Lab Report Template

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Project 2.2.2 - Erosion Investigation

Problem

All soil erodes differently, but how does soil erode when they have different slopes?

Hypothesis

I believe that the steeper the slop is, the faster erosion will happen. So, if the slope is higher, then the water will drain faster and erosion will happen faster.

Materials

- Stream bed
- Catch basin
- Stand
- Rainmaker
- 50ml graduated cup
- Plastic tub
- Local soil – bag 3
- Roll of plastic
- Safety glasses

Procedures

1. Collect materials and put on safety glasses
2. Set up stream bed, catch basin, stand, and rainmaker
3. Put soil (bag 3) in the stream bed, between points A and B
4. Pour 50ml of water into the rain maker and record the amount of time it takes for the water to stop running out of the bottom of the stream bed and into the catch basin.
5. Once finished, empty the catch basin and refill the 50ml graduated cup with water
6. Repeat steps 4 and 5 two more times being sure to record the time
7. Once three trials of the first height have finished, change the height of the catch basin in order to change the slope
8. Complete steps 4 and 5 three times making sure to record the times for the second slops
9. Change the slope a third time and complete steps 4 and 5
10. Once data is collected, clean up the area and put everything away
11. While going over the data, fide the average of each slope and record it

Data Collection

Percent of Slope	Time in minutes
	01:18.40
22.7%	01:12.02
	01:21.38
Average ->	**01:17.27**
	00:58.24
36.4%	01:12.70
	01:04.91
Average ->	**01:05.28**
	02:09.91
13.6%	03:13.68
	03:00.03
Average ->	**02:47.87**

Analysis of Results

Like previously believed, the height the slope is the faster erosion will happen. When the slope was at 22.7% the average time was 1 minute and 17 minutes. When the slope was increased by 13.7% the averaged time decreased by 11.99 seconds and when the slope was decreased by 9.1%, the average time increased by 90.6 seconds, so 1 minute and 30 seconds. So, when the slope is increased, the time will decrease and when the slope is decreased the time will increase.

Conclusions

Based on the results, I can inference that the larger the slope, the faster erosion will happen. My predictions were proven true because I predicted that, the steeper the slop is, the faster erosion will happen, and the data that I recorded from my experiment proved me right. One possible source of error could possibly be the moisture content of the soil, because the first few trials could have been done while the soil was drier and the last few trials when the soil was very wet, because some of the water did absorbed into the soil. Some questions could arise based on my results because, one, I could have tested to see how long it would of taken for all of the 50ml of water to flow through the soil and not how long it toke before the water stopped flowing, and two, that would the results have been if I had soaked the soil before starting the experiment, making the soil into mud, to keep the moisture content the same, or if I used dry soil to test and see in the results would have been different based on the moisture of the soil.