

Science Grade 4 A

Grade Level Standard(s): Science 4 Earth Science: Make observations and/or use measurements to provide evidence of the effects of weathering and the rate of erosion by water, ice, wind, or vegetation.

Material(s) Provided for Science 4 A	Question(s)	Page Number
Science 4 A Hill	2, 3	13
Science 4 A Attainment Task Questions for Student Use	1 - 5	17

Response Code:

- Indicate the answer provided by the student.

Text Coding:

- “Quotation marks” indicate the script that the teacher should read to the student.
- *Italicized text* provides further direction for the test administrator.
- Words in parenthesis () are optional; they may replace or be read in addition to the word(s) immediately preceding.

a. There is soil and grass growing on top.



b. There are trees growing near the hill.



c. The soil has deep gullies (trenches).



Before beginning task administration, please ensure that all conditions specified in the administration protocol (starting on page 10 of the Administration Guide Overview and Attainment Task Administration) have been met. Inform the student that the task is about to start by saying, “We are about to start the task, and I am going to ask you some questions.”

All questions from this task are available for presentation to the student in the supplemental material Science 4 A Attainment Task Questions for Student Use.

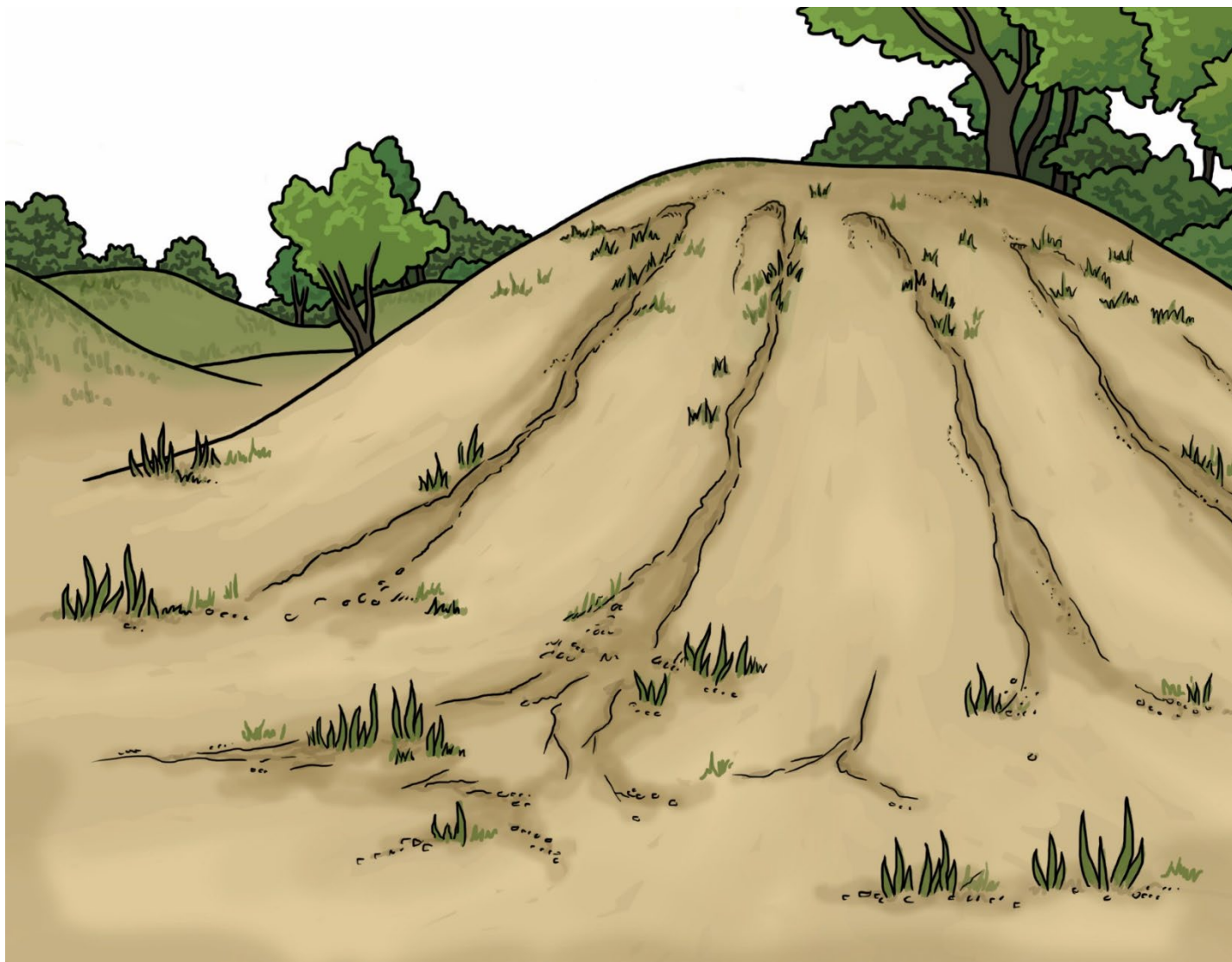
“Ms. Davis’ class is studying the effects of erosion.”

Present the student with Science 4 A Hill and ask the following question:

2. “Which of the following could be used as evidence (proof) that there is soil erosion on the hill?”

Response Option	Response Rationale
a. There is soil and grass growing on top.	<i>The student identifies some sprouts of grass on the hill however does not recognize that the limited amount of grass does not indicate there is soil erosion.</i>
b. There are trees growing near the hill.	<i>The student recognizes that tree roots may slow soil erosion however does not understand the nearby trees do not indicate there is soil erosion on the hill.</i>
c. The soil has deep gullies (trenches). (Correct)	<i>The student observes the gullies in the dirt on the hill and recognizes this as evidence of soil erosion.</i>
Depth of Knowledge (DOK) 2	

Science 4 A Hill



Science 4 A Attainment Task Questions for Student Use

2. Which of the following could be used as evidence (proof) that there is soil erosion on the hill?

Kentucky Academic Standard: Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation [Clarification Statement: Examples of variables to test could include angle of slope in the downhill movement of water, amount of vegetation, speed of wind, relative rate of deposition, cycles of freezing and thawing of water, cycles of heating and cooling, and volume of water flow. (4-ESS2-1)]

Alternate Assessment Target: *Make observations and/or use measurements to provide evidence of the effects of weathering and the rate of erosion by water, ice, wind, or vegetation.*

Student Group	Number of Students*	Percent Correct
All Students	555	49.19%
Gender		
Female	185	45.41%
Male	370	51.08%
Ethnicity		
African American	71	53.52%
American Indian or Alaska Native	<10	Not Reported
Asian	<10	Not Reported
Hispanic of Latino	<10	Not Reported
Native Hawaiian of Pacific Islander	<10	Not Reported
White (Non-Hispanic)	398	51.01%
Two or More Races	80	38.75%
English Learner	33	33.33%
Economically Disadvantaged	425	50.12%

*Number of students that attempted the item