When Wells Run Low

Trace how drought affects water access and livelihoods

ES.9 "Obtain, evaluate, and communicate information based on evidence to explain how key natural resources, natural hazards, and climate variability influence human activity and welfare. a..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline two changes to water supply, circle two groups of people affected, and number at least three linked causes and effects in the order they occur.

Drought in the Central Valley

1. In California's Central Valley, winter storms and mountain snow help supply rivers and refill groundwater. Farms use both sources to irrigate crops. During a drought, less snow and rain can mean less water in rivers and less water soaking into the ground. Farmers may pump more groundwater to keep fields productive. When water is pumped faster than it is replaced, the water table drops. This is a change in a natural resource, not just a change in the weather: the supply of usable groundwater can shrink for years. A dry winter alone does not determine every well's fate.

2. Consider two households in the same valley during a long drought. One uses a shallow private well; the other receives water from a town system with deeper wells and several supply options. If heavy pumping lowers the water table below the first well's intake, its tap can stop running while the town still delivers water. The first household might have to pay for delivered water or a deeper well. Those costs can take a larger share of a low-income family's budget. A town system can also face shortages, but access to backup supplies can delay the effects.

3. Water stress also reaches people whose work depends on farming. If growers cut irrigated acreage because water becomes too costly or scarce, some farmworkers may lose work hours and income. The same drought can therefore affect both a worker's paycheck and a household's tap, especially in rural areas with private wells. This pattern does not mean every rural family loses water or every farmworker loses work. It shows why a useful explanation names the drought, traces how water supplies change, and identifies who has fewer ways to absorb the loss. Evidence about well depth, backup supplies, and costs supports that explanation.

2 ANSWER WITH EVIDENCE

Use the passage

1. How can less rain and snow during a drought lead to a lower water table? Trace the steps described in the passage.

2. Why might a household with a shallow private well lose tap water while a household served by the town still has it?

3. Why could the cost of responding to a dry well affect a low-income family more severely?

4. How can scarce water affect farmworkers even if their own taps keep running?

3 YOUR TURN

Your own words

Write a four-sentence message for a county water meeting that proposes one action to reduce drought harm. Use at least two details from the passage to explain which cause-and-effect chain the action addresses, and identify who would benefit most and why.

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PART 1 · READ AND MARK

Underline two changes to water supply, circle two groups of people affected, and number at least three linked causes and effects in the order they occur. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How can less rain and snow during a drought lead to a lower water table? Trace the steps described in the passage.	**Less rain and snow can reduce river water and groundwater recharge. Farmers may pump more groundwater, and the water table drops if pumping exceeds replacement.**
2	Why might a household with a shallow private well lose tap water while a household served by the town still has it?	**The water table can fall below the shallow well's intake. The town may still draw from deeper wells or other supplies.**
3	Why could the cost of responding to a dry well affect a low-income family more severely?	**Paying for delivered water or a deeper well can take a larger share of a low-income family's budget.**
4	How can scarce water affect farmworkers even if their own taps keep running?	**Growers may cut irrigated acreage when water is scarce or costly, causing some farmworkers to lose work hours and income.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The county should provide emergency water deliveries to households with shallow private wells during a long drought. Less rain and snow can reduce groundwater recharge, while extra pumping can lower the water table below a shallow well's intake. A town with deeper wells and backup supplies may still provide water after that private well stops working. Low-income rural households would benefit most because paying for delivered water can take a larger share of their budgets.

Accept other feasible actions if the four-sentence message uses at least two accurate passage details to explain a cause-and-effect chain and identifies a group that faces disproportionate harm.