

Plants Notice Changes

Read how plants respond to light, heat, and gravity.

SC.3.L.14.2 "Investigate and describe how plants respond to stimuli (heat, light, gravity), such as the way plant stems grow toward light and their roots grow downward in response to gravity."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Circle each stimulus named in the passage. Underline the words that tell how a plant responds, so you can connect each change around a plant to its response.

A Plant's Surroundings

- ① On a classroom windowsill, Maya placed a young bean plant in a box with a small opening on one side. Sunlight entered through the opening. After several days, the plant's stem curved toward the opening. Light was a stimulus, something in the plant's surroundings that can cause a response. The stem's bending was the plant's response to light.
- ② Heat can also affect a plant. In very hot weather, some plants close tiny openings on their leaves. This response can slow the loss of water from the leaves. A plant does not walk away from heat. Instead, it can change how its parts work. Different kinds of plants may respond to heat in different ways.
- ③ Gravity pulls objects toward Earth. It also guides plant roots. A gardener placed a seedling on its side for a short time. At first, the roots pointed sideways with the pot. Later, the roots curved and grew downward. Growing down helps roots move into soil, where they can take in water and minerals. This is a response to gravity.

2 ANSWER WITH EVIDENCE Use the passage

1 What stimulus caused Maya's bean plant stem to curve?

2 How can some plants respond to very hot weather, and how does this help?

3 A seedling is placed on its side. What do its roots do later, and what stimulus causes this response?

4 How are a stem growing toward light and roots growing downward alike?

3 YOUR TURN Your own words

Plan a three-panel investigation. In each panel, draw one potted plant and change one condition: light from one side, a warm place, or a pot placed on its side. Under each panel, write a prediction that names the stimulus and a plant response.

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PART 1 • READ AND MARK

Circle each stimulus named in the passage. Underline the words that tell how a plant responds, so you can connect each change around a plant to its response. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What stimulus caused Maya's bean plant stem to curve?	Light, or sunlight entering through the opening.
2	How can some plants respond to very hot weather, and how does this help?	They close tiny openings on their leaves. This can slow water loss from the leaves.
3	A seedling is placed on its side. What do its roots do later, and what stimulus causes this response?	The roots curve and grow downward. Gravity causes this response.
4	How are a stem growing toward light and roots growing downward alike?	Both are plant responses to a stimulus in the plant's surroundings.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Panel 1 shows a plant beside a light on its left. Light is the stimulus, and the stem will bend toward the light. Panel 2 shows a plant in a warm place. Heat is the stimulus, and tiny openings on the leaves may close to slow water loss. Panel 3 shows a pot on its side. Gravity is the stimulus, and the roots will curve and grow downward.

Accept equivalent wording that correctly connects light to stem growth toward light, heat to a plant change that slows water loss, and gravity to roots growing downward. For the investigation, accept clear drawings and predictions that name each stimulus and a matching plant response.