

## Investigating Earth Systems Correlation to Idaho Achievement Standards Grades 6, 7, 8

Correlation key:									
<b>"X" = Coverage</b> Secondary concept of the activity or problem. Students gain a basic understanding or introduction of the concept. <b>"XX" = In-depth Coverage</b> Primary concept that is the focus of the activity or problem. Students gain thorough understanding of the concept.	Climate and Weather	Dynamic Planet	Energy Resources	Fossils	Materials and Minerals	Oceans	Rocks and Landforms	Soil	Water as a Resource
<b>SCIENCE STANDARDS - MIDDLE GRADES (GRADES 6-8),</b>									
Based on the necessary math knowledge and skills, student maturation level, and the need for secondary level Physical Science exposure, it is recommended that Earth Science									
<b>618. UNIFYING CONCEPTS OF SCIENCE.</b>									
01. Understand systems, order, and organization.									
a. Know that a system is an organized group of related objects that form a whole.	XX	XX	XX	XX	XX	XX	XX	XX	XX
b. Describe the function of each human body system.									
02. Understand concepts and processes of evidence, models, and explanation.									
a. Know that observations and data are evidence on which to base scientific explanations and predictions.	XX	XX	XX	XX	XX	XX	XX	XX	XX
b. Know the difference between observations and inferences.	XX	XX	XX	XX	XX	XX	XX	XX	XX
c. Use models to explain or demonstrate a concept.	XX	XX	XX	XX	XX	XX	XX	XX	XX
d. Develop skills to create scientific explanations based on scientific knowledge, logic, and analysis.	XX	XX	XX	XX	XX	XX	XX	XX	XX
03. Understand constancy, change, and measurement.									
a. Recognize that some concepts in science do not change with time.	XX	XX	XX	XX	XX	XX	XX	XX	XX
b. Analyze changes that occur in and among systems.	XX	XX	XX	XX	XX	XX	XX	XX	XX
c. Measure using standard and metric systems with an emphasis on the metric system.	XX	XX	XX	XX	XX	XX	XX	XX	XX
04. Understand the theory that evolution is a process that relates to the gradual changes in the universe and of equilibrium as a physical state.									
a. Understand the relationships of past, present, and future.	XX	XX	XX	XX	XX	XX	XX	XX	XX
05. Understand concepts of form and function.									
a. Understand that the shape or form of an object or system is frequently related to its use or function.	XX	XX	XX	XX	XX	XX	XX	XX	XX
<b>619. CONCEPTS OF SCIENTIFIC INQUIRY. -(6th grade)</b>									
01. Understand scientific inquiry and develop critical thinking skills.									
a. Develop questions that can be answered by conducting scientific experiments.	XX	XX	XX	XX	XX	XX	XX	XX	XX
b. Conduct scientific investigations using controls and variables when appropriate.	XX	XX	XX	XX	XX	XX	XX	XX	XX
c. Select and use appropriate tools and techniques to gather and display data.	XX	XX	XX	XX	XX	XX	XX	XX	XX
d. Analyze data in order to develop descriptions, explanations, predictions, and models using evidence.	XX	XX	XX	XX	XX	XX	XX	XX	XX

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e. Develop a hypothesis based on observations.	XX	XX	XX	XX	XX	XX	XX	XX	XX
f. Compare alternative explanations and predictions.	XX	XX	XX	XX	XX	XX	XX	XX	XX
g. Communicate scientific procedures and explanations.	XX	XX	XX	XX	XX	XX	XX	XX	XX
<b>623. MATTER, ENERGY, AND ORGANIZATION IN LIVING SYSTEMS. (6th grade)</b>									
01. Understand the relationship between matter, energy, and organization to trace matter as it cycles and energy as it flows through living systems and between living systems and the environment.									
a. Know that the energy for life is primarily derived from the sun through photosynthesis.			X	X	X	XX			X
<b>624. EARTH AND SPACE SYSTEMS. (6th grade)</b>									
01. Understand scientific theories of origin and subsequent changes in the universe and earth systems.									
a. Investigate the interactions between the solid earth, oceans, atmosphere, and organisms.		XX	X	X	X	XX	X		X
b. Know the water cycle and its relationship to weather and climate.	XX			X			X	X	XX
c. Identify cumulus, cirrus, and stratus clouds and their relationship to weather changes.	XX								X
d. Know that fossils are evidence of past life forms.			XX	XX					
02. Understand geo-chemical cycles and energy in the earth system.									
a. Know the rock cycle and identify the three classifications of rocks.		X		X	XX		XX	X	
b. Know the layers and composition of the earth.		XX		X			XX		
<b>625. TECHNOLOGY. (6th grade)</b>									
01. Understand the relationship between science and technology and develop the abilities of technological design and application.									
a. Know that science and technology are human endeavors interrelated to each other, to society, and to	XX	XX	XX	XX	XX	XX	XX	XX	XX
b. Compare scientific inquiry and technological design in terms of activities, results, and influences on individuals and society: know that science enables technology and vice versa.	XX	XX	XX	XX	XX	XX	XX	XX	XX
c. Create a tool to perform a specific function.	XX	XX	XX	XX	XX	XX	XX	XX	XX
d. Use available and appropriate technology.	XX	XX	XX	XX	XX	XX	XX	XX	XX
e. Explore the elements of technological design, which include the following: - Identify a problem; - Propose a solution; - Implement a proposed solution; - Evaluate the solution and its consequences; - Communicate the problem, process, and solution.	XX	XX	XX	XX	XX	XX	XX	XX	XX

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<b>626. PERSONAL AND SOCIAL PERSPECTIVES. (6th grade)</b>									
01. Understand common environmental quality issues, both natural and human induced.									
a. Identify issues for environmental studies.			X		X	X			
02. Understand the causes and effects of population change.									
a. Understand the effect of technological development and human population growth on the United States and/or the world.			X		X				
03. Understand the importance of natural resources and the need to manage and conserve them.									
a. Understand the differences between renewable and nonrenewable resources.		X	XX		XX	X			
b. Understand the conservation of natural resources.		X	XX		XX	X			
04. Understand different uses of technology in science and how they affect our standard of living.									
a. Identify examples of technologies used in these scientific fields:	X		X		X	X			X
- Food production;									
- Environmental cleanup;			X		X	X			X
- Advances in medicine;									
- Communications;	X								
- The space program;			X						
<b>627. HISTORY OF SCIENCE. (6th grade)</b>									
01. Understand the significance of major scientific milestones.									
a. Understand major contributions of various scientists and researchers.	XX	XX	XX	XX	XX	XX	XX	XX	XX
<b>628. INTERDISCIPLINARY CONCEPTS. (6th grade)</b>									
01. Understand that interpersonal relationships are important in scientific endeavors.									
a. Work in teams to solve problems.	XX	XX	XX	XX	XX	XX	XX	XX	XX
02. Understand technical communication.									
a. Read, understand, and follow technical instructions.	XX	XX	XX	XX	XX	XX	XX	XX	XX
b. Write a lab report.	XX	XX	XX	XX	XX	XX	XX	XX	XX
<b>CONCEPTS OF SCIENTIFIC INQUIRY. (7th-8th grade)</b>									
01. Understand scientific inquiry and develop critical thinking skills.									
a. Develop complex questions that can be answered by conducting long-term studies	XX	XX	XX	XX	XX	XX	XX	XX	XX
b. Design and conduct scientific investigations using controls and variable when appropriate	XX	XX	XX	XX	XX	XX	XX	XX	XX
c. Select and use appropriate tools and techniques to gather and display data.	XX	XX	XX	XX	XX	XX	XX	XX	XX
d. Analyze data in order to form conclusions.	XX	XX	XX	XX	XX	XX	XX	XX	XX
e. Think critically and logically to accept or reject a hypothesis	XX	XX	XX	XX	XX	XX	XX	XX	XX
f. Analyze alternative explanations and predictions.	XX	XX	XX	XX	XX	XX	XX	XX	XX

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g. Communicate and defend scientific procedures and explanations.	XX	XX	XX	XX	XX	XX	XX	XX	XX
h. Recognize the differences among observations, hypotheses, mathematical laws and theories.	XX	XX	XX	XX	XX	XX	XX	XX	XX
<b>635. CONCEPTS OF PHYSICAL SCIENCE. (7th-8th grade)</b>									
04. Understand that the total energy in the universe is constant.									
a. Explain how energy can be transformed from one form to another but is neither destroyed nor created.	XX	XX	XX		X	X	X		X
b. Understand that energy is transferred from one place to another.	XX	XX	XX		X	X	X		X
<b>638. MATTER, ENERGY, AND ORGANIZATION IN LIVING SYSTEMS. (7th-8th grade)</b>									
01. Understand the relationship between matter, energy, and organization to trace matter as it cycles and energy as it flows through living systems and between living systems and the environment.									
a. Know that the energy stored in food is primarily derived from the sun through photosynthesis.			X	X		X			X
b. Know that the distribution and abundance of organisms and populations in ecosystems are limited by the availability of matter and energy.			X	X		X			
c. Know that atoms and molecules cycle among the living and nonliving components of the biosphere.			XX	X	X	X	X	X	X
d. Trace energy flows through ecosystems in one direction, from photosynthetic organisms to herbivores to carnivores and decomposers.						X			
02. Understand the individual behavior of organisms and their interactions in populations and communities as influenced by physiological and environmental factors.									
a. Know that organisms have behavioral responses to internal and external stimuli.						X			
b. Know that living organisms have the capacity to produce populations of infinite size but that environments and resources are finite.						X			
<b>639. EARTH AND SPACE SYSTEMS. (7th-8th grade)</b>									
01. Understand scientific theories of origin and subsequent changes in the universe and earth systems.									
a. Know that there are interactions among the solid earth, oceans, atmosphere, and organisms, which result in a change of earth's system. (Some interactions are observable such as earthquakes and volcanic eruptions, but many take place over hundreds of millions of years.)	XX	XX	X	XX	X	X	X	X	
b. Compare earth with other planets with emphasis on conditions necessary for life.						X			X
c. Understand the motions that explain such occurrences as the day, the seasons, the year, phases of the moon,									

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d. Know that the development of life caused dramatic changes in the composition of the earth's atmosphere.	X			X		X			X
e. Know that the universe is constantly expanding.									
f. Know that stars and galaxies have a life cycle.									
g. Know methods used to estimate geologic time (observing rock sequences, using fossils to correlate the sequence at various locations).									
<b>02. Understand geo-chemical cycles of energy in the earth system.</b>									
a. Know that earth systems have internal and external sources of energy.	X	XX	X	X	X	X	X		
b. Know that the earth's internal heat causes the plates of the earth's surface to move.		XX					X		
c. Know that the heating of the earth's surface and atmosphere by the sun drives convection within the atmosphere and oceans, producing winds and ocean currents affecting global climate.	XX	XX			X	X	X		
<b>640. TECHNOLOGY. (7th-8th grade)</b>									
<b>01. Understand the relationship between science and technology and develop the abilities of technological design and application.</b>									
a. Know that science and technology are human endeavors interrelated to each other, to society, and to the work place.	XX	XX	XX	XX	XX	XX	XX	XX	XX
b. Compare and contrast scientific inquiry and technological design in terms of activities, results, and influence on individuals and society: know that science enables technology and vice versa.	XX	XX	XX	XX	XX	XX	XX	XX	XX
c. Create a tool to perform a specific function.	XX	XX	XX	XX	XX	XX	XX	XX	XX
d. Use available and appropriate technology.	XX	XX	XX	XX	XX	XX	XX	XX	XX
e. Know the elements of technological design, which include the following:	XX	XX	XX	XX	XX	XX	XX	XX	XX
- Identify a problem;	XX	XX	XX	XX	XX	XX	XX	XX	XX
- Propose a solution;	XX	XX	XX	XX	XX	XX	XX	XX	XX
- Implement a proposed solution;	XX	XX	XX	XX	XX	XX	XX	XX	XX
- Evaluate the solution and its consequences;	XX	XX	XX	XX	XX	XX	XX	XX	XX
<b>641. PERSONAL AND SOCIAL PERSPECTIVES. (7th-8th grade)</b>									
<b>01. Understand common environmental quality issues, both natural and human induced.</b>									
a. Identify environmental issues and conduct studies.									
<b>02. Understand the causes and effects of population change.</b>									
a. Understand the effect of technological development and the growth of human population on the living and nonliving components of the environment.			X		X	X	X		X

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<b>03. Understand the importance of natural resources and the need to manage and conserve them.</b>									
a. Explore alternative sources of energy.		X	XX			X			
b. Understand the role and effect of management of natural resources.		X	XX	XX		X	X	X	X
<b>04. Understand different uses of technology in science and how they affect our standard of living.</b>									
a. Know that there are predictable and unpredictable consequences of technology.	X	X	X	X	X	X	X	X	X
<b>642. HISTORY OF SCIENCE. (7th-8th grade)</b>									
<b>01. Understand the significance of major scientific milestones.</b>									
a. Understand the impact of historical scientific events.	X	X	X	X	X	X	X	X	X
<b>643. INTERDISCIPLINARY CONCEPTS. (7th-8th grade)</b>									
<b>01. Understand that interpersonal relationships are important in scientific endeavors.</b>									
a. Work in teams to solve problems.	XX	XX	XX	XX	XX	XX	XX	XX	XX
<b>02. Understand technical communication.</b>									
a. Read, understand, and follow technical instructions.	XX	XX	XX	XX	XX	XX	XX	XX	XX
b. Write and articulate technical information.	XX	XX	XX	XX	XX	XX	XX	XX	XX
c. Write a long-term investigation.	XX	XX	XX	XX	XX	XX	XX	XX	XX