More From Fields

Trace how farming changes can increase food production.

7.C.4.2.B "Explain how agricultural innovations, such as the Green Revolution and modern irrigation systems, increase food production in developing countries."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Circle each farming innovation in the passage, then underline the nearby words that explain how it can help produce more food.

Growing More Food

1. In a farming village, the harvest depends on how much grain each field produces. During the Green Revolution, scientists developed wheat and rice varieties that could produce more grain per plant than many older varieties. Farmers in some developing countries planted these improved seeds and added fertilizer to supply nutrients. When the plants also received enough water, many fields produced larger harvests from the same land. The seeds alone were not a guarantee: fertilizer and improved seeds cost money, and poor watering could reduce the harvest.

2. Water can also change how often a farmer harvests. A canal irrigation system carries river water to fields when rainfall is low. In a village with a long dry season, farmers may use that water to grow a second crop instead of leaving fields bare for months. This increases the amount of food produced over a year, even if each plant gives the same amount of grain. But canals must be maintained, and taking too much river water can leave less for people or farms downstream.

3. Some villages have too little water to send it across every field. Drip irrigation uses narrow tubes with small openings to release water slowly near plant roots. Compared with flooding a field, less water is lost to evaporation or flows away from the crops. With the same limited water supply, farmers may keep more plants growing through dry weeks and harvest food that might otherwise be lost. Drip systems also need regular cleaning because dirt can block the small openings.

2 ANSWER WITH EVIDENCE

Use the passage

1. Why might improved seeds fail to produce a larger harvest if a farmer plants them without making other changes?

2. How can canal irrigation increase a village's yearly food production even if each plant produces the same amount of grain?

3. How can drip irrigation help farmers harvest more food when water is scarce?

4. How could improved seeds and drip irrigation work together to increase a harvest?

3 YOUR TURN

Your own words

A village has a short rainy season and a limited supply of river water. In 3 to 4 sentences, propose two innovations from the passage, explain how each could increase food production, and name one challenge the village would need to address.

ANSWER KEY

More From Fields

GRADE 7 · 7.C.4.2.B

PART 1 · READ AND MARK

Circle each farming innovation in the passage, then underline the nearby words that explain how it can help produce more food. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Why might improved seeds fail to produce a larger harvest if a farmer plants them without making other changes?	**The plants also need nutrients from fertilizer and enough water to produce a larger harvest.**
2	How can canal irrigation increase a village's yearly food production even if each plant produces the same amount of grain?	**Canals can bring water during the dry season, allowing farmers to grow a second crop.**
3	How can drip irrigation help farmers harvest more food when water is scarce?	**It delivers water near roots and reduces water lost to evaporation or runoff, so more plants may keep growing through dry weeks.**
4	How could improved seeds and drip irrigation work together to increase a harvest?	**Improved seeds can produce more grain per plant when they receive nutrients and enough water. Drip irrigation supplies water near the roots while reducing water loss.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The village could plant improved wheat or rice seeds, which can produce more grain per plant when they get fertilizer and enough water. Drip irrigation could deliver its limited water near the plants' roots instead of losing much of it to evaporation or runoff. Together, these changes could increase the harvest from the same fields. The village would need to plan for the cost of improved seeds and fertilizer.

Accept any two innovations from the passage if the response explains how each increases production and identifies a challenge stated in the text. Students may choose canal irrigation, but should account for its maintenance or its effect on downstream water supplies.