

Riverside Science Literacy Standards and Benchmarks –

February 27, 2006

Standard 1: Understands Unifying Concepts and Processes:

Provide students with ways of thinking about the integrating a range of basic ideas, which help them to understand the natural world.

Standard 2: Science as Inquiry:

Understands how to combine processes and scientific knowledge with scientific reasoning and critical thinking.

Standard 3: Physical Science:

Understands physical science facts, concepts, principles, theories and models that are important for all students.

Standard 4: Life Science:

Understands life science facts, concepts, principles, theories and models that are important for all students.

Standard 5: Earth and Space Science:

Understands earth and space science facts, concepts, principles, theories and models that are important for all students.

Standard 6: Science and Technology:

Establishes connections between the natural and designed worlds and provide students with opportunities to develop decision-making abilities.

Standard 7: Science in Personal and Social Perspectives:

Understands the importance of the sciences impacting personal and social issues.

Standard 8: History and Nature of Science:

Understanding science as a human endeavor and the role it has played in civilization and the development of various cultures.

	Standard 1	Standard 2	Standard 3	Standard 4	Standard 5	Standard 6	Standard 7	Standard 8
	Unifying Concepts and Processes Provide students with ways of thinking about the integrating a range of basic ideas, which help them to understand the natural world.	Science as Inquiry Understands how to combine processes and scientific knowledge with scientific reasoning and critical thinking.	Physical Science Understands physical science facts, concepts, principles, theories and models that are important for all students.	Life Science Understands life science facts, concepts, principles, theories and models that are important for all students.	Earth and Space Science Understands earth and space science facts, concepts, principles, theories and models that are important for all students.	Science and Technology Establishes connections between the natural and designed worlds and provide students with opportunities to develop decision-making abilities.	Science in Personal and Social Perspectives Science in Personal and Social Perspectives: Understands the importance of the sciences impacting personal and social issues.	History and Nature of Science Understanding science as a human endeavor and the role it has played in civilization and the development of various cultures.
K	1.1 Knows the five senses. (C) (H)				5.1 Knows the four seasons.		7.1 Knows how changes in the environment affect me. (G)	
1				4.1 Knows that living things grow and change.	5.1 Knows that weather changes daily.	6.1 Understands the difference between living and non-living things.		8.1 Understands that differences exist within families.
2	1.1 Understands that the five senses may be used to observe objects within their environment.	2.1 Knows that tools can be used to gather information and extend the senses. a. Thermometer b. Magnifiers c. Rulers d. Balances	3.1 Knows objects by observable characteristics.	4.1 Knows that plants and animals have features that help them live in different environments.	5.1 Knows that short-term weather conditions can change daily and weather patterns change over the seasons. a. Temperature b. Rain c. Snow			
					5.2 Knows the objects in the sky a. Sun b. Moon c. Stars			
	1.1 Knows the integral parts and functions of systems. (C,G,GF,H,MC,S)	2.1 Knows that scientific investigation involves asking and answering a question. (C,G,S)			5.1 Knows the characteristics of soils, rocks, water, and the atmosphere. (G,C,GF,S)	6.1 Knows which tool to use to collect and analyze data. (G,C,GF,T,S)		8.1 Knows that science is ever changing. (G,C,H,T,MC)

3								
4	<p>1.1 Knows a variety of ways to explain procedures or ideas. (GF)</p> <p>a. Sketches b. Charts c. Graphs</p>	<p>2.1 Knows how to plan and conduct a simple investigation. (GF, G)</p> <p>a. Predict outcomes b. Uses tool correctly c. Records observations d. Form conclusions</p>	<p>3.1 Knows that forces can change the position and motion of objects.</p> <p>a. Gravity</p>	<p>4.1 Knows the various structures of plants necessary for growth, survival, and reproduction. (G)</p> <p>a. Leaves b. Flowers c. Seed Coat d. Roots e. Stems f. Seed Dispersal</p>	<p>5.1 Knows the basic features of the solar system, galaxies, and universe. (G, GF, C)</p> <p>a. Planet characteristics and names b. Revolution/Rotation of Earth c. Positioning of the planets</p>	<p>6.1 Understands that scientists use tools to collect and analyze data. (C, GF)</p>		
			<p>3.2 Knows the basic principles of electricity and magnetism. (C)</p> <p>a. Simple circuits b. Electromagnets c. Compasses</p>	<p>4.2 Knows the body systems and care of the human body. (S) (H)</p> <p>a. digestive (nutrition) b. muscular & skeletal (exercise) c. respiratory (exercise) d. nervous (safety) e. circulatory</p>				

	Standard 1 Unifying Concepts and Processes Provide students with ways of thinking about the integrating a range of basic ideas, which help them to understand the natural world.	Standard 2 Science as Inquiry Understands how to combine processes and scientific knowledge with scientific reasoning and critical thinking.	Standard 3 Physical Science Understands physical science facts, concepts, principles, theories and models that are important for all students.	Standard 4 Life Science Understands life science facts, concepts, principles, theories and models that are important for all students.	Standard 5 Earth and Space Science Understands earth and space science facts, concepts, principles, theories and models that are important for all students.	Standard 6 Science and Technology Establishes connections between the natural and designed worlds and provide students with opportunities to develop decision-making abilities.	Standard 7 Science in Personal and Social Perspectives Science in Personal and Social Perspectives: Understands the importance of the sciences impacting personal and social issues.	Standard 8 History and Nature of Science Understanding science as a human endeavor and the role it has played in civilization and the development of various cultures.
5		<p>2.1 Uses basic skills of scientific inquiry.</p> <p>a. Identify questions and concepts that guide scientific investigations.</p> <p>b. Formulate testable hypothesis.</p> <p>c. Design and conduct scientific investigations.</p> <p>d. Use technology and mathematics to improve investigations and communications.</p> <p>e. Formulate and revise scientific explanations and models using logic and evidence.</p> <p>f. Recognize and analyze alternative explanations and models.</p> <p>g. Communicate and defend a scientific argument.</p>	<p>3.1 Knows that materials can change from solid to liquid to gas by heating and from gas to liquid to solid by cooling.</p>	<p>4.1 Knows the various structures of animals necessary for growth, survival, and reproduction.</p> <p>a. Metamorphosis</p>	<p>5.1 Understands the "water cycle."</p> <p>a. Evaporation</p> <p>b. Condensation</p> <p>c. Precipitation</p> <p>d. Water storage (aquifers, lakes, streams, runoff, and oceans)</p>	<p>6.1 Demonstrates the ability to use tools and technologies to collect and analyze data.</p> <p>a. Microscopes</p> <p>b. Balances</p> <p>c. Computers</p> <p>d. Scissors</p> <p>e. Magnifying glasses</p> <p>f. Thermometers</p> <p>g. Graduated cylinders</p> <p>h. Rulers</p>	<p>7.1 Understands how human choices can directly affect a person's health.</p>	<p>8.1 Understands that current scientific discoveries illustrate that science is never finished.</p>
		<p>2.2 Demonstrates the ability to describe any change in terms of speed, pattern, shape, position, size, etc.</p>			<p>5.2 Understands the similarities and differences of fresh water and salt water.</p>			
6	<p>1.1 Understands the interactions within a system.</p>	<p>2.1 Demonstrates the ability to design and conduct a scientific investigation.</p>	<p>3.1 Knows the forms of energy and how it is transferred.</p>	<p>4.1 Knows the basic structure and function of cells.</p>	<p>5.1 Knows characteristics of constructive and destructive weathering and erosion.</p>		<p>7.1 Understands that human activities, such as urban growth, land use, and waste disposal can accelerate many natural changes.</p>	

	1.2 Understands changes in terms of scale, rate, and pattern			4.2 Understands the interactions between living and nonliving factors in an ecosystem.				
7				4.1 Knows how organisms obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing external environment.		6.1 Demonstrates the ability to identify a simple problem and to propose, implement, evaluate, and communicate a solution.		8.1 Demonstrates the ability to create scientific explanations.
				4.2 Knows the functions, such as growth and nutrition, which cells carry on to sustain life.				
8	1.1 Understands the interactions within a system and between systems.	2.1 Knows the appropriate tools and techniques to gather, analyze, and interpret data.	3.1 Knows that all matter is composed of elements, which may combine in a variety of ways to form compounds.		5.1 Understands how a combination of constructive and destructive weathering and erosion forces creates landforms.			
					5.2 Understands the major impact of topography, location, and oceans on climate.			

