Beyond Clear Water

Trace how a treatment process develops and responds to change.

9-10.RST.2.a "Analyze the text's development of a complex process, phenomenon, or concept."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each step that changes or tests the water, and number those steps in order. Circle two places where a condition at one stage affects a later decision.

From River to Tap

1. After a storm, river water may look like chocolate milk. It carries bits of soil, leaves, and microbes too small to see. A drinking-water plant cannot make this water safe by simply letting it stand. First, workers add a coagulant, a chemical that helps tiny suspended particles lose the forces that keep them apart. Gentle mixing then lets the particles gather into larger clusters called flocs. This change in size matters: a single speck can remain suspended, but a heavy floc can sink. The plant is not removing every hazard yet; it is preparing the water for later steps.

2. Water moves slowly through a settling basin, where many flocs drop to the bottom as sludge. The clearer water above them passes through layers of sand or other filter material. Filters catch particles that did not settle, including some that could shelter microbes from disinfectant. Operators clean clogged filters so they keep trapping particles effectively. Even after filtering, clear-looking water may still contain dangerous microbes. The plant adds a disinfectant, often chlorine, to inactivate them. It must remain in contact with the water long enough to work, so water travels through a contact tank before entering the distribution pipes.

3. These stages form a chain, but they are not a fixed recipe. After heavy rain, more particles enter the river; workers may adjust the coagulant dose and check how much material remains in the water after filtering. Too little coagulant leaves particles that strain the later stages, while too much wastes chemicals and can make treatment harder. Operators also measure disinfectant levels because organic material in the water can use up some chlorine. A final check helps them see whether enough remains to protect water as it travels through pipes. Each measurement connects changing river conditions to a decision farther along the chain.

2 ANSWER WITH EVIDENCE

Use the passage

1. How does the problem described at the start of the passage explain why the plant uses more than one treatment step?

2. Why must the particles change size before the settling basin can remove many of them? Explain how this change also helps the filter.

3. How does the passage show that clear-looking water is not necessarily safe after filtering?

4. How does heavy rain change the process from a fixed sequence of steps into a series of decisions?

3 YOUR TURN

Your own words

Write two new opening sentences for readers who think clear water is always safe. Then write two sentences explaining how your opening prepares readers to understand two different later steps in the passage.

ANSWER KEY

Beyond Clear Water

HIGH SCHOOL · 9-10.RST.2.a

PART 1 · READ AND MARK

Underline each step that changes or tests the water, and number those steps in order. Circle two places where a condition at one stage affects a later decision. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How does the problem described at the start of the passage explain why the plant uses more than one treatment step?	**River water contains both suspended material and microbes. Gathering and removing particles prepares the water for filtering, while disinfection addresses microbes that may remain.**
2	Why must the particles change size before the settling basin can remove many of them? Explain how this change also helps the filter.	**Tiny particles can stay suspended, but larger flocs can sink in the basin. The filter then catches particles that did not settle.**
3	How does the passage show that clear-looking water is not necessarily safe after filtering?	**Filtering removes particles, but dangerous microbes may remain. Disinfectant must inactivate them and stay in contact with the water long enough to work.**
4	How does heavy rain change the process from a fixed sequence of steps into a series of decisions?	**Rain can add particles, so workers may adjust the coagulant dose and check the filtered water. They also measure disinfectant because organic material can use up chlorine.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

A glass of river water can look clean while still carrying microbes. A treatment plant must address what eyes can see and what they cannot. This opening helps readers distinguish the settling basin's job of removing flocs from later safety checks. It also prepares them to understand why disinfectant needs time in a contact tank after the water passes through a filter.

Accept explanations that accurately connect stages rather than merely list them. For Part 3, look for two original opening sentences and two explanation sentences tied to distinct later steps.