

**Houghton Mifflin Harcourt *ScienceFusion* Student Edition ©2012  
Grade 3**

correlated to the

**Minnesota Academic Standards  
Science Grade 3**

<b>Standards</b>		<b>Citations</b>	
<b>3.1. The Nature of Science and Engineering</b>			
3.1.1. The Practice of Science			
3.1.1.1. Scientists work as individuals and in groups			
3.1.1.1.1	Provide evidence to support claims other than saying “Everyone knows that,” or “I just know,” and question such reasons when given by others.	SE:	4–11, 15–16, 29–31, 34–46, 67–68, 129–130, 163–164, 227–228, 263–264, 318, 392–394
		Flipchart:	3, 6, 10, 43, 44, 45
3.1.2. Scientific inquiry is a set of interrelated processes incorporating multiple approaches that are used to pose questions about the natural world and investigate phenomena.			
3.1.1.2.1	Generate questions that can be answered when scientific knowledge is combined with knowledge gained from one's own observations or investigations. <i>For example:</i> Investigate the sounds produced by striking various objects.	SE:	4–11, 15–16, 29–31, 34–46, 67–68, 129–130, 163–164, 227–228, 263–264
		Flipchart:	2, 10, 43, 45
3.1.1.2.2	Recognize that when a science investigation is done the way it was done before, even in a different place, a similar result is expected.	SE:	34–46, 61, 81–82
		Flipchart:	6, 7, 10
3.1.1.2.3	Maintain a record of observations, procedures and explanations, being careful to distinguish between actual observations and ideas about what was observed. <i>For example:</i> Make a chart comparing observations about the structures of plants and animals.	SE:	4–11, 15–16, 29–31, 34–46, 67–68, 81–82, 113–114, 129–130, 163–164, 179–180, 227–228, 263–264, 315–316, 341–342, 377–378, 393–394
		Flipchart:	6, 7, 43, 45

Standards		Citations	
3.1.1.2.4	Construct reasonable explanations based on evidence collected from observations or experiments.	SE:	4–11, 15–16, 29–31, 34–46, 48, 67–68, 81–82, 113–114, 129–130, 163–164, 179–180, 187, 226–228, 263–264, 315–316, 377–378, 393–394, 396
		Flipchart:	6, 7, 43, 45
<b>3.1.3. Interactions Among Science, Technology Engineering, Mathematics, and Society</b>			
3.1.3.2. Men and women throughout the history of all cultures, including Minnesota American Indian tribes and communities, have been involved in engineering design and scientific inquiry.			
3.1.3.2.1	Understand that everybody can use evidence to learn about the natural world, identify patterns in nature, and develop tools. <i>For example:</i> Ojibwe and Dakota knowledge and use of patterns in the stars to predict and plan.	SE:	34–46, 48, 225–228, 241, 250–255, 279, 281–282, 301, 343–344
		Flipchart:	4, 6, 7, 10, 24, 28, 29, 37, 42
3.1.3.2.2	Recognize that the practice of science and/or engineering involves many different kinds of work and engages men and women of all ages and backgrounds.	SE:	4–11, 15–16, 34–47, 56–63, 70–77, 83, 127–128, 143–144, 165, 195–196, 225, 241, 279, 301, 315–316, 318, 339–344, 363, 415–416, 418–426, 431
		Flipchart:	3, 8, 9, 10, 11, 24, 28, 29, 33, 37, 40, 46, 48, 50
<b>3.1.4. Tools and mathematics help scientists and engineers see more, measure more accurately, and do things that they could not otherwise accomplish.</b>			
3.1.3.4.1	Use tools, including rulers, thermometers, magnifiers and simple balances, to improve observations and keep a record of the observations made.	SE:	15–16, 18–22, 24–26, 29–31, 47, 80, 83, 165, 195–196, 306–307, 315–316, 343–344, 354–359, 362
		Flipchart:	4, 5, 11, 35, 36, 37, 40, 41, 50
<b>3.2. Physical Science</b>			
<b>3.2.3. Energy</b>			
3.2.3.1. Energy appears in different forms, including sound and light.			
3.2.3.1.1	Explain the relationship between the pitch of a sound, the rate of vibration of the source and factors that affect pitch. <i>For example:</i> Changing the length of a string that is plucked changes the pitch.	This benchmark is addressed in the <i>ScienceFusion</i> Grade 2 Student Edition, pp. 390–391, 393.	
3.2.3.1.2	Explain how shadows form and can change in various ways.	This benchmark is beyond the scope of <i>ScienceFusion</i> Grade 3 Student Edition.	

Standards		Citations
3.2.3.1.3	Describe how light travels in a straight line until it is absorbed, redirected, reflected or allowed to pass through an object. <i>For example:</i> Use a flashlight, mirrors and water to demonstrate reflection and bending of light.	This benchmark is beyond the scope of <i>ScienceFusion</i> Grade 3 Student Edition.
<b>3.3. Earth and Space Science</b>		
3.3.3. The Universe		
3.3.3.1. The sun and moon have locations and movements that can be observed and described.		
3.3.3.1.1	Observe and describe the daily and seasonal changes in the position of the sun and compare observations.	SE: 326–329 Flipchart: 40
3.3.3.1.2	Recognize the pattern of apparent changes in the moon's shape and position.	SE: 332–334, 341–342 Flipchart: 39
3.3.3.2. Objects in the solar system as seen from Earth have various sizes and distinctive patterns of motion.		
3.3.3.2.1	Demonstrate how a large light source at a great distance looks like a small light that is much closer. <i>For example:</i> Car headlights at a distance look small compared to when they are close.	SE: 18
3.3.3.2.2	Recognize that the Earth is one of several planets that orbit the sun, and that the moon orbits the Earth.	SE: 326–329, 332–333 Flipchart: 38
<b>3.4. Life Science</b>		
3.4.1. Structure and Function in Living Systems		
3.4.1.1. Living things are diverse with many different characteristics that enable them to grow, reproduce and survive.		
3.4.1.1.1	Compare how the different structures of plants and animals serve various functions of growth, survival and reproduction. <i>For example:</i> Skeletons in animals and stems in plants provide strength and stability.	SE: 92–97, 102–109, 116–124, 168–173 Flipchart: 12, 14, 15, 16, 17, 18

<b>Standards</b>		<b>Citations</b>	
3.4.1.1.2	Identify common groups of plants and animals using observable physical characteristics, structures and behaviors. <i>For example:</i> Sort animals into groups such as mammals and amphibians based on physical characteristics. <i>Another example:</i> Sort and identify common Minnesota trees based on leaf/needle characteristics.	SE:	96–97, 102–109, 116–124, 132–140
		Flipchart:	14
3.4.3. Evolution in Living Systems			
3.4.3.2. Offspring are generally similar to their parents, but may have variations that can be advantageous or disadvantageous in a particular environment.			
3.4.3.2.1	Give examples of likenesses between adults and offspring in plants and animals that can be inherited or acquired. <i>For example:</i> Collect samples or pictures that show similarities between adults and their young offspring.	SE:	92–95, 102–109, 132–140
		Flipchart:	12, 13, 14
3.4.3.2.2	Give examples of differences among individuals that can sometimes give an individual an advantage in survival and reproduction.	SE:	92–95, 102–109, 116–124
		Flipchart:	15, 16, 17, 18