

Soil and Trees

Tracing a land-use cycle in Sub-Saharan Africa

SS7G2.b "Explain the relationship between poor soil and deforestation in Sub-Saharan Africa."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline the one sentence in paragraph 1 and the one sentence in paragraph 2 that show poor soil leading people to clear trees. Circle the two sentences in paragraph 2 that show how tree loss can make soil poorer, then number the four cycle-step sentences in paragraph 3 in order from 1 to 4.

When Soil and Forests Change

- ① In many parts of Sub-Saharan Africa, families depend on small farms for food and income. Healthy soil contains nutrients and organic matter from decayed plants. When farmers grow crops on the same land for many seasons without enough time or materials to restore it, the soil can lose nutrients. Heavy rain may then wash away exposed topsoil. Harvests become smaller, so families may need another way to grow enough food. This problem is especially serious where farms are crowded and land is limited.
- ② One response is to clear nearby woodland or forest for a new field. Cutting trees can give crops access to soil that still has nutrients, but it also removes roots, leaf cover, and future plant material that protect or enrich the ground. Without tree cover, sun can dry the soil, and rain can carry soil away. Wood may also be cut for cooking fuel or for sale. After repeated planting, the new field may become poor as well.
- ③ This relationship can form a repeating cycle. Soil loses nutrients or topsoil, and harvests shrink. Farmers may clear trees to open another field or obtain wood. The loss of trees leaves soil less protected from sun and rain. More soil can dry out or wash away, making the land poorer. The cycle does not mean every farmer makes the same choice in every place. Farming methods that protect soil and trees can slow the cycle.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 How can poor soil lead to deforestation, according to the passage?

2 What are two ways that losing tree cover can make soil poorer?

3 Describe the cycle from poor soil to more poor soil in three steps.

4 How can cutting wood for cooking fuel or sale add to the poor-soil and deforestation relationship?

3 YOUR TURN _____ Your own words

Write exactly three sentences explaining the relationship between poor soil and deforestation. Include exactly two actions people could use to slow the cycle.

PART 1 • READ AND MARK

Underline the one sentence in paragraph 1 and the one sentence in paragraph 2 that show poor soil leading people to clear trees. Circle the two sentences in paragraph 2 that show how tree loss can make soil poorer, then number the four cycle-step sentences in paragraph 3 in order from 1 to 4. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	How can poor soil lead to deforestation, according to the passage?	When soil loses nutrients or topsoil, harvests shrink. Farmers may clear nearby woodland or forest to open a new field with more nutrients.
2	What are two ways that losing tree cover can make soil poorer?	Tree loss removes roots and leaf cover that protect the ground. Without tree cover, sun can dry the soil and rain can carry it away.
3	Describe the cycle from poor soil to more poor soil in three steps.	Poor soil causes smaller harvests, so farmers may clear trees for a new field or wood. Tree loss leaves soil less protected. Sun and rain can then dry or wash away more soil.
4	How can cutting wood for cooking fuel or sale add to the poor-soil and deforestation relationship?	It causes more trees to be removed. With less tree cover, soil has less protection from drying and erosion.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Poor soil can cause farmers to clear forests because they need a productive field. Farmers can add compost to return organic matter and nutrients to the soil. They can plant trees among crops to help protect the soil from sun and rain.

Accept explanations that accurately connect nutrient loss or erosion to tree clearing and then connect tree loss to further soil damage. For the open response, check for exactly three sentences and exactly two distinct actions that could slow the cycle.