Bean Plant Blueprint

Notice how exact science words make a process clear.

CCSS.ELA-Literacy.W.4.2d "Use precise language and domain-specific vocabulary to inform about or explain the topic."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline six precise science words or phrases that name a plant part, stage, or process. These words help explain exactly how a bean seed grows.

From Seed to Plant

1. After a bean seed is planted, it absorbs water through its seed coat. The water causes the embryo inside to swell. Soon, the seed coat splits, and a tiny root, called a radicle, pushes into the soil. The radicle anchors the young plant and takes in water and minerals. This first stage is called germination.

2. Next, a shoot grows upward and breaks through the soil surface. The shoot carries two seed leaves, or cotyledons. At first, cotyledons provide stored food for the seedling. As green leaves unfold, chlorophyll captures light energy. During photosynthesis, the leaves use light, water, and carbon dioxide to make sugar, which supplies energy for the growing plant.

3. Over time, the seedling develops a stem and more leaves. Its roots branch through the soil, forming root hairs that absorb water and dissolved minerals. The stem transports water from the roots to the leaves. With enough sunlight, water, air, and space, the seedling can grow into a mature bean plant. Later, the plant may produce flowers and seed pods.

2 ANSWER WITH EVIDENCE

Use the passage

1. What is the name of the first root that pushes into the soil? Explain how radicle is more precise than root.

2. Which domain-specific word names the process that makes sugar in the leaves? Copy the sentence that tells what is used in this process.

3. The passage says that the stem transports water. What does transports tell you more exactly than moves?

4. Which two plant-part terms are linked to these jobs: absorbing water and dissolved minerals, and carrying water from roots to leaves?

3 YOUR TURN

Your own words

Write three sentences that explain a bean plant's growth from seed to seed pod. Use at least four precise science terms from the passage, and make clear what happens first, next, and later.

ANSWER KEY

Bean Plant Blueprint

GRADE 4 · W.4.2d

PART 1 · READ AND MARK

Underline six precise science words or phrases that name a plant part, stage, or process. These words help explain exactly how a bean seed grows. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What is the name of the first root that pushes into the soil? Explain how radicle is more precise than root.	**A radicle. It names the tiny first root that grows from the seed.**
2	Which domain-specific word names the process that makes sugar in the leaves? Copy the sentence that tells what is used in this process.	**Photosynthesis. "During photosynthesis, the leaves use light, water, and carbon dioxide to make sugar, which supplies energy for the growing plant."**
3	The passage says that the stem transports water. What does transports tell you more exactly than moves?	**It tells that the stem carries water from the roots to the leaves.**
4	Which two plant-part terms are linked to these jobs: absorbing water and dissolved minerals, and carrying water from roots to leaves?	**Root hairs absorb water and dissolved minerals. The stem carries water from roots to leaves.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

First, water enters the seed coat and starts germination. Next, the radicle grows into the soil while cotyledons feed the seedling. Later, chlorophyll helps the leaves make sugar during photosynthesis, and the mature plant can form seed pods.

Accept other accurate precise science terms from the passage when students explain their meanings or functions. For the writing task, accept varied sequences if they use at least four appropriate terms and clearly explain the stages.