

Drops to Roots

Trace how connected parts move water to plants.

4.5.D "examine and model the parts of a system and their interdependence in the function of the system;"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each system part. Then number the parts 1 to 6 in the order water moves through them, so you can see how the parts depend on one another.

A Garden Watering System

- ① The school garden uses a drip-watering system to give plants water slowly. A barrel holds rainwater. A spigot at the bottom lets water enter a long hose. Small tubes branch from the hose and lead to each plant. Tiny holes in the tubes release drops near the roots. This system saves water because it wets the soil instead of spraying the whole garden.
- ② Each part depends on other parts to do its job. The barrel must contain water before the spigot can send water into the hose. The hose must stay open so water can reach the small tubes. If a tube is pinched, the plant at its end gets little or no water. If the holes are clogged with dirt, drops cannot leave the tube and the roots stay dry.
- ③ Garden helpers check the system each week. They fill the barrel, look for leaks, and clear dirt from the holes. These actions help every part work together. When water moves from the barrel through the spigot, hose, tubes, and holes, plants receive water at their roots. Healthy roots take in water, and the plants can grow leaves, flowers, or vegetables.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What path does water follow from the barrel to the plant roots?

2 Why must the barrel contain water before the spigot can do its job?

3 What happens to a plant if its tube is pinched? Explain why.

4 How do the hose and the small tubes work together to water the plants?

3 YOUR TURN _____ Your own words

Choose a different system you know, such as a bicycle, a pencil sharpener, or a bird feeder. In the box, draw and label at least four parts, using arrows to show how they work together. Then write two sentences that state the system's function and explain what happens if one labeled part fails.

PART 1 • READ AND MARK

Underline each system part. Then number the parts 1 to 6 in the order water moves through them, so you can see how the parts depend on one another. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What path does water follow from the barrel to the plant roots?	barrel, spigot, hose, small tubes, tiny holes, roots
2	Why must the barrel contain water before the spigot can do its job?	The barrel supplies the water that the spigot sends into the hose.
3	What happens to a plant if its tube is pinched? Explain why.	The plant gets little or no water because the pinched tube blocks water from reaching it.
4	How do the hose and the small tubes work together to water the plants?	The hose carries water to the small tubes. The tubes lead to the plants, and their holes release drops near the roots.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Sketch labels and arrows: pedal → chain → gears → rear wheel, with handlebars also labeled. The bicycle system moves a rider when the pedal turns the chain, the chain turns the gears, and the gears turn the rear wheel. If the chain breaks, the pedal cannot turn the gears, so the rear wheel will not be powered.

Accept equivalent names for parts, such as tap for spigot, if the water path and relationships are correct. For the open task, accept any reasonable system with at least four labeled parts, arrows showing connections, a stated function, and a logical effect of a failed part.