Exploring Pressure Underground Sim Lab



**Directions**

1. Go to the PhET simulation “Under Pressure” <https://phet.colorado.edu/en/simulation/under-pressure>
2. Push the big Play arrow.
	1. Start with the default settings.
	2. Fill the tank with water.
	3. Turn on the Grid and play with the Ruler.
	4. Use the Grid to get you data table measurements.
3. Click on the pressure gauge to move it toward the water. Measure the pressure in the water at every 0.50 m from the surface to the bottom.

**Data Table**

|  |  |
| --- | --- |
| **Depth (m)** | **Pressure (kPa[[1]](#footnote-1))** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

1. Create a graph with *depth on the x-axis* and *pressure on the y-axis*.

**Title:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



**TOPER** Checklist:

🞏 **T**itle & label axis

🞏 **O**rganize your data

🞏 **P**encil

🞏 **E**ven scale & spacing

🞏 **R**uler

**Y-axis**

**Label:**

**\_\_\_\_\_**

**\_\_\_\_\_**

**X-axis Label: \_\_\_\_\_\_\_\_**

1. Which variable is the independent variable (x-axis)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Which variable is the dependent variable (y-axis)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. How would your graph differ if you gathered data from Mars? Jupiter? Explain why.

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1. What is the relationship between depth and pressure?
* *As \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ increases, then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ increases*. Why do you think this happens? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. Why might a well stop producing water?

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1. Click on the icon with the question mark on the sink to access the mystery fluid portion. Determine the density of a mystery fluid. If your last name starts with A-H, test Fluid A. If your last name starts with I-N, test Fluid B. If your last name starts with O-Z, test Fluid C. Describe your method and results below.

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1. unit of pressure and stress; a pascal is a pressure of one newton per square meter, or, in SI base units, one kilogram per meter per second squared. [↑](#footnote-ref-1)