Danville Area School District
Course Overview and Scope and Sequence

Course Title: Physics
Content Area: Science
Grade Level: 11th and/or 12th
Date Developed: June 2023

COURSE OVERVIEW: Physics is an exciting and fun introductory concepts-based physics course! This course is designed to introduce you to the fundamental principles and concepts of physics through hands-on experiments and interactive activities. You will explore topics such as mechanics, thermodynamics, electromagnetism, waves, and fluid mechanics, and learn how they are interconnected. Throughout the course, you will engage in a variety of activities that will challenge your understanding of physics and encourage you to think creatively. By the end of this course, you will have a solid foundation in the basic concepts and principles of physics and be able to apply them to solve problems. You will also have gained valuable skills in critical thinking, problem-solving, and teamwork.

ANCHOR STANDARDS:

1. Forces and Motion
2. Types of Interactions
3. Definitions of Energy
4. Relationship Between Energy and Forces

KEY COURSE TEXT AND MATERIALS: Holt Physics 2006
ISBN: 0-03-073548-3

KEY ASSESSMENTS: Unit Exams

Diagnostic: None
Formative: Labs, activities, bell ringers/exit tickets, class discussions, gizmo
Summative: quiz and test

SCOPE AND SEQUENCE					
Unit	PRIORITY STANDARDS	SUPPORTING STANDARDS	ASSESSMENT	MATERIALS	TIMEFRAME
1. Measurement	2.1.HS Mathematics core standards	3.5.6-8.O	Classroom discussions and measurement activities.	Content is teacher created. In addition to lab/project supplies, materials are posted in Google Classroom.	5 days
2. One dimensional motion - constant velocity	3.2.9-12I	3.2.3.A	Velocity lab, graphing practice, lab practicum, quiz and unit test	Content is teacher created. In addition to lab/project supplies, materials are posted in Google Classroom.	10 days
2x. One dimensional motion - constant acceleration	3.2.9-12I 3.2.9-12K	3.2.3.A	Acceleration lab, ball toss lab, lab practicum, quiz and test	Content is teacher created. In addition to lab/project supplies, materials are posted in Google Classroom.	15 days
3. Two dimensional motion	3.2.9-12I	3.2.3.A	Dr. Evil activity, vector investigations, projectile lab, Pirate lab, quiz and test	Content is teacher created. In addition to lab/project supplies, materials are posted in	15 days

				Google Classroom.	
4. Forces	3.2.9-12I 3.2.9-12K	3.2.6-8.H	Force diagram, Newton's law labs, Atwood's lab, Friction lab, inclined plane lab, quiz and test	Content is teacher created. In addition to lab/project supplies, materials are posted in Google Classroom.	20 days
5. Energy	3.2.9-12L	3.2.6-8.L 3.2.6-8.O 3.2.6-8.P	Gizmo, ball toss lab, model friction and energy lab, quiz and test	Content is teacher created. In addition to lab/project supplies, materials are posted in Google Classroom.	20 days
6. Momentum	3.2.9-12J 3.2.9-12K 3.2.9-12P 3.2.9-12Q	3.2.6-8.G	Momentum and collision lab, gizmo, quiz and test	Content is teacher created. In addition to lab/project supplies, materials are posted in Google Classroom.	20 days
7. Rotational Motion	3.2.9-12L 3.2.9-12M 3.2.9-12S	3.2.6-8.C	Gizmos, Constant acceleration modeling, diagram rotational lab, quiz	Content is teacher created. In addition to lab/project supplies, materials are posted in Google Classroom.	15 days
8. Waves and Sound	3.2.9-12.T	3.2.6-8.Q 3.2.6-8.R	Gizmos, Wave Lab, Quiz	Content is teacher created. In addition to lab/project supplies, materials are posted in Google Classroom.	15 days

9. Electricity and Magnetism	3.2.9-12M 3.2.9-12S	3.2.6-8.I 3.2.6-8.K	Gizmo, series and parallel lab, home energy use investigation, modeling circuits, quiz	Content is teacher created. In addition to lab/project supplies, materials are posted in Google Classroom.	15 days
10. Light and Optics	3.2.9-12.V 3.2.9-12.W	3.2.6-8.R	Optics Lab, Gizmo, Diffraction and Light Spectra Lab, quiz	Content is teacher created. In addition to lab/project supplies, materials are posted in Google Classroom.	12 days
11. Fluid Mechanics	3.2.9-12Q	3.2.6-8.P	Gizmo, Density lab, modeling buoyancy, quiz	Content is teacher created. In addition to lab/project supplies, materials are posted in Google Classroom.	10 days
12. Thermodynamics	3.2.9-12.Q 3.2.9-12.R	3.2.6-8.M 3.2.6-8.N 3.2.6-8.B	Heat Transfer Lab, Gizmo, quiz	Content is teacher created. In addition to lab/project supplies, materials are posted in Google Classroom.	5 days