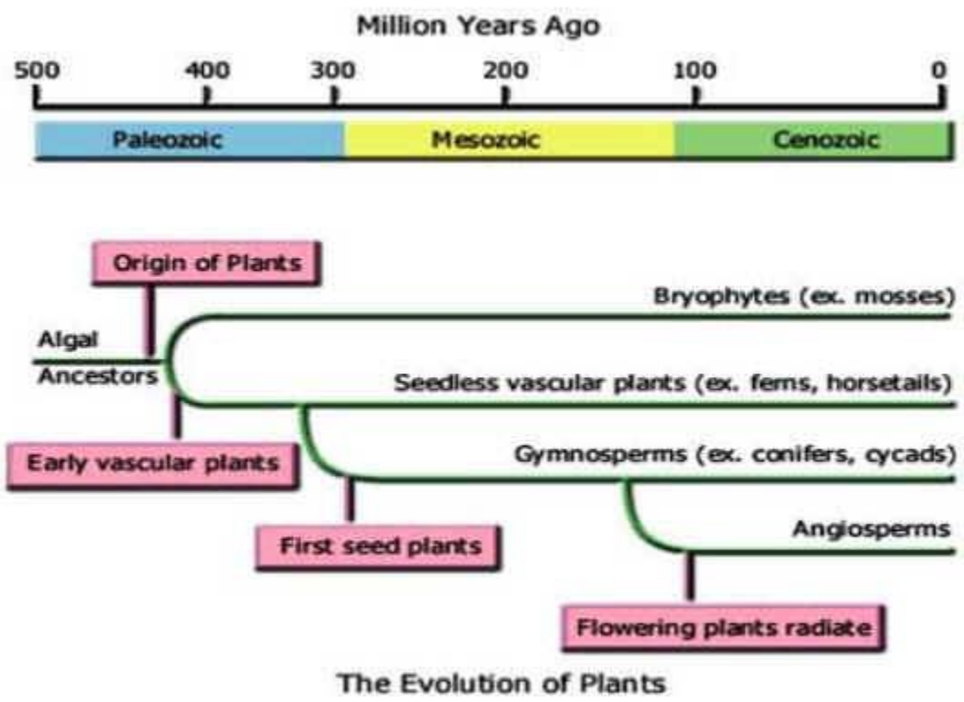
Botany Webquest

First a quick overview of the evolution of plants and then we discus how they work.



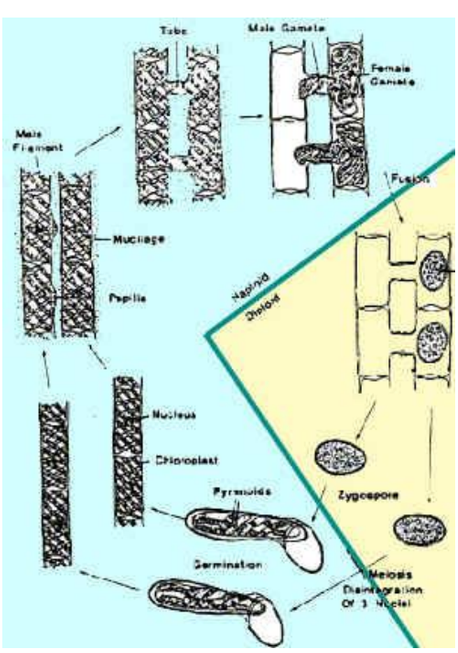
The Evolution of Plants

What kind of an ancestor did all land plants have? _____

Give an example of a non-vascular land plant: _____

Name three kinds of vascular plants: _____ , _____, _____

Draw the life cycle of any plant: http://tinyurl.com/6mg7po



Remember the life cycle of the relatively "primitive" fungus division called zygomycota.

The diploid stage was a brief interval called a _____.

Primitive plants are no different.

Observe the primitive algae called *Spyrogyra*.

It is almost always always a haploid gametophyte except for the brief interval called a Zygospore.

In Botany talk – the _____ generation is dominant in *Spryogyra*.

All of the more general questions about plant phyla can be found on the following:
Copy the following link and paste into a browser window:

http://www.perspective.com/nature/plantae/index.html

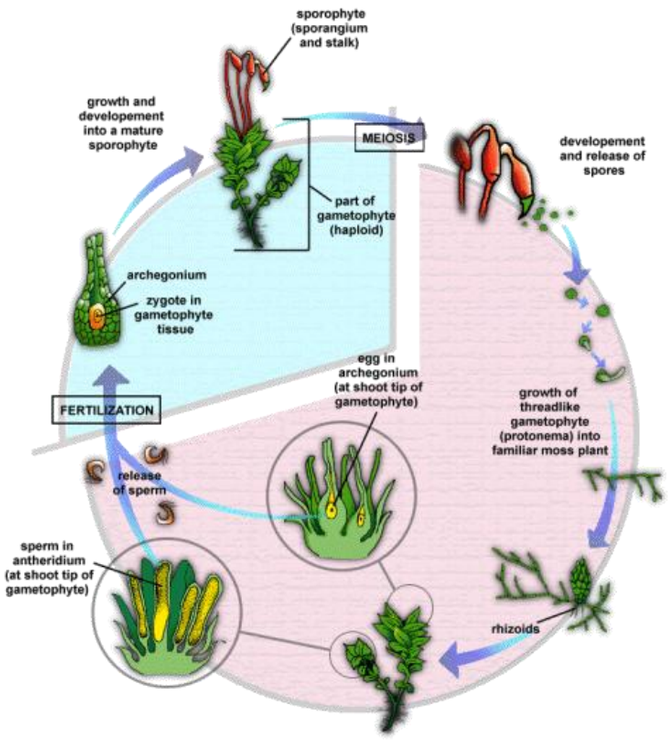
Botanists still have to get their act together! There are at least four competing classification systems in use. Classification is typically done according to

_____, _____ or _____

Mosses and Allies belong to the Phylum _____

Non-vascular means _____

Besides mosses, this phylum includes _____& _____



Mosses

Like all plants, mosses alternate generations.

Which generation is dominant?

Which generation is parasitic?

Club mosses can grow much larger than real mosses!

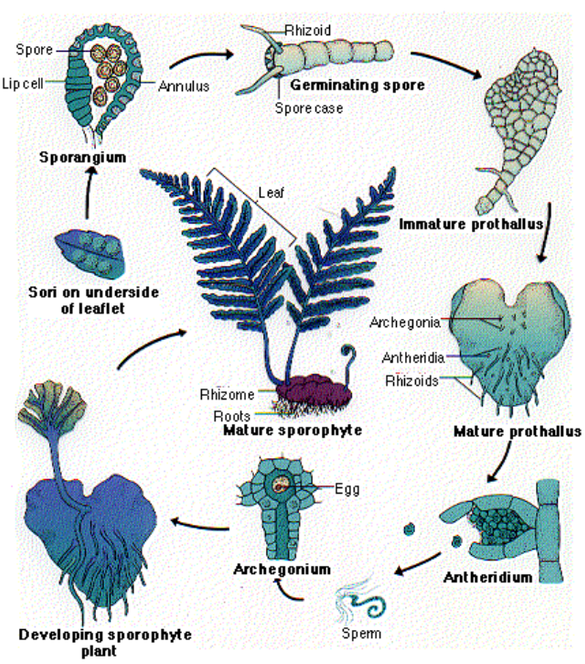
According to the following link, explain why club mosses are not considered real mosses:

http://www1.kent.k12.wa.us/staff/timlynch/sci_class/chap10/p_plants.html

_____

Ferns and Allies (*Pteridophyta* and allies)

Phylum _____are a huge evolutionary jump over mosses! They have primitive _____ so they can grow much larger and live in _____. However they are still primitive because they still have _____ which restricts them to habitats which _____



Refer to the following when answering the following fern questions:
http://www.perspective.com/nature/plantae/index.html

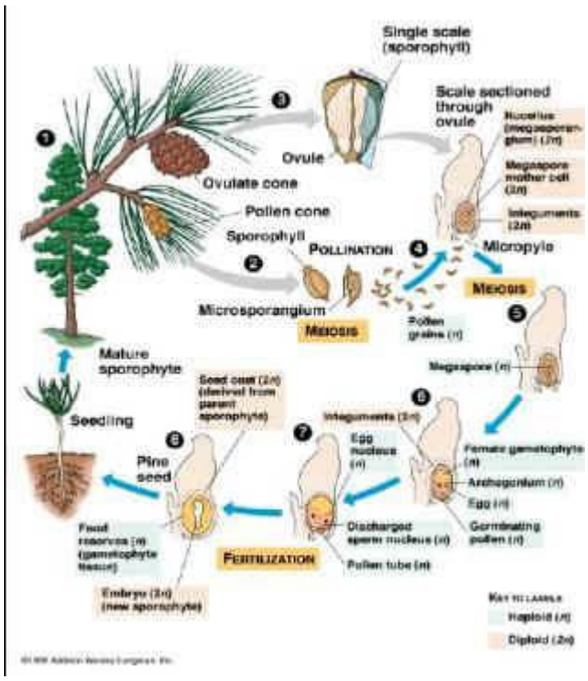
In ferns which generation is now dominant?

What is another name for a fern gametophyte?

A sorus is a sac of many spore producing sporangia.

Where are these located in a fern?

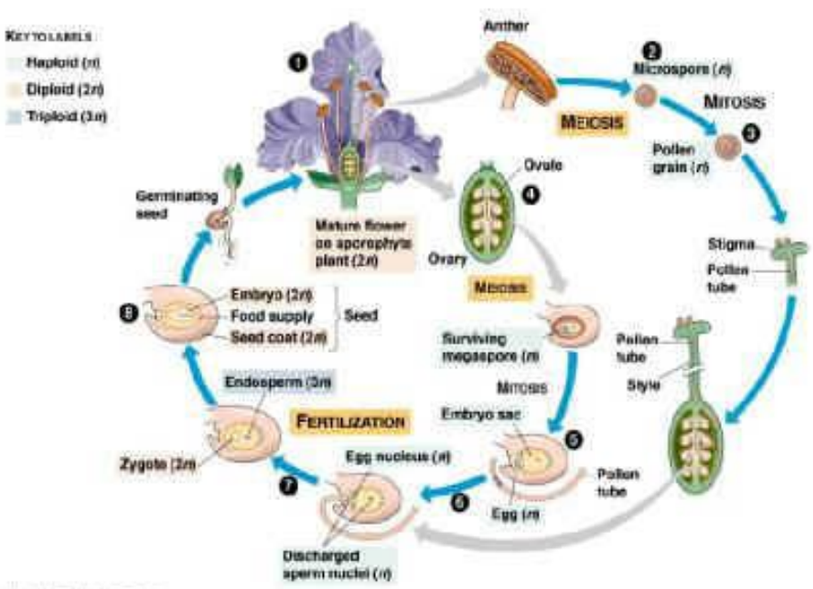
Conifers and Allies phylum _____



The gymnosperms add the next level of complexity to plant evolution: they reproduce from _____ instead of _____.

The _____, however, are "naked" (Greek: gummnos) -- not covered by an _____. Usually, the _____ is produced inside a _____ structure such as a _____ hence the name "conifer." Some conifers, such as the Yew and Ginko, produce their seeds inside a _____ structure.

Flowering Dicot Plants



Phylum _____

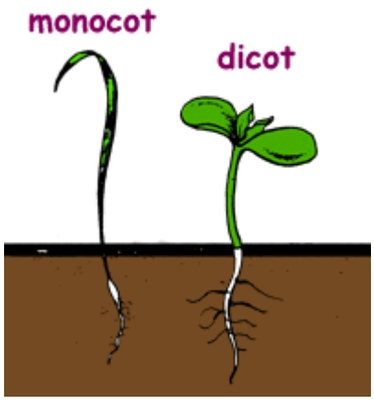
Class _____

Angiosperms add the final improvement to plant reproduction: they grow their seeds inside _____Greek: *angeion* = vessel) which is, itself, embedded in _____.

After it is fertilized, the flower falls away and the ovary swells to become _____.

Gymnosperms and angiosperms both have gametophytes. They are parasites that live off the sporophyte.

Give a common name for an angiosperm gametophyte: _____



Angiosperms in the class *Dicotyledoneae* grow two _____ (*cotyledons*).

In addition, foliage leaves typically have a _____ originating at the base of the leaf blade, or three or more main veins that diverge from the base.

Most of the planet's plants are dicot/monocot.

Flowering Monocot Plants Phylum _____ Class: _____

Monocots start with _____

The main veins of their foliage leaves are usually _____and nearly _____ to each other.

Monocots provide us with our primary sources of nutrition, supplying us and the animals we eat with _____ such as _____ as well as _____such as _____.

Now refer to the following site before answering the next questions:

http://www.hobart.k12.in.us/jkousen/Biology/phobig.html

http://cwx.prenhall.com/bookbind/pubbooks/audesirk6/chapter21/group1/deluxe-content.html

	MATCHING:	
	1. organic compound produced during photosynthesis	A. algae
	2. source of energy for photosynthesis	B. autotrophe
	3. is both a reactant & product of photosynthesis	C. blue-green algae
	4. an organism that can synthesize organic materials using materials in its environment	D. chlorophyll
	5. the cell organelle where photosynthesis occurs	E. chloroplast
	6. the green pigment in plant cells that absorbs sunlight	F. glucose
	7. photosynthestic Protists	G. sunlight
	8. photosynthestic members of the Kingdom Monera	H. water

MC:

1. The waxy coating on the surface of a leaf is the ....

a) epidermis b) cuticle c) palisade layer d) chlorophyll

2. Water is lost from the leaves of plants through openings called ...

a) root hairs b) xylem c) lenticels d) stomates

3. The conversion of light energy to chemical energy occurs in the cells of ...

a)algae b) invertebrates c) fungi d) teachers

4. The raw materials needed for photosynthesis include ...

a) oxygen & water b) carbon dioxide & water c) glucose & oxygen d) glucose & carbon dioxide

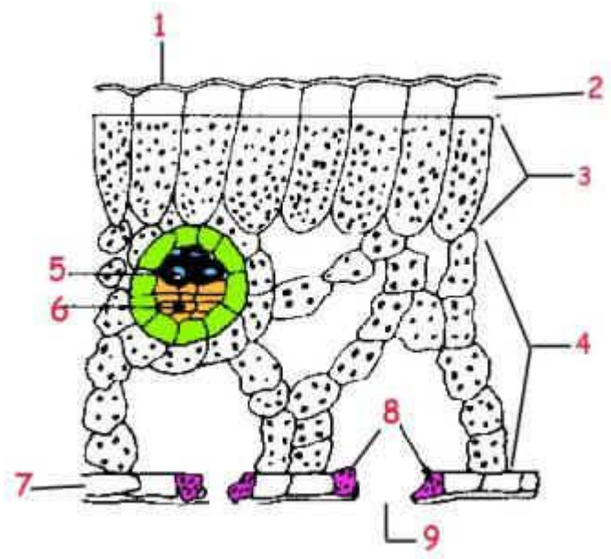
5. Which word equation summarizes photosynthesis?

a) water + starch ---> glucose + glucose +glucose b) water + carbon dioxide ---> oxygen +glucose + water

c) glucose + oxygen ---> water + carbon dioxide + ATP d) glucose + glucose ---> maltose + water

6. Autotrophic activity in plant cells occur in organelles called ...

a) cytoplasm b) chloroplasts c) ribosomes d) nuclei



1. Write the number & name of the principle area of photosynthesis.

2. Write the number & name of the structure(s) that regulate the opening & closing of stomates.

3. Which number indicates where oxygen exits the leaf?

4. Which numbers indicate vascular tissues, which transport materials to & from the leaf? What are the names of the vascular tissues?

5. Write the number & function of the cuticle.

6. The structure of which area in the leaf allows for the diffusion of gases (carbon dioxide & oxygen)? Give the number & name.

7. What do the "black dots" represent?