

Correlation of
Seeds of Science/Roots of Reading[®]
Integrated Science and Literacy Units

with the State of Washington
Science Standards
for Grades 4-5

Created September 2011



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WA Science Standards – 4 th - 5 th Grade	2 nd - 3 rd Grade				3 rd - 4 th Grade				4 th - 5 th Grade			
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EALR 1: Systems												
1. Systems contain subsystems.							●●●	●●	●●			
2. A system can do things that none of its subsystems can do by themselves.							●●●					
3. Systems have inputs and outputs. Changes in inputs may change the outputs of a system.							●●●					
4. One defective part can cause a subsystem to malfunction, which in turn will affect the system as a whole.							●					
EALR 2: Inquiry												
1. Scientific investigations involve asking and answering questions and comparing the answers with evidence from the real world.	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
2. Scientists plan and conduct different kinds of investigations, depending on the questions they are trying to answer. Types of investigations include systematic observations and descriptions, field studies, models, and open-ended explorations as well as controlled experiments.	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
3. An experiment involves a comparison. For an experiment to be valid and fair, all of the things that can possibly change the outcome of the experiment			●●		●●	●●				●●●	●●	●●●

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should be kept the same, if possible.												
4. Investigations involve systematic collection and recording of relevant observations and data.	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
5. Repeated trials are necessary for reliability.	●●	●	●●	●●		●●						●●
6. A scientific model is a simplified representation of an object, event, system, or process created to understand some aspect of the natural world. When learning from a model, it is important to realize that the model is not exactly the same as the thing being modeled.	●●●	●●●		●●●	●●●	●●●		●●●	●●●	●●●	●●●	●●●
7. Scientific explanations emphasize evidence, have logically consistent arguments, and use known scientific principles, models, and theories.	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
8. Scientists communicate the results of their investigations verbally and in writing. They review and ask questions about the results of other scientists' work.	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
EALR 3: Application												
1. Technology involves changing the natural world to meet human needs or wants.		●●				●		●●●	●●●	●	●	

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2. People in different cultures all around the world use different materials or technologies to solve the same problems.	●	●	●	●	●	●	●	●	●	●	●	●
3. Problems of moderate complexity can be solved using the technological design process. This process begins by defining and researching the problem to be solved.		●●●	●●	●●	●●●	●●		●●●	●●●	●●●	●●	●●●
4. Scientists and engineers often work in teams with other individuals to generate different ideas for solving a problem.	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
5. Possible solutions should be tested to see if they solve the problem. Building a model or prototype is one way to test a possible solution.		●●●	●●●	●●●	●●			●●●	●●●	●●●	●●●	●●
6. Solutions to problems must be communicated, if the problem is to be solved.	●●●	●●●	●●●	●●●	●●●			●●●	●●●	●●●	●●●	●●●
7. Science and technology have greatly improved food quality and quantity, transportation, health, sanitation, and Communication.			●									
8. People of all ages, interests, and abilities engage in a variety of scientific and technological work.	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
EALR 4: Physical Science												
Force and Motion												

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1. The weight of an object is a measure of how strongly it is pulled down toward the ground by gravity. A spring scale can measure the pulling force.				●●●								
2. The relative speed of two objects can be determined in two ways: (1) If two objects travel for the same amount of time, the object that has traveled the greatest distance is the fastest. (2) If two objects travel the same distance, the object that takes the least time to travel the distance is the fastest.												
Matter: Properties and Change												
1. Substances can exist in different physical states—solid, liquid, and gas. Many substances can be changed from one state to another by heating or cooling.			●●			●●●				●●●	●	
2. Air is a gas. Air fills a closed container completely. Wind is moving air.						●●●				●		
3. The total amount of matter is conserved (stays the same) when it undergoes a physical change such as when an object is broken into tiny pieces, when a solid is dissolved in a liquid, or when matter changes state (solid, liquid, gas).											●●	
Energy: Transfer, Transformation and Conservation												
1. Energy has many forms, such as heat, light, sound,					●●●					●		

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motion, and electricity.												
2. Energy can be transferred from one place to another.					● ● ●					●		
3. Heat energy can be generated a number of ways and can move (transfer) from one place to another. Heat energy is transferred from warmer things to colder things.					● ●							●
4. Sound energy can be generated by making things vibrate.												
5. Electrical energy in circuits can be changed to other forms of energy, including light, heat, sound, and motion. Electric circuits require a complete loop through conducting materials in which an electric current can pass.					● ●							
EALR 4: Earth and Space Science												
Earth in Space												
1. Earth is approximately spherical in shape. Things on or near the Earth are pulled toward Earth’s center by the force of gravity.				● ● ●					● ● ●			
2. Earth’s daily spin relative to the Sun causes night and day.									● ● ●			

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3. Earth’s nearly circular yearly orbit around the Sun causes us to see different constellations at different times of year.												
4. The Sun is a star. It is the central and largest body in our Solar System. The Sun appears much brighter and larger in the sky than other stars because it is many thousands of times closer to Earth.								●●●				
Earth Systems, Structures, and Processes												
1. Earth materials include solid rocks and soil, water, and gases of the atmosphere. Materials have different physical and chemical properties which make them useful in different ways. Earth materials provide many of the resources that humans use.	●●●	●●●										
2. Weathering is the breaking down of rock into pebbles and sand caused by physical processes such as heating, cooling, and pressure, and chemical processes such as acid rain.		●●										
3. Erosion is the movement of Earth materials by forces such as wind, moving water, ice forming, and gravity.		●●●				●						
4. Soils are formed by weathering and erosion, decay of plant matter, transport by rain through streams and	●	●										

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rivers, and deposition of sediments in valleys, riverbeds, and lakes.												
5. Soils are often found in layers, with each layer having a different chemical composition and different physical properties.	●●											
6. Erosion plays an important role in the formation of soil, but too much erosion can wash away fertile soil from ecosystems and farms.												
Earth History												
1. Different kinds of events caused the formation of different kinds of fossils.							●●					
2. By studying the kinds of plant and animal fossils in a layer of rock, it is possible to infer what the environment was like at the time and where the layer formed.							●●					
EALR 4: Life Science												
Structures and Functions of Living Organisms												
1. Plants and animals can be sorted according to their structures and behaviors.	●●						●●●			●●●		
2. Plants and animals have different structures and behaviors that serve different functions.	●●●	●					●●●	●●		●●●		
3. Certain structures and behaviors enable plants and	●●●						●●●			●●●		

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animals to respond to changes in their environment.												
4. Plants and animals have structures and behaviors that respond to internal needs.	●●●	●					●●	●		●●●		
5. Nutrition is essential to health. Various kinds of foods are necessary to build and maintain body structures. Individuals have responsibility for their own health and food choices.	●	●										
Ecosystems												
1. An ecosystem includes all of the populations of living organisms and nonliving physical factors in a given area. Living organisms depend on one another and the nonliving physical factors in their ecosystem to help them survive.	●●●	●●●				●	●			●●●		
2. Plants make their own food using energy from the sun. Animals get food energy by eating plants and/or other animals that eat plants. Plants make it possible for animals to use the energy of sunlight.	●●●									●●●		
3. Plants and animals are related in food webs with producers (plants that make their own food), consumers (animals that eat producers and/or other animals), and decomposers (primarily bacteria and fungi) that break down wastes and dead organisms, and	●●●									●●●		

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return nutrients to the soil.												
4. Ecosystems can change slowly or rapidly. Big changes over a short period of time can have a major impact on the ecosystem and the populations of plants and animals living there.	●●●	●●●				●	●			●●●		
5. All plants and animals change the ecosystem where they live. If this change reduces another organism’s access to resources, that organism may move to another location or die.	●●●					●				●●●		
6. People affect ecosystems both positively and negatively.	●	●●●								●●●		
Biological Evolution												
1. In any ecosystem, some populations of organisms thrive and grow, some decline, and others do not survive at all.	●●●									●●●		
2. Plants and animals inherit many characteristics from their parents. Some inherited characteristics allow organisms to better survive and reproduce in a given ecosystem.							●●●					
3. Some characteristics and behaviors result from an individual plant’s or animal’s interactions with the environment and are not passed from one generation to							●●●					

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the next by heredity.												
4. Fossils provide evidence that many plant and animal species are extinct and that species have changed over time.							● ●					

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