The first exam in your science course is approaching. The General Education Academic Support is here to help. What can you do ahead of Exam 1?
Here is some information about Exam 1.

Covers content learned in weeks 1 and 2.
Is worth of 100 total points, and includes the following types of questions:

- Multiple-choice questions
- Multiple response questions
- Matching questions
- Essay questions

Week 1 Topics:

Scientific method

Hypothesis: A testable explanation.

Independent variable: What you as the scientist are controlling or changing.

Dependent variable: Depends on the independent variable. What you expect to change. What you are measuring.

Positive control: Group or condition with known outcome. Negative

control: Condition for which no change is expected. Experimental

controls: All the conditions that are held constant. Sample question:

Q1. You have observed that your heart rate increases upon exercise, having caffeine and when you are scared. You want to conduct a study and of these which one is easily controllable independent variable?
Q2. You want to test two pain killer drugs A and B for their effectiveness in treating headaches. Based on the literature available and the chemical composition of the drugs you think drug A is more effective than B. You would like to determine which one is the most effective. State your hypothesis, design an experiment, and state a result that would support your hypothesis.
Remember to include positive and negative controls. What is the independent and dependent variable of this experiment? Name the constant variables of this experiment. (8 points)
Q 3. I am studying the effect of exercise on heart rate. Which will be the independent variable of this experiment.

Dimensional Analysis

- **Always set up your start and end point before using conversions**

Examples:

1. I have a book with a weight of 0.46 lbs. What is the mass of this book in kg?
2. I have a sample of a fluid with a volume of 670 ml. What is the volume of this sample in gal?
3. I have a sample that diffused to a diameter of 0.2 inches. What is this diameter in mm?

Do not forget about density!

Q1. In an experiment, you calculate that the mass of a 95.5 ml sample of a liquid is 75 grams. You know that this liquid is one of the substances below: Which liquid do you have?
Q 2: If a silver nugget occupies a volume of 8 ml what will be the mass of this metal? (density of silver is 10.5 g/ml).
What do we know about atoms?
Subatomic particles and their relationships