**What affects Index of Refraction?**

**Task:** Design an experiment that examines a factor that affects water's index of refraction. You and your group are provided with a limit set of materials you can choose from. The teacher must approve other materials that you want to use at least 1 day before the day of the lab. You must come to the lab prepared with a clear purpose, a list of materials, and a list of procedures to help you carry out your lab. Time is given in class to perform the experiment. One group submits 1 copy of the lab report. Make sure to check the lab write-up requirements and the lab report rubric.

**Group**: 2-4 people per group

**Materials:**

Semi-circle trays

Meter sticks

Protractors

Felt pens

White paper

Sugar

Salt

Water

Ray boxes

Laser pointer (limited)

Light filters (red, blue, and green)

Centigram balance

Graduated cylinders

**Schedule:**

*Wednesday April 1, 2015* - Time in class to conduct the experiment.

*Monday April 13, 2015* - Lab due. Hand into Mr. Henderson or to Ms. Li under room 211 (Mr. Scorda's room)

**Lab design requirements**

1. Make sure your experiment has a clear purpose that clearly identifies the independent and the dependent variable.
2. Your independent and dependent variables must be **measureable**.
3. Your lab must have the following sections: Purpose, Materials, Procedure, Data collection, Data Analysis, Discussion, Conclusion, and References if applicable.
4. The data analysis must have a component that calculates the index of refraction of water.
5. At least 1 graph must be produced, showing the relationship between your dependent (y-axis) vs. your independent variable (x-axis).
6. There must be at least 3 points on your graph.
7. Your group must identify and attempt to control your experiment.
8. Your experimental design should address your purpose and not attempt to measure something else.
9. Make sure you refer to the lab report rubric to check anything you missed.