



This document is designed to help North Carolina educators teach the Essential Standards (Standard Course of Study). NCDPI staff are continually updating and improving these tools to better serve teachers.

Fifth Grade Science  
 2009-to-2004 Standards Crosswalk

This document is a general comparison of the current 2004 Science Standard Course of Study and the new 2009 Science Essential Standards. It provides initial insight into sameness and difference between these two sets of standards. This document is not intended to answer all questions about the nuance of the new standards versus the old - in fact, we imagine you will develop questions as you do a close reading of the new standards. Please send the science section of NC DPI any thoughts, feedback, questions and ideas about additional resources that would help you start preparing to teach the Essential Standards. Email Beverly Vance at [bvance@dpi.state.nc.us](mailto:bvance@dpi.state.nc.us).

**Important Note: The current 2004 SCOS will continue to be the operational standards in the 2010-11 and 2011-12 school years** as resource materials are developed to support the new Science Essential Standards, professional development is conducted and assessments are designed to align to the new Science Essential Standards. We expect the new Essential Standards to be taught and assessed in schools for the first time in the 2012-13 school year. That said, we are providing Essential Standards resources now and over the next two-years so that schools and teachers can get a head start on internalizing and planning to teach the new standards.

2009 Essential Standards			2004 NC SCOS			Comments
Strand	Objective	Essential Standard	Goal	Objective	Text of objective	
Physical Science: Forces and Motion		<b>Understand force, motion and the relationship between them.</b>	Forces and Motion in Technological Designs	4.01	Determine the motion of an object by following and measuring its position over time.	
	5.P.1.1	Explain how factors such as gravity, friction, and change in mass affect the motion of objects.				
	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.		4.02	Evaluate how pushing or pulling forces can change the position and motion of an object.	

2009 Essential Standards			2004 NC SCOS			
Strand	Objective	Essential Standard	Goal	Objective	Text of objective	Comments
		Text of Clarifying objective				
	5.P.1.3	Illustrate the motion of an object using a graph to show a change in position over a period of time.		4.05	Determine factors that affect motion including: <ul style="list-style-type: none"> <li>• Force</li> <li>• Friction</li> <li>• Inertia</li> <li>• Momentum</li> </ul>	
	5.P.1.4	Predict the effect of a given force or a change in mass on the motion of an object.				
Physical Science: Matter: Properties and Change	<b>Understand the interactions of matter and energy and the changes that occur.</b>		Landforms	2.02	Investigate and discuss the role of the water cycle and how movement of water over and through the landscape helps shape land forms.	
	5.P.2.1	Explain how the sun’s energy impacts the processes of the water cycle (including, evaporation, transpiration, condensation, precipitation and runoff).		Weather and Climate	3.01	
	5.P.2.2	Compare the weight of an object to the sum of the weight of its parts before and after an interaction.				
	5.P.2.3	Summarize properties of original materials, and the new material(s) formed, to demonstrate that a change has occurred.				
Physical Science: Energy:	<b>Explain how the properties of some materials change as a result of heating and cooling.</b>					
	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 or radiation)				

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Strand	Objective	Essential Standard	Goal	Objective	Text of objective	Comments
		Text of Clarifying objective				
	5.P.3.2	Explain how heating and cooling affect some materials and how this relates to their purpose and practical applications.				
Earth Science: Earth Systems, Structures and Processes	<b>Understand weather patterns and phenomena, making connections to the weather in a particular place and time.</b>					
	5.E.1.1	Compare daily and seasonal changes in weather conditions (including wind speed and direction, precipitation, and temperature) and patterns.				
	5.E.1.2	Predict upcoming weather events from weather data collected through observation and measurements.	Weather and Climate	3.03	Describe and analyze the formation of various types of clouds and discuss their relation to weather systems.	
	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.		3.02	Discuss and determine how the following are affected by predictable patterns of weather: <ul style="list-style-type: none"> <li>• Temperature</li> <li>• Wind direction and speed</li> <li>• Precipitation</li> <li>• Cloud cover</li> <li>• Air pressure</li> </ul>	
3.04				Explain how global atmospheric movement patterns affect local weather.		
Life Science: Structures and	<b>Understand how structures and systems of organisms (to include the human body) perform functions necessary for life.</b>					
	5.L.1.1	Explain why some organisms are capable of surviving as a single cell while others require many cells that are specialized to survive.				

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		Text of Clarifying objective				
	5.L.1.2	Compare the major systems of the human body (digestive, respiratory, circulatory, muscular, skeletal, cardiovascular) as it relates to their functions necessary for life.				
Life Science: Ecosystems	<b>Understand the interdependence of plants and animals with their ecosystem.</b>		Interdependence of Plants and Animals	1.01	Describe and compare several common ecosystems (communities of organisms and their interaction with the environment).	
	5.L.2.1	Compare the characteristics of several common ecosystems, including estuaries and salt marshes, oceans, lakes and ponds, forests, and grasslands).		1.02	Identify and analyze the functions of organisms within the population of the ecosystem: <ul style="list-style-type: none"> <li>• Producers</li> <li>• Consumers</li> <li>• Decomposers</li> </ul>	
	5.L.2.2	Classify the organisms within an ecosystem according to the function they serve: producers, consumers, or decomposers (biotic factors).		1.04	Discuss and determine the role of light, temperature, and soil composition in an ecosystem's capacity to support life.	
	5.L.2.3	Infer the effects that may result from the interconnected relationship of plants and animals to their ecosystem.		1.05	Determine the interaction of organisms within an ecosystem.	
				1.07	Determine how materials are recycled in nature.	
Life Science: Evolution and	<b>Understand why organisms differ from or are similar to their parents based on the characteristics of the organism.</b>					
	5.L.3.1	Explain why organisms differ from or are similar to their parents based on the characteristics of the organism.				

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		Text of Clarifying objective				
	5.L.3.2	Give examples of likenesses that are inherited and some that are not.				

- Objective 1.03 not addressed**
- Objective 1.06 not addressed**
- Objective 2.01 not addressed**
- Objective 2.03 not addressed**
- Objective 2.04 not addressed**
- Objective 2.05 not addressed**
- Objective 2.06 not addressed**
- Objective 2.07 not addressed**
- Objective 3.05 not addressed**
- Objective 3.06 not addressed**
- Objective 4.03 not addressed**
- Objective 4.04 not addressed**
- Objective 4.06 not addressed**
- Objective 4.07 not addressed**