

Dear 7th Grade Science Teacher:

The goal of the North Carolina Science Standard Course of Study (NC SCoS) is to achieve scientific literacy. The Seventh Grade Science Pacing Guide includes **Essential Standards and Clarifying Objectives** from *life, physical and earth sciences*. These standards engage students in developing problem-solving and critical thinking skills that empower them to participate in an increasingly scientific and technological world.

Seventh Graders Value Science Best When...

- Science is taught *daily* (60 to 90 minutes).
- Learning opportunities develop understandings and skills for problem-solving in real-world scientific and technological concepts.
- The collaborative scientific contributions of individuals from all ethnic origins are recognized and valued.
- Math and reading skills are infused into science.
- *Inquiry skills* and positive attitudes are modeled by the teacher and others involved in the education process.
- A *variety of presentation modes* are used to accommodate different learning styles; students are given opportunities to interact and share ideas and collaborate with their peers.

Seventh Graders Learn Science Best When...

- ✓ Involved in first-hand exploration & investigation and inquiry/processing skills are nurtured.
- ✓ Instruction builds directly on student' conceptual background.
- ✓ Science content is organized on the basis of broad conceptual themes common to all science disciplines.
- ✓ Mathematics and communication skills are an integral part of science instruction.
- ✓ Learning environment fosters positive attitudes towards self and society, as well as science.

Suggested Instructional Model: (I Do; We Do; You Do)

- **I Do: Engage** --Introduce science concept and connect to student's' prior knowledge; revealing any misconceptions.
- **We Do: Explore** --Provide an opportunity for observations and questioning prior to teacher's explaining of concepts.
- **I Do: Explain/Elaborate** -- Provide a clear, concise description of new concept; include labels & essential vocabulary; integrate video clip. Demonstrate the concept and/or process using visual models, technology, and text
- **We Do: Evaluate** --Assess Hands-on/Minds-on practice through guided practice
- **You Do: Evaluate**—Determine students' overall understanding of concepts and their progress made towards learning the science objectives.

Charting a New Course!

Halifax County Schools

2018-2019 Curriculum & Instruction Support Team

7th Grade Science At-a-Glance

| Forces and Motion | Quarters | | | | Energy: Conservation and Transfer | Quarters | | | |
|---|----------|---|---|---|---|----------|---|---|---|
| 7.P.1.1 Explain how the motion of an object can be described by its position, direction of motion, and speed with respect to some other object. | 1 | X | X | X | 7.P.2.1 Explain how kinetic and potential energy contribute to the mechanical energy of an object. | 1 | X | X | X |
| 7.P.1.2 Explain the effects of balanced and unbalanced forces acting on an object (including friction, gravity and magnets). | 1 | X | X | X | 7.P.2.2 Explain how energy can be transformed from one form to another (specifically potential energy and kinetic energy) using a model or diagram of a moving object (roller coaster, pendulum, or cars on ramps as examples). | 1 | X | X | X |
| 7.P.1.3 Illustrate the motion of an object using a graph to show a change in position over a period of time. | 1 | X | X | X | 7.P.2.3 Recognize that energy can be transferred from one system to another when two objects push or pull on each other over a distance (work) and electrical circuits require a complete loop through which an electrical current can pass. | X | 2 | X | X |
| 7.P.1.4 Interpret distance versus time graphs for constant speed and variable motion. | 1 | X | X | X | 7.P.2.4 Explain how simple machines such as inclined planes, pulleys, levers and wheel and axels are used to create mechanical advantage and increase efficiency. | X | 2 | X | X |
| Earth Systems, Structures and Processes | Quarters | | | | Earth Systems, Structures and Processes | Quarters | | | |
| 7.E.1.1: Compare the composition, properties and structure of Earth's atmosphere to include: mixtures of gases and differences in temperature and pressure within layers. | X | 2 | X | X | 7.E.1.4: Predict weather conditions and patterns based on information obtained from: -Weather data collected from direct observations and measurement (wind speed and direction, air temperature, humidity and air pressure) -Weather maps, satellites and radar -Cloud shapes and types and associated elevation | X | 2 | X | X |

