

Buffalo Academy of Scholars Science Standards

(Based off of Next Generation Science Standards)

Elementary Levels (1-5)

Science and Engineering Practices: Students who demonstrate understanding can:

1. Ask questions and define problems. Skills build on real world experiences and progress to recognizing patterns and specifying qualitative relationships.
2. Develop and revise simple models to describe phenomena. Students use models to represent events and design solutions. Science models, laws, mechanisms, and theories explain natural events.
3. Plan and carry out investigations to answer questions or test solutions to problems.
 - a. Conduct an investigation to produce data to serve as the basis of evidence, using fair tests in which variables are controlled and the number of trials is considered.
 - b. Make observations and measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon.
4. Use mathematics and computational thinking to extend quantitative measurements to understanding and explanation of the natural and engineered worlds.
 - a. Make and interpret graphs to address scientific and engineering questions and problems.
 - b. Use standard units to measure and describe physical quantities such as mass, volume, time, and temperature.
 - c. Scale and proportion are determined to classify natural objects, from very small to immensely large.
5. Analyze and interpret data to make sense of phenomena using logical reasoning.
 - a. Use quantitative approaches to collecting data and conducting multiple trials of qualitative observations.
 - b. Organizing information such as cause and effect, similarities in patterns, and systemic models are used to evaluate data and support a claim.
6. Obtain, evaluate, and communicate information
 - a. Integrate information from books and/or other reliable media to explain phenomena or solutions to design problems.
 - b. Evaluate the merit and accuracy of ideas and methods.
 - c. Communicate information about phenomena, citing information from physical experimentation, print, or digital sources.

7. Engage in argument supported by evidence, data, and/or a model. Students begin to write and present scientific claims and cite relevant evidence from valid sources about the natural and designed worlds.
8. Construct explanations and design solutions. Students will begin to use evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problems.