Dear 5th Grade Science Teacher:

The goal of the North Carolina Science Standard Course of Study (NC SCoS) is to achieve scientific literacy. The Fifth 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.

Fifth Graders Value Science Best When...

- Science is taught *daily* (30 to 45 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.

Fifth 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

Halifax County Schools: Science Essential Standards Pacing Guide									Revised June 30, 2018
5th Grade Science At-a-Glance									
Earth Systems, Structures and Processes	**Quarters**				**Matter Properties and Change**	**Quarters**			
Understand weather patterns and phenomena, making connections to the weather in a particular place and time.	**1**	**2**	**3**	**4**	**Understand the interactions of matter and energy and the changes that occur**	**1**	**2**	**3**	**4**
5.E.1.1 – Compare daily and seasonal changes in weather conditions (including wind speed and direction, precipitation, and temperature)	1	X	X	X	5.P.2.1 – Explain how the sun's energy impacts the processes of the water cycle (including evaporation, transpiration, condensation, precipitation, and runoff)	1	X	X	4
5. E.1.2 – Predict upcoming weather events from weather data collected through observation and measurements.	1	X	X	4	5. P.2.2 – Compare the weight of an object to the sum of the weight of its parts before and after and interaction.	1	X	X	X
5.E.1.3 – Explain how global patterns such as the jet stream and water currents influence local weather in measurable terms such as temperature, wind direction and speed, and precipitation.	1	X	X	4	5. P.2.3 – Summarize properties of original materials, and the new materials formed, to demonstrate that a change has occurred.	1	X	X	4
Energy: Conservation and Transfer	**Quarters**				**Forces and Motion**	**Quarters**			
Explain how the properties of some materials change as a result of heating and cooling.	**1**	**2**	**3**	**4**	**Understand force, motion and the relationship between them.**	**1**	**2**	**3**	**4**
5. P.3.1 – Explain the effects of the transfer of heat (either by direct contact or at a distance) that occurs between objects at different temperatures. (conduction, convection, radiation)	X	2	X	4	5. P.1.1 – Explain how factors such as gravity, friction, and change in mass affect the motion of objects.	X	2	X	4
5. P.3.2 – Explain how heating and cooling affect some materials and how this relates to their purpose and practical applications.	X	2	X	4	5. P.1.2 – Infer the motion of objects in terms of how far they travel in a certain amount of time and the direction in which they travel.	X	2	X	4
					5. P.1.3 – Illustrate the motion of an object using a graph to show a change in position over a period of time.	X	2	X	X
					5. P.1.4 – Predict the effect of a given force or a change in mass on the motion of an object.	X	2	X	X

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Structures and Functions of Living Organisms	**Quarters**				**Ecosystems**	**Quarters**			
Understand how structures and systems of organisms (to include the human body) perform functions necessary for life.	**1**	**2**	**3**	**4**	**Understand the interdependence of plants and animals with their ecosystem.**	**1**	**2**	**3**	**4**
5.L.1.1 Explain why some organisms are capable of surviving as a single cell while others require many cells that are specialized	X	X	3	4	5. L.2.1 – Compare the characteristics of several common ecosystems, including estuaries and salt marshes, oceans, lakes and ponds.	X	X	3	4
5.L.1.2 Compare the major systems of the human body: Digestive, Respiratory, Circulatory, Muscular, Skeletal, Cardiovascular in terms of their functions necessary for life.	X	X	3	4	5.L.2.2 – Classify the organisms within an ecosystem according to the function they serve: producers, consumers, or decomposers (biotic factors)	X	X	3	4
					5. L.2.3 – Infer the effects that may result from the interconnected relationship of plants and animals to their ecosystem.	X	X	3	4
Evolution and Genetics	**Quarters**								
	1	**2**	**3**	**4**					
5. L.3.1 Explain why organisms differ from or are similar to their parents based on the characteristics of the organism.	X	X	3	4					
5. L.3.2 Give examples of likenesses that are inherited and some that are not.	X	X	3	4					

Note:

The Science and Engineering Practices listed below are to be integrated in daily lesson activities as often as possible:

1. Asking questions and defining problems
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations and designing solutions
7. Engaging in argument from evidence
8. Obtaining, evaluating and communicating information