

Key

Name \_\_\_\_\_



# PLANT EVOLUTION WEBQUEST

Click to visit: <http://www.humboldt.edu/natmus/plants/index.html>  
Click on the word "Exhibits," located in the menu on the left of the web page then click on the displayed exhibit: **Plant evolution**

Step 1: click on the **Timeline** across the top of the page.

1. How long ago was the primary evidence of photosynthesis? 3 Billion Years Ago
2. Estimate: when did conifers appear on the Earth? 225 MYA
3. Estimate: when did flowering plants appear on Earth? 110 MYA

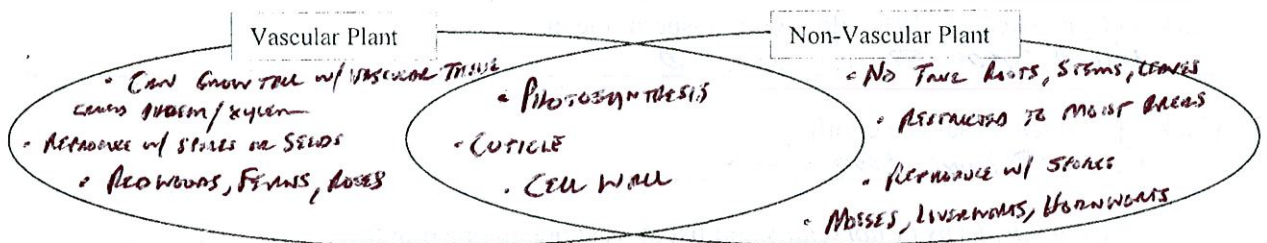
Step 2: return, click on the **What Makes a Plant a Plant** link.

1. What are four characteristics that make a plant a plant?  
MAKE FOOD      CELL WALLS      REPRODUCE      HAVE CUTICLE
2. What is the formula for photosynthesis?  
Carbon Dioxide + WATER + Light Energy → GLUCOSE + Oxygen
3. What does the cell wall do for the plant? PROVIDE SUPPORT FOR THE PLANT
4. What is the purpose of the cuticle? KEEPS PLANTS FROM DRYING OUT (WATER PROOFING)

Step 3: click on **The Making of a Seed: Cone or Flower?**

Step 4: click on **Gymnosperm** (click again to enlarge)

1. What is a **Vascular plants** PLANTS THAT HAVE TISSUES FOR CONDUCTING WATER, MINERALS, PHOTOSYNTHETIC PRODUCTS.
2. When did **Gymnosperms** first arrive on Earth? 380 MYA
3. List three examples of a **Gymnosperm**: REDWOODS, PINES, FIRS, JUNIPERS, GINKGOS, and \_\_\_\_\_
4. What is the most common way that **Gymnosperms** are pollinated? WIND



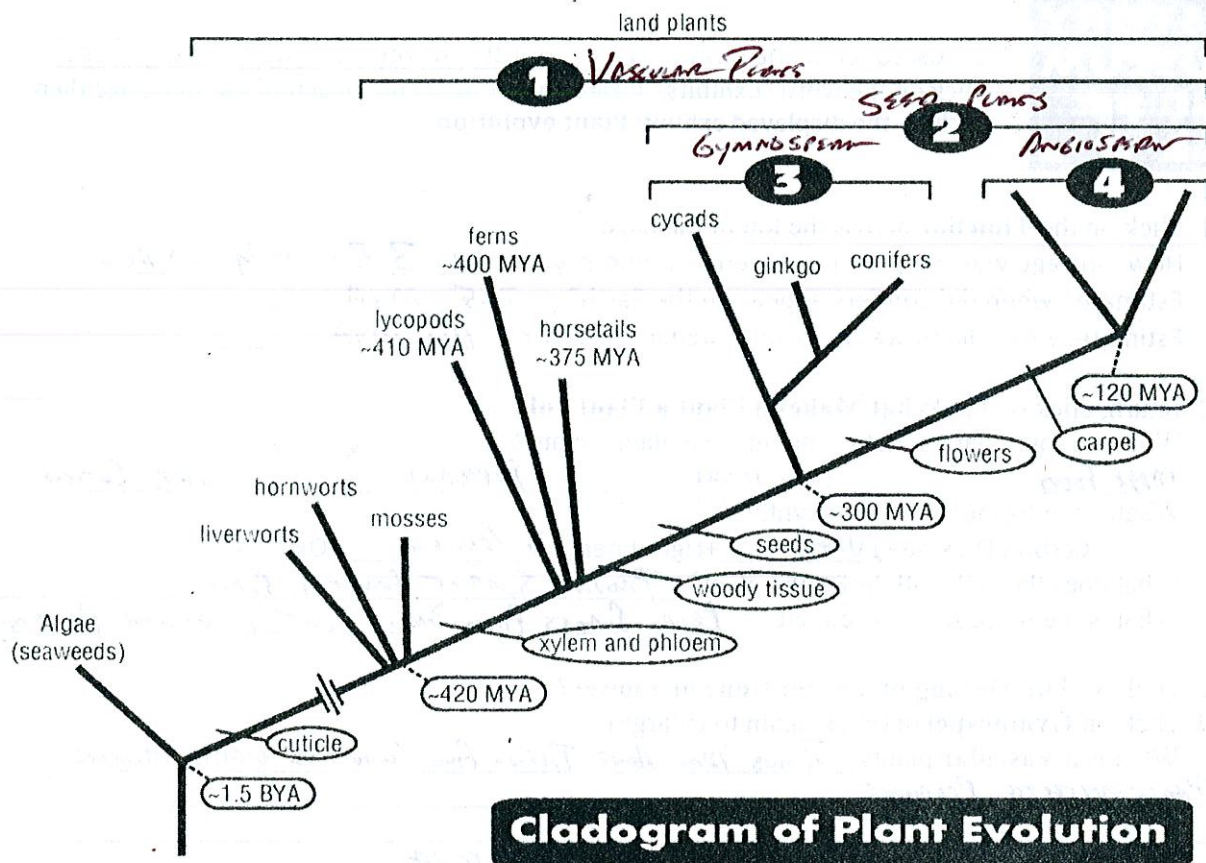
Step 6: Return to **The Making of a Seed...**

Step 7: click on **Angiosperm** (click again to enlarge)

1. Where do **Angiosperms** keep their seeds? FRUITS
2. How are these plants seeds pollinated? BIRDS, INSECTS, MAMMALS, WIND
3. When did **Angiosperms** appear on Earth? 140 MYA
4. Name 3 examples of **Angiosperms**: CEREAL, GRASSES, ORCHIDS, PEARS, and \_\_\_\_\_
5. Based on what you now know... What are some angiosperms that humans eat? APPLE, ORANGES, PEACH, PEAR, PLUM ... (Over...)

Step 8: click on **plant home**

Step 11: click on **Cladogram of Plant Evolution**. Look over the cladogram and fill in terms for 1-4.



### Cladogram of Plant Evolution

1. Click on *Angiosperms*. What are three ways angiosperms are different than gymnosperms?  
Flowers      Embryo within seeds      Fruits contain seeds
2. Click on *Gymnosperms*. What does Gymnosperm mean?  
Naked seeds → not enclosed
3. Click on *Conifer*. What is a conifer?  
Cone bearing seed plants
4. Click on *lycopods*, *ferns* or *horsetails* and list at least one interesting fact.  
Lycopods structured very similar to 1<sup>st</sup> vascular plants
5. Click on *liverworts*, *hornworts* or *mosses* and list at least one interesting fact.  
Answers will vary
6. Click on *algae* and list at least one interesting fact.  
Answers will vary