

# 18.2 Student Activity Key

## Liverworts and Hornworts

All plant life cycles are dependent on photosynthesis. In seedless nonvascular and vascular plants, life cycle phases are determined by the structure and capabilities of their individual sporophytes and gametophytes.

**Answer the following questions based on your understanding of plant life cycles:**

1. Why are seedless nonvascular plants typically dependent on gametophytes? **C**
  - A) Gametophytes are capable of absorbing large amounts of water.
  - B) Gametophytes are firmly rooted in the soil by rhizoids.
  - C) Gametophytes carry on photosynthesis.
2. What are sporophytes in seedless nonvascular plants composed of? **C**
  - A) Long, slender stalks and aerial stems
  - B) Aerial stems, rhizoids, and rhizomes
  - C) Long, slender stalks and capsules
3. Why are hornworts not dependent on gametophytes? **A**
  - A) Hornwort sporophytes carry on photosynthesis.
  - B) Hornwort sporophytes expand the surface area of gametophyte root systems.
  - C) Hornworts do not have gametophytes.
4. Why do seedless vascular plants have dominant sporophyte phases? **A**
  - A) Seedless vascular plants typically have photosynthetic sporophytes.
  - B) Seedless vascular plants typically have aerial stems and branches.
  - C) Seedless vascular plants typically have rhizoids and rhizomes.
5. Why is water so essential to how plants obtain energy? **B**
  - A) Water washes away harmful chemicals and parasites.
  - B) Water plays a critical role in photosynthesis.
  - C) Water softens the surrounding soil.