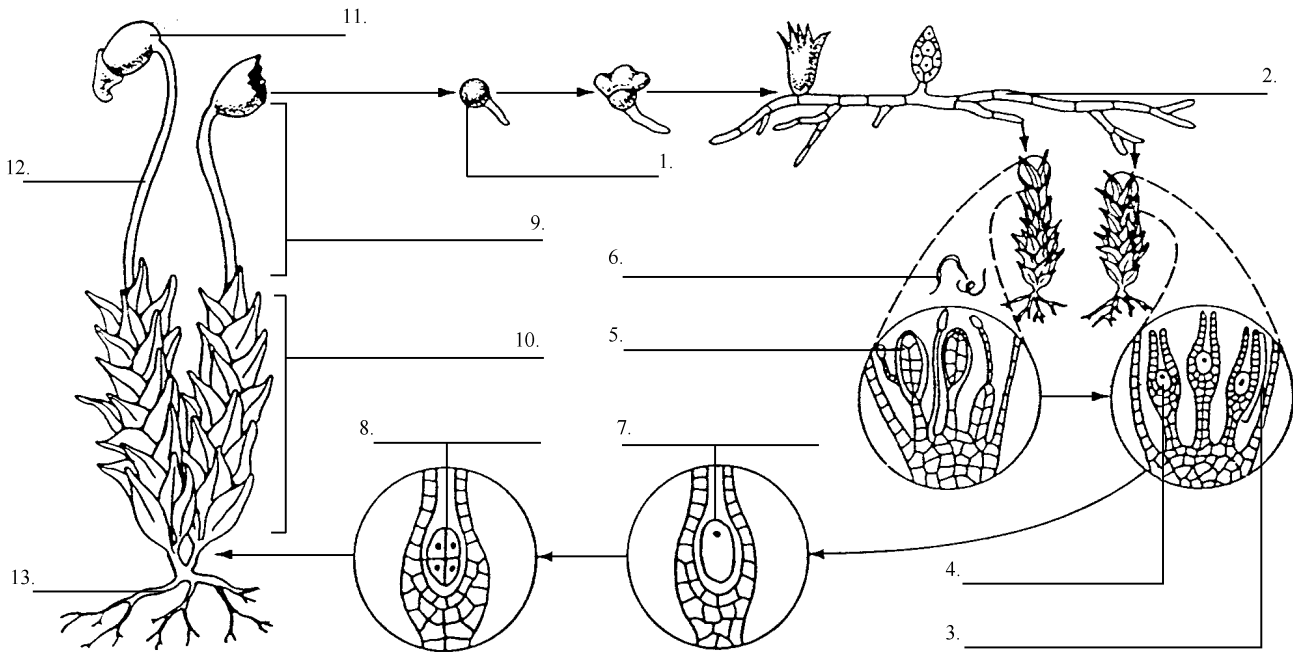


Procedure:

During reproduction, mosses exhibit **alternation of generations** in which a gametophyte generation gives rise to a sporophyte generation that, in turn, gives rise to another gametophyte generation. The **leafy**, green forms of mosses are the gametophytes, and the **stalks** are the sporophytes.

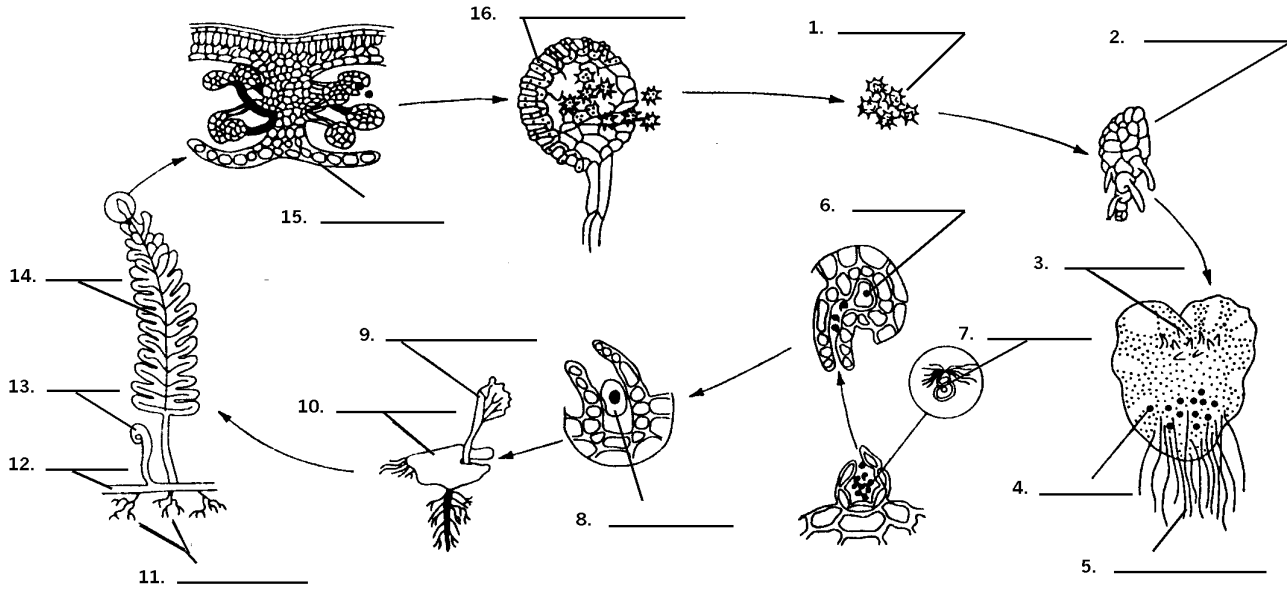
A. Study the diagram below showing the life cycle of a moss. Label each of the structures in the space provided.



B. Answer the following questions.

1. What composes a gametophyte?
2. What composes a sporophyte?
3. What is produced in the antheridium? _____. In the archegonium? _____.
4. How does a zygote form? _____. Is it haploid or diploid? _____.
5. What develops from a zygote?
6. Spores develop within sporophytes that are diploid, but the spores are haploid when released. What caused this change?
7. What is the function of protonema?
8. What evidence indicates that the mosses evolved from the green algae?

C. Study the diagram below showing the life cycle of a fern. Label each of the structures in the space provided.



D. Answer the following questions.

1. What composes a gametophyte?
2. What composes a sporophyte?
3. What is produced in the antheridium? _____. In the archegonium? _____.
4. How does a zygote form? _____. Is it haploid or diploid? _____.
5. What develops from a zygote?
6. Spores develop within sporophytes that are diploid, but the spores are haploid when released. What caused this change?
7. What is the function of prothallus?
8. What evidence indicates that the ferns evolved from the green algae?

Analysis and Conclusions

1. The moss contains vegetative structures that are similar to structures in the fern. Compare the vegetative structures of the moss and the fern that are shown in diagrams A and C.

2. Compare the spore containing structures of both plants.

3. Which stage in the life cycles of the moss and the fern would you be most likely to see in the woods? Explain your answer.

4. Compare the events that occur just after the spores are released in mosses and ferns.

5. Compare the ways in which the sperm and the egg join in mosses and ferns.

6. Explain why ferns can grow larger and taller than mosses.