

Where Wastewater Goes

Trace a treatment process and identify its central conclusion.

CCSS.ELA-Literacy.RST.9-10.2 "Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline the sentence that states the plant's overall purpose, circle sequence words, and number the six stages the water follows from screening to disinfection.

Inside a Wastewater Treatment Plant

- ① When water leaves homes, schools, and businesses through drains, it carries soap, food scraps, human waste, and tiny particles. A wastewater treatment plant does not simply make this material vanish. Instead, it separates and changes pollutants through several linked stages before releasing treated water to a river or supplying it for limited reuse, such as irrigation. The plant's goal is to reduce materials that could harm ecosystems or spread disease. Each stage handles a different kind of contaminant, so the order of the process matters.
- ② First, bar screens catch rags, plastic, and other large objects that could damage equipment. In a grit chamber, water slows enough for sand, gravel, and similar heavy particles to settle. Next, the flow enters a primary clarifier, a large tank where many suspended solids sink as sludge and oils rise for removal. These physical steps remove substantial debris, but dissolved wastes and many microorganisms remain in the water. The partly cleaned water therefore moves to a biological stage rather than leaving the plant after settling.
- ③ In aeration tanks, workers add air so bacteria can use oxygen while consuming much of the remaining organic waste. A second clarifier lets the bacteria settle, and some are returned to the aeration tank to keep the biological system working. The clarified water is disinfected, often with ultraviolet light or chlorine, before discharge or reuse. Meanwhile, collected sludge is thickened and may be digested to reduce its volume and produce biogas. Treatment combines physical separation, living organisms, and disinfection to protect water systems from pollution.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What central idea does the passage develop about wastewater treatment?

2 Why does the water move to a biological stage after the physical steps?

3 Trace the main path of the water after it leaves the primary clarifier.

4 After primary clarification, how does the passage show that water and collected solids follow different paths?

3 YOUR TURN _____ Your own words

Write a 65-80 word summary for a city newsletter. State the central idea, trace the water's main path through at least four stages, and explain why the stages work in that order.

PART 1 • READ AND MARK

Underline the sentence that states the plant's overall purpose, circle sequence words, and number the six stages the water follows from screening to disinfection. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What central idea does the passage develop about wastewater treatment?	Wastewater treatment uses linked physical, biological, and disinfection stages to remove different pollutants and protect water systems.
2	Why does the water move to a biological stage after the physical steps?	Screens, settling, and clarification remove debris and many solids, but dissolved wastes and many microorganisms remain. Bacteria in the biological stage consume much of the remaining organic waste.
3	Trace the main path of the water after it leaves the primary clarifier.	It enters aeration tanks, moves to a second clarifier, is disinfected, and is then discharged or reused.
4	After primary clarification, how does the passage show that water and collected solids follow different paths?	The partly cleaned water moves to biological treatment, while solids collected as sludge are thickened and may be digested to reduce volume and produce biogas.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Wastewater treatment protects water systems by using linked stages that remove different pollutants. Screens and grit chambers take out large, heavy debris before a primary clarifier removes more solids. Because dissolved waste and microorganisms remain, aeration helps bacteria consume organic material, and a second clarifier removes those bacteria. Finally, disinfection prepares the water for discharge or reuse. This order removes large material before later treatment and reserves disinfection for clarified water.

Accept equivalent descriptions of the sequence when they preserve the order and distinguish the water path from the sludge path. For the summary, require a central idea, at least four accurately ordered stages, and an explanation that different stages address different contaminants.