

NAME _____

PROBLEM: To examine a stream's velocity and its effect on erosion.

MATERIALS: Stream table Meter stick Protractor
 Stop watch Sand Toothpick
 Bucket

PROCEDURE – PART 1:

1. Set up the stream table according to directions.
2. Make a mark 15 cm from the top of the stream table. This is the starting line.
3. Measure the distance from the starting line to the end of the stream table. Record.
4. Use the protractor to raise the end of the stream table to an angle of 5°.
5. Allow water to flow down the stream table at a constant rate.
6. Place the toothpick at the starting line and time its movement from there to the end of the table. Record the time.
7. Repeat 4 more times.
8. Repeat steps 5 – 7 with the stream tables raised to angles of 10°, 15°, 20°, and 25°.
9. Use the reduced data to calculate the speed of the flowing water. $\text{Distance} \div \text{Average Time} = \text{Velocity cm / sec}$

PROCEDURE – PART 2:

1. Set the top of the stream table to an angle of 10°.
2. Allow 200 ml of water to flow down the table.
3. Place the toothpick at the starting line and time its movement from there to the end of the table. Record the time.
4. Repeat 4 more times.
5. Repeat steps 3 – 5 with water flowing in the amounts 400, 600 and 800 ml.
6. Use the reduced data to calculate the speed of the flowing water.

PROCEDURE – PART 3:

1. Set the stream table at an angle of 5°.
2. Place 50 ml of sand in the middle of the table.
3. Allow water to flow down the stream table at a constant rate and time how long it takes to completely erode all of the sand. Record.
4. Repeat four more times.
5. Repeat steps 1 – 4 with the stream tables raised to angles of 10°, 15°, 20°, and 25°.

PROCEDURE – PART 4:

1. Set the stream table at an angle of 10°.
2. Place 50 ml of sand in the middle of the stream table.
3. Allow 200 ml of water to flow down the table.
4. Time how long it takes the sand to erode. Record.
5. Repeat four more times.
6. Repeat steps 2 – 5 with water flowing in the amounts of 400, 600 and 800 ml.

DATA – PART 1:**VELOCITY OF WATER @ VARIOUS ANGLES**

Trial	5°	10°	15°	20°	25°
1					
2					
3					
4					
5					
Average					
Speed of Water					

Graph your results on a sheet of graph paper. Remember TAILS & DRY MIX.

DATA – PART 2:**VELOCITY OF WATER @ VARIOUS VOLUMES**

Trial	200 ml	400 ml	600 ml	800 ml
1				
2				
3				
4				
5				
Average				
Speed of Water				

Graph your results on a sheet of graph paper. Remember TAILS & DRY MIX.

DATA – PART 3:**EROSION TIME IN SECONDS @ VARIOUS ANGLES**

Trial	5°	10°	15°	20°	25°
1					
2					
3					
4					
5					
Average					

Graph your results on a sheet of graph paper. Remember TAILS & DRY MIX.

DATA – PART 4:**EROSION TIME IN SECONDS @ VARIOUS VOLUMES**

Trial	200 ml	400 ml	600 ml	800 ml
1				
2				
3				
4				
5				
Average				

Graph your results on a sheet of graph paper. Remember TAILS & DRY MIX.

DATA ANALYSIS:

Use your data to answer these questions:

1. How does the slope of a stream affect its flow?
2. Why do you think a flooding stream or river will do more damage than one that is flowing normally?

3. How do the velocity and volume of river water affect how much erosion takes place along a river bed?

CONCLUSION:

Write a paragraph describing the results of these activities. Use your handbook to help you.