

*Essential skills and knowledge for this Davis School District course***Motion**

- a. Describe and analyze the motion of objects in terms of position, time, acceleration, and velocity.
- b. Relate the motion of objects to a frame of reference.
- c. Use Newton's first law to explain the motion of an object.

**Relationship between Force, Mass, and Acceleration**

- a. Analyze the forces acting on an object.
- b. Use Newton's second law to relate force, mass and acceleration of an object.
- c. Explain and provide practical examples of how forces act in pairs (Newton's Third Law).

**Gravitational and Electrical Forces**

- a. Investigate and explain Newton's law of universal gravitation.
- b. Describe the factors that affect electric force (Coulomb's law).

**Conservation of Energy**

- a. Determine kinetic and potential energy in a system.
- b. Describe conservation of energy in terms of systems.
- c. Investigate and describe common energy transformations.

**Properties and Applications of Waves**

- a. Understand, investigate, and apply the properties of mechanical waves.
- b. Describe the nature of electromagnetic waves and provide examples in everyday life.
- c. Distinguish between the different parts of the electromagnetic spectrum.

**Skill Acquisition Through Practice**

- a. Make predictions, design and conduct experiments, and collect data to formulate conclusions.
- b. Use data to compare, contrast, and calculate.
- c. Select and use appropriate scientific instruments.
- d. Construct models to describe concepts and principles.
- e. Use precise scientific language in oral and written communication.