



Bedford Public Schools

Grade 8 – 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.

Eighth Grade Science

Grade 8 science will include units on Earth, life, physical science and engineering. The focus of these units will be on Earth's place in the Universe and the human impact on our planet, the diversity of life, matter, forces, and interactions of the physical world. This course is designed to promote the continued use of the eight practices of science and engineering. The three Science and Engineering practices emphasized are:

- Developing and Using Models
- Engaging in Argument from Evidence
- Obtaining, evaluating and communicating information

Grade 8 students develop their thinking skills focusing on the cause and effect of more complex phenomena in science. Strong emphasis will be placed on teaching global science by using local examples. Hands-on activities, labs, projects, and the latest technology available will be used to enhance learning.



Learning Expectations

[Grade 8 Science](#)

Grade 8 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"> • Asking questions (for science) and defining problems (for engineering). • Developing and using models. • Planning and carrying out investigations. • Analyzing and interpreting data. • Using mathematics and computational thinking. • Constructing explanations (for science) and designing solutions (for engineering). • Engaging in argument from evidence. • Obtaining, evaluating, and communicating information. 	<ul style="list-style-type: none"> • How can we accurately represent our three dimensional Earth in a two dimensional format? • How does the transfer of energy affect processes above and below the surface of the Earth? • What evidence supports the theory of the Earth's physical and biological changes? • How do Newton's Laws affect matter on Earth and in the Universe? • What are the effects of human influences on the environment? 	<ul style="list-style-type: none"> • Students create and interpret models that represent the surface of the Earth, patterns of weather, and locations of geological events. • Students analyze and interpret data to determine the role of human activities on global warming. • Students develop models to show how reproduction may affect genetic diversity. • Students explain how a changing environment affects an organism's ability to survive and evolve.