



STANDARDS ALIGNMENT MAGNET ROCKET UNIT

This document was reviewed and created in collaboration with [Bellevue School District](#).

In this curriculum created for grades 7-9, students engage in learning experiences that address standards and practices identified in the Computer Science Teachers Association (CSTA) Computer Science standards and the Next Generation Science Standards (NGSS). The standards addressed throughout the curriculum are listed below. For more detail about the learning activities within the curriculum please visit the Magnet Rocket Teacher Guide.

NEXT GENERATION SCIENCE STANDARDS

- Focal Performance Expectation
 - [MS-PS3-2](#): Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.
 - [MS-PS2-3](#): Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.
- Focal Science and Engineering Practices
 - Practice 1: Asking Questions and Defining Problems
 - Practice 2: Developing and Using Models
 - Practice 5: Using Mathematics and Computational Thinking
 - Practice 7: Engaging in Argument from Evidence
 - Practice 8: Obtaining, Evaluating, and Communicating Information
- Focal Disciplinary Core Ideas
 - PS2.B: Types of Interactions Electric and magnetic (electromagnetic) forces can be attractive or repulsive, and their sizes depend on the magnitudes of the charges, currents, or magnetic strengths involved and on the distances between the interacting objects.
 - PS3.C: Relationship Between Energy and Forces When two objects interact, each one exerts a force on the other that can cause energy to be transferred to or from the object.

- Crosscutting Concepts
 - Patterns
 - Cause and Effect
 - System and System Models

COMPUTER SCIENCE TEACHERS ASSOCIATION

- Concepts
 - 2-AP-11: Create clearly named variables that represent different data types and perform operations on their values.
 - 2-AP-13: Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.
- Practices
 - Creating Computational Artifacts
 - Recognizing and Defining Computational Problems