Part 1: How high?

**How does elevation change influence turbine speed?**

1. Fill your 2 liter bottle with water.
2. Pour the water over the turbine to make it spin.
3. Measure the distance between the spout of the bottle and the middle of the turbine to the nearest centimeter.
4. Record the highest distance you can hold the bottle above the turbine and successfully get it to spin.

Part 2: How fast?

1. Divide your highest distance from #4 by four.
2. Calcluate 25%, 50%, and 75% of your highest distance, and record your results in the table below.
3. Measure the speed at which the turbine spins for each height.
4. Record and graph your results.

Highest Height (H): ­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ÷ 4 =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = 25% of Highest Height

(25% of H) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ x 2 =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = 50% of Highest Height

(25% of H) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ x 3 =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_= 75% of Highest Height

|  |  |
| --- | --- |
| H: cm | Spinning rate |
| 25%: cm |  |
| 50%: cm |  |
| 75%: cm |  |
| 100: cm |  |

Graph: Height vs. Rotational Speed

Summarize the relationship between change in elevation and turbine speed:

If you were going to build a hydroelectric dam, would you look for a location with a large elevation change or a small elevation change?