



Bedford Public Schools

Grade 7 – Science

JGMS Science Program

The goal of the Science Program at JGMS is to develop the science and engineering practices for students through learning about concepts related to Earth, Life, Physical, and Engineering sciences. Through the three years, the eight science and engineering practices will serve as the basis for students to understand concepts about the physical and biological worlds. In each year of the program, students will spend time learning about each area of science and build on their scientific practices.

Grade 7 Science and Technology

In grade 7 science, students continue building science and engineering skills and practices introduced in the 6th grade. This year, the major theme focuses on Systems and Cycles in life, earth, and physical sciences. A focus on systems necessitates that students interpret information, apply concepts and skills from the broad context of the discipline making connections among different domains of knowledge. The three Science and Engineering practices emphasized are:

- Constructing Explanations and Designing Solutions
- Engaging in Argument from Evidence
- Developing and Using Models

Students explore changes in earth's history and composition, geologic events, and how human activities impact the environment. Major biomes are studied in the ecology unit with emphasis on analyzing the structure and function of biomes that include possible solutions to problems caused by human impact. Energy conservation and transfer are analyzed in the physical world. Students examine and provide arguments for energy conservation and the relationship between electricity and magnetism.



Learning Expectations

[Grade 7 Science](#)

Grade 7 Science

Enduring Understandings In order to meet the standards, the students will need to understand that . . .	Essential Questions In order to understand, students will need to consider questions such as . . .	Knowledge and Skills Learning this material will require students to . . .
<ul style="list-style-type: none"> • Developing and using models. • Analyzing and interpreting data. • Planning and carrying out investigations. • Engaging in argument from evidence. • Constructing explanations and designing solutions. • Obtaining, evaluating, and communicating information. • Asking questions and defining problems. • Using mathematics and computational thinking. 	<ul style="list-style-type: none"> • What factors influence an ecosystem? • How does energy flow through the ecosystem? • How do body systems work independently and as a whole in the body? • What evidence from current geological processes support that the Earth is constantly in a state of change? • What are the forces that influence the movement of water on the earth? • What are the effects of human influences on the environment due to consumption of natural resources? • What are the mechanisms for energy transfer in the world? 	<ul style="list-style-type: none"> • Students explain the dynamic interactions between organisms and their environment including both living and nonliving components. • Students explain how cycles of matter and energy transfers occur in ecosystems. • Students construct explanations describing how the human body works as a system. • Students develop models to explain the relationship between electric and magnetic forces. • Students provide evidence that shows the role of energy in its various forms including the conservation and transfer of energy. • Students develop models to explain how the movement of water helps shape the Earth.