

New York State Regents Physics
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Who?

- Students. You are responsible and accountable for your own learning.
- Teacher. I manage, motivate, make it happen in the classroom and in the laboratory. I deliver NYS Regents Physics curriculum.

What?

- Physics is the science that seeks to explain and understand matter and energy and their interaction.
- Physics is a science and thus it does utilize the scientific method.
- Physics is the most basic and fundamental science.
- Examples: motion, forces, electricity, magnetism, sound, light, atomic particles

Why?

- Earn good grades
- Pass the NYS Regents Exam in Physics
- Earn an advanced Regents Diploma
- Required for some majors such as engineering, science, medicine, dentistry
- Understand the physical world of the very small and the very large
- Address misconceptions: force to maintain constant velocity, sound in outer space

How?

- Solve problems
- Homework, class work, textbook, Review book, tutoring, class webpage jpg
- Labs and lab reports
- Websites such as www.physicsclassroom.com; www.khanacademy.com

Scientific Method

- 1. Observation (qualitative, quantitative)
- 2. Questioning (why? How? When?)
- 3. Hypothesis (educated guess, explanation, use prior knowledge, use imagination)
- 4. Prediction (if the hypothesis, then the following.....)
- 5. Experiment = test the hypothesis
- 6. Conclusion. Is the hypothesis true or false?

Scientific Truth

- “Truth” is unfalsifiable hypotheses.
- If you or anyone cannot show a hypothesis to be wrong, that is taken to be “truth.”

Experiments

- Independent variable = parameter being varied. Best done one at a time. Graphed on the X – axis.
- Dependent variable = effect or result being studied. Graphed on the Y – axis.
- Control = prior condition. “same old, same old” The parameter being kept the same.

Example of Scientific Method

- 1. The car will not start.
- 2. Why won't the car start?
- 3. The car will not start because the battery is dead.
- 4. If I replace the dead battery, then the car will start.
- 5. I replace the dead battery and as a result the car starts.
- 6. The hypothesis was correct that the car needed a new battery.

Group Problem

- 1. Qualitative Observation: The grass is brown.
- Use the scientific method to explain why and how the grass is brown.