



CHARLOTTE'S WEB

Conceptual Physics

Course Description: This course focuses on introductory high school physics with lab writing. We will cover topics including motion, energy, momentum, atoms, matter, heat, temperature, pressure, buoyancy, sound, light, electricity, and magnetism. In addition to studying the textbook, we will also cover how to write high quality lab reports. Our class time will be structured according to the following:

1. Discussing questions from the previous week (10 min).
2. Covering new topics (40 min).
3. Practicing some homework examples (20 min).
4. Reviewing lab report progress (15 min).

To facilitate learning and retention, we will utilize different games and activities, including simple student presentations that will be assigned throughout the course.

Feedback and grading on lab reports, tests, and quizzes will be provided.

Labs: There will be four classes in the school year where we will spend the entire class period conducting a lab experiment. There are two options for families. Families can have students follow along with the lab demonstration, or they can purchase the physics supplies and set up their lab and participate as it is demonstrated. Due to time constraints, if a family chooses to purchase the student lab materials, students are expected to have their labs completely prepped before the lesson begins. Additionally, we cannot pause the experiment to help anyone if their labs malfunction. If any help is necessary, the student should have an adult nearby who can assist them.

At the end of class most weeks, we will review lab report progress for 15 minutes. Students are responsible to write and submit small portions of their lab report every week to help maintain steady progress.

Course design: The course will have live weekly meetings on Zoom for discussion. Class participation via discussion boards, assignments, and the schedule will all be accessed through the Canvas platform (which is free). Each student will need an email account to register. You can register using a parent's email account, but they will need it to access the course. If registering with more than two children, there will need to be two email accounts, one for each student.

Course expectations: Students are expected to do the assigned reading, to prepare for the discussion, including discussion forums during the week, and to complete the homework and lab assignments. Assignments and reading will require approximately 45 minutes per day to



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complete. If a class is missed, each student is required to watch the recording before coming to class the following week.

High school credits: The class is worth 1 Science credit with lab.

Supplies needed:

- Canvas account (information sent out during the summer- free)
- Documents printed (provided by Charlotte's Web - free)
- [*Introductory Physics 3rd Edition by John D. Mays*](#)
- [*The Student Lab Report Handbook by John D. Mays*](#)
- [*Physics lab supplies*](#) (optional)

Below are five optional physics books. It is recommended that students read one per term according to their interest.

- [*E=mc²: A Biography of the World's Most Famous Equation*](#) (biography about Einstein)
- [*Storm in a Teacup: The Physics of Everyday Life*](#) (physics book about how physics applies to everyday life).
- [*For the Love of Physics*](#)
- [*Drawing Physics*](#)
- [*In Search of Schrödinger's Cat: Quantum Physics and Reality*](#)

Pre-requisites: Grades 8-11

1. Must have completed a course of Algebra 1.
2. Must be able to type their assignments.
3. Required to participate in the free workshop on self educating, which will be offered in the summer OR have previously participated in the workshop.

Course enrollment min/max: 6/12

Live meetings- Meets weekly on Thursday from 3-4:30pm EST.

Cost: \$400 for the year per student for the course including graded labs, quizzes and exams.

Instructor: Laura Platt

Questions? Email the instructor: lplatt16@gmail.com