Southmoreland School District
AP Physics 2 Curriculum Overview

AP Physics 2 Overview:

AP Physics 2 is the continuation of AP Physics 1. Topics covered in AP Physics 2 include, thermodynamics, electric fields, electrical energy, current and resistors, magnetism, light and atomic physics. AP Physics 2 is highly recommended for students planning to enter the life sciences, pre-medicine or engineering fields. Students may be eligible to receive college credit for physics, based on the rules of their selected college.

Module Titles:

Module 1: Fluids
Module 2: Thermodynamics
Module 3: Electric Force and Fields
Module 4: Electric Circuits
Module 5: Magnetism and Electromagnetic Induction
Module 6: Geometric and Physical Optics
Module 7: Quantum, Atomic, and Nuclear Physics

Module Overviews:

Module 1: Fluids
Students will consider how a fluid's internal structure and interactions define its macroscopic characteristics and how these interactions can be studied if they can't be seen. This module will include an emphasis on representations and models and connecting related knowledge between fundamental ideas. Situation static and dynamic fluids will be examined. .

Module 2: Thermodynamics
Students will continue to investigate what they cannot see by examining heat, temperature, and thermal energy in practical contexts such as heat engines, heat pumps, and refrigerators. The focus of this Module is the study of relationships and change, so it's important that students can discuss—in addition to calculate—what happens when a physical scenario changes, such as the consequences of adding heat to, or removing heat from, a system. mathematics of probability.

Module 3: Electric Force and Fields
Students will study electromagnetic phenomena at a fundamental level, introducing students to the concepts of electric charge, electric force, and electric field and

potential. This module continues to focus on relationships, change, and developing the science practice of making connections between scales, concepts, and representations.

Module 4: Electric Circuits
Students will study the behavior of charged particles to deepen students' understanding of the law of conservation of energy and how it's applied to electric circuits. This module will ask students to do more than calculate for the current, resistance, and voltage in a simple circuit; it will challenge them to draw connections between the interactions of systems and the changes that result from those interactions.

Module 5: Magnetism and Electromagnetic Induction
Students study the relationships between moving charges and the magnetic forces and fields they generate. Students will discover the natural symmetry between electricity and magnetism and make connections between electromagnetic induction and the underlying principles behind most of the technology in modern society, including telephones, television, computers, and the Internet.

Module 6: Geometric and Physical Optics
Students will be introduced to the different ways of thinking about and modeling light. New types of representations, including ray, wave front, and interference diagrams are introduced. It is essential that students understand how to create and use these diagrams to help answer questions and to use as evidence for claims.

Module 7: Quantum, Atomic, and Nuclear Physics
Students will be able to make connections between the content of this module and the fundamental principles of physics, principles of conservation, and models and representations used earlier in the course. These connections will help students make predictions about a variety of phenomena—including the rate of radioactive decay or the type of nuclear reaction. Students will study the photoelectric experiment to the ideas of energy conservation and the particle model of light.