

Notes:

- Your major questions for today are: “What characterizes each of these major groups of plants?” and, “What are the important evolutionary trends in plants?”
- For each group of plants, compare the life cycle with the generalized diagram of the Alternation of Generations on the board.
- Start 16.2 Study C early, since the pollen tubes require time to grow.

Complete in lab:

- Exercise 15.1
 - Study A: Observe live mosses; be able to identify gametophytes and sporophytes.
 - Study B: If liverworts are available, observe to find the structures listed in bold in the procedures.
- Exercise 15.2
 - Study A: Use microscope slides to find spores; be able to describe heterospory in strobilli.
 - Study B: Observe sample horsetails. Look for reproductive and vegetative growth forms.
 - Study C: Use prepared slides to observe fern gametophytes. Obviously there will be no motile sperm cells! Large fern sporophytes will be out for observation.
- Exercise 16.1
 - Study A: Observe and describe sample gymnosperms in the class, and go up to the greenhouse to observe the large potted *Cycas* and *Zamia* in the middle room.
 - Study B: Use slides to observe pine pollen, or if fresh pollen is available, made a wet mount. Male and female cones will be out for observation.
- Exercise 16.2
 - Study A: Your table will be assigned several flowers with simple structure for this exercise. Note that the outer whorl of flower structures is always composed of sepals, even if they are the same color as the petals.
 - Study B: Use the key on page 422 to determine possible pollinators for your assigned flowers.
 - Study C: Use fresh pollen from lilies or other available flowers. The pollen tubes require at least 30 minutes to *begin* growth.
 - Study D: Use the key on page 428 to classify the fruits at the front table. Yes, those are all fruits. Discuss with your group what *fruit* means in a botanical sense and how that differs from other classifications, such as kitchen usage.

Complete for homework (on your own paper):

- Discussion questions:
 - pp 391-392, questions 1-4
 - pp 395-396, questions 1, 3, 4

- p 397, questions 1 & 3
- pp 399-400, questions 1-3
- pp 413, question 1
- p 417, questions 2, 3, 5
- p 422, question 1
- p 426, question 1
- p 428, questions 1, 2
- Tables 16.3, 16.4, 16.5 (fill these in during class)
- Questions for Review,
 - pp 402-403, numbers 2, 4 (I recommend using table 15.4 as a study aid for exams)
 - pp 429-430, questions 3, 4 (I recommend using table 16.6 as a study aid for exams)
- Applying Your Knowledge,
 - pp 404-405, questions 1 and 4
 - p 431, number 3
- Group challenge questions (discuss these with your group during lab):
 1. You're a bryologist, and becoming increasingly irritated as your neighbor leans over the fence and describes how he's trying to kill all the moss in his yard. Why the irritation? Because he keeps referring to the moss as "that dratted mold," and, "all that pesky green fungus." As gently as possible, explain why moss is not a mold or any other fungus. And for good measure, explain the ecological roles of moss and why it's not a disease that needs to be wiped out.
 2. Yes, those were all fruits on the front table that you observed. Discuss the botanical definition of the term *fruit*, and how this differs from other classification systems, such as kitchen usage. According to the botanical definition of *fruit*, is a pine cone a fruit? Why or why not?

Homework is due next week at the start of lab.