

EXERCISE 4: PLANT DIVERSITY

Once you have completed this exercise, you should be able to:

1. Describe the progression in cellular organization and specialization among the green algae.
2. Explain how plants are adapted for life on land.
3. Describe the life cycle of mosses.
4. From a specimen, drawing, photo, or slide of a moss, identify the major reproductive structures, describe their function, and state which part of the life cycle they represent.
5. Describe the fern life cycle and explain how it is different from the moss life cycle.
6. From a specimen, drawing, photo, or slide of a fern, identify the major reproductive structures, describe their function, and state which part of the life cycle they represent.
7. Distinguish between homosporous and heterosporous.
8. Distinguish between megaspores and microspores, and explain how they are produced.
9. Describe the pine life cycle and explain how it is different from the moss and fern life cycles.
10. From a specimen, drawing, photo, or slide of a pine, identify the major reproductive structures, describe their function, and state which part of the life cycle they represent.
11. Explain the difference between pollination and fertilization.
12. Describe the flowering plant life cycle and explain how it is different from the moss, fern, and pine life cycles.
13. Identify the male and female structures of a flower and describe the function of each.
14. Define and identify the following terms:

Chlorophyta

Charophyta

Plantae

Bryophyta

Pterophyta

gymnosperm

angiosperm

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isogamous
oogamous
alternation of generations
nonvascular plant
vascular plant
zygote
gametophyte
gametes
archegonia
antheridia
prothallus
sporophyte
sporangia
spores
sori
xylem
phloem
homosporous
heterosporous
seed
megasporangia
megaspore mother cell
megaspores
microsporangia
microspores
pollen
ovule
fruit
flower
pistil
stigma
style
ovary
stamen
anther
filament
double fertilization
endosperm