Wolf Ridge ELC Minnesota Standards Matrix

Grade 8 Science Standards			Daytime Classes	Animal Signs	Beavers	Birds	Small Mammals	Snowshoe Hare	White-tailed Deer	Wildlife Mgmt	Forest Ecology	Plant Study	Trees and Keys	Wetlands Ecology	Lake Study	Stream Study	Fisheries Mgmt	Frozen Lake Study	Acid Rain	Climate & Phenology	Energy & CO2	Geology	Weather	Living Lightly	Natures Timing	Ojibwe Heritage	Ojibwe Snowshoe	Seeds of Change	Voyageur Life	Adventure Ropes Course	Rock Climbing	Basic Survival	F.I.R.S.T Games	Beginning Orienteering	Competitive Orienteering	Canoeing	Cross Country Skiing	Superior Snowshoe	Superior View Hike	Evening Activities	Astronomy	Block Printing	Creative Expressions	Creature from Wolf Lake	Dream Catchers	Lake Superior Game	Night Hike	Ol Pellets	Paper Making Star Lab	Woodland Art	Volleyball	Naturalist Programs	Bats	Fur Trade	History of the North Shore	Logging Camp Life	Raptors	Frozen Beans
Strand I. History and Nature of Science																																																												
Substrand	**Standard**	**Benchmark**																																																										
A. Scientific World View	The student will understand that science is a way of knowing about the world that is characterized by empirical criteria, logical argument and skeptical review.	1. The student will explain and give examples of how science can be used to make informed ethical decisions by identifying likely consequences of particular actions.		1	1	1			1	1					1	1	1	1	1	1	1							1																																
		2. Explain the development, usefulness and limitations of scientific models in the explanation and prediction of natural phenomena.																		2	2																																							
B. Scientific Inquiry	The student will understand that scientific inquiry is used by scientists to investigate the natural world in systematic ways.	1. The student will know that scientific investigations involve the common elements of systematic observations, the careful collection of relevant evidence, logical reasoning and innovation in developing hypotheses and explanations.		1				1	1					1	1	1		1		1	1																																							
		2. Describe how scientists can conduct investigations in a simple system and make generalizations to more complex systems.		2					2											2	2																																							
Strand II. Physical Science																																																												
Substrand	**Standard**	**Benchmarks**																																																										
B. Scientific Inquiry	The student will use multiple skills to design and conduct scientific investigation	1. The student will specify variables to be changed, controlled and measured.					1																																																					
		2. Use sufficient trials and adequate sample size to ensure reliable data.					2											2																																										
		3. Use appropriate technology and mathematics skills to access, gather, store, retrieve and organize data.				3								3	3	3		3		3	3																																								
C. Scientific Enterprise	The student will know that science and technology are human efforts that both influence and are influenced by civilizations and cultures worldwide.	1. The student will evaluate the credibility and validity of scientific and technological information from various sources.																	1	1	1																																								

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D. Historic Perspect-ives	The student will understand how scientific discovery, culture, societal norms and technology have influenced one another in different time periods.	1. The student will relate personal experiences in scientific investigation to the experiences of scientists throughout history.					1																																																						
		2. Cite examples of how science and technology contributed to changes in agriculture, manufacturing, sanitation, medicine, warfare, transportation, information processing or communication.			2		2													2	2																																								
Strand: III	**Earth and Space Science**																																																													
Substrand	**Standard**	**Benchmarks**																																																												
A. Earth Structure and Processes:	The student will identify Earth's composition, structure and processes.	1. The student will explain how earthquakes, volcanoes, sea-floor spreading and mountain building are evidence of movement of crustal plates.																				1																	1																							
		2. Describe how features on the Earth's surface are created and constantly changing through a combination of slow and rapid processes of weathering, erosion, sediment deposition, landslides, volcanic eruptions and earthquakes.																				2																	2																							
		3. Describe the various processes and interactions of the rock cycle.																				3																	3																							
		4. Interpret successive layers of sedimentary rocks and their fossils to document the age and history of the Earth.																																																												
		5. Recognize that constructive and destructive Earth processes can affect the evidence of Earth's history.																				5																																								
		6. Classify and identify rocks and minerals using characteristics including but not limited to density, hardness and streak.																				6																																								

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A. Earth Structure and Processes	The student will investigate the impact humans have on the environment	1. The student will identify and research an environmental issue and evaluate its impact.		1	1			1			1	1	1		1	1	1	1	1	1	1					1	1	1	1										1																				
B. The Water Cycle, Weather and Climate	The student will investigate how the atmosphere interacts with the Earth system.	1. The student will define radiation, conduction and convection and explain their effects on weather and climate.																					1																																			
		2. Identify the forces that create currents and layers in the Earth's atmosphere and water systems.																					2																																			
		3. Describe the effect of Earth's rotation on the winds and ocean currents.																					3																																			
		4. Collect and use data to predict the weather.																					4																																			
		5. Identify the composition and structure of the atmosphere.																		5	5		5																																			
		6. Describe climate changes that have occurred over time.																		6	6		6																																			
C. The Universe	The student will compare objects in the solar system and explain their interactions with the earth.	1. The student will recognize that the sun is the principal energy source for the solar system and that this energy is transferred in the form of radiation.																		1	1																																					
		2. Explain how the combination of the Earth's tilted axis and revolution around the sun causes the progression of seasons and weather patterns.																					2																																			