

## Grand Island Public Schools PHYSICS

**Course Length:** Two semesters

**Grade Levels:** 10, 11, 12

**Prerequisite Courses:** Algebra 3-4 and two prior science courses or enrolled in Chemistry

### **Course Description:**

This course allows students to experience matter and energy and their relationships as they occur in the real world.

### **Physics Course Standards**

**As a result of their participation in this course, students will:**

#### **Strand 1: Inquiry and Other Integrated Science Components**

- Use scientific inquiry to solve problems and conduct scientific investigations.
  - Formulate questions that guide scientific investigations.
  - Develop a testable hypothesis based on prior scientific knowledge.
  - Design and conduct a scientific investigation to test the hypothesis.
  - Use technology, observations and mathematics to improve investigations and communications.
  - Formulate and revise scientific explanations and models using logic and evidence.
  - Communicate and defend a scientific argument.
- Investigate and understand that scientists, past and present, have different abilities, technologies, qualities, theories, and scientific habits of mind (e.g., ethics).
- Use appropriate technology as a tool in problem solving.
- Describe the similarities and differences between science and technology and the impact they have on each other.
- Understand the role of science in making informed decisions.

#### **Strand 2: Physical Science**

- Observe, describe and measure the physical properties of matter at both the atomic and subatomic levels.
- Describe and apply the laws of motion.
- Describe, examine, and analyze the characteristics of forces.
- Demonstrate and analyze the relationships among forces and motion.
- Describe, examine, and apply the laws of conservation of momentum and energy.

#### **Strand 3: Life Science**

#### **Strand 4: Earth and Space Science**

- Describe and explain the history and scale of the universe and solar system.