Edmund Burke School | Middle School (Grades 6-8)

Science Department

Students at Burke develop the habits of mind and the skills necessary to do what a scientist does: wonder, observe, predict, collect and analyze data, solve problems, and communicate results and ideas. Students learn to work together to solve problems and answer questions using design-thinking and scientific processes. We have embraced the “maker movement,” providing students with a variety of materials with which to design, build, and manipulate. Demonstrations, lab activities, coding, and project-based learning are regular components of each class.

6th Grade - Earth Science

We explore the geosphere (land), hydrosphere (water), atmosphere (air, weather, and climate), and biosphere (living things) of the local Chesapeake Bay region, as well as the wider world, before launching into outer space. We emphasize the power of science in understanding the world around us and celebrate the diversity of methods that scientists use to advance that goal. Varied projects and activities require students to think and act as scientists by observing, questioning, predicting, collecting and analyzing data, drawing conclusions, communicating results and ideas, problem-solving, and engaging in cooperative learning.

7th Grade - Life Science

In the beginning of the year, students discuss design-thinking and scientific practices and apply them to a series of challenges based on our curricular work. We continue by diving
into topics including botany, gardening, pollinators, and nutrition. In the second trimester, we explore the human body, including the circulatory, respiratory, digestive, and reproductive systems. In the third trimester, we study ecology, with a specific focus on conservation. Year-round, we focus on laboratory writing and the use of scientific equipment. We also work with the Rock Creek Conservancy on projects relating to sustainability, which is a theme of the entire 7th-grade curriculum.

8th Grade - Physical Science

Students investigate topics fundamental to the study of chemistry and physics, including the chemical makeup of our world, forms of energy, and Newton’s laws. Students continue to develop their ability to think and act as scientists and engineers, with a special focus on laboratory work and formal experimentation. Major laboratory activities and design projects include identifying a mystery substance, exploring the chemical reactions of cooking, building a marble roller coaster, and designing a protective casing for a dropped egg. To emulate the reality of scientific work, these projects are often collaborative and require students to conduct background research and communicate information in written and spoken forms.

Special Projects & Trips

- Completing student-driven projects on the Chesapeake Bay and water-based field experience with the Chesapeake Bay Foundation
- Researching (including a visit to IKEA), designing, and building a model of an off-the-grid Tiny House
- Making Crème Brulée and analyzing the chemical reactions within it
- Experiencing the physics of roller skating
- Visiting the “Scrap Yard: Innovators of Recycling” exhibit in Baltimore

Preparation for High School

When students conclude Middle School Science they can:

- use scientific processes and design-thinking skills
- write clearly about laboratory work
- independently research scientific questions
- communicate ideas and support them with evidence