

All the Rivers Run - Student Worksheet

Rivers flowing through landscapes weather and erode away rock, forming features such as valleys, gorges and canyons.

Aim

In this experiment, you will examine how water flow affects the amount of erosion in a landscape.

Materials (per group)

- Large tray
- Second tray or container to collect sand
- Clean sand
- Landscape design photo or diagram
- Brick or block of wood to tilt tray
- Small rocks of roughly same size
- Water in bottle with holed drilled in the lid (each group has different sized holes in their bottles)

Method

1. Build a landscape out of sand in the tray according to the design provided by your teacher. Each group's landscape must be the same.
2. Place the rocks at the locations shown on the design.
3. Place the brick or block under one end of the tray to slope the landscape and position the second tray or container at the bottom end of the landscape to collect any sand that will run off.

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- Pour water onto the landscape from the raised end of the tray at a set height (each group must use the same height). You may need to squeeze the bottle.
- Observe how the sand is washed away (mimicking rocks being weathered and eroded) and collected in the tray or container at the end.
- Measure the amount of sand that was collected (e.g. weigh it once dry or measure spoonfuls of wet sand) and share your results with the class.

Hypothesis

When we increase the size of the holes in the bottle (increase flow), the amount of sand eroded will increase/decrease/stay the same (circle one) because

Variables

In this experiment:

We will **change** _____
(independent variable)

We will **measure** _____
(dependent variable)

The things we will keep the **same** (controlled variables) are:

Name _____



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Diagram

Draw a labelled diagram of your experiment

Results

Record the results for the whole class below.

Size of holes in bottle	Amount of sand collected





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Discussion

1. How does the amount of sand eroded in your experiment compare to other groups?

2. From the class results, what did you observe happening to the amount of sand eroded as the size of the holes (amount of water flow) increased?

3. What happened when the water met rocks in your landscape? Did the water go over, under or around the rocks? Why do you think the water did this?

Evaluation

Was this experiment a fair test? How could you change it to make it better?

