# Life cycles of bryophytes, seedless vascular plants and gymnosperms essay sample

1) Compare and contrast the life cycles of bryophytes, seedless vascular plants and gymnosperms. Focus your answer on traits (structures or processes) that affect the success of various transitions in the life cycle. How do any of the differences you mention affect the relative success of these different groups in dry environments? All bryophytes, for example, liverworts, mosses and hornworts, have the gametophyte generation as the most dominant. Antheridia and archegonia develop on the mature plant (the gametophyte). In the presence of water, the biflagellate sperm from the antheridia swim to the archegonia and fertilization occurs, leading to the production of a diploid sporophyte. The sporophyte grows up from the archegonium. Its body comprises a long stalk topped by a capsule within which spore-producing cells undergo meiosis to form haploid spores. In ferns and their allies, including clubmosses and horsetails, the conspicuous plant observed in the field is the diploid sporophyte.

The haploid spores develop in sori on the underside of the fronds and are dispersed by the wind (or in some cases, by floating on water). If conditions are right, a spore will germinate and grow into a rather inconspicuous plant body called a prothallus. Fern sperms then swim to the egg in the archegonium and produce a zygote. It develops into a new sporophyte. The life cycle of a typical gymnosperm include the dominant sporophyte. Gymnosperms usually have two different types of cones: male and female. The male cones have pollen grain, and the female cones have the ovules. The pollen gets to the female parts by the wind and forms zygote. Then eventually becomes a mature megastrobilus. . Water serves as a means to disperse spores away from the parent, sperm swim through the water to

fertilize the female egg. All of these groups of plants have life cycles that involve alternation of generations.