Explore online. Have children go online to watch a video about setting up and doing the activity.

Name _____

Hands-On Activity

Engineer It • Prevent Water from Changing Land

Materials _____

_____

Ask a Question

What are some ways to prevent water from changing the land?

Test and Record Data

Explore online.

Step 1

Make a model. Observe the model before adding water. Record your observations and data.

Children's pictures should show their model before adding water.	Children's descriptions should list out the details of the model.

Step 2

Add water to your model. Observe the model. Record your observations and data.

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Hands-On Activity small groups 1 class period

Engineer It • Prevent Water from Changing Land

3D Learning Objective

SEP Constructing Explanations and Designing Solutions

Children design, test, and redesign possible solutions to prevent water from changing land. Children then communicate their findings to others.

Suggested Materials disposable plastic gloves, soil, small cup or container to transfer soil, foil tray or plastic tub, water in a pitcher or other large container, toothpicks, craft sticks, straws, chenille sticks, small rock, glue or tape, clay or modeling clay

Preparation

Have children brainstorm the materials they might use the day before conducting the hands-on activity. Then pre-assemble the materials before conducting the hands-on activity.

Activity

Guide children to read the activity title and pose a question they want to answer in the investigation based on this topic.

STEP 1 Provide children with assigned roles within the groups in order to keep all children engaged in the activity. Discuss with children what a model is and why it is important to build a model.

STEP 2 Guide children to pour the water into their model. Ask children to record their observations and data about the changes made to their model. Encourage children to make detailed observations and notes.

CCC Science Addresses Questions About the Natural and Material World

Remind children that they can record any questions they have as they observe water being added to their model. Review with children that scientists ask questions in order to better understand the topic they are studying.

Hands-On Activity, continued

STEP 3 The step will require time for children to implement their designs. Setting a timer will help children manage their designs, and work more collaboratively.

STEP 4 Guide children to pour the water into their new model with the water damage prevention design. Ask children to record their observations and data about the changes made to their new model design.

SEP Constructing Explanations and Designing Solutions

Have children discuss their design and the results of their test. **Ask: How do you know if your design is successful?** The changes to the model will be minimal.

STEP 5 Guide children to revise and retest their design to prevent water damage. Ask children to record their observations and data about the changes made to their revised model design.

Claims Evidence and Reasoning

Children should make a claim that states at least one solution that prevents water from changing their model. They should cite evidence to support how their design prevented the water from changing the land. Allow children to share their claims and evidence with other groups.

Scoring Rubric for Hands-On Activity	
3	States a claim supported with evidence about a solution that prevents water from changing land
2	States a claim somewhat supported with evidence about a solution that prevents water from changing land
1	States a claim that is not supported by evidence
0	Does not state a claim and does not provide evidence

Step 3
Design and build a solution to slow or prevent changes by the water. Rebuild the model. Put the design solution in place.

Step 4
Test your design. Fill the model with about the same amount of water as before. Observe your model and measure the height of its banks. Record your observations and data.

Check children's observations and data.

Step 5
Revise and retest your design. Compare your results with the results of other groups.

Make a claim that answers your question.

Children should describe what they used for their design solution.

What is your evidence?

Children should list specific examples of how their design solution prevented the water from changing the land.

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