Fields in Motion

How crops and farming methods travel and change

SS24.HG.13a "Describe how cultural diffusion and changes in technology have advanced agricultural methods over time."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline two examples of a crop or farming idea moving between regions, and circle two technologies. Draw an arrow from each mark to a phrase that explains how farming changed.

From Maize Seeds to Drip Lines

1 Picture a farmer in West Africa examining an unfamiliar ear of maize. Maize was first domesticated in what is now Mexico thousands of years ago. After the late 1400s, Atlantic trade carried it to Africa, where farmers began growing it alongside crops such as millet and sorghum. Moving a crop to a new region is cultural diffusion, but farmers did not simply copy a fixed recipe. They tested when to plant maize in local rainy seasons and how to prepare and eat it. This exchange expanded crop choices and changed farming routines, though maize did not replace older grains everywhere.

2 For centuries, many farmers planted maize by hand, placing seeds in holes or furrows. During the nineteenth and twentieth centuries, mechanical seed planters became more common in many maize-growing areas. Pulled by animals or tractors, these machines dropped seeds at planned intervals and covered them with soil. Planting a field took fewer workers and less time than placing every seed by hand. More even spacing also made it easier to manage rows as plants grew. A planter, however, cost money and needed repair, so not every farmer could use one. Technology changed the planting method, not the crop's original homeland.

3 Water delivery shows how diffusion and technology can work together. Modern drip irrigation developed in Israel in the twentieth century and later spread to farms in other regions. Tubes release water slowly near plant roots instead of spraying a whole field. Where water is scarce, this method can reduce water lost to evaporation or runoff compared with some other irrigation methods. A farmer growing maize might use drip lines to manage water during dry periods, if there is a reliable water source. The tubes can clog, and installing the system costs money. Farmers adapt a traveling idea to their conditions rather than adopting it unchanged.

2 ANSWER WITH EVIDENCE

Use the passage

1. How did the spread of maize to Africa change farmers' crop choices, and what did they adjust to local conditions?

2. How did mechanical seed planters change maize planting compared with planting by hand?

3. How could the spread of drip irrigation improve farming in a water-scarce region? Give one obstacle to using it.

4. Maize and drip irrigation both spread between regions. What was different about what spread, and how did each change farming?

3 YOUR TURN

Your own words

A community has enough rain for maize but few workers available at planting time. In five sentences, propose how it could use a crop that spread across regions and one technology from the passage, explaining the crop's origin, what the technology changes, and one obstacle.

ANSWER KEY

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HIGH SCHOOL · SS24.HG.13a

PART 1 · READ AND MARK

Underline two examples of a crop or farming idea moving between regions, and circle two technologies. Draw an arrow from each mark to a phrase that explains how farming changed. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How did the spread of maize to Africa change farmers' crop choices, and what did they adjust to local conditions?	**Farmers could grow maize alongside grains such as millet and sorghum. They tested planting times for local rainy seasons and developed ways to prepare and eat it.**
2	How did mechanical seed planters change maize planting compared with planting by hand?	**Planters placed and covered seeds at planned intervals, reducing planting time and labor. Their even spacing also made rows easier to manage.**
3	How could the spread of drip irrigation improve farming in a water-scarce region? Give one obstacle to using it.	**Drip lines deliver water near roots and can reduce losses to evaporation or runoff. Installation costs money, and the tubes can clog.**
4	Maize and drip irrigation both spread between regions. What was different about what spread, and how did each change farming?	**Maize was a crop that gave farmers another planting choice. Drip irrigation was a water-delivery method that let farmers release water slowly near plant roots.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The community could add maize to the crops it already grows. Maize was first domesticated in what is now Mexico and later spread to Africa through Atlantic trade. Farmers could test planting times to fit their local rainy season. A mechanical seed planter could place maize seeds at planned intervals with fewer workers than hand planting. Buying and repairing a planter could be difficult for the community.

Accept responses that accurately connect maize's spread to a change in crop choices and a passage technology to a change in method. For Part 3, the obstacle must fit the technology the student chooses.