

PHYSICS FIRST
2009-10 COURSE SYLLABUS
Mr. Christopher

Course Description: Physics First is a college preparatory required freshman-level course. Emphasis is placed on providing as much hands-on practical learning as possible with the focus on application to everyday life. Units of study will include Laws of Motion, Work and Energy, Matter, Periodic Table, Electrical Systems, Waves, and Sound with the use of Scientific Inquiry throughout all units of study.

Instructional Philosophy: This course requires students to work individually and in small groups. It is my goal to provide students with a variety of activities that will challenge and interest them so that they may be successful participants in the real world. It is also important that I teach objectives that must be met at the Physics First level so that students will gain a vast knowledge of the subject matter.

Major Course Goals: The student will demonstrate an understanding of the following concepts:

1. The process of scientific inquiry and investigations.
2. The Laws of Motion as described by Newton.
3. The different forms of energy.
4. The types of simple machines and their functions.
5. Describe matter and its properties.
6. Use the periodic table to obtain information about the elements.
7. The classification and identification of chemical reactions.
8. The relationships between current, voltage, and resistance.
9. The properties of waves.
10. The electromagnetic spectrum and the relationship among frequency, energy, and wavelength of light.
11. The concepts developed by the literacy and numeracy committees.

Major Course Objectives/Benchmarks by Quarter: Mastery of the course objectives is required with a minimum 70%.

First Quarter

1. Develop abilities in science including scientific inquiry and investigations.
2. Recognize that force is needed to change an object's motion.
3. Compare and contrast Newton's Laws of Motion.
4. Calculate work, energy, and power.
5. Explain what it means when an object is in equilibrium.
6. Describe the path of a projectile.

Second Quarter

1. Convert between temperature scales.
2. Examine the relationship between temperature, the movement of particles, and the states of matter.
3. Distinguish between physical and chemical properties.
4. Develop an understanding of the periodic table.
5. Classify the different forms of energy.
6. Contrast ionic and covalent bonds.

Third Quarter

1. Explain the relationships between current, voltage, and resistance.
2. Distinguish between alternating and direct current.
3. Predict the effects of the electromagnetic force on the motion of an object.
4. Differentiate insulators, semiconductors, and conductors.

Fourth Quarter

1. Identify a cycle of harmonic motion.
2. Explain the Doppler effect.
3. Develop an understanding of reflection and refraction.
4. Describe the different kinds of electromagnetic waves.

Required/Recommended Reading:

1. Students will be required to read their textbook.
2. Students will be required to read their laboratory and be prepared before class.
3. Students will be required to have appropriate reading material to read during all SSR times.
4. Students will read articles from scientific journals and magazines during the school year.
5. Students will participate in the literacy program by reading 200 pages of science related material.

Major course projects and Instructional Activities: Students will participate in the following projects and activities:

1. Students will participate in a variety of laboratory activities centered around the scientific method.
2. Students will participate in a variety of laboratory activities that will introduce them to the instruments and procedures used by laboratory technicians.
3. Students will participate in a variety of laboratory activities that will tie together our units of study.
4. Students will have a group project during the quarter that will be graded as a group and individual grades will also be given.

Course Assessment Plan: Students will be assessed in the following manner:

1. There will be a test and/or project at the completion of each unit of study. Test will consist of open ended constructive response questions, performance events, and objective questions.
2. Students will be required to complete homework as part of their grade.
3. A comprehensive quarter final will be given at the end of each quarter.
4. Students will be given a comprehensive End of Course (EOC) exam at the end of the year.

Classroom Expectations:

1. Be on time and in your seat when the bell rings.
2. Be prepared at the beginning of class. Have your textbook, notebook, homework, and a pen or pencil. On SSR days, you must have your reading material (4th hour only).
3. Be respectful of all people and property in the room.
4. Read and follow all directions, as given, the first time.
5. No gum, food, or drink in the room at any time.

6. No grooming (fixing hair, make-up, etc.)
7. Keep your feet on the floor and not on the chairs.
8. Keep book bags out of the aisles and purses on the floor during class.
9. The teacher, NOT THE BELL, dismisses the class.

Supplies and Materials Needed: Students should have the following materials for class:

1. Notebook
2. Pen or pencil
3. Scientific calculator

Homework Policy and Grading Scale: Please refer to the Student Handbook for the Homework Policy. The grading scale is as follows:

A	100-95	C	76-73
A-.....	94-90	C-.....	72-70
B+.....	89-87	D+.....	69-67
B	86-83	D	66-63
B-.....	82-80	D-.....	62-60
C+.....	79-77	F.....	59-0

Extra Help: If you need any extra assistance I will be available before and after school.

Time and Place to be Reached by Parent: If you need to contact me for any reason please feel free to leave me a message at 431-2616 ext 4134. I can also be reached by email at cchristopher@centralr3.org. Homework assignments can be found online at new.schoolnotes.com.