

## Chapter 4 - Plants

1. Plant forms: What distinguishes a tree from a shrub, and an herbaceous plant from trees and shrubs? What is a liana?
2. Contrast perennial and annual plants.
3. Draw a generic plant with the following parts:
  - a. Stem
  - b. Buds
  - c. Bracts
  - d. Leaves
  - e. Generic flower, with labeled parts
4. Flowers:
  - a. Which are the male and female parts of the flower?
  - b. What are sepals?
  - c. Where do you find nectaries?
  - d. What are the fruits of plants formed from?
5. What advantages and disadvantages do flowering plants have over their non-flowering relatives?
6. Pollination:
  - a. Why do plants use animal pollinators?
  - b. What is the general exchange between plants and their pollinating animals?
  - c. What other ways do plants transfer pollen from one plant to another?
7. What are four ways that plants disperse their seeds to new locations?
8. "Plant communities" are a human construct, but useful because we lump plants by general habitat requirements, and are able to expect a generic set of plants under given conditions.
  - a. What factors influence habitat types?
  - b. What are the generalized characteristics of and threats to the following community types?
    - i. Beach vegetation
    - ii. Grasslands
    - iii. Salt marshes
    - iv. Freshwater marshes
    - v. Vernal pools
    - vi. Transitional marshes
    - vii. Coastal scrub
    - viii. Chaparral
    - ix. Mixed evergreen forests
    - x. Oak woodlands
    - xi. Riparian forest
    - xii. Coniferous forests
    - xiii. Redwood forests
    - xiv. Deserts
9. How do plants modify their leaves to deal with the drought conditions of the Mediterranean summer?
10. Why do these climate types support such great plant diversity?
11. What are two key adaptations some California plants have to fires?
12. What makes invasive species problematic to California landscapes? What are some examples of problem species?
13. How was fire used as a traditional agricultural tool in California? What were some of the primary effects of fires on oak woodlands?
14. What are some of the plant communities highly managed by California Indians?
15. What are some of the changes we may see in plant communities given ongoing climate change?
16. How would you convince your city council to restrict nurseries from selling invasive plants?

**For discussion in class** – What lessons, if any, can be learned from indigenous peoples' management of their lands?

Suggested reading:

- *The Hidden Life of Trees* by Peter Wohlleben
- *Finding the Mother Tree: Discovering the Wisdom of the Forest* by Suzanne Simard