

Key Concept Builder 

LESSON 1

What is a plant?

Key Concept What characteristics are common to all plants?

Directions: Answer each question or respond to each statement on the lines provided.

1. All plants are made from eukaryotic cells. What is special about a eukaryotic cell?

2. List two ways a plant cell differs from an animal cell.

3. Why are chloroplasts important for the survival of plant cells?

4. List two functions of cell walls found in plants.

5. What function do vacuoles serve in plant cells?

6. Why is it an advantage for plants to be multicellular?

7. Why are plants considered producers?

8. Why are plants, as producers, important to all other organisms?

9. What food source is made during photosynthesis?

Enrichment**LESSON 1**

The "Dinosaur" Tree

Imagine what it was like being the person to discover a living thing thought to have been extinct for more than two million years. Suppose it went something like this ...

An Avid Bushwalker

My name is *David Noble*, and I am a field officer in Australia with the National Parks and Wildlife Services (New South Wales). One September day in 1994 was a memorable one for me.

On a cool day in June, I was hiking with friends in the Wollemi National Park some 150 miles from Sydney. Within this enormous park are about 500 deeply water-carved gorges. It is difficult to reach the floor of any of them without rappelling in and hoisting out. That June, we heaved over rock ledges and slid on our ropes to the floor of a canyon to view the temperate rain forest from below the canopy. Marking the spot, we vowed to return to this same spot on our next trip.

That Fateful Day

On September 10, 1994, my mates and I hiked to that gorge marked on our map. This time we headed in from the other end of the gorge to survey a different landscape that was previously unseen and unexplored.

Applying Critical-Thinking Skills

Directions: Answer each question.

- 1. Predict** What might have happened to these unique and rare trees if David Noble and his hiking friends had not taken the path from the opposite side of the gorge on that day in September 1994? What did Noble's discovery make possible for the Wollemi pines?
- 2. Infer** Why do you think the precise location of the stand of Wollemi pine trees is kept secret and that it is closed to the public?

I expected to see the usual sassafras, coachwood, ferns, and orchids. Instead, I was looking at strange trees I had never seen before. These trees had bark like bubbly chocolate and soft, flat, bladelike needles. I took fallen samples for analysis.

An Astounding Discovery

The next month, I returned to the canyon with an experienced naturalist who recognized the samples as being from a plant thought to be extinct for two million years. There was a small, well-protected stand of 23 of these amazing pine trees in this remote gorge—and they had been there for millions of years. The tree was named *Wollemia nobilis*, for the park and, incredibly, for me!

An Undisclosed Location

To protect these trees in the wild, their precise location is known only to a few scientists, and the area is closed to the public. However, the seeds are being cultivated and small saplings can be ordered for your garden. Commercial propagation is part of the strategy to increase their number. Although their number in the wild remains small, they grow well when they are cultivated.