

Plants!

An introduction

Plants

- All plants are multi-cellular, autotrophic _____.
- Lots of cells.
- Produces its own food using chlorophyll.
- Has a Nucleus .

Plants

- The plant kingdom is one of the largest groups of living things with more than half a million different species.
 - Examples include: multi-cellular algae, moss, ferns, flowering plants, and trees.

Plants

- Plants are not able to independently move from one place to another.
- Plants have dedicated _____
 - Groups of cells to perform specific functions.
- All plants require male and female parts to reproduce.

Plant Classifications

- There are only 4 distinct types of plants.
 - _____ seedless plants
 - Vascular seedless
 - Vascular non-flowering (like pine cones)
 - Vascular _____

Plant Classifications

- Non-Vascular Seedless
 - Plants that do not use a system of _____ to transport water and nutrients between different parts of the plant.
 - Non-vascular plants are the simplest of all land dwelling plants.
 - All are low-growing.
 - First plants on land.

Plant Classifications

- Non-Vascular Seedless

- Mosses

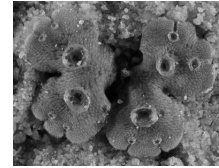


<http://visual.merriam-webster.com/images/plants-gardening/plants/moss/examples-mosses.jpg>

Plant Classifications

- Non-Vascular Seedless

- Liverworts



<http://www.sheffield.ac.uk/content/1/c6/05/24/91/liverworts-close-up-web.jpg>

Plant Classifications

- Non-Vascular Seedless

- Hornworts



<http://www.ucmp.berkeley.edu/plants/hornwortyoung.jpg>

Plant Classifications

- Seedless, Vascular

- The plants in this group have a true _____ transport system for the movement of water and nutrients
 - They are "seedless" because they reproduce by means of spores.
 - _____
 - a reproductive structure that is adapted for dispersal.

Plant Classifications

- Seedless, Vascular

- Ferns



<http://kmacphoto.net/ferns.jpg>

Plant Classifications

- Seedless, Vascular

- Horsetails



<http://www.library.illinois.edu/vex/toxic/hrstail/6-29-19.jpg>

Plant Classifications

- Seedless, Vascular
 - Whisk Ferns



Psilotum nudum
<http://www.palaeos.com/Plants/Images/Psilotum.jpg>

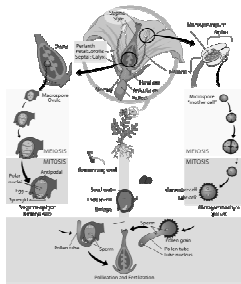
Plant Classifications

- Flowering, Vascular with Seeds



<http://www.biology.iastate.edu/Courses/211L/Anthoph/floweringplant>

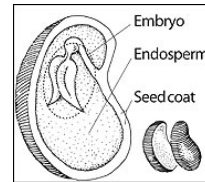
Angiosperm Life Cycle



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Angiosperm Life Cycle

- Parts of a seed.



<http://extension.missouri.edu/p/MG3>

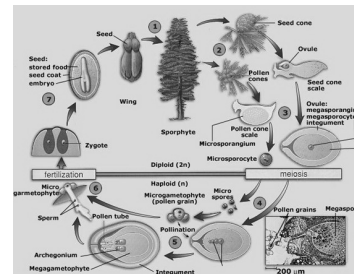
Plant Classifications

- Non-Flowering, Vascular with Seeds



<http://biology.cle.u.edu/graphics/taxonomy/plants/spermatophyta/Gymnosperms/>

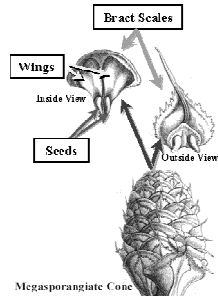
Gymnosperm Life Cycle



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Gymnosperm Life Cycle

- Parts of a cone.

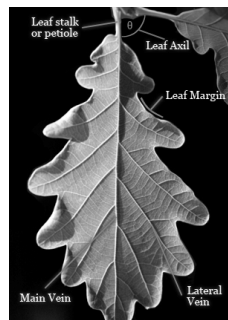


Parts of a Plant

- LEAF
 - Absorbs sunlight for plant to convert to energy.
 - Stores chlorophyll and is the site of photosynthesis.
 - Contain _____
 - a pore, found in the leaf and stem of plants that is used for gas exchange
 - Can be wide and flat (as in a maple leaf) or long and thin (as in a cactus spine)
 - Covered with a water proof layer called the cuticle

Parts of a Plant

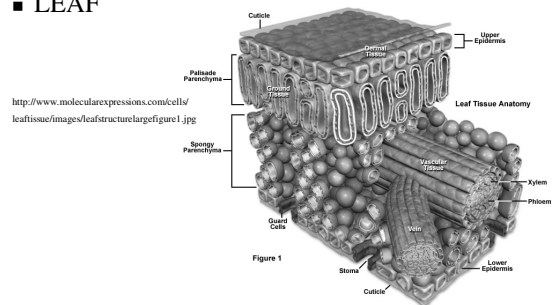
- LEAF



<http://www.woodlands.co.uk/images/tree-identification/leafdiagram.jpg>

Parts of a Plant

- LEAF

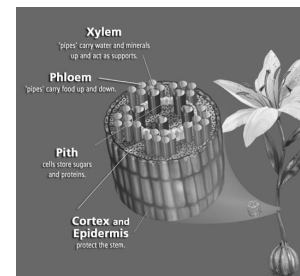


Parts of a Plant

- STEM
 - supports leaves and flowers.
 - carries water, minerals, and food up and down between the plant's leaves and roots.
 - can be small and thin (as in a flower) or tall and thick (as in a tree).
 - helps plant grow in a direction toward energy sources.
 - has light-sensitive tips to ensure growth toward light.

Parts of a Plant

- STEM



http://paintthelight.net/BotanyProject/Activities/images/2004_gallery_stem_diagram.jpg

Parts of a Plant

■ ROOT

- Grows down into the soil or water.
- Anchors plant to the earth.
- Absorbs water and minerals needed for growth.
- Includes varieties, based on structure:
 - _____: single large root with a few smaller, branching roots.
 - _____ roots: many small roots branching off in different directions.

Parts of a Plant

■ Taproot



http://upload.wikimedia.org/wikipedia/en/7/7a/Plant_taproots.jpg

Parts of a Plant

Fibrous roots



http://www.croplangenetics.com/stellent/groups/public/documents/web_content/ecmd0014867.jpg

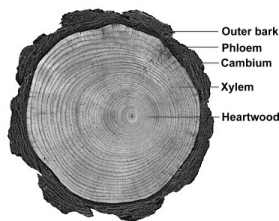
Parts of a Plant

■ Vascular System

- _____
 - Used for water and mineral transport
 - Flows mostly up toward the leaves
- _____
 - Used for sugar/food transport
 - Flows mostly down toward the roots

Parts of a Plant

■ Vascular System



http://www.treeboss.net/images/bark_cross_section.jpg

Photosynthesis

- _____ is the process by which plants take energy from the sun and combine carbon dioxide and water to produce food.
- Water + Carbon Dioxide + Light ---> Sugar + Oxygen