

Landslide Experiment:

In the last worksheets, we determined the three different factors that affect landslides.

1. Soil type (Large rocks, small rocks, sand)
2. Precipitation amount
3. Angle of slope

In groups of 5-6, you are going to simulate a landslide and measure the data from your simulation. You will need to choose which variables to measure (Soil, Precipitation, Slope) by using a river table. (See figure 1.) You will set up the variable using increasing amounts and using control variables.

EX.. "Measuring soil type at increasing angles... Measure sand at an angle of 10°, Measure sand at an angle of 20°, Measure sand at an angle of 25°, measure sand at an angle of 30°. Land slide occurs at an angle of 35°."

| Angle | Landslide |
|-------|-----------|
| 10° | No |
| 15° | No |
| 20° | No |
| 25° | No |
| 30° | No |
| 35° | Yes |

Figure 1. Data table for landslide angles



Figure 2. Landslide table

Once you have collected the data from your landslide table, you will share the data with your classmates. We will collect data from slopes around the school as a class before the experiment. Finally, you will need to write a discussion to answer our research question... "Will VSA have another landslide?"



Guidelines for writing:

Planning

Write your planning section in point form.

- What variable did you choose to test?
- What materials / apparatus did you use?
- How will you test your variables? What will you do?

EX.

1. Place soil onto the tray evenly spread on a flat surface.
2. Use protractor to measure angle of 10 degrees incline of the tray
3. Observe for landslide.
4. Increase angle to 15 degrees incline and observe.
5. Continue increasing at 5 degrees each time until landslide occurs.

Data collection and Presenting your data.

No paragraph or point form writing is needed here. Just show your data!

- Create a table similar to the table above to collect your data.
- Share your data with your classmates on the board.

Discussion

Answer the following question in point form!

Will VSA have another landslide?

- How can you tell it will have a landslide or not?
- Is there any evidence in your data to show a possible landslide?
- Can you use your evidence to prove that a landslide will occur or not?

Example Model Answer

VSA will have another landslide because the simulation showed us that the soil will collapse at 30 degrees if the soil is sandy. The soil at VSA is a sandy soil. I can see it is sandy when I pick up the soil with my hands. The slope at VSA is very steep at 80 degrees. The simulation showed us that 30 degrees is enough. The simulation showed us that landslides occur when there is a lot of precipitation. We can see from the climate graph for Hong Kong that we normally have 5000mm of rain in August. So a landslide will happen most likely in August.

Shum Wan Road landslide



Date and Rainfall

- 13 August 1995
- 115 mm in one day