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**Class:** Physics II

**Period:** 7th

**Group #:** 1

**Lab # and Title:** 2. Hydrostatic Pressure Lab

### Laboratory Report

#### **Purpose**

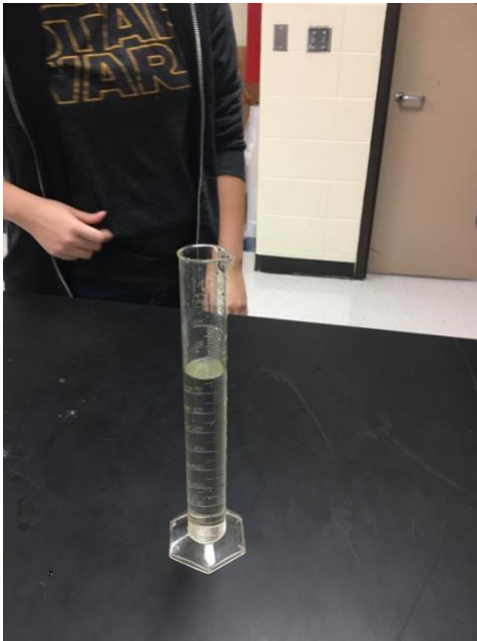
Determine the relation between pressure and depth by comparing the changes in pressure as depth is manipulated.

#### **Equipment Used**

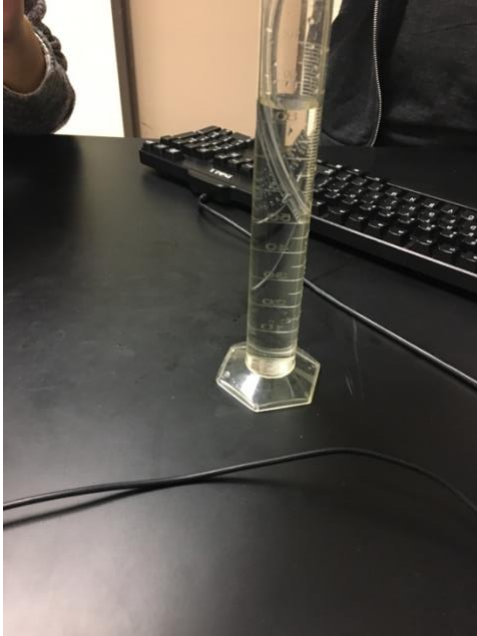
Graduated cylinder, pressure sensor, plastic tube, meter stick

#### **Procedure**

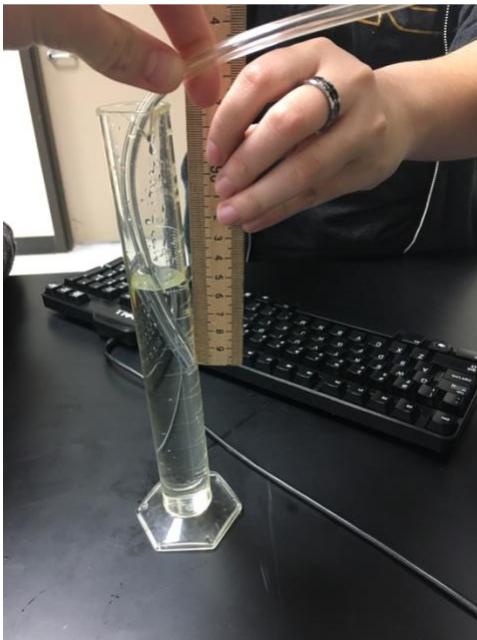
1. Log onto computer and open Data Studio. Make sure pressure sensor is connected to the computer.
2. Attach plastic tube to the pressure sensor.
3. Fill up graduated cylinder with approximately 100 mL of water.



4. Insert tube into water.



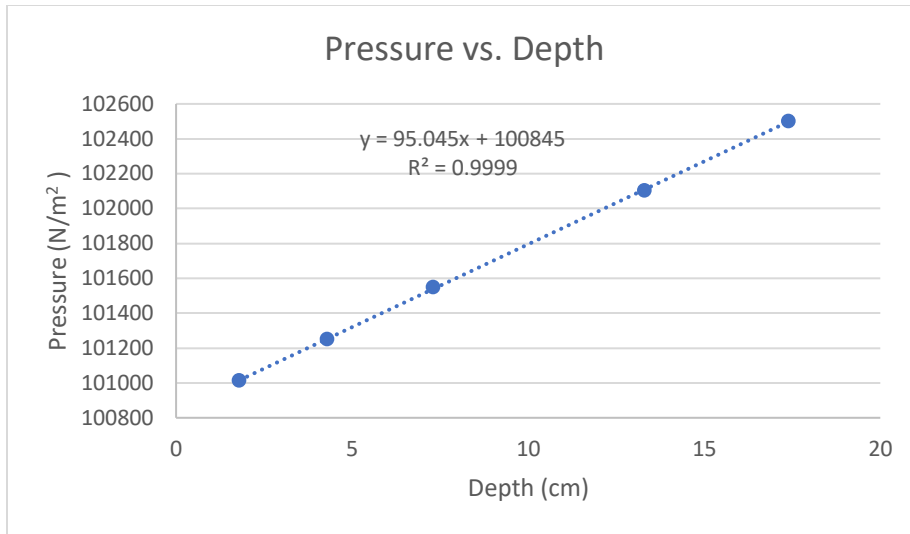
5. Record depth from the top of the water



6. Record pressure shown on Data Studio.
7. Repeat steps 4-5 4 more times at varying depths and record results.

**Data**

Depth (cm)	Pressure (N/m <sup>2</sup> )
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1.8	101013
4.3	101250
7.3	101550
13.3	102102
17.4	102500

## Conclusion

According to the data we collected in this experiment, depth and pressure seem to be directly proportional as evident by the linear graph produced. As depth increases, pressure increases as well at an average ratio of 1:95.045. We are fairly confident in this relation as the  $R^2$  value was 0.99987, however, possible sources of error must be accounted for. For instance, the meter stick that we used was limited to only 1 millimeter, as a result the most accurate measurement for depth we could retrieve was to the tenth of a centimeter. In the future, if we were to recreate this experiment we'd try to acquire more accurate measurement tools to ensure the most accurate results possible.