

Appendix: Implementing NC Essential Standards and Common Core Standards

The following Essential Standards for North Carolina 7th Grade Science will be emphasized during this unit:

- 7.P.1 Understand motion, the effects of forces on motion and the graphical representations of motion.
- 7.P.2 Understand forms of energy, energy transfer and transformation and conservation of mechanical systems.

This unit builds on concepts from these standards and allows students to apply strategies from various activities to engage in active learning.

The Common Core State Standards for Mathematics dictate that our students should be able to solve real-life and mathematical problems using numerical and algebraic expressions and equations. In addition, the following overarching standards for Mathematical Practices will be emphasized during this unit:

- CCSS.Math.Practice.MP1 Make sense of problems and persevere in solving them.
- CCSS.Math.Practice.MP2 Reason abstractly and quantitatively.
- CCSS.Math.Practice.MP3 Construct viable arguments and critique the reasoning of others.
- CCSS.Math.Practice.MP4 Model with mathematics.
- CCSS.Math.Practice.MP5 Use appropriate tools strategically.
- CCSS.Math.Practice.MP6 Attend to precision.
- CCSS.Math.Practice.MP7 Look for and make use of structure.

This unit is heavily woven with 7th grade math concepts, creating a rich cross-curricular dynamic that is both engaging and meaningful.

The Common Core State Standards for Literacy dictate that our students should be able to:

- CCSS.ELA-Literacy.RST.6-8.1 Cite specific textual evidence to support analysis of science and technical texts.
- CCSS.ELA-Literacy.RST.6-8.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
- CCSS.ELA-Literacy.W.7.1 Write arguments to support claims with clear reasons and relevant evidence.

Literacy is a key component of this unit. Students are required to cite evidence from the text as well as create arguments to justify their reasoning, providing them with the opportunity to think on higher levels and become more deeply engaged in the content.