

# Minnesota Academic Science Standards Alignment with BrainU Activities - August 2009

	Altered Reality	Bead Neurons	<i>C. elegans</i> & Alcohol	Caeno-WHAT??	Card Sort Challenge	Cherotaxis using <i>C. elegans</i>	Close-up of the Nervous System	Connect the Neurons!	<i>Manduca: Caterpillar Diss.</i>	Makes Me Sweat	<i>Manduca sexta</i> Wax Model	Memory Items	Mindflex™	Mirror Emotions	Mirror Image	Motor Learning and Memory	Neurotransmission	Neuropathfinding: Kinesthetic Model	Open Inquiry using <i>C. elegans</i>	Recency and Primacy Effects	Sheep Brain Dissection	Virtual Neurons	Ways of Knowing	What's the Deal	Whose Choice is it Anyway?	Your Incredible Memory!	
<b>Seventh Grade</b>																											
<b>1. The Nature of Science and Engineering</b>																											
<b>7.1.1.1 Science is a way of knowing</b>																											
7.1.1.1.1 ...prior expectations create bias			X			X			X	X			X		X	X			X				X			X	
7.1.1.1.2 ... when similar investigations give different results			X			X				X			X	X		X			X							X	
<b>7.1.1.2 Scientific inquiry uses multiple interrelated processes</b>																											
7.1.1.2.1 Generate and refine a variety of scientific questions			X			X							X						X			X		X	X	X	X
7.1.1.2.2 Plan and conduct a controlled experiment			X	X		X						X	X		X	X			X			X		X	X	X	X
7.1.1.2.3 Generate a scientific conclusion			X	X	X	X				X		X	X	X	X	X			X			X		X	X	X	X
7.1.1.2.4 Evaluate explanations proposed by others			X	X	X	X				X		X	X	X					X			X	X	X	X	X	X
<b>7.1.3.4 Current and emerging technologies</b>																											
7.1.3.4.1 Use maps ... and other data sets to describe patterns																										X	
7.1.3.4.2 Determine and use appropriate safety procedures, tools, measurements, graphs	X		X	X	X	X	X	X	X	X	X		X						X	X	X	X	X			X	X
<b>4. Life Science</b>																											
<b>7.4.1.1 Tissues, organs and organ systems</b>																											
7.4.1.1.1 Recognize that all cells do not look alike	X	X					X	X	X	X	X			X			X				X	X					
7.4.1.1.2 Describe how the organs ... interact in the vertebrate	X						X	X	X		X	X		X							X						X
<b>7.4.2.2 All organisms are composed of one or more cells</b>																											
7.4.1.2.1 Recognize that cells carry out life functions	X	X			X		X	X	X	X	X			X	X						X	X					
7.4.1.2.2 Recognize that cells repeatedly divide																											
<b>7.4.3.1 Reproductions is characteristic of all organisms</b>																											
7.4.3.1.1 Recognize that cells contain genes																											
7.4.3.1.3 Distinguish... inherited and those acquired through environmental															X									X			

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<b>7.4.3.2 Individual organisms with certain traits</b>																											
7.4.3.2.2 Use internal and external anatomical structures to compare	X		X	X		X	X	X	X		X	X			X	X	X	X			X	X					X
<b>7.4.4.2 Human beings are constantly interacting with other</b>																											
7.4.4.2.1 Explain how viruses, bacteria, fungi and parasites																											
<b>8.1 The Nature of Science and Engineering</b>																											
<b>8.1.1.1 Science is a way of knowing</b>																											
8.1.1.1.1 Evaluate the reasoning in arguments in which fact and opinion are intermingled					X					X			X										X	X	X		
8.1.1.2.1 Use logical reasoning and imagination to develop descriptions... and models	X	X	X		X	X		X		X	X		X	X	X		X	X			X	X	X	X	X		
8.1.3.2.1 Describe examples of important contributions... by individuals																											
<b>9.1 The Nature of Science and Engineering</b>																											
<b>9.1.1.1 Science is a way of knowing</b>																											
9.1.1.1.2 Understand that scientists conduct investigations			X	X	X	X			X	X			X	X					X		X			X	X		
9.1.1.1.3 Explain how the traditions and norms of science define the bounds of professional scientific						X																				X	
9.1.1.1.4 Explain how societal and scientific ethics impact research practices			X	X		X	X		X	X			X		X						X					X	
9.1.1.1.5 Identify sources of bias and how bias					X																	X			X		
9.1.1.1.6 Describe how changes in scientific knowledge occur in incremental steps															X				X				X	X			
9.1.1.1.7 Explain how scientific and technological innovations... can challenge theories or models																							X				



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<b>9.1.3.3 Science and engineering operate in context of society</b>																										
9.1.3.3.1 Describe how values and constraints affect science and engineering																									X	
9.1.3.3.2 Communicate, justify and defend the procedures			X		X	X									X	X	X	X	X	X		X		X	X	
9.1.3.3.3 Describe how scientific investigations and engineering require multi-disciplinary																									X	
<b>9.1.3.4 Science, technology, engineering and math</b>																										
9.1.3.4.1 Describe how technological problems... often create a demand for new scientific knowledge																										
9.1.3.4.2 Determine and use appropriate safety			X	X		X	X		X	X			X					X				X			X	
9.1.3.4.3 Select and use appropriate numeric, symbolic, pictorial, or graphical representation	X				X			X	X	X	X	X	X			X		X	X			X			X	
9.1.3.4.4 Relate the reliability of data to consistency of results					X					X		X	X			X		X	X			X			X	
9.1.3.4.5 Demonstrate how unit consistency and dimensional analysis																										
9.1.3.4.6 Analyze the strengths and limitations of ... models	X	X	X	X		X		X	X		X	X			X		X	X	X				X		X	
<b>9.4 Life Science</b>																										
<b>9.4.1.1 Organisms use interaction of cellular processes</b>																										
9.4.1.1.1 Explain how cell processes... homeostasis	X	X	X	X		X	X	X	X	X	X		X	X	X	?	X	X	X			X				
9.4.1.1.2 Organ systems and Homeostasis	X	X	X	X		X	X	X	X	X	X		X	X	X	X			X		X	X				X
<b>9.4.1.2 Cells and cell structures have specific functions</b>																										
9.4.1.2.4 Explain the function and importance of cell organelles	X	X					X	X	X	X	X		X				X	X				X		X		
9.4.1.2.5 Compare and contrast passive transport with active	X	X	X		X	X	X	X		X			X					X	X					X		
<b>9.4.4.1 Human activity has consequences</b>																										
9.4.4.1.1 Describe the social, economic and ecological risks					X														X					X		

