Investigating Factors Affecting Tsunami Inundation

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_

*Investigate how coastal landforms affect how far a tsunami travels inland.*

**Part One: Forming a Question or Hypothesis**

1. Why is it important to understand tsunami wave inundation?
2. Consider the list of variables that the class has brainstormed or your teacher has given you.
   1. Which question are you investigating?

* 1. What two variables are you testing?
  2. Draw and label sketches to show how you will use the tsunami wave box to test the two variables you selected.

1. Write a hypothesis predicting what you expect to see.

**Part Two: Investigate & Collect Information**

Use the materials provided to create your first landscape. Once it is complete, run multiple tests, being sure to keep all other variables the same (water depth, box slope, tsunami strength). Use toothpicks to mark the location of wave inundation, and then use the toothpicks to measure the distance the wave made it inland. You may also record a video of your tsunami in slow motion to help with recording observations.

What is your first variable tested?

|  |  |  |
| --- | --- | --- |
| **Test** | **Run-Up Measurements (cm)** | **Observations** |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |

Draw and label a top view sketch showing tsunami wave inundation on your landscape:

|  |
| --- |
|  |

Once you are finished testing your first variable, make adjustments to your tsunami wave tank to test the second variable. Once it is complete, run multiple tests, being sure to keep all other variables the same (water depth, box slope, tsunami strength). Use toothpicks to mark the location of wave inundation, and then use the toothpicks to measure the distance the wave made it inland. You may also record a video of your tsunami in slow motion to help with recording observations.

Second Variable Tested:

|  |  |  |
| --- | --- | --- |
| **Test** | **Run-Up Measurements (cm)** | **Observations** |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |

Draw and label a top view sketch showing tsunami wave inundation on your landscape:

|  |
| --- |
|  |

Based on what you observed, how would you answer your initial question (2a)?

**Part Three: Conclusion**

1. Write a paragraph that restates your hypothesis and whether or not you were correct. Use your measurements and observations as evidence to support your conclusion.
2. At the end of class groups will rotate and share observations and conclusions with each other. Record the conclusions from three different groups below:

**Clean Up**

Clean up your space. Carefully empty the water into a sink, tidy up your tank, organize your materials, and wipe down your table.

Have your teacher initial that your group has properly cleaned up: \_\_\_\_\_\_\_\_\_\_\_\_