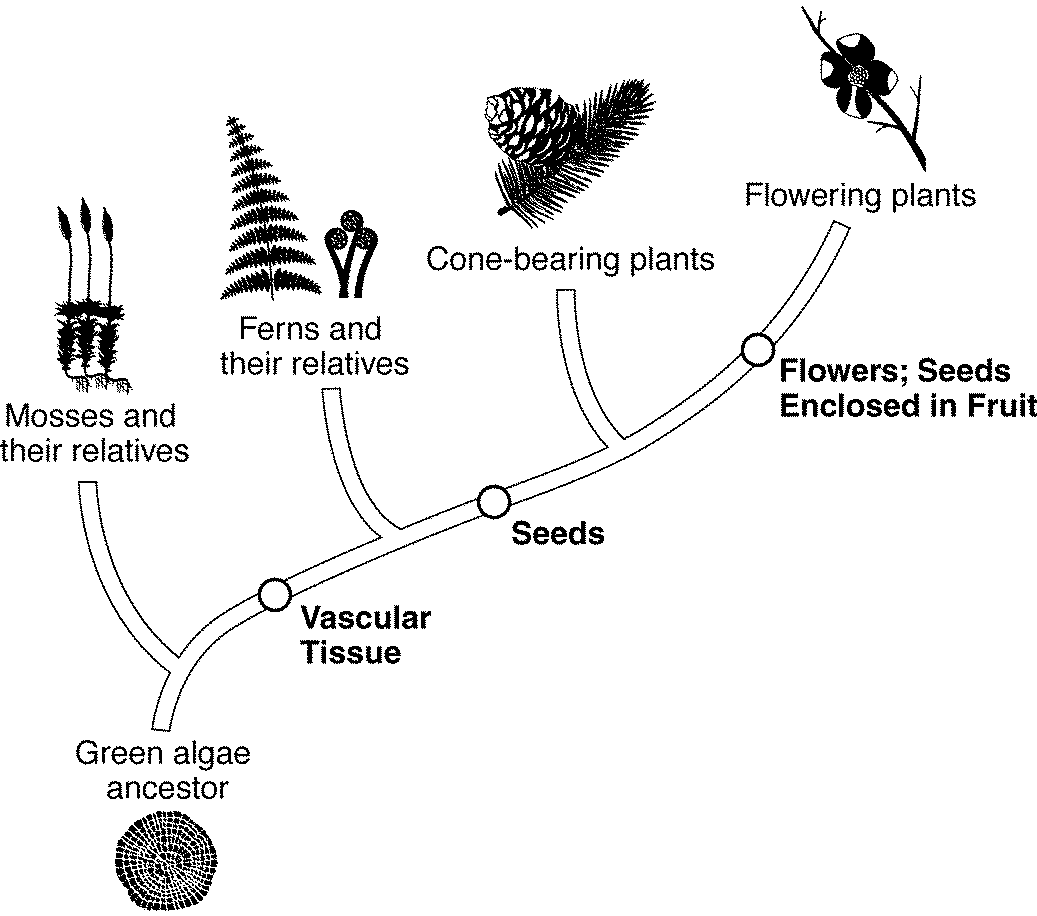
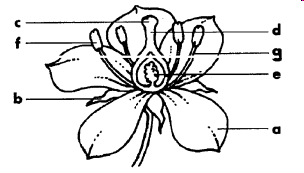
**Pre-AP Plants Test Review**

*Refer to the following questions and vocabulary to help you to review for the test.*

* Required vocabulary: transpiration, cohesion, adhesion, hydrogen bonding, vascular tissue, monocots/dicots, stomata, cuticle, guard cells, epidermis, mesophyll, xylem, phloem, osmosis, root hairs, root pressure, auxin, apical meristem, ground tissue, ethylene, gibberellins, cytokinin, and capillary action
* How do ancient plants differ from current plants?
  + What challenges are unique to early land plants?
* What organelle is present in plants that is responsible for cellular respiration?
* What organelle is present in plants that is responsible for photosynthesis?
* Examine the picture below and answer the following questions.
  + Which organism is more closely related to flowering plants?
  + Which organism is more distantly related to flowering plants?
  + Which organism(s) contain vascular tissue?
  + Plants evolved \_\_\_\_\_ after they evolved seeds

****

* Where can you find ground tissue in a plant?
* What are the types of root systems?
  + How do they differ?
  + How does this difference serve as an adaptation?
* What is the function of the plant root?
  + What are adaptations that exist that enable them to function effectively?
* Describe the movement of water in a plant.
  + How does hydrogen bonding, cohesion, and adhesion contribute to the movement of water in a plant?
  + How does this process differ from the movement of nutrients?
  + How does root pressure contribute to the movement of water in plants?
  + How does capillary action aid in the movement of water in plants?
* What is vascular tissue?
  + Why is it important?
  + What structures make up the vascular bundle/tissue?
    - What is the function of each?
    - How do they differ?
    - How are they similar?
* What is the direction of transport in each vascular structure?
  + How is each structure specialized for their function?
* What are adaptations of leaves that enable them to be efficient in photosynthesis?
* What is transpiration?
  + How is the leaf adapted to reduce its effects?
* How do differences in the proportion of chloroplasts relate to its ability to photosynthesize?
* Draw a cross-section of a leaf.
  + Label the parts and briefly summarize the function of each structure.
  + What is the role of the cuticle?
  + Which part of the leaf is responsible for photosynthesis?
* What are guard cells?
  + Where are they located?
  + How do these guard cells maintain homeostasis in the plant?
* What are possible explanations for why leaves on a tree differ in size and appearance?
  + How does this difference relate to its genes?
  + What is the effect of the environment on plant genes?
* What are adaptations that enable plants to survive in extreme environments, such as deserts, salty marshes, and anaerobic environments?
* What are tropisms?
  + What are the types of tropisms that exist?
  + What is positive and negative tropism?
  + Explain how they are collectively similar and different.
  + What is the role of auxins in tropisms?
    - Explain how each tropism is beneficial to the plant.
    - The behavior of the Venus flytrap is an example of which?
      * Why?
* How do gymnosperms and angiosperms differ?
  + What adaptations have enabled angiosperms to be more successful?
    - Explain why.
* What are the reproductive structures in gymnosperms and angiosperms?
  + How do they differ?
  + How are they similar?
  + How does this difference provide an evolutionary advantage?
    - Give an example of each.
* What is the function of a flower?
  + For the cross-section of a flower below, label its parts and specify the function of each.



* What adaptations would seeds possess for dispersal by wind?
  + Animal?
    - State 2
  + Or water?
    - State 2
* What is the role of hormones in the plant?
  + What system produces these hormones?
  + Give an example of the effect of hormones and it’s interaction with another system.
  + What is the function of the following hormones: ethylene, gibberellins, and cytokinin?
* Are carrots examples of modified roots, stems, or leaves?
  + Explain why.
  + Are onions examples of modified roots, stems, or leaves?
    - Explain why.
* Nitrogen fixing bacteria have a mutualistic relationship with the plant kingdom.
  + Explain why.
  + How does this role relate to the macromolecules/biomolecules- protein and nucleic acids?
  + What is a mutualistic relationship?
    - How does this differ from commensalism, and parasitism?
* How does primary growth differ from secondary growth?
* What is the difference between monocots and dicots?
  + Give an example of each.
* What is the apical meristem?
  + What is the importance of the apical meristem in plants?
  + What process takes place here?