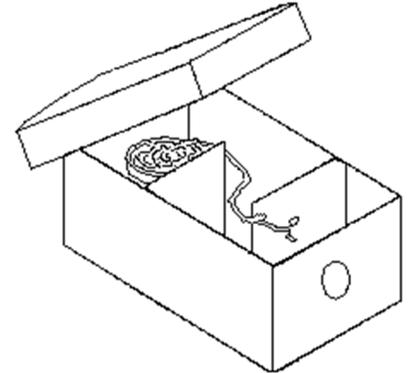


Class Copy

Forces that Move Plants and Homeostasis Test – Pre-AP

1. A student did the experiment to the right for a science fair. The box was taped shut with just the one hole cut in it. The student made sure the plant received the normal amount of water, nutrients, and carbon dioxide. What was the student testing?



- A. Hydrotropism
- B. Gravitropism
- C. Thigmotropism
- D. Phototropism

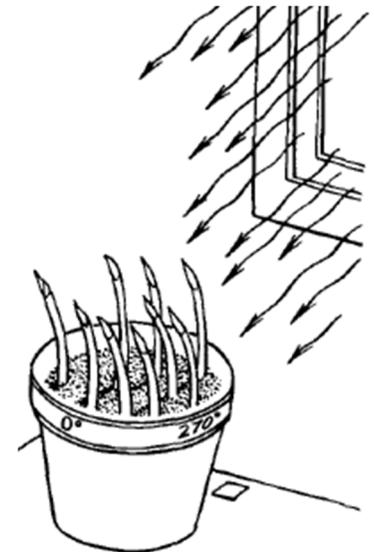
2. Step 1: An oak tree produces seeds known as acorns.
Step 2: The acorns are dropped on the ground and buried.
Step 3: The roots will come out of the acorn and then the shoots.
What is step 3 known as?

3. Plant cells must be shaped in the form of a rectangle so they can be stacked on top of each other. This allows the plant to grow taller without having bones to support itself. Plants, however, need water to fill their cells so that the cells do not collapse. If a cell collapses it is because what became too low?

4. Which of the following pairs of tropisms and stimuli is incorrect?

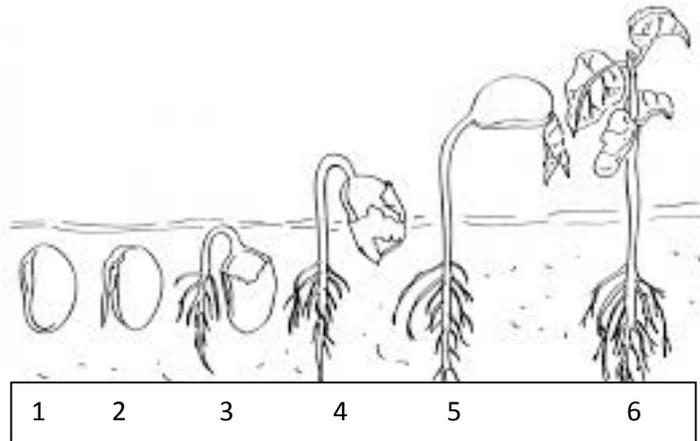
- A. Phototropism – Light
- B. Geotropism – Rock
- C. Hydrotropism – Water
- D. Thigmotropism – Touch

5. The plant in the diagram to the right is demonstrating _____.
(Be specific – positive or negative)



6. If a plant is touched by a passing animal and its leaves close, this is known as what kind of tropism?

*****Use the following diagram to answer questions 7 – 9.*****



7. Which of the following pairs of plants and gravitropism are demonstrated in the diagram?
- A. Stem – Positive Gravitropism, Root – Negative Gravitropism
 - B. Stem – Positive Gravitropism, Root – Positive Gravitropism
 - C. Stem – Negative Gravitropism, Root – Positive Gravitropism
 - D. Stem – Negative Gravitropism, Root – Negative Gravitropism
8. Roots stay in the soil because of different tropisms to get water and nutrients for the plant. Stems will grow out of the soil to find two important things for photosynthesis. What are those two things?
9. Chlorophyll is the green pigment inside the Chloroplast of a plant. It is responsible for capturing sunlight for photosynthesis. Which stage will the plant start to produce chlorophyll?
10. Homeostasis is the process that an organism goes through to maintain internal _____.
- a. Stimulus
 - b. Response
 - c. Homogenous
 - d. Equilibrium

*****Use the diagram of the plant on the right for Questions 11-13.*****

11. What is the probable cause of the physical appearance of the plant to the right?

12. If the plant to the right does not respond correctly, it will die. How must the plant respond so that it may live?

13. For the plant to the right to stand upright again, the specialized hormones are sent as communication to the nucleus of the cell. The nucleus then tells the rest of the cell what to do to fix the problem and get back to normal. Which of the following identifies the nucleus and describes the response of the cell?

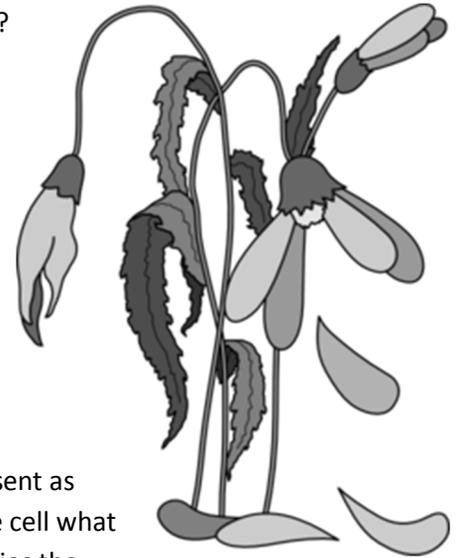
- A. Receptor; Positive Feedback
- B. Receptor; Negative Feedback
- C. Control Center; Positive Feedback
- D. Control Center; Negative Feedback

14. A student places a plant in a dark room next to a growth lamp, while providing sufficient water and nutrients to ensure the plant's growth and survival. The plant will likely respond by –

15. The roots of plants grown on the space shuttle while in orbit around Earth all have different orientations. A logical conclusion is that the irregular root growth is caused by the lack of –

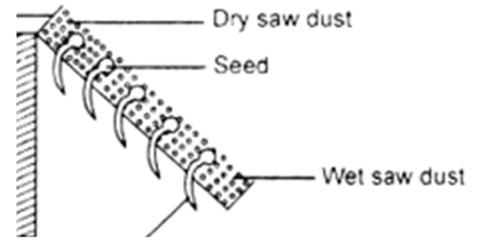
16. Sunflowers have specialized cells that enable the sunflower to track the Sun. Which of the following allows the sunflower to move to face the Sun?

- A. Gravity
- B. Electricity
- C. Friction
- D. Turgor pressure



17. A wilted plant returns to an upright position after being watered. This is an example of the effects of which of the following forces?

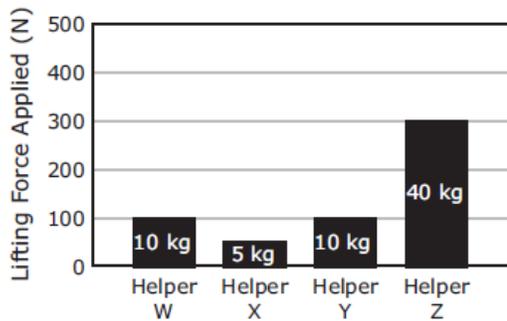
18. The diagram to the right shows what happens when a plant's roots grow with positive hydrotropism. What stimulus is causing the roots to grow that way?



19. How would the body respond to an increased environmental temperature?

20. Four students volunteered to help a librarian move containers of library materials. The graph shows the amount of force used to lift the containers. The numbers in the bars show the mass of each container. The numbers in the bars show the mass of each container. The results for each student helper are shown in the table.

Data for Helpers



Helper	Result of Lifting Force
W	The container was raised 1 m to a shelf.
X	The container was raised 2.5 m to the top of a cabinet.
Y	The container was raised 0.5 m to a tabletop.
Z	The container was too heavy to lift even after four tries.

Which helper did the most work? $W=Fd$

Forces that Move Plants and Homeostasis Test Answer Sheet – Pre-AP

1. _____

11. _____

2. _____

12. _____

3. _____

13. _____

4. _____

14. _____

5. _____

15. _____

6. _____

16. _____

7. _____

17. _____

8. _____

18. _____

9. _____

19. _____

10. _____

20. _____

3.

- A. Hydrotropism
- B. Turgor Pressure
- C. Photosynthesis
- D. Hydrolysis

8.

- A. Oxygen and Water
- B. Carbon Dioxide and Water
- C. Carbon Dioxide and Sunlight
- D. Oxygen and Sunlight

11.

- A. Loss of Water
- B. Cold conditions
- C. Negative Phototropism
- D. Positive Gravitropism

12.

- A. Increase Photosynthesis
- B. Increase Turgor pressure
- C. Decrease Osmosis
- D. Increase Hydrotropism

14.

- A. bending towards the lamp.
- B. wilting and eventually dying.
- C. shedding all of its leaves.
- D. increasing its rate of photosynthesis.

15.

- A. Geotropism
- B. Gravity
- C. Turgor pressure
- D. Thermal gradient

17.

- A. Gravity
- B. Light
- C. Water
- D. Touch

19.

- A. Sweating
- B. Vomiting
- C. Shivering
- D. Crying