

TE Notes for “How does gravity affect the way water flows?”

Quest Check-In Lab

DEMONSTRATE

STEM How does gravity affect the way water flows?

Time 45 **Grouping** 3

Objective Students will plan an investigation to show how gravity affects water. **DOK4**

Understanding the Science Practice
Students will plan an investigation to help answer a scientific question: how does gravity affect the way water flows? Students choose materials to conduct their investigation. They then make observations to help them answer the scientific question.

Connect to STEM Students investigate to determine how water can be incorporated into

STEM Quest Check-In Lab

How does gravity affect the way water flows?

Engineers observe how gravity affects things in nature. They can use their observations to help build structures like obstacle courses. How can you show how gravity affects water?

Materials

- container
- plastic cup
- water
- ramp

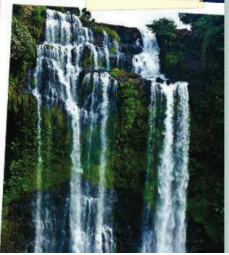
Suggested Materials

- soil
- sand

Science Practice
You **plan an investigation** to help answer a scientific question.

Procedure

1. Think of ways you can use the materials to see how gravity affects water.
2. **Plan your investigation** that tests how water is affected by gravity. Show your plan to your teacher.
3. Set up and conduct your investigation. Record your observations.



the design of an obstacle course.

Materials Go online to download the master materials list, which also identifies kit materials.

Advance Preparation Set up stations for groups to work at. Fill an 8 oz. plastic cup of water for each group. Have more water readily available as students repeat trials. Put a tray or newspaper down below the containers to help with spills.

What to Expect Students will observe that gravity always causes water to flow down the ramp, even if an obstacle changes its path. Students will also observe that water flows faster when it is on a steeper slope.

Go online to the Lab Center to get an editable version of this lab.

SC.2.P.13.3 Recognize that objects are pulled toward the ground unless something holds them up. **SC.2.N.1.1** Raise questions about the natural world, investigate them in teams through free exploration and systematic observations, and generate appropriate explanations based on those explorations.

Focus on Mastery!

Planning and Carrying Out Investigations Planning an investigation is important in science. Planning an investigation requires thought and organization before starting an experiment. This ensures that the experiment obtains data that answers the question being asked. Planning an investigation ensures that time is not wasted in performing an experiment that does not answer the question. After students plan their investigations in Step 2 of the procedure, make sure you review their plans. Their plan should clearly show how the materials will be used to demonstrate that gravity affects the flow of water. For example, students might plan to place the ramp inside the container. They may or may not include some soil or sand at the bottom of the ramp as an obstacle. They will use water in the cup to pour down the ramp to observe how the water flows. Students may also decide to adjust the angle of the ramp to see how it affects the flow of water.