

Questions: 1 Grade 5 Science (0 out of 5) GUEST (Student ID: GUEST) GUEST SESSION

1
GUEST

Many different energy sources are used to produce electricity. The Amount of Carbon Dioxide Released graph shows the amount of carbon dioxide gas released by some energy sources, in grams per kilowatt hour (g/kWh).

Amount of Carbon Dioxide Released

Energy Source	Carbon Dioxide Released (g/kWh)
Coal	900
Natural gas	400
Nuclear	4
Wind	0
Hydroelectric	0

Which change in energy sources would cause the greatest **decrease** in the amount of carbon dioxide released?

- Ⓐ replacing natural gas with coal
- Ⓑ replacing nuclear with natural gas
- Ⓒ increasing wind and reducing nuclear
- Ⓓ increasing hydroelectric and reducing coal

Questions: 2-3 Grade 5 Science (1 out of 5) GUEST (Student ID: GUEST) GUEST SESSION

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Section 1—Soggy Solutions


Read the information and answer the questions.

There is a ditch next to a school. On one side of the ditch is a playfield. After a heavy rainfall, water from the ditch flows onto the playfield.

Students researched different ways to solve the problem of water flowing out of the ditch and onto the playfield after a heavy rainfall. The Student Solutions diagram shows the three solutions the students proposed, based on their research.

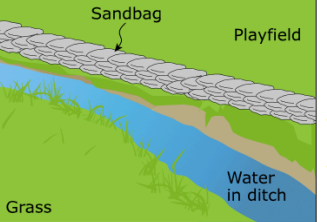
Student Solutions

Solution 1



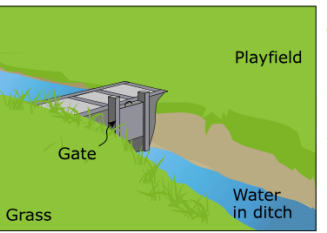
Dig the ditch deeper.

Solution 2



Place sandbags along the side of the ditch nearest the playfield.

Solution 3



Add a gate across the ditch before the ditch reaches the playfield.

2

Which statement describes how a heavy rainfall causes the water from the ditch to flow onto the playfield?

- Ⓐ The playfield absorbs extra water during a heavy rainfall.
- Ⓑ The water flows through the ditch very fast during a heavy rainfall.
- Ⓒ The water volume is larger than the ditch can hold during a heavy rainfall.
- Ⓓ The grass near the ditch grows quickly because of the extra water during a heavy rainfall.

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Based on the Student Solutions diagram, select a box to predict the effect of each solution.

Effect	Solution 1: Dig the ditch deeper	Solution 2: Place sandbags	Solution 3: Add a gate
Provides more space in the ditch for water to flow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prevents water in the ditch from flowing past the playfield	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blocks water flowing out of the ditch from reaching the playfield	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Section 1—Soggy Solutions

Section 2—Soggy Solutions

The students used a stream table to model the ditch and the playfield. The stream table is shown in the Ditch and Playfield Model diagram.

Ditch and Playfield Model

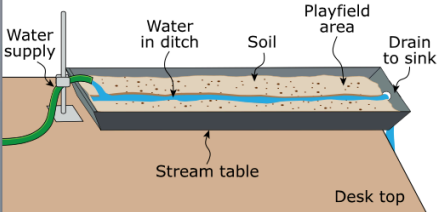


Diagram not to scale

The students used the stream table to test each solution. All three solutions kept water from flowing out of the ditch onto the playfield.

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GUEST

Select **three** statements that describe reasons to use a stream table to test possible solutions during the design process.

- The stream table conditions are exactly the same as the conditions in the real ditch.
- The stream table shows the time needed for water to soak in to the playground soil.
- The stream table allows all three solutions to be tested without waiting for heavy rainfall.
- The stream table tests all three solutions without affecting the environment around the ditch.
- The stream table allows students to collect data more quickly than testing with the real ditch.