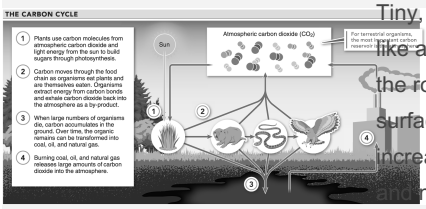
Population growth key terms

Carrying capacity (K)	
Demographic transition	Moving between patterns of growth: high birth and death rates to high birth and low death rates, to low birth and death rates
Density-dependent factors	Limited resources limit population growth: food, space, mates, etc.
Density-independent factors	Indiscriminate forces that limit population: floods, earthquakes, fires, and other weather or geology-based calamities.
Exponential growth	r * N
Logistic growth	r * N ((K - N) / K)
Maximum sustainable yield	Half the carrying capacity (K / 2)

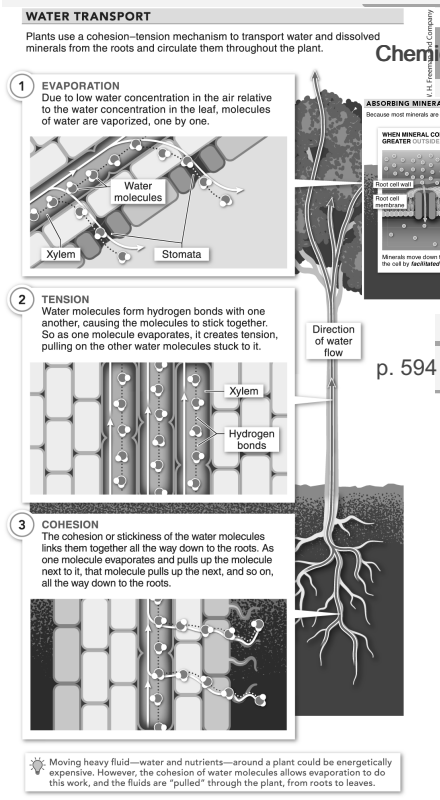
Carbon Cycle



Mycorrhizae

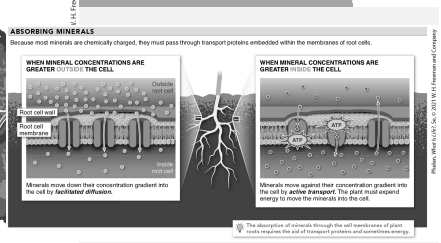
Tiny, thread-like fungi trap water like a sponge and hold it around the roots. The fungi's huge surface area dramatically increases the amount of water and minerals that can be absorbed. In exchange, they receive sugars, amino acids, and vitamins from the plant.

How water moves through plants



pp. 596-598

Chemical transport



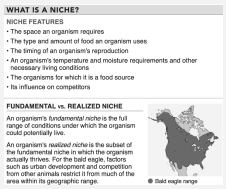
p. 594

Sponsored by **CrosswordCheats.com**
Learn to solve cryptic crosswords!
http://crosswordcheats.com

Plant tissues and structures

Epidermis	
Guard cells	Form the stoma, allowing gas exchange
Phloem	Flows sugar down to roots through sieve tubes and distributes water and nutrients to cells in need
Xylem	Dead cells that provide main structural support while moving water and nutrients up to the plant
Cork cells	Create outer bark in trees, providing fire protection to inner living tree.
Apical meristems	Think: APEX, at the top (upward, elongating growth occurs)
Lateral meristems	Think: Lats get swole (lateral layers of cambium growth)
Pith	Inner stem tissue
Cortex	Outer stem tissue

Niches



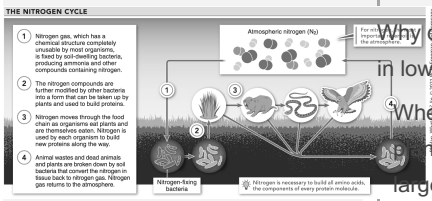
Energy flow

Sun	
Producer	Plants which convert light energy into food through photosynthesis (Most abundant and energy-efficient food sources)
Primary consumer	Herbivores- eat producers (most abundant consumer, second most energy)
Secondary consumer	Carnivores- eat primary consumers (fewer than primary consumers)

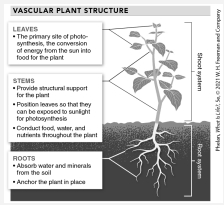
Energy flow (cont)

Tertiary consumer	Top carnivores- eat other carnivores (very few in number, most energy-expensive)
Quaternary consumer (and so on)	APEX predators- very energy-expensive and seldom exist in typical ecosystems

Nitrogen Cycle



Vascular plant structure



Ground tissue

Q & A plants

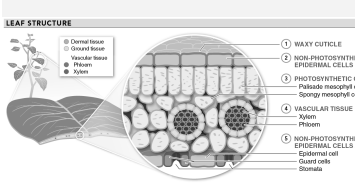
Which modified structure are all of the following examples of? Potatoes, runner vines, asparagus spears, daffodil bulbs

Stems

Why do carnivorous plants thrive in low-nutrient environments?

When given more nutrients, plants focused on building larger photosynthetic leaves and smaller or no carnivorous structures. When given little to no nutrients, plants focused more on building carnivorous structures.

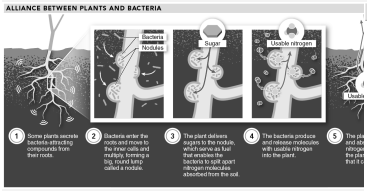
Leaf structure



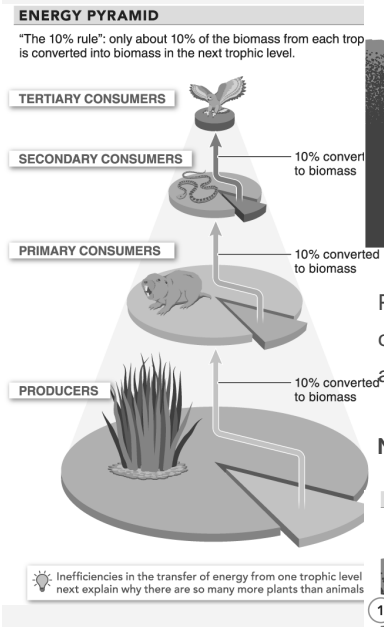
p. 584

Sponsored by **CrosswordCheats.com**
Learn to solve cryptic crosswords!
http://crosswordcheats.com

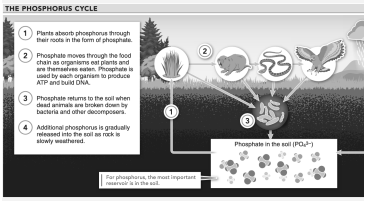
Plants and Bacteria



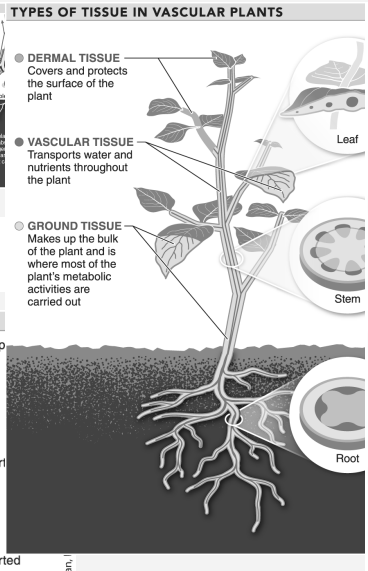
Energy Transfer



Phosphorous Cycle

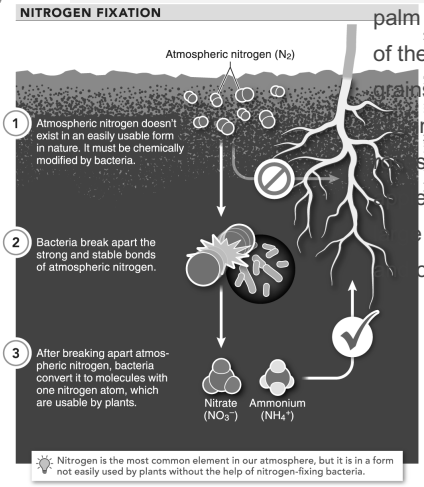


Plant tissue types

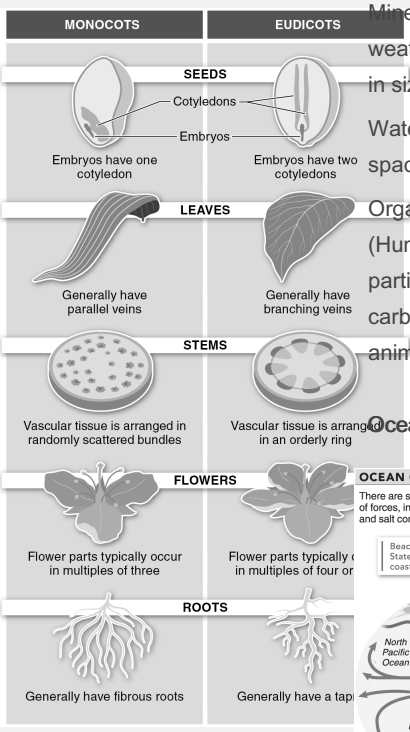


P. 577-578 in textbook goes over this, guard cells, cork cells, and epidermis

Nitrogen Fixing



Monocots v Eudicots



Some common monocots are palm trees, orchids, lilies, and all of the grasses, including most grains used in food products. Common eudicots include daisies, coffee, potatoes, beans, strawberries, and most fruit trees, including maples and oaks.

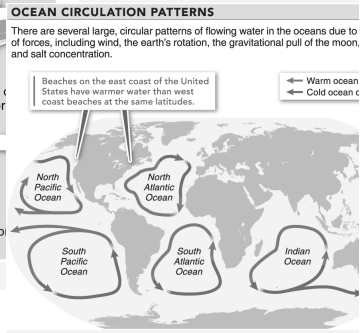
Soil contains:

Minerals- 50% (in the form of weathered rock particles ranging in size from sand, silt, and clay)

Water and air- 45-50% (fills space in-between particles)

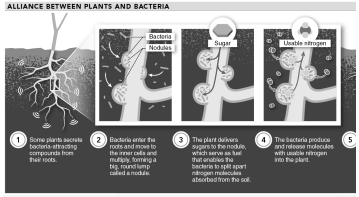
Organic materials- 1-5% (Humus- decomposed or partially decomposed bits of carbon-containing plants or animals)

Ocean Currents



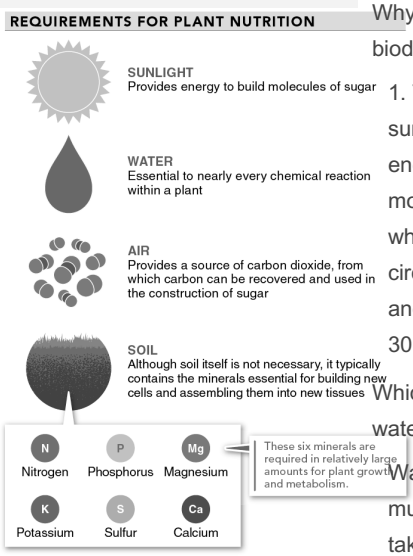
Think: Red to blue, wet for you. Blue to red, dry ahead.

Plants and Bacteria



Sponsored by CrosswordCheats.com
Learn to solve cryptic crosswords!
http://crosswordcheats.com

Plants require...



Plants technically do not require soil, as hydroponic gardening is a possibility. They do require these other nutrients in trace amounts, however: chlorine, iron, boron, manganese, zinc, copper, and molybdenum.

Q & A

Why is it so much colder at the poles than at the equator?

> The curvature of the Earth causes sunlight exposure to spread out over further swaths as it gets closer to the poles.

Q & A (cont)

Why is there so much more biodiversity along the equator?

1. The concentration of sunlight provides a lot of energy 2. Warm air holds more moisture than cold air, which increases the water circulating near the equator, and causes deserts around 30 degree latitude.

Which holds more heat: air or water?

> Water holds 10,000 times as much heat as air, meaning it takes more energy and temperature change to heat water, and air temperature fluctuates more easily.

What is the rain shadow effect?

> Water travels from the ocean over land through warm air. As the air moves up over mountains, the temperature drops, forcing the moisture out as precipitation. A rain shadow is left when the air drops back down behind the mountain and warms again, creating more arid climates with little annual rainfall.

Q & A (cont)

How do ocean currents work?

> Ocean currents warm slowly as they travel through warmer areas and cool slowly as they travel through cooler climates. The currents travel in large, circular motions warming cooler land with warm currents and cooling warmer land with cool currents.

Sponsored by **CrosswordCheats.com**
Learn to solve cryptic crosswords!
http://crosswordcheats.com