Learning Target: I can read passages about seed producing and non-seed producing plants and use the information gathered to answer multiple choice comprehension questions.

Seed-Producing vs. Non-Seed Producing Plants Reading for Meaning

Plants are one of the most important groups of organisms on Earth. They make their own food through photosynthesis and provide oxygen for other living things. While all plants share some similarities, one key difference is how they reproduce.

Seed-producing plants include flowering plants and cone-bearing plants. These plants create seeds that contain an embryo and stored food, protected by a seed coat. Seeds allow plants to survive in many environments and spread over wide areas. Flowering plants, such as sunflowers and apple trees, produce seeds inside fruits. Cone-bearing plants, like pine trees, produce seeds inside cones. The seed gives the new plant a strong start because it already has food stored inside.

Non-seed producing plants, such as ferns and mosses, reproduce using spores. Spores are tiny, lightweight, and often carried by wind or water. Unlike seeds, spores do not contain stored food. For this reason, spore-producing plants must usually grow in damp or shady places where water is available. Ferns grow from clusters of spores found on the underside of their fronds, while mosses release spores from capsules on stalks.

Both types of plants have successful survival strategies. Seeds provide protection and energy, giving plants a better chance to grow in tough environments. Spores, on the other hand, allow plants to make thousands of reproductive cells at once, increasing the chance that at least some will survive.

Understanding how seed-producing and non-seed producing plants reproduce helps scientists explain how plants spread, adapt, and continue the cycle of life on Earth.

Questions (DOK 3–4)

1. A pine tree produces seeds in cones. How does this adaptation increase the pine tree's chance of survival compared to ferns?

A. Pine trees need less sunlight than ferns.
B. Pine trees' seeds contain stored food, helping seedlings grow.
C. Pine trees' seeds grow only in wet environments.
D. Pine trees produce more spores than ferns.

2. If a scientist found a plant growing in a dry desert, which characteristic would most likely help it survive there?

A. Producing spores that blow in the wind
B. Producing seeds that contain stored food and protection
C. Producing spores that release only in wet conditions
D. Producing flowers that release water for the soil

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3. A fern and a moss both reproduce without seeds. What evidence would best support a claim that ferns and mosses share similar reproduction strategies?

A. They both use cones to make seeds.
B. They both need animals to carry their spores.
C. They both release spores that grow into new plants.
D. They both produce fruits that protect spores.

4. Imagine a new environment becomes very dry over many years. Which type of plants would most likely struggle the most, and why?

A. Seed-producing plants, because their seeds dry out
B. Non-seed producing plants, because spores require moisture to grow
C. Cone-bearing plants, because cones cannot survive dry air
D. Flowering plants, because flowers cannot survive in deserts

5. Which reasoning best explains why non-seed producing plants like moss are usually found in shady forests instead of open fields?

A. They need shade to prevent seed damage.
B. They need water to help spores grow into new plants.
C. They use flowers to collect energy from the sun.
D. They cannot photosynthesize in bright light.

6. A scientist claims that seed-producing plants are more likely than spore-producing plants to survive in extreme conditions. Which evidence best supports this claim?

A. Seeds have stored food and protective coats.
B. Seeds require animals to survive.
C. Seeds grow faster than spores in shade.
D. Seeds are lighter and travel farther than spores.

7. Compare how ferns and pine trees reproduce. Which explanation correctly contrasts the two?

A. Ferns make seeds with food inside, while pine trees make spores.
B. Pine trees make seeds in cones, while ferns release spores from fronds.
C. Pine trees grow only in water, while ferns grow on land.
D. Ferns use flowers, while pine trees use cones.

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8. A gardener plants seeds from a sunflower and also plants spores from a fern in a sunny, dry yard. Which outcome is most likely, and why?

A. Both plants will grow well because both need sunlight.
B. The fern will grow better because spores do not need water.
C. The sunflower will grow better because its seeds have stored food.
D. Neither plant will grow because seeds and spores need shade.

9. What conclusion can be made about why plants evolved different reproductive methods?

A. To compete with animals for food
B. To adapt to different environments and increase survival chances
C. To prevent oxygen from leaving Earth's atmosphere
D. To reduce the number of offspring produced each year

10. You observe two plants: one grows flowers with fruits, and the other grows tiny capsules that release powder-like cells. Which conclusion is best supported?

A. Both are cone-bearing plants.
B. The first is a seed-producing plant; the second is a non-seed producing plant.
C. Both are spore-producing plants.
D. The first is a non-seed producing plant; the second is a seed-producing plant.

