

**Portales Municipal Schools
CURRICULUM MAP**

Subject: Science	Updated 2010	Grade Level 5
-------------------------	---------------------	----------------------

ESSENTIAL QUESTIONS: How do plants & animals get their energy in an ecosystem?					
STRAND CONTENT OF SCIENCE			BENCHMARK 5-8 Benchmark I: Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.		
STANDARD II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
1 s t	<p>1. Identify the components of habitats and ecosystems (producers, consumers, decomposers, predators).</p> <p>2. Understand how food webs depict relationships between different organisms.</p> <p>3. Know that changes in the environment can have different effects on different organisms (e.g., some organisms move, some survive, some reproduce, some die).</p> <p>4. Describe how human activity impacts the environment.</p>	<p>Components of habitats of ecosystems</p> <p>Food Webs</p> <p>Changes to the environment</p>	<p>The student will be able to:</p> <p>research each major biome identifying plants, animals, climate, and landform facts and culminate in a Dinah Zike layered booklet or science journal.</p> <p>use plant and animal picture cards from the Hands-On Learning Kit to build simple food chains that can be combined to create a food web (I.I.I.1; I.I.II.1-2)</p> <p>use a set length of paper to represent the flow of energy in an ecosystem and cut it apart to visualize the actual amount of energy transfer (I.I.I.1; I.I.II.1-2)</p> <p>make a food web using yarn as the flow of energy and students representing the organisms (I.I.I.1)</p>	<p>Teacher made Standards and Benchmark Pre and Post Test</p> <p>Biome research rubric/layered book</p> <p>Teacher observation during hands on activity and student written analysis of conclusions</p>	<p>Science Studies Week Newspaper: "Ecosystems" and "The Water Cycle"</p> <p>Dinah Zike's Cross-Curricular Classrooms Thematic Manipulatives: Biome Flip Books Eco-puzzle- eng/sp: http://www.mnnaturalhistory.org/SMNHC/Sandia%20Mini-curriculum/3.%20Eco_Word_Puzzle.pdf</p> <p>Eco-scramble: http://www.mnnaturalhistory.org/smhnc/Sandia%20Mini-curriculum/1.%20Ecosystem_Scramble.pdf</p> <p>Land and Water Biome three column chart Center for Hand-on Learning Ecosystem Kit Valencia Book Room – Guided Group Reader for each Biome</p> <p>Biomes WebQuest</p> <p>Pictorial food web resources Discover Works handouts p. 92 and 95</p> <p>Instruction Fair, Inc. p. 7, 14, 16, 26-27, and 29</p> <p>projectwild.org (use w/ human food web)</p> <p>Scott Foresman Unit A Ch. 5-6 Dare to Care for the Grizzly Bear-PBS Lesson with outlines, video clips, etc. http://www.pbs.org/wnet/nature/lessons/dare-to-care-for-a-grizzly-bear/lesson-activities/1822/</p>
ESSENTIAL QUESTIONS: How can matter be described?					

Portales Municipal Schools
CURRICULUM MAP

Subject:	Science	Updated 2010	Grade Level 5
-----------------	---------	--------------	---------------

STRAND CONTENT OF SCIENCE		BENCHMARK 5-8 Benchmark I: Know the forms and properties of matter and how matter interacts.			
STANDARD I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
2 n d	<p>1. Describe properties (e.g., relative volume, ability to flow) of the three states of matter.</p> <p>2. Describe how matter changes from one phase to another (e.g., condensation, evaporation).</p> <p>3. Know that matter is made up of particles (atoms) that can combine to form molecules and that these particles are too small to see with the naked eye.</p>	<p>Properties of the three states of matter</p> <p>Phase changes in matter</p> <p>Matter is made of particles (atoms)</p>	<p>The students will be able to:</p> <p>make a water molecule mobile and label the parts correctly. (I.I.II.1-2)</p> <p>read and research supplemental text to identify properties of matter, phase changes in matter, and that matter is made of particles (atoms)</p> <p>use colored marshmallows to build a model of an atom that shows its electrons, protons, and neutrons.</p> <p>observe chemical properties and reactions in copper and zinc using the center for hands-on learning (I.I.I.1)</p> <p>find the volume and mass of various objects using mathematical tools and measurements (I.I.III.1-4)</p>	<p>Teacher made Standards and Benchmark Pre and Post Test</p> <p>Water molecule mobile</p> <p>Analysis of students understanding as explained in science journal, working papers or discussions.</p> <p>Atom model</p>	<p>Project Aims A collection of Elementary Water Activities: Water Precious Water p. 3-6 “The Water Molecule” matter video website: http://www.harcourtschool.com/activity/states_of_matter/index.html</p> <p>Science Studies Week Newspaper: “Building Block of Matter”, “Liquids, Solids, and Gasses”, “Hot and Cold”</p> <p>Aims Education Foundation – Electrical Connections “Atoms” p. 1-5 aimsedu.org</p> <p>Center for Hands-On Learning Matter Kit</p> <p>Th Phantom’s Portrait Parlor Paper Cutting Activity- (relates to size of atoms) http://www.miamisci.org/af/sln/phantom/papercutting.html</p>

Portales Municipal Schools
CURRICULUM MAP

Subject: Science	Updated 2010	Grade Level 5
-------------------------	---------------------	----------------------

ESSENTIAL QUESTIONS: How can matter be described?					
STRAND CONTENT OF SCIENCE			BENCHMARK 5-8 Benchmark I: Know the forms and properties of matter and how matter interacts.		
STANDARD I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
2 n d	<p>4. Know that the periodic table is a chart of the pure elements that make up all matter.</p> <p>5. Describe the relative location and motion of the particles (atoms and molecules) in each state of matter.</p> <p>6. Explain the relationship between temperature and the motion of particles in each state of matter.</p>	Periodic table	<p>The student will be able to:</p> <p>analyze the periodic table to distinguish pure elements and complete the crossword puzzle</p> <p>conduct a science experiment entitled “How do Molecules Measure Up” in order to understand molecules vary in size. (I.I.1-5)</p> <p>use the steps of the scientific method to determine if the amount of surface area will affect the evaporation rate of liquids. (I.I.1-5)</p> <p>put a drop of food coloring in hot and cold water to compare how molecules move differently at different temperatures. (I.I.1-5)</p>	<p>Crossword Puzzle</p> <p>Grade lab sheets for understanding of content knowledge as well as completion of each step in the scientific method</p>	<p>Elements of the Periodic Table Cross word Puzzle-copy of the periodic table</p> <p>Elements and Compounds Fact Sheet Interactive Periodic table: http://www.spartechsoftware.com/recko/PeriodicTable.htm</p> <p>How do Molecules Measure Up Acitivity</p> <p>Project Aims A collection of Elementary Water Activities: Water Precious Water p. 34-37 “Moving Molecules”</p> <p>“In The Lab” Science Studies Weekly – “Hot and Cold”</p> <p>Scott Foresman Unit C Chapter 11</p>

Portales Municipal Schools
CURRICULUM MAP

Subject:	Science	Updated 2010	Grade Level 5
-----------------	---------	--------------	---------------

ESSENTIAL QUESTIONS: What forces produce motion in objects?					
STRAND CONTENT OF SCIENCE			BENCHMARK 5-8 Benchmark III: Describe and explain forces that produce motion in objects.		
STANDARD I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.					
9 w k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R = Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
3 r d	<p>1. Understand how the rate of change of position is the velocity of an object in motion.</p> <p>2. Recognize that acceleration is the change in velocity with time.</p> <p>3. Identify forces in nature (gravity, magnetism, electricity, friction).</p> <p>4. Understand that when a force (e.g., gravity, friction) acts on an object, the object speeds up, slows down, or goes in a different direction.</p>	<p>Velocity</p> <p>Acceleration</p> <p>Forces</p> <p>Force Acting on Objects</p>	<p>The student will be able to:</p> <p>read and research supplemental text to identify velocity and acceleration and complete comprehension questions page</p> <p>read <i>The Magic School Bus and the ElectricField Trip</i> as a whole class in the format of a play and complete teacher made comprehension page</p> <p>use materials provided to make a simple circuit (I.I.II.1-2)</p> <p>build a tractor assembly using supplied materials to illustrate how friction works and record data to find out which assembly will go the farthest distance. Distances will be measured and recorded on the data sheet provided in the activity. (I.I.III.1-4)</p>	<p>Teacher made comprehension question page</p> <p>Teacher made comprehension question page</p> <p>Working circuit</p> <p>Working tractor assembly and completed data sheet</p>	<p>Science Studies Week Newspaper: “A Moving World”; “Electricity and Magnetism”</p> <p><i>The Magic School Bus and the ElectricField Trip</i></p> <p>AIMS Education Foundation “All Wound Up” Masters of Gravity Game/Activity from PBS: http://westernreservepublicmedia.org/gravity/index.htm</p>

**Portales Municipal Schools
CURRICULUM MAP**

Subject:	Science	Updated 2010	Grade Level 5
-----------------	---------	---------------------	----------------------

ESSENTIAL QUESTIONS: How do simple machines allow us to use less force?					
STRAND CONTENT OF SCIENCE			BENCHMARK 5-8 Benchmark III: Describe and explain forces that produce motion in objects.		
STANDARD I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
3 r d	5. Identify simple machines & describe how they give advantage to users (e.g., levers, pulleys, wheels and axles, inclined planes, screws, wedges).	Simple Machines	<p>The students will be able to:</p> <p>read and research supplemental text to identify velocity and acceleration and complete comprehension questions page</p> <p>make & use simple machines using provided materials (I.I.I.1-5)</p> <p>make a layered book of the six simple machines and classify tools into each category</p>	<p>Teacher made comprehension question page</p> <p>Models of simple machines</p> <p>Layered book</p>	<p>Science Studies Weekly: “Technology & Inventions”</p> <p>Center for Hands-on-Learning Kit: Simple Machines</p> <p>Game/Activity from PBS: has clickable section for simple machines: http://westernreservepublicmedia.org/gravity/index.htm</p> <p>Aims Education Foundation: “Wedge-Ease”, “One good turn deserves another”, “Nuts & Bolts”, “Pulley Power”, & “Making the Grade”</p> <p>Dinah Zike’s Cross-Curricular Classrooms: Magnets, Simple Tools & Machines</p> <p>Scott Foresman Unit C Chapter 13&15</p>

Portales Municipal Schools
CURRICULUM MAP

Subject:	Science	Updated 2010	Grade Level 5
-----------------	---------	---------------------	----------------------

ESSENTIAL QUESTIONS: How can the scientific method help us conduct and experiment?					
STRAND SCIENTIFIC THINKING AND PRACTICE			BENCHMARK 5-8 Benchmark I: Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.		
STANDARD I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.					
	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
T h r o u g h o u t y e a r	1. Plan and conduct investigations, including formulating testable questions, making systematic observations, developing logical conclusions, & communicating findings. 2. Use appropriate technologies (e.g., calculators, computers, balances, spring scales, microscopes) to perform scientific tests and to collect and display data. 3. Use graphic representations(charts, graphs, tables, labeled diagrams) to present data & produce explanations for investigations.		See referenced activities in content standards and benchmarks above.		

Portales Municipal Schools
CURRICULUM MAP

Subject: Science	Updated 2010	Grade Level 5
-------------------------	---------------------	----------------------

ESSENTIAL QUESTIONS:					
STRAND SCIENTIFIC THINKING AND PRACTICE		BENCHMARK 5-8 Benchmark I: Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.			
STANDARD I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.					
	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
T h r o u g h o u t y e a r	<p>4. Describe how credible scientific investigations use reproducible elements including single variables, controls, and appropriate sample sizes to produce valid scientific results.</p> <p>5. Communicate the steps and results of a scientific investigation.</p>		See referenced activities in content standards and benchmarks above.		

Portales Municipal Schools
CURRICULUM MAP

Subject:	Science	Updated 2010	Grade Level 5
-----------------	---------	---------------------	----------------------

ESSENTIAL QUESTIONS: What tools can we use to answer scientific questions?					
STRAND SCIENTIFIC THINKING AND PRACTICE			BENCHMARK 5-8 Benchmark II: Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge.		
STANDARD I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.					
	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
T h r o u g h o u t y e a r	<p>1. Understand that different kinds of investigations are used to answer different kinds of questions (e.g., observations, data collection, controlled experiments).</p> <p>2. Understand that scientific conclusions are subject to peer and public review.</p>		See referenced activities in content standards and benchmarks above.		

Portales Municipal Schools
CURRICULUM MAP

Subject:	Science	Updated 2010	Grade Level 5
-----------------	---------	---------------------	----------------------

ESSENTIAL QUESTIONS: What units can we use for measurement?					
STRAND SCIENTIFIC THINKING AND PRACTICE			BENCHMARK 5-8 Benchmark III: Use mathematical ideas, tools, and techniques to understand scientific knowledge		
STANDARD I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.					
	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
T h r o u g h o u t y e a r	1. Use appropriate units to make precise and varied measurements. 2. Use mathematical skills to analyze data 3. Make predictions based on analyses of data, observations, and explanations. 4. Understand the attributes to be measured in a scientific investigation and describe the units, systems, and processes for making the measurement.		See referenced activities in content standards and benchmarks above.		

