

**RCPS Curriculum Pacing Guide
2013-2014
Subject: Physical Science**

Week of:	SOL #	Unit	Bloom's	Objectives
8/12– 8/16/13	PS 1	Scientific Method Metric Conversion ACT: spag. lab penny lab	Remembering Understanding Applying Analyzing Evaluating Creating	PS 1 a) independent and dependent variables, constants, controls, and repeated trials are identified; b) data tables showing the independent and dependent variables, derived quantities, and the number of trials are constructed and interpreted; c) valid conclusions are made after analyzing data; d) conversions are made among metric units, applying appropriate prefixes; e) experimental results are presented in appropriate written form;
Week 2	PS 1	Measurement Length, Mass, Volume ACT: length mass lab I/II vol. lab I/II	Remembering Understanding Applying	PS 1 b) length, mass, volume, density measured

Week 3	PS 1	Calculating Density ACT: mystery canisters water vs. ice nail vs. rod red vs. yell. liq.	Evaluating Analyzing Applying Understanding Remembering	PS 1 b) , mass, volume, density measured
Week 4 4 days	PS 2/PS 5/PS7	Physical Properties Physical Changes Chemical Properties Chemical Changes ACT: Ketchup Lab Egg Journal Chemical Reaction Labs- Candle Observation Solid + Liquid = Gas Blue Goo Nail in CuSO ₄	Remembering Understanding Applying Analyzing Evaluating	PS.2 The student will investigate and understand the nature of matter. Key concepts include a) the particle theory of matter; b) solids, liquids, and gases; c) physical properties; d) chemical properties; and e) characteristics of types of matter based on physical and chemical properties. PS.5 The student will investigate and understand changes in matter and the relationship of these changes to the Law of Conservation of Matter and Energy. Key concepts include a) physical changes; chemical changes PS.7 The student will investigate and understand temperature scales, heat, and thermal energy transfer. Key concepts include a) Celsius and Kelvin temperature scales and absolute zero; b) phase change, freezing point, melting point, boiling point, vaporization, and condensation;

Week 5	PS 5/PS 2	Chemical Changes Elements/Mixtures/Compounds ACT: Rock Candy Separating Beads Lab Saturation Lab Salt and Sand Lab	Remembering Understanding Applying Analyzing Evaluating Creating	<p>PS.5 The student will investigate and understand changes in matter and the relationship of these changes to the Law of Conservation of Matter and Energy. Key concepts include</p> <p>a) chemical changes</p> <p>PS.2 The student will investigate and understand the nature of matter. Key concepts include</p> <p>a) the particle theory of matter; elements, compounds, mixtures,</p>
Week 6	PS3/PS4	Atoms/Periodic Table ACT: Marshmallow Atoms	Remembering Understanding Applying	<p>PS.3 The student will investigate and understand the modern and historical models of atomic structure. Key concepts include</p> <p>a) the contributions of Dalton, Thomson, Rutherford, and Bohr in understanding the atom; and</p> <p>b) the modern model of atomic structure.</p> <p>PS.4 The student will investigate and understand the organization and use of the periodic table of elements to obtain information. Key concepts include</p> <p>a) symbols, atomic numbers, atomic mass, chemical families (groups), and periods;</p> <p>b) classification of elements as metals, metalloids, and nonmetals; and</p>

Week 7	PS3/PS4	Atoms/Periodic Table Counting Atoms Balancing Equations Ionic/Covalent Bonding	Remembering Understanding Applying	<p>PS.3 The student will investigate and understand the modern and historical models of atomic structure. Key concepts include</p> <ul style="list-style-type: none"> c) the contributions of Dalton, Thomson, Rutherford, and Bohr in understanding the atom; and d) the modern model of atomic structure. <p>PS.4 The student will investigate and understand the organization and use of the periodic table of elements to obtain information. Key concepts include</p> <ul style="list-style-type: none"> a) symbols, atomic numbers, atomic mass, chemical families (groups), and periods; b) classification of elements as metals, metalloids, and nonmetals; and
Week 8	PS 4	Counting Atoms Balancing Equations Ionic/Covalent Bonding	Remembering Understanding Applying	<p>PS.4 The student will investigate and understand the organization and use of the periodic table of elements to obtain information. Key concepts include</p> <ul style="list-style-type: none"> c) formation of compounds through ionic and covalent bonding.

Week 9	PS 2	<p>Acid/Base/Salts ACT: Litmus & pH paper lab Cabbage Juice Ind. Neutralization Lab</p> <p>BENCHMARK TEST 1: Oct. 7th</p>	<p>Remembering Understanding Applying Analyzing Evaluating</p>	<p>PS.2 The student will investigate and understand the nature of matter. Key concepts include b) acids, bases, and salts</p>
Week 10	PS 10	<p>Motion Forces Friction ACT: Newton's Laws demos Work & Power Lab Friction Lab Hot Wheelin' Physics Speed Challenge</p>	<p>Remembering Understanding Applying Analyzing Evaluating</p>	<p>PS.10 The student will investigate and understand the scientific principles of work, force, and motion. Key concepts include a) speed, velocity, and acceleration; b) Newton's laws of motion; c) work, force,</p>
Week 11	PS 10	<p>Simple Machines Act: Screw Lab Inclined Plane Lab Pulley Lab</p>	<p>Remembering Understanding Applying Analyzing Evaluating Creating</p>	<p>PS.10 The student will investigate and understand the scientific principles of work, force, and motion. Key concepts include a) work, force, mechanical advantage, efficiency, and power; and b) technological applications of work, force, and motion.</p>

<p>Week 12 4 days</p>	<p>PS 6/PS 7</p>	<p>Energy Energy Conversions ACT: Wacky Hall Walkers Ball and Ring Bi-Metallic Strip 5 metals heat transfer</p>	<p>Remembering Understanding Applying Analyzing Evaluating</p>	<p>PS.6 The student will investigate and understand forms of energy and how energy is transferred and transformed. Key concepts include</p> <ul style="list-style-type: none"> a) potential and kinetic energy; and b) mechanical, chemical, electrical, thermal, radiant, and nuclear energy. <p>PS.7 The student will investigate and understand temperature scales, heat, and thermal energy transfer. Key concepts include</p> <ul style="list-style-type: none"> c) conduction, convection, and radiation; and d) applications of thermal energy transfer.
<p>Week 13</p>	<p>PS 9</p>	<p>Waves and Light ACT: Wave demo Light Boxes Light stations Fish bowl lens</p>	<p>Remembering Understanding Applying Analyzing Evaluating</p>	<p>PS.9 The student will investigate and understand the characteristics of transverse waves. Key concepts include</p> <ul style="list-style-type: none"> a) wavelength, frequency, speed, amplitude, crest, and trough; b) the wave behavior of light; c) images formed by lenses and mirrors; d) the electromagnetic spectrum; and e) technological applications of light.

Week 14	PS 8	Sound ACT: Wave demo Sound Stations	Remembering Understanding Applying Analyzing Evaluating	PS.8 The student will investigate and understand the characteristics of sound waves. Key concepts include a) wavelength, frequency, speed, amplitude, rarefaction, and compression; b) resonance; c) the nature of compression waves; and d) technological applications of sound
Week 15	PS 11	Electricity Magnets Electromagnets ACT: Electricity Lab Magnet Lab Electromagnet Lab BENCHMARK TEST 2: Nov. 21th	Remembering Understanding Applying Analyzing Evaluating Creating	PS.11 The student will investigate and understand basic principles of electricity and magnetism. Key concepts include a) static electricity, current electricity, and circuits; b) relationship between a magnetic field and an electric current; c) electromagnets, motors, and generators and their uses; and d) conductors, semiconductors, and insulators.
Week 16				
Week 17				
Week 18				
Week 19 2days				
