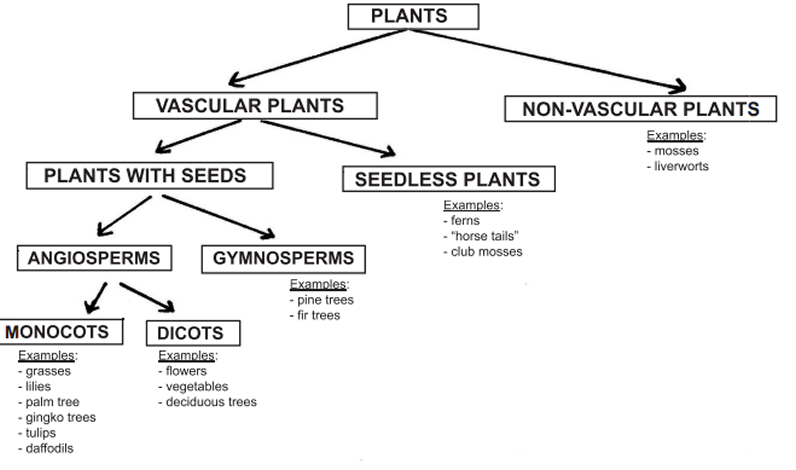
Each group has the characteristics of the level above it, but has some distinguishing features.

* The further down the scale you go, the more minor the differences become, until you end up with a classification which applies to only one plant.

**VASCULAR PLANTS:**

* have vascular vessels to transport water and food
* examples: flowers, trees

**NON-VASCULAR PLANTS:**

* small, simple plants without a vascular system
* cannot transport food or water very far
* lack roots, have rhizoids (small hairs that keep the plant in place)
* commonly found in moist environments
* reproduce sexually by creating single-celled spores or asexually by vegetative propagation
* examples: mosses, liverworts

**PLANTS WITH SEEDS:**

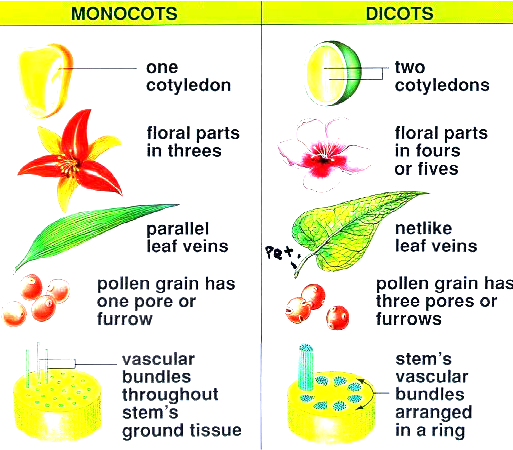
* allow plants to reproduce sexually without needing water and provide protection
* appeared about 280 million years ago
* climate colder and drier so spore producing plants could not survive the drought and freezing so they became extinct
* divided into 2 groups - angiosperms and gymnosperms

**SEEDLESS PLANTS:**

* do not produce seeds, are dispersed by windblown spores or by water
* formed first forests 350 million years
* examples: ferns, whisk ferns, club mosses, and horsetails.

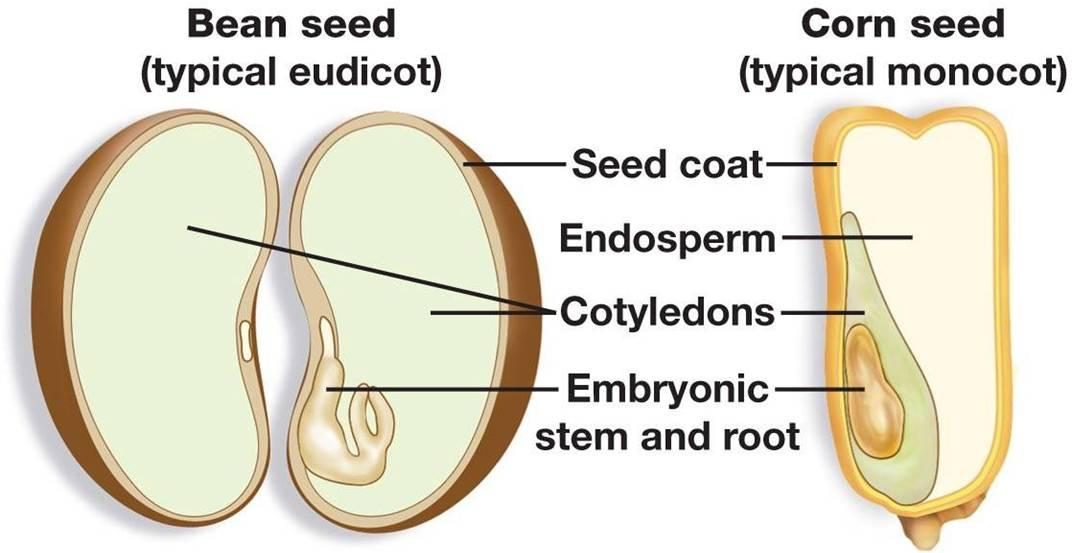
|  |  |
| --- | --- |
| Angiosperms | Gymnosperms |
| * **Flower producing** plants * Mature seed is **surrounded by the ovule** (e.g. apple). * Group is often referred to as **hardwoods**. * Trees have broad leaves that *usually* change color and **die every autumn** | * Plants which **DO NOT produce flowers** * Seeds are not enclosed in an ovule (e.g.pine cone). * Group referred to **as softwoods**. * U*sually* have needles that stay green throughout the year |

**CHARACTERISTICS OF MONOCOTS AND DICOTS**



|  |  |  |
| --- | --- | --- |
| **CHARACTERISTIC** | **MONOCOTS** | **DICOTS** |
| **VASCULAR TISSUE** | SCATTERED | ARRANGED IN RING |
| **ROOTS** | FIBROUS | TAPROOT |
| **POLLEN GRAIN** | 1 OPENING | 3 OPENINGS |
| **FLOWER PETALS** | MULTIPLES OF 3 | GROUPS OF 4 OR 5 |
| **COTYLEDONS** | 1 | 2 |
| **LEAF VENATION** | PARALLEL | NET-LIKE |

**MONOCOT AND DICOT SEEDS:**

**Dicot** 

* 2 cotyledons
* cotyledons are fleshy and store food
* endosperm absent

**Monocot**

* only one cotyledon
* cotyledon is thin, small and lacks food materials
* endosperm present and stores food

