Avon School
Grade 4 Science Curriculum

Curriculum Overview

"Science, engineering, and technology influence and permeate every aspect of modern life. Some knowledge of science and engineering is required to engage with the major public policy issues of today as well as to make informed everyday decisions, such as selecting among alternative medical treatments or determining how to invest public funds for water supply options. In addition, understanding science and the extraordinary insights it has produced can be meaningful and relevant on a personal level, opening new worlds to explore and offering lifelong opportunities for enriching people's lives. In these contexts, learning science is important for everyone, even those who eventually choose careers in fields other than science or engineering."

The science standards are designed to help realize a vision for education in the sciences and engineering in which students, over multiple years of school, actively engage in scientific and engineering practices and apply crosscutting concepts to deepen their understanding of the core ideas in these fields. The learning experiences provided for students should engage them with fundamental questions about the world and with how scientists have investigated and found answers to those questions. Throughout grades K-12, students should have the opportunity to carry out scientific investigations and engineering design projects related to the disciplinary core ideas (pp. 8-9, NRC, 2012).

New Jersey Department of Education, 2019

Unit Title	Timeframe	**Profound Perspective** *(Unit summary)*:
Birth of Rocks: *Rock Cycle, Erosion, & Natural Hazards*	Marking Period 1 4- 8 Weeks	This unit takes the perspective that every rock has a story. Students will develop an appreciation for the processes that shape the Earth's surface. After considering where volcanoes form and how they erupt, they turn to investigations of rocks breaking apart and creating potential hazards. Through hands-on investigation, students explore the world of rocks and design ways of protecting humans from their dangers.
Human Machine: *Body, Senses, & the Brain*	Marking Period 2 4-8 Weeks	This introductory human body unit takes the perspective that we can think about our bodies as being like a machine. We have parts for moving around, sensors, and a built-in computer. Students explore their senses and consider how the information we process helps us understand and react to our environment.
Energizing Everything: *Energy & Motion*	Marking Period 3-4 6-12 weeks	This introductory energy unit will encourage students to think about the energy that things need to move. Students will explore how energy makes things go, from powering vehicles to moving one's body. Students will experiment with rubber band racers to discover the relationship between how much energy is stored in a material and how much is released. They will investigate the role that hills play in making roller coasters move and the energy transfer that happens when two objects collide. Students will realize that thinking about the world in terms of energy helps them make sense of how and why things speed up and slow down. Hands-on activities focus on engineering, testing hypotheses and using results to develop their ideas.
Waves of Sound: *Sound, Waves, & Communication*	Marking Period 4 3-6 Weeks	This unit helps students develop the idea that sound is an actual thing, a wave of vibrations traveling through the air. Equipped with this understanding, students can begin to make sense of how sound and music work.