Fields and Futures

Land use choices in California's Central Valley

WG.C.5 "Analyze patterns of land use among the world's people. Analyze settlement patterns associated with major agricultural regions and linkages among regions of food production and consumption..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline two ways farms connect to distant consumers, circle two limits on water use, and number one benefit and one cost of a water-use rule. Use your marks to trace how geography and markets shape land use.

What Shapes the Central Valley?

1. California's Central Valley stretches between mountain ranges. Its flat land and fertile soils support large farms, while towns such as Fresno provide workers, packing plants, and services. The wetter northern Sacramento Valley grows rice in flooded fields as well as fruit and nuts. The drier southern San Joaquin Valley grows almonds, grapes, and vegetables, often with irrigation. This north-south contrast shows that even one major farming region has different land uses. Farm families and workers settle near fields and processing sites, while large cities farther away consume much of the harvest.

2. Markets connect the valley to distant consumers. Packing plants sort fruit and vegetables for refrigerated trucks and trains, which move food to cities across the United States. Railroads lowered shipping costs but also required tracks and rail yards on land once used for other purposes. Some harvests are exported, so prices beyond California can influence what farmers plant. Strong demand for almonds, for example, can encourage more orchards. Almond trees need water each year, even when drought cuts supplies. Canals divert river water into fields, while pumps draw groundwater. These systems make dry areas productive but put pressure on limited water supplies.

3. Overpumping groundwater can cause land to sink, damaging roads and canals. Irrigation can leave salts in soil when water evaporates, and fertilizer runoff can pollute streams. Rules that limit pumping may protect drinking supplies and farm productivity over time, but they can raise costs or reduce harvests in dry years. Some growers switch to drip irrigation, which delivers water near roots and can reduce waste, although equipment costs money. Others leave fields fallow during drought. Choosing future land uses means weighing farm jobs, affordable food, reliable water, and healthy ecosystems. No single choice meets every need without a cost.

2 ANSWER WITH EVIDENCE

Use the passage

1. How does a difference in climate help explain the different crops grown in the northern and southern parts of the valley?

2. How do the locations of farms, towns, and distant cities shape work and transportation in the valley?

3. Why could strong demand for almonds increase pressure on the valley's water supplies?

4. Explain one environmental benefit and one economic cost of a rule that limits groundwater pumping.

3 YOUR TURN

Your own words

A dry plateau has a river, a nearby town, and a railroad to a large city. In 80 to 110 words, propose a farming and water-use plan, explaining how the railroad and city market shape your choice and weighing one benefit and one cost of a water-use rule.

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PART 1 · READ AND MARK

Underline two ways farms connect to distant consumers, circle two limits on water use, and number one benefit and one cost of a water-use rule. Use your marks to trace how geography and markets shape land use. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How does a difference in climate help explain the different crops grown in the northern and southern parts of the valley?	**The wetter north grows rice in flooded fields, while the drier south grows almonds, grapes, and vegetables, often with irrigation.**
2	How do the locations of farms, towns, and distant cities shape work and transportation in the valley?	**Workers and packing plants are near farms in valley towns. Trucks and trains then carry packed food to consumers in distant cities.**
3	Why could strong demand for almonds increase pressure on the valley's water supplies?	**Demand can encourage growers to plant more almond orchards, whose trees need water every year, including during drought.**
4	Explain one environmental benefit and one economic cost of a rule that limits groundwater pumping.	**Limiting pumping could reduce land sinking and protect water supplies, but it could raise farm costs or reduce harvests in dry years.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would grow drought-tolerant grain on most of the plateau and irrigate a smaller area of vegetables near the town. The railroad could carry both crops to the large city, where demand for fresh vegetables might help pay for their higher water costs. I would limit how much river water farms can take during dry months. This rule could leave more water for the town and for plants and animals along the river. It might also reduce vegetable harvests and farm income in a dry year. Keeping the irrigated area small would help the farms adjust.

Accept other feasible land-use plans that use the stated geography, connect production to the city by rail, and explain both a benefit and a cost of a water-use rule. The sample response is 97 words.