Where Water Went

Use geographic evidence to trace change in the Aral Sea.

MWH.P.2.3 "Demonstrate a mastery of geographic concepts and the use of geographic tools to understand the impact of geography on the past and present. Actively engage in asking and answering geographic questions by acquiring, organizing..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline two changes in where water is found, circle two human decisions that affected river flow, and number the sources of geographic evidence you would compare to explain those changes.

The Changing Aral Sea

1. The Aral Sea lies between Kazakhstan and Uzbekistan in Central Asia. On a 1960 survey map, the sea appears as one broad body of water, fed by the Amu Darya from the south and the Syr Darya from the northeast. A satellite image from 2014 shows a different pattern: the northern basin remains, while much of the southern basin has become dry lakebed. Both sources show the same region, but they record it at different times. Comparing the shorelines lets a geographer ask where water disappeared, rather than assuming the entire region changed in the same way.

2. Beginning in the 1960s, Soviet planners redirected river water into irrigation canals, especially to grow cotton in dry areas. Water that entered fields, evaporated, or leaked from canals no longer reached the sea. The changing shoreline therefore connects a political and economic decision to a physical change. As the southern basin shrank, former fishing ports such as Moynaq in Uzbekistan were left far from open water. Exposed lakebed also became a source of salty dust, which can harm farmland and human health. A map of shorelines shows where change occurred, but it cannot, by itself, prove why it happened.

3. Other evidence helps test the explanation. Records of river diversion show large amounts of water routed toward farms, while population and land-use maps identify communities and cropland near the former shore. In 2005, Kazakhstan completed the Kok-Aral Dam, which holds more Syr Darya water in the North Aral Sea. Later satellite images show that the northern basin recovered some water, even as much of the southern basin remained dry. This uneven result matters: government choices altered both river flow and livelihoods, but a local repair did not reverse the losses everywhere. Comparing sources across time reveals both the reach and the limits of these decisions.

2 ANSWER WITH EVIDENCE

Use the passage

1. How does the 2014 pattern differ from the 1960 pattern, and what does that difference tell you about where the sea changed most?

2. Why would you use river-diversion records along with shoreline maps to explain the shrinking sea?

3. How did the location of Moynaq turn a change in the physical environment into a problem for people?

4. To what extent did the Kok-Aral Dam reverse the effects of earlier water diversions? Use the locations of the two basins in your answer.

3 YOUR TURN

Your own words

Imagine a town on a river is considering a new irrigation canal. In 4 to 5 sentences, name two geographic data sources you would collect, explain how you would compare them, identify one likely benefit and one possible downstream cost, and state what evidence would affect your recommendation.

ANSWER KEY

Where Water Went

HIGH SCHOOL · MWH.P.2.3

PART 1 · READ AND MARK

Underline two changes in where water is found, circle two human decisions that affected river flow, and number the sources of geographic evidence you would compare to explain those changes. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How does the 2014 pattern differ from the 1960 pattern, and what does that difference tell you about where the sea changed most?	**The 1960 map shows one broad sea. By 2014, the northern basin remained, but much of the southern basin was dry, so the loss was especially severe in the south.**
2	Why would you use river-diversion records along with shoreline maps to explain the shrinking sea?	**Shoreline maps show where the sea shrank, while diversion records show that water was routed toward farms instead of reaching the sea.**
3	How did the location of Moynaq turn a change in the physical environment into a problem for people?	**Moynaq was a fishing port near the shore. As the southern basin shrank, it was left far from open water, disrupting fishing.**
4	To what extent did the Kok-Aral Dam reverse the effects of earlier water diversions? Use the locations of the two basins in your answer.	**It helped the northern basin recover some water, but much of the southern basin remained dry. Its effects were limited to part of the sea.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would compare satellite images of the river in dry months with records of water withdrawals at upstream farms. I would check whether the river narrows downstream from farms that take the most water. A canal might increase food production, but it could leave less water for a downstream wetland. I would support a smaller canal only if the records showed that enough water would still reach the wetland in dry months. If the wetland already loses water each summer, I would recommend more efficient irrigation instead of a new canal.

Accept answers that distinguish evidence of where change occurred from evidence of why it occurred. For the open task, look for two usable sources, a clear comparison, a benefit and a downstream cost, and a recommendation tied to evidence.