Physics 2016-2017

Yap Seventh-Day Adventist School

Yearly Lesson Outline with NAD Standards

Holt Physics, by Raymond A. Serway and Jerry S. Faughn

Quarter ?

Chapter 1 – The Science of Physics

Chapter 2 – Motion in One Dimension
PHY.4.2 – Identify the fundamental properties and laws of mechanics.
PHY.5.1 – Test the properties and laws of mechanics (Newton's laws, work, power, velocity, energy, etc.).
PHY.6.1 – Predict the outcome of motion and force problems using the principles of mechanics.

Chapter 3 – Two-Dimensional Motion and Vectors
PHY.4.2 – Identify the fundamental properties and laws of mechanics.
PHY.5.1 – Test the properties and laws of mechanics (Newton's laws, work, power, velocity, energy, etc.).
PHY.6.1 – Predict the outcome of motion and force problems using the principles of mechanics.

Chapter 4 – Forces and the Laws of Motion
PHY.4.2 – Identify the fundamental properties and laws of mechanics.
PHY.5.1 – Test the properties and laws of mechanics (Newton's laws, work, power, velocity, energy, etc.).
PHY.6.1 – Predict the outcome of motion and force problems using the principles of mechanics.

Chapter 5 – Work and Energy
PHY.4.2 – Identify the fundamental properties and laws of mechanics.
PHY.5.1 – Test the properties and laws of mechanics (Newton's laws, work, power, velocity, energy, etc.).
PHY.6.1 – Predict the outcome of motion and force problems using the principles of mechanics.
PHY.6.2 – Correlate changes in energy to the laws of thermodynamics.

Chapter 6 – Momentum and Collisions
PHY.4.2 – Identify the fundamental properties and laws of mechanics.
PHY.5.1 – Test the properties and laws of mechanics (Newton's laws, work, power, velocity, energy, etc.).
PHY.6.1 – Predict the outcome of motion and force problems using the principles of mechanics.

Chapter 7 – Circular Motion and Gravitation
PHY.4.2 – Identify the fundamental properties and laws of mechanics.
PHY.6.1 – Predict the outcome of motion and force problems using the principles of mechanics.

Chapter 8 – Fluid Mechanics
PHY.4.2 – Identify the fundamental properties and laws of mechanics.
PHY.6.1 – Predict the outcome of motion and force problems using the principles of mechanics.

Chapter 9 – Heat
PHY.4.3 – Define the properties and laws of thermodynamics.
PHY.5.2 – Explore the properties and laws of thermodynamics (laws, heat energy).

Chapter 10 – Thermodynamics
PHY.4.3 – Define the properties and laws of thermodynamics.
PHY.5.2 – Explore the properties and laws of thermodynamics (laws, heat energy).
PHY.6.2 – Correlate changes in energy to the laws of thermodynamics.

Chapter 11 – Vibrations and Waves
PHY.4.4 – Demonstrate an understanding of the sound and light principles.
PHY.5.3 – Investigate the properties of sound and light (waves, optics, etc.).
PHY.6.3 – Evaluate the conditions and factors which affect sound and light.

Chapter 12 – Sound
PHY.4.4 – Demonstrate an understanding of the sound and light principles.
PHY.5.3 – Investigate the properties of sound and light (waves, optics, etc.).
PHY.6.3 – Evaluate the conditions and factors which affect sound and light.

Chapter 13 – Light and Reflection
PHY.4.4 – Demonstrate an understanding of the sound and light principles.
PHY.5.3 – Investigate the properties of sound and light (waves, optics, etc.).
PHY.6.3 – Evaluate the conditions and factors which affect sound and light.

Chapter 14 – Refraction
PHY.4.4 – Demonstrate an understanding of the sound and light principles.
PHY.5.3 – Investigate the properties of sound and light (waves, optics, etc.).
PHY.6.3 – Evaluate the conditions and factors which affect sound and light.

Chapter 15 – Interference and Diffraction
PHY.4.4 – Demonstrate an understanding of the sound and light principles.
PHY.5.3 – Investigate the properties of sound and light (waves, optics, etc.).
PHY.6.3 – Evaluate the conditions and factors which affect sound and light.

Chapter 16 – Electric Forces and Fields
PHY.4.5 – Describe the fundamental properties of electricity and magnetism.
PHY.5.4 – Examine the principles of electricity and magnetism (circuits, Ohm’s law, forces, charges, fields).

Chapter 17 – Electrical Energy and Current
PHY.4.5 – Describe the fundamental properties of electricity and magnetism.
PHY.5.4 – Examine the principles of electricity and magnetism (circuits, Ohm’s law, forces, charges, fields).
PHY.6.4 – Analyze various electrical circuits.

Chapter 18 – Circuits and Circuit Elements
PHY.4.5 – Describe the fundamental properties of electricity and magnetism.
PHY.5.4 – Examine the principles of electricity and magnetism (circuits, Ohm's law, forces, charges, fields).
PHY.6.4 – Analyze various electrical circuits.

Chapter 19 – Magnetism
PHY.4.5 – Describe the fundamental properties of electricity and magnetism.
PHY.5.4 – Examine the principles of electricity and magnetism (circuits, Ohm's law, forces, charges, fields).

Chapter 20 – Electromagnetic Induction
PHY.4.5 – Describe the fundamental properties of electricity and magnetism.
PHY.5.4 – Examine the principles of electricity and magnetism (circuits, Ohm's law, forces, charges, fields).

Chapter 21 – Atomic Physics
PHY.4.6 – Understand the basic concepts of nuclear physics.
PHY.5.5 – Research the principles of nuclear physics (quantum theory, radioactivity, dating methods, etc.).
PHY.6.5 – Interpret the results of nuclear research.
PHY.7.3 – Apply the study of physics to issues regarding nuclear energy.

Chapter 22 – Subatomic Physics
PHY.4.6 – Understand the basic concepts of nuclear physics.
PHY.5.5 – Research the principles of nuclear physics (quantum theory, radioactivity, dating methods, etc.).
PHY.6.5 – Interpret the results of nuclear research.
PHY.7.3 – Apply the study of physics to issues regarding nuclear energy.

Throughout the year

PHY.4.1 – Recognize God as the Designer and Creator of our physical world and its governing laws.
PHY.7.1 – Strengthen belief in God as Designer and Creator by applying the laws of physics.
PHY.7.2 – Utilize the concepts of physics to improve lifestyle choices.