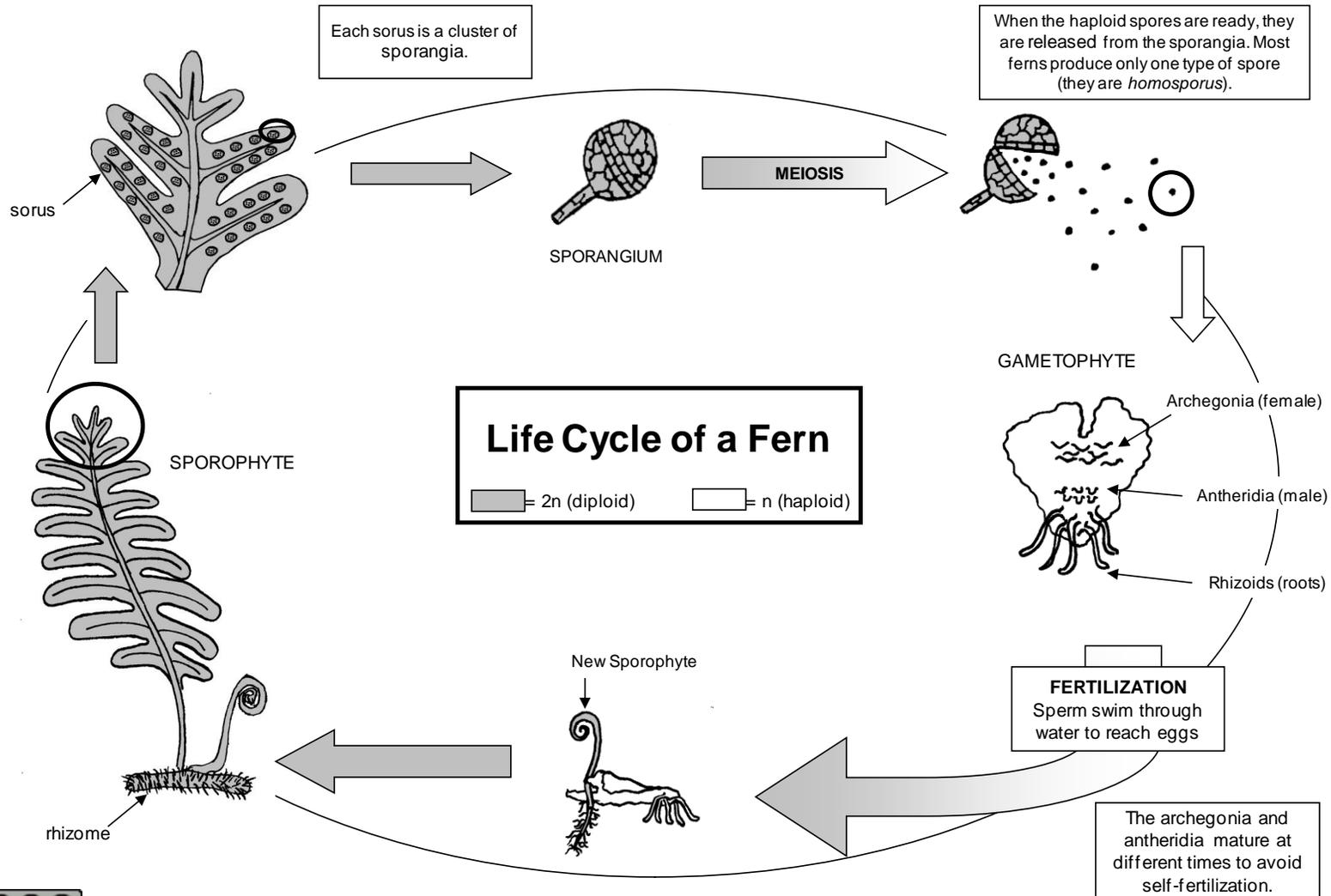
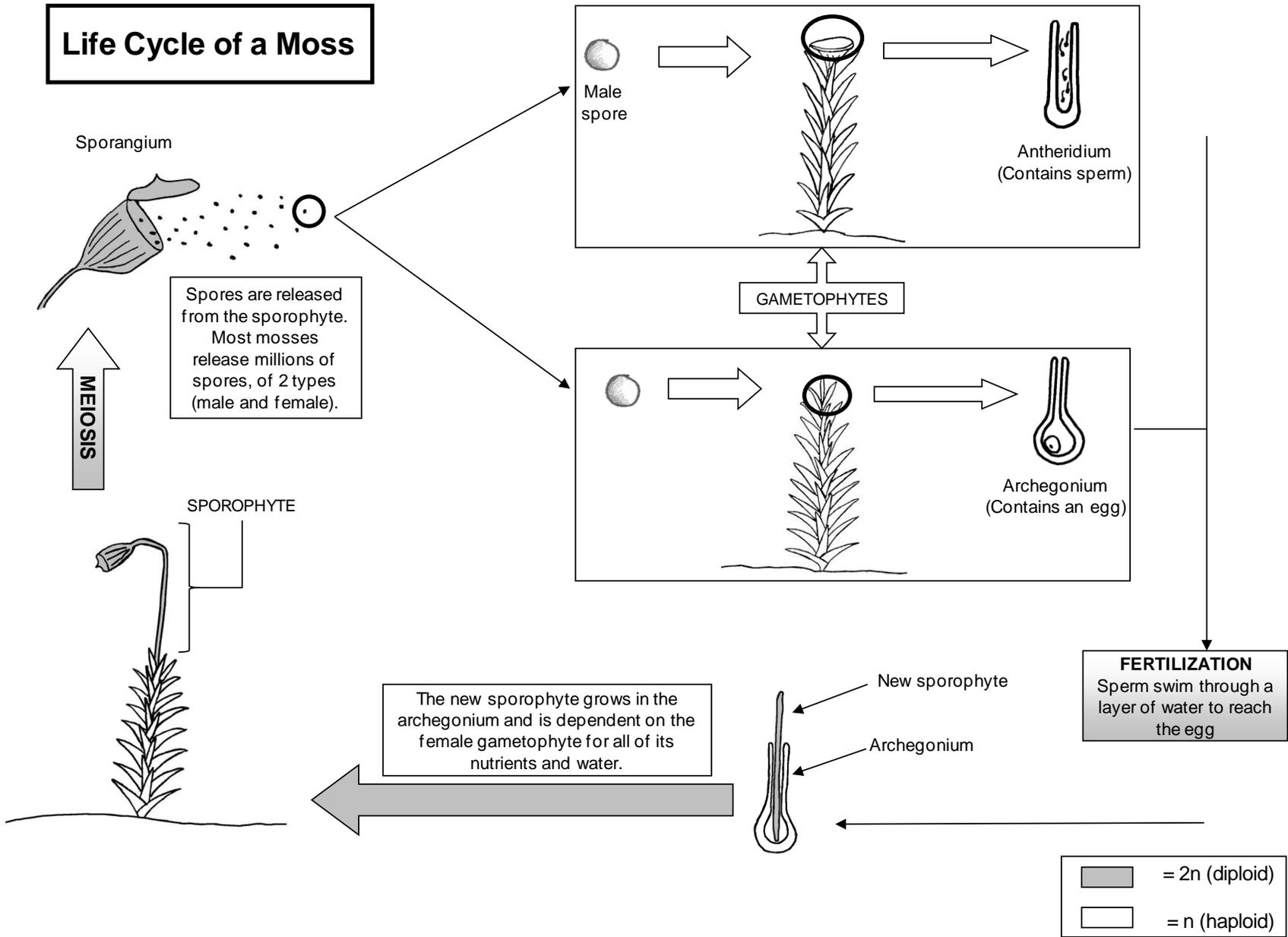


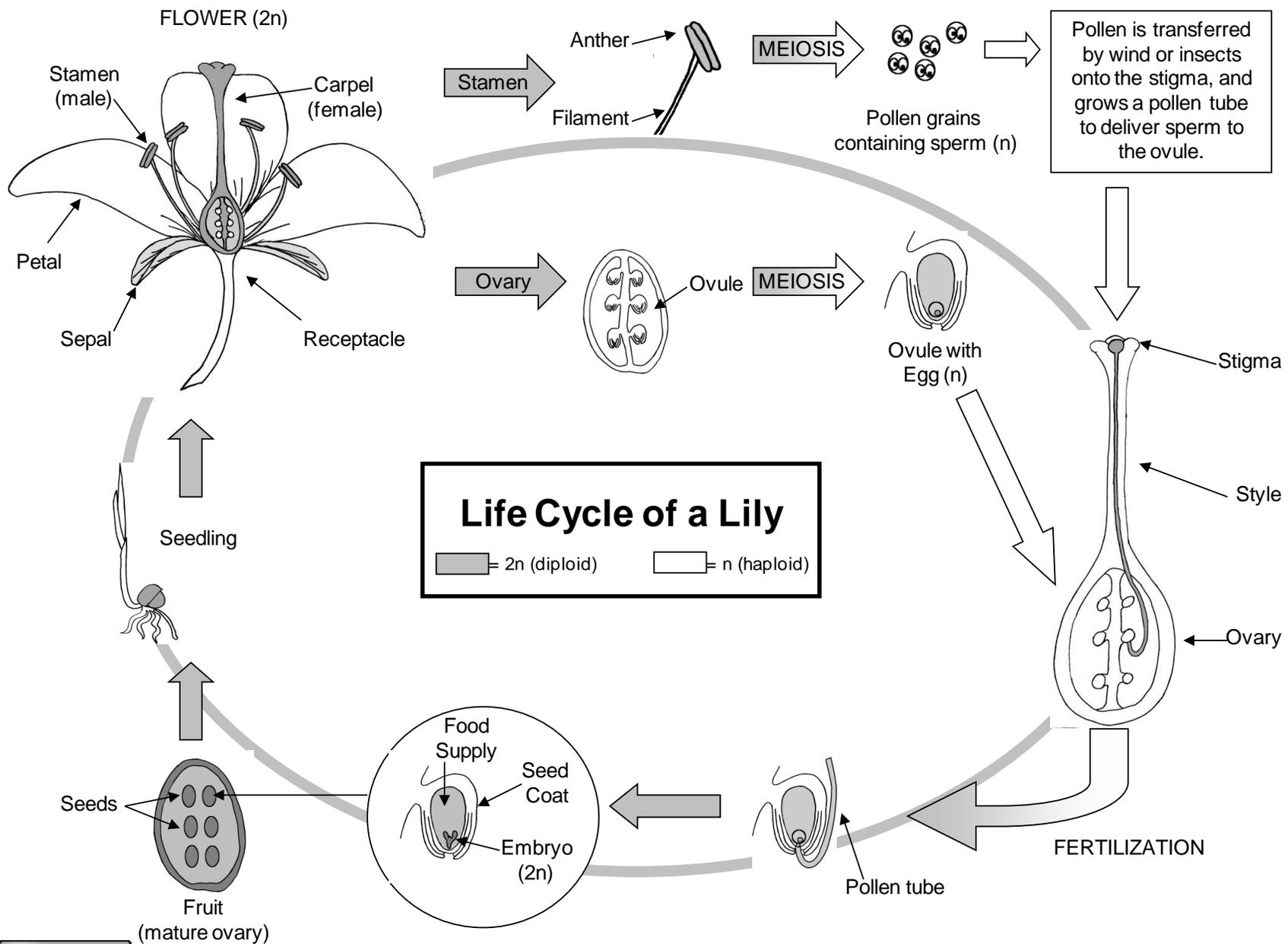


# Life Cycles of Fern/Moss/Lily



# Life Cycle of a Moss





## QUESTIONS

1. Is the green fur that people commonly call 'moss' haploid or diploid?
2. Why are ferns found mostly in damp locations?
3. Where are sori found?
4. Are mosses homosporous?
5. Is the sporophyte or the gametophyte of a fern the dominant form?
6. Why is it important that the antheridia and archegonia of a fern gametophyte mature at different rates?
7. Is the dominant form of a lily haploid or diploid?
8. List the names of the female parts of a flower.
9. Why is the stigma normally taller than the anthers in a flower?
10. What is one advantage of using pollen for fertilization rather than swimming sperm, as for a fern?
11. What advantage does having swimming sperm offer over a plant that relies on insects for fertilization?
12. Is it possible to pollinate a plant without fertilizing it?
13. What benefit does enclosing the embryo in a seed provide?

## SOLUTIONS

1. The soft green part of the moss is the gametophyte (haploid).
2. Ferns require a layer of water in order to be fertilized, which is not available in dry areas.
3. Sori (plural of sorus) are the small dot-like clusters of sporangia on the bottom of a fern leaf.
4. Mosses produce two types of spores, so they are not homosporous.
5. The dominant form of a fern (the type that is the most visible) is the sporophyte.
6. If the archegonia and antheridia matured at the same time, there would be a good chance that the sperm would fertilize the eggs of the same gametophyte. Self-fertilization would decrease variation in a population, and reduce the chances of survival for the species.
7. The dominant form of a lily is diploid.
8. The carpel is composed of the stigma, style, and ovary.
9. The stigma is above the anthers to avoid self-fertilization. (See Question 6)
10. One advantage is that the pollen requires no special conditions to reach the stigma – wind may blow it, insects may carry it, or an animal might touch it. Ferns, however, require sufficiently moist conditions, and will be unable to fertilize in dry weather.
11. Plants with swimming sperm do not depend on other organisms for their reproduction, so (for example) a shortage of bees will not affect their ability to reproduce.
12. Yes — when pollen reaches the stigma, the flower is pollinated, but it is not fertilized until the pollen has delivered the sperm to the ovule.
13. The hard coat of a seed protects the embryo, and contains a food supply to help the seedling begin its growth.

