

Project Learning Tree Standards-Based FCAT-Style Activities



Soil Stories

Teacher Page

Students practice FCAT skills while learning about the characteristics of different soil types.

GRADE LEVEL: 4th and 5th grades

ACADEMIC OUTCOMES/LESSON OBJECTIVES:

- Students will read a table introducing them to the characteristics of soils.
- Students will respond to FCAT-Style questions and prompts in Reading, Writing, Math, and Science.

SUNSHINE STATE STANDARDS ASSESSED:

- (LA.4.4.2.3) writes informational/expository essays that contain introductory, body, and concluding paragraphs. (LA.5.4.2.3) writes informational/expository essays that state a thesis with a narrow focus, contain introductory, body, and concluding paragraphs.
- (MA.A.3.2.3) adds, subtracts, and multiplies whole numbers, decimals, and fractions, including mixed numbers, and divides whole numbers to solve real-world problems, using appropriate methods of computing, such as mental mathematics, paper and pencil, and calculator.
- (SC.D.1.2.4) knows that the surface of the Earth is in a continuous state of change as waves, weather, and shifts of the land constantly change and produce many new features.
- (SC.D.1.2.5) knows that some changes in the Earth's surface are due to slow processes and some changes are due to rapid processes.
- (LA.4.2.2.2; LA.5.2.2.2) uses information from the text to answer questions related to explicitly stated main ideas and relevant details.

RESOURCES:

Florida Project Learning Tree Web site - <http://www.sfrc.ufl.edu/plt/>

Florida Department of Education Web site - <http://www.firn.edu/doe/>

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ANSWER KEY:

1. LA.4.4.1.1, LA.5.4.1.1 Use the 6-point Writing Rubric.
2. b) M.A.A.3.2.3
3. b) LA.4.2.2.2; LA.5.2.2.2
4. Use the 4-point Science Rubric for Extended Response Questions.
SC.D.1.2.4, SC.D.1.2.5 Example of a Top-Score Response:
The high level winds and rain can beat the sand loose so that it flows out in the ocean. This causes erosion on the beaches. Grasses and homes in that area can also be damaged by the winds and rain and even washed away. Also, a hurricane's high tides or storm surge can cause lots of flooding, carrying sand, plants, and houses further inland. Either way, lots of sand gets moved around, either in towards the mainland or out to sea.

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Soil Stories

Student Handout

Students practice FCAT skills while learning about the characteristics of different soil types.

WRITING

1. When you add water to Florida's sandy soil, the sand becomes a useful building material. Think about something unusual that you could build with moist sand. Write to explain what your sandy creation looks like and the reasons you chose to build that particular shape or thing.

NOTE: Write your response to question 1 on another sheet.

The following table is adapted from the Project Learning Tree activity, "Soil Stories."

Characteristics of Common Soils

| Type of Soil | How Big the Soil Particles Are | How the Soil Feels | How Well it Holds Minerals for Plants to Use | How Well it Holds Water for Plants to Use |
|--------------|--------------------------------|--------------------|--|---|
| Sand | 0.05 - 2.0 mm | Gritty | Poorly | Poorly |
| Silt | 0.002 - 0.05 mm | Smooth | Okay | Well |
| Clay | < 0.002 mm | Sticky, Slick | Great | Poorly |

Note: These three soils mix together to create all the different kinds of dirt we see around us. When dirt is a fairly equal mixture of sand, silt, and clay, it's called "loam."

MATH

2. Mr. Rodriguez's students want to know how many sand particles could be lined up in one inch of space. Assume that each grain of sand in this experiment is 0.08 inches in length. What is the maximum number of sand grains that could be lined up in one inch of space?
 - a. 8 grains of sand
 - b. 10 grains of sand
 - b. 12 grains of sand
 - c. 14 grains of sand

Name:

Date:

