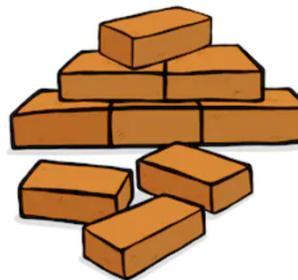


Foundation



“If I have seen further, it is by standing on the shoulders of giants.” –Sir Isaac Newton

A ‘foundation’ is synonymous with providing support for something. A strong foundation of a building helps support the elaborate structure being built on top of it. The foundation of a growing tree is the strong roots that keep it stable as the branches stretch up into the sky. An organizational foundation provides financial support to help improve society and make the world a better place.

High school is a time for building a strong foundation for your future. This foundation includes academic skills, interpersonal skills, and experiences that will help you determine what direction you would like to build or grow. To ensure this foundation is strong, it is important to be both creative and careful in your endeavors.

During this cycle, you will learn the foundational skills you will need to be a successful science student—including observation, critical thinking, problem solving, data analysis, evidence-based explanation and collaboration. You will have a chance to explore some of the foundational theories of the physical world, all the way down, the smallest unit of matter, called the atom. These tiny particles and how they interact are the foundation for how we will explore and learn to understand how the physical world works!

Guiding Questions:

- What is the *foundation* that you will need to be successful in high school and beyond?
- How do scientists build on the *foundations* of those that come before them?
- What are the *foundational* principles for understanding the physical world?

What You Will Learn:

- The skills scientists use to design experiments and explain their findings
- The structure of the smallest unit of matter, the atom
- The use of the periodic table to understand atoms

What you will do:

- Engage in Socratic seminar to discuss the “foundations” of science
- Create our own scientific investigations and collect data to explore our questions
- Develop models of atoms and interpret how they interact with each other
- Explore the patterns found in elements to construct a ‘periodic table’ and compare it to those developed by scientists throughout history
- Test out various elements to explore their characteristics and predict how they will interact with each other
- Collect data and graph the changing characteristics of atoms as they are heated