

Strand I Thinking and Practice

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

Essential Question: How does accurate data collection and the advance of technologies help us make scientific discoveries?

Category	Eighth Grade	End Learning Mastery	Assessment(s)	Resources
<p>Process of Investigation SCIENTIFIC METHOD</p> <p>Benchmark I: Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.</p>	<p>1. Evaluate the accuracy and reproducibility of data and observations.</p> <p>2. Use a variety of technologies to gather, analyze and interpret scientific data.</p> <p>3. Know how to recognize and explain anomalous data.</p>	<p>To understand the various steps in problem solving.</p> <p>To write hypotheses and conclusions in complete sentences.</p> <p>To use cause and effect reasoning to write "I think... because..." hypotheses sentences.</p> <p>VOCABULARY:</p> <ol style="list-style-type: none"> Standard Accuracy Precision +/- % error variance deviation average meniscus histogram significant figure basic SI units x and y axes independent/dependent variables control variable scientific notation estimated digit variable outlier accuracy precision 		<p><u>SCIENTIFIC METHOD</u></p> <p><i>PH SCI EXP:</i> Ch. 1.2</p> <p><i>PH ADAPTED READ/STDY WKBK</i> p. 8,9,10,11</p> <p><i>PH GUIDED READ/STDY WKBK</i> p. 11,12,13</p> <p><i>PH ALL-IN-ONE UNIT 1</i> P. 47, 48, 57, 60-64</p> <p><i>PH INQUIRY SKILLS</i> p. 37-56</p> <p>LABS -Lab Report Cklist for all labs -SLUDGES</p> <p><u>INTRO TO MATTER, COMPOUNDS, MIXTURE/ELEMENTS</u> OTHER ACTIVITIES:- Precision of Balance Lab -Worksheet on variance, averages, histograms, etc</p> <p><u>FIRE & SAFETY:</u> <i>PH SCI EXP:</i></p>

		22. source of error		Ch. 6.4 <i>PH ADAPTED READ/STDY WKBK</i> p. 12, 13 <i>PH GUIDED READ/STDY WKBK</i> p. 15,16 <i>PH ALL-IN-ONE UNIT 1</i> p. 59-64
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Essential Question: How do we agree on scientific results in order to make conclusions?

Category	Eighth Grade	End Learning Mastery	Assessment(s)	Resources
Process of Investigation SCIENTIFIC THINKING Benchmark II: Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge	1. Examine alternative explanations for observations. 2. Describe ways in which science differs from other ways of knowing and from other bodies of knowledge (e.g., experimentation, logical arguments, skepticism). 3. Know that scientific knowledge is built on questions posed as testable hypotheses, which are tested until the results are accepted by peers.	To know that scientific knowledge is confirmed through testable hypotheses built on repeatable results. VOCABULARY: <ol style="list-style-type: none"> error analysis laws theories hypotheses perspective influence beliefs bias cultural influence empirical evidence verifiable evidence reproducible replicate 		<i>PH SCI EXP</i> Ch. 1.1, 1.2, 17.4 <i>PH ADAPTED READ/STDY WKBK</i> p. 5, 6 <i>PH GUIDED READ/STDY WKBK</i> p. 9,10, 12 <i>PH INQUIRY SKILLS</i> p. 5-36 <i>PH ALL-IN-ONE UNIT 1</i> p. 49,50, 52-58 OTHER ACTIVITIES: -Conserv. of Mass labs -Debate/Town Meeting on topic of teacher's choice -

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Strand I **Thinking and Practice**

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

Essential Question: Why do we have to use math for science class?

Category	Eighth Grade	End Learning Mastery	Assessment(s)	Resources
<p>Process of Investigation MATH SKILLS</p> <p>Benchmark III: Use mathematical ideas, tools, and techniques to understand scientific knowledge</p>	<p>1. Use mathematical expressions and techniques to explain data and observations and to communicate findings (e.g., formulas and equations, significant figures, graphing, sampling, estimation, mean).</p> <p>2. Create models to describe phenomena.</p>	<p>To understand the use of mathematical units, equations and graphs to support and communicate mathematical models.</p> <p>VOCABULARY:</p> <ol style="list-style-type: none"> 1. formulas 2. equations 3. significant figures 4. trials 5. sampling 6. estimated digit 7. mean/average 8. histograms 9. estimation 10. model 		<p><u>SCIENTIFIC METHOD</u> PH SCI EXP CH. 1</p> <p>PH PRESENTS CD -What is Science</p> <p><u>MEASURING & NUMBERS:</u> PH SCI EXP Ch. 2.2, 3.4, 9.2, 9.3, 10, 11.2, 12.1, 13.1, 15.1, 20.4 & P. 157, 190, 460</p> <p>PH ADAPTED READ/STDY WKBK : P. 24-26</p> <p>PH GUIDED READ/STDY WKBK : p. 26-28</p> <p>PH PRESENTS CD (throughout most units)</p> <p>PH SCI EXP MATH REVIEW: Ps. 789-793</p> <p>SCI. EXP SKILLS HDBK: Ps. 779-781, 786-788</p>

				<p><i>PH INQUIRY SKILLS</i> p. 27-36 & 50-78</p> <p><i>PH ALL-IN-ONE UNIT 1</i> p.</p> <p><i>OTHER ACTIVITIES:</i> -Sig. Figure/Sci. Notation Wkst -Density Practice</p> <p><i>QUANTITATIVE LABS:</i> -Measuring Length -Demo volume w/ 1000mL cubes, etc -Measuring Liquid Volume -Precision of Balance Labs</p> <p><i>EXAMPLE MODELS:</i> -Rock Cycle Sketch -Roller Coasters -3D volcano model</p>
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Stand II – Content of Science

Standard I): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Essential Question: Why do some objects interact with one another and some do not?

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<p>Strand II: Content of Science</p> <p>PHYSICAL SCIENCE Forms of Matter</p> <p>Benchmark I: Know the forms and properties of matter and how matter interacts</p>	<p>Properties of Matter</p> <ol style="list-style-type: none"> 1. Know how to use density, boiling point, freezing point, conductivity, and color to identify various substances. 2. Distinguish between metals and non-metals. 3. Understand the differences among elements, compounds, and mixtures by: <ul style="list-style-type: none"> ✓ classification of materials as elements, compounds, or mixtures ✓ interpretation of chemical formulas ✓ separation of mixtures into compounds by methods including evaporation, filtration, screening, magnetism. <p>Structure of Matter</p> <ol style="list-style-type: none"> 1. Identify the protons, neutrons, and electrons within an atom and describe their locations (i.e., in the nucleus or in motion outside the nucleus). 2. Explain that elements are organized in the periodic table according to their properties. 3. Know that compounds are made of two or more elements, but not all sets of elements can combine to form compounds. <p>Changes in Matter</p> <ol style="list-style-type: none"> 1. Know that phase changes are 	<p>The knowledge of the characteristic properties and structure of matter, elements and compounds and how different kinds of matter interacts.</p> <p>To understand how the periodic tables classifies the different elements as the building blocks of matter.</p> <p>To interpret information about phases of matter using graphs.</p> <p>VOCABULARY: <u>Intro to Matter, Compounds, Mixtures and Elements:</u></p> <ol style="list-style-type: none"> 1. density 2. boiling point 3. phase change 4. plateau 5. freezing/melting point 6. ionic bond 7. covalent bond 8. physical change 9. chemical change 10. freeze 11. vaporize 12. condensation 13. sublimation 14. evaporation 15. boiling 16. chemical reaction 17. respiration 18. concentration 19. surface area 20. exothermic 21. endothermic 22. rate of reaction <p>6</p> <p><u>Atomic Structure & The</u></p>		<p><u>Intro to Matter, Compounds, Mixtures and Elements:</u> <i>PH SCI EXP:</i> Ch: 2.2, 2.3, 3.1, 3.2, 5, 6, 7.1, 14.3</p> <p><i>PH ADAPTED READ/STDY WKBK:</i> P. 20-23, 27, 28, 34-49, 70-82, 85-98, 99-105, 161-164</p> <p><i>PH GUIDED READ/STDY WKBK:</i> P. 24-27, 29, 30, 33, 35-47</p> <p><i>PH ALL-IN-ONE UNIT 1</i> P. 103, 106-110, 111, 113-126, 139-150, 160-214, 371-422, 440-444, 449-454</p> <p><i>PH PRESENTS CD:</i> -Solids, Liquids, Gases -Intro to Matter -Chemical Reactions</p> <p><i>IPS LABS:</i> Splint in microburner Baking Soda Lab; Volume Labs; Conservation of Mass; Density Labs Boiling Pt. Lab Solubility Labs Separation of Solids Fractional Distillation SLUDGE Alka-Seltzer Lab</p> <p><i>VHS/DVD VIDEOS:</i> Check Media Center</p> <p><i>OTHER ACTIVITIES:</i> -Measuring Practice -Density Practice -Sig. Figs/Sci Notation</p>

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Stand II – Content of Science

Standard I): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Essential Question: How is energy transformed, conserved and wasted?

Category	Eighth Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand II: Content of Science</p> <p>PHYSICAL SCIENCE Properties of Matter</p> <p>Benchmark II: Explain the physical processes involved in the transfer, change, and conservation of energy</p>	<p>Energy Transformation 1. Know that energy exists in many forms and that when energy is transformed some energy is usually converted to heat.</p> <p>2. Know that kinetic energy is a measure of the energy of an object in motion and potential energy is a measure of an object's position or composition, including:</p> <p>✓ transformation of gravitational potential energy of position into kinetic energy of motion by a falling object.</p> <p>3. Distinguish between renewable and nonrenewable sources of energy.</p> <p>4. Know that electrical energy is the flow of electrons through electrical conductors that connect sources of electrical energy to points of use, including:</p> <p>✓ electrical current paths through parallel and series circuits</p> <p>✓ production of electricity by fossil-fueled and nuclear power plants,</p>	<p>To understand the various forms of energy and how the change of energy from one form to another fuels the basic processes of all the major large cycles on the earth.</p> <p>To understand the environmental impact of energy use and how some forms of energy are renewable and others are not.</p> <p>To understand the basics of electrical energy and how it is made available for human use.</p> <p>To understand how all energy moves from place to place through various types of waves.</p> <p>VOCABULARY: <u>Energy Types (MRS. CHEN)</u></p> <ol style="list-style-type: none"> mechanical radiant solar 		<p><u>ENERGY TYPES (MRS. CHEN)</u> <i>PH SCI EXP:</i> Ch. 2.4, 10.2, 13</p> <p><i>PH ADAPTED</i> <i>READ/STDY WKBK</i> : P. 31-33, 185-195</p> <p><i>PH GUIDED READ/STDY WKBK</i> : P. 31-33, 176, 180, 181, 184</p> <p><i>PH ALL-IN-ONE UNIT 1</i> P. 127-132</p> <p><i>PH PRESENTS CD</i> -Energy</p> <p>LABS: *****</p> <p>VHS/DVD VIDEOS: Check Media Center</p> <p>OTHER ACTIVITIES: *****</p> <p><u>EARTH SCIENCE (RESOURCES):</u> <i>PH SCI EXP:</i> Ch *****</p>

	<p>wind generators, geothermal plants, and solar cells</p> <p>✓ use of electricity by appliances and equipment (e.g., calculators, hair dryers, light bulbs, motors).</p> <p>Waves</p> <p>1. Understand how light and radio waves carry energy through vacuum or matter by:</p> <ul style="list-style-type: none"> ✓ straight-line travel unless an object is encountered ✓ reflection by a mirror, refraction by a lens, absorption by a dark object ✓ separation of white light into different wavelengths by prisms ✓ visibility of objects due to light emission or scattering. <p>2. Understand that vibrations of matter (e.g., sound, earthquakes, water waves) carry wave energy, including:</p> <ul style="list-style-type: none"> ✓ sound transmission through solids, liquids, and gases ✓ relationship of pitch and loudness of sound to rate and distance (amplitude) of vibration <p>ripples made by objects dropped in water.</p>	<ol style="list-style-type: none"> chemical heat electrical nuclear friction potential energy kinetic energy <p><u>Earth Science (Resources):</u></p> <ol style="list-style-type: none"> renewable vs. non-renewable solar wind geothermal biomass hydro fossil fuels <p><u>Electricity & Magnetism:</u></p> <ol style="list-style-type: none"> parallel circuit series circuit current resistance voltage watts open circuit closed circuit <p><u>Waves:</u></p> <ol style="list-style-type: none"> crest trough wavelength amplitude reflection refraction diffraction transverse wave longitudinal wave compression rarefaction Doppler Effect E/M spectrum vacuum 		<p><i>PH ALL-IN-ONE UNIT</i> p. *****</p> <p><i>PH ADAPTED READ/STDY WKBK:</i> p. 196-198</p> <p><i>PH GUIDED READ/STDY WKBK:</i> p. 182-183</p> <p><i>PH PRESENTS CD</i> -Energy Resources -Energy</p> <p><i>OTHER:</i> N.M. Resource Research & Posters</p> <p><u>ELECTRICITY & MAGNETISM:</u> <i>PH SCI EXP:</i> Ch. 19, 20, 21</p> <p><i>PH ADAPTED READ/STDY WKBK:</i> p. 281-329</p> <p><i>PH GUIDED READ/STDY WKBK :</i> p. 261-301</p> <p><i>PH ALL-IN-ONE UNIT</i> p. *****</p> <p><i>PH PRESENTS CD</i> -Electricity, Magnetism, -Using Electricity & -Magnetism</p> <p><i>LABS:</i> *****</p> <p><i>VHS/DVD VIDEOS:</i> Check Media Center</p>
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		15. s-waves/p-waves		<p><i>OTHER ACTIVITIES:</i></p> <p><u>WAVES:</u> PH SCI EXP: Ch. 15, 16, 17, 18</p> <p><i>PH ALL-IN-ONE UNIT</i> p. *****</p> <p><i>PH ADAPTED READ/STDY WKBK:</i> p. 214-280</p> <p><i>PH GUIDED READ/STDY WKBK:</i> p. 199-259</p> <p>PH PRESENTS CD -Characteristics of Waves, -Sound, Light, -E/M Spectrum</p>
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Essential Question: What forces get you in motion?

Category	Eighth Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand II: Content of Science</p> <p>PHYSICAL SCIENCE Forces of Matter</p> <p>Benchmark III: Describe and explain forces that produce motion in objects.</p>	<p>Forces</p> <p>1. Know that there are fundamental forces in nature (e.g., gravity, electromagnetic forces, nuclear forces).</p> <p>2. Know that a force has both magnitude and direction.</p> <p>3. Analyze the separate forces acting on an object at rest or in motion (e.g., gravity, elastic</p>	<p>To understand how Newton's laws of motion help us understand the forces that make objects move.</p> <p>VOCABULARY: <u>Force Types</u></p> <ol style="list-style-type: none"> gravity magnetism nuclear (strong/weak) radioactive decay 		<p><u>FORCES & MOTION:</u> <i>PH SCI EXP:</i> Ch. 9, 10, 11</p> <p><i>PH ALL-IN-ONE UNIT</i> p. *****</p> <p><i>PH ADAPTED READ/STDY WKBK:</i> p. 132-162</p> <p><i>PH GUIDED READ/STDY WKBK:</i></p>

	<p>motion (e.g., gravity, elastic forces, friction), including how multiple forces reinforce or cancel one another to result in a net force that acts on an object.</p> <p>4. Know that electric charge produces electrical fields and magnets produce magnetic fields.</p> <p>5. Know how a moving magnetic field can produce an electric current (generator) and how an electric current can produce a magnetic field (electromagnet).</p> <p>6. Know that Earth has a magnetic field.</p> <p>Motion</p> <p>1. Know that an object's motion is always described relative to some other object or point (i.e., frame of reference).</p> <p>2. Understand and apply Newton's Laws of Motion:</p> <ul style="list-style-type: none"> Objects in motion will continue in motion and objects at rest will remain at rest unless acted upon by an unbalanced force (inertia). 	<p>5. attract 6. repel</p> <p><u>Force & Motion</u></p> <p>1. scalar 2. vector 3. magnitude 4. direction 5. normal 6. equilibrium 7. net force 8. inertia 9. frame of reference 10. acceleration 11. Newton's Laws</p> <p><u>Electricity & Magnetism</u></p> <p>1. electrical charge 2. electrical field 3. magnetic field 4. induction 5. electromagnet 6. motor 7. generator 8. current 9. magnetosphere 10. auroras</p>		<p>p. 127-149</p> <p><i>PH PRESENTS CD</i> -Forces; Motion</p> <p><i>OTHER</i> Newton's Laws Triptych Force & Motion Labs</p> <p><u>ELECTRICITY & MAGNETISM:</u> <i>PH SCI EXP:</i> Ch. 19, 20, 21</p> <p><i>PH ADAPTED READ/STDY WKBK:</i> p. 281-283, 317-329</p> <p><i>PH GUIDED READ/STDY WKBK:</i> p. 261-301</p> <p><i>PH PRESENTS CD</i> -Using Electricity & Magnetism</p> <p><i>OTHER</i> Circuit Labs Magnet Labs E/M Lab Static Electricity Demos Science On Wheels</p> <p><u>EARTH SCIENCE</u> <u>(Earth's Mag. Field)</u> <i>PH SCI EXP:</i> Ch. 19.3</p> <p><i>PH ALL-IN-ONE UNIT</i> p. *****</p> <p><i>PH ADAPTED READ/STDY WKBK :</i> p. 289-292</p> <p><i>PH GUIDED READ/STDY</i></p>
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	<ul style="list-style-type: none"> ■ If a greater force is applied to an object a proportionally greater acceleration will occur. ■ If an object has more mass the effect of an applied force is proportionally less. 			<p><i>WKBK</i>: p. 268-270</p> <p><i>PH PRESENTS CD</i> -Magnetism</p> <p><i>OTHER</i> DVD: Magnetic Storm</p>
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Strand II Content of Science – LIFE SCIENCE

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Essential Question: How does an ecosystem use the energy of the sun and the periodic table?

Category	Eighth Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand II: Content of Science</p> <p>LIFE SCIENCE Forms & Structure</p> <p>Benchmark I: Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.</p>	<ol style="list-style-type: none"> 1. Describe how matter moves through ecosystems (e.g., water cycle, carbon cycle). 2. Describe how energy flows through ecosystems (e.g., sunlight, green plants, food for animals). 3. Explain how a change in the flow of energy can impact an ecosystem (e.g., the amount of sunlight available for plant growth, global climate change). 	<p>The students will understand the path of energy in its different forms from the nuclear energy in the Sun to the ability of animals to prey on each other.</p>		<p><u>EARTH SCIENCE (water):</u> <i>PH SCI EXP:</i> Ch. 2.4, 14.3</p> <p><i>PH ALL-IN-ONE UNIT 1</i> p. *****</p> <p><i>PH ADAPTED READ/STDY WKBK:</i> p. 207-209</p> <p><i>PH GUIDED READ/STDY WKBK:</i> p. 35-37</p> <p><i>PH PRESENTS CD</i> Ecosystems & Biomes: (Cycles of Matter)</p> <p><i>OTHER</i> Droplet's water cycle pamphlet</p> <p><u>EARTH SCIENCE or PERIODIC TABLE UNIT (energy flow & transformation):</u> <i>PH SCI EXP:</i> Ch. 2.4, 13.4, 14</p> <p><i>PH ADAPTED READ/STDY WKBK:</i> p. 31-33, 196-198</p> <p><i>PH GUIDED READ/STDY WKBK:</i> p. 179-184</p>

				<p><i>PH PRESENTS CD</i> Ecosystems & Biomes Cell Processes & Energy</p> <p><u>EARTH SCIENCE or PERIODIC TABLE UNIT (carbon):</u> <i>PH SCI EXP:</i> Ch. *****</p> <p><i>PH ALL-IN-ONE UNIT 1</i> p. 503-565</p> <p><i>PH ADAPT READING & STDY WKBK:</i> p. 114-119</p> <p><i>PH GUIDED READING & STDY WKBK:</i> p. 113-126</p> <p><i>PH PRESENTS CD</i> Ecosystems & Biomes: (Cycles of Matter)</p>
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Essential Question: What are the major elements from the periodic table that describe living organisms and are involved in genetic exchange?

Category	Eighth Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand II: Content of Science</p> <p>LIFE SCIENCE Life Forms in the Environment</p> <p>Benchmark II; Understand how traits are passed from one generation to the next and how species evolve</p>	<p>1. Understand that living organisms are made mostly of molecules consisting of a limited number of elements (e.g., carbon, hydrogen, nitrogen, oxygen).</p> <p>2. Identify DNA as the chemical compound involved in heredity in living organisms.</p> <p>3. Describe the widespread role of carbon in the chemistry of living systems.</p>	<p>Describe the elements and compounds involved in living organisms and heredity functions.</p>		<p><u>CARBON:</u> <i>PH SCI EXP:</i> Ch. 8.1, 8.2, 8.4</p> <p><i>PH ALL-IN-ONE UNIT 1</i> p. 503-565</p> <p><i>PH ADAPTED READ/STDY WKBK:</i> p.114-119,126-130</p> <p><i>PH GUIDED READ/STDY WKBK:</i> p.113-118,122-126</p> <p><i>P.H PRESENTS CD:</i> Carbon Chemistry</p>

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Strand II Content of Science – LIFE SCIENCE

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Essential Question: How do chemicals interact with living organisms?

Category	Eighth Grade	End Learning Mastery	Assessment(s)	Resources
Strand II: Content of Science LIFE SCIENCE Life Forms in the Environment Benchmark III: Understand the structure of organisms and the function of cells in living systems.	1. Describe how cells use chemical energy obtained from food to conduct cellular functions (i.e., respiration). 2. Explain that photosynthesis in green plants captures the energy from the sun and stores it chemically. 3. Describe how chemical substances can influence cellular activity (e.g., pH).	To describe how cells utilize chemical and radiant energy to perform their various functions.		<u>Compounds, Mixtures & Elements</u> <i>PH SCI EXP:</i> Ch. 2.4, 7.5, 8.4, 13.4 <i>PH ADAPTED READ/STDY WKBK:</i> p.112-113 <i>PH GUIDED READ/STDY WKBK:</i> p.109-110, 179 <i>PH PRESENTS CD:</i> Cell Processes & Energy

Strand II Content of Science – EARTH AND SPACE SCIENCE

Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Essential Question: How do we use telescopes to discover the structures and forces of the universe?

Category	Eighth Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand II: Content of Science</p> <p>EARTH & SPACE SCIENCE Universe/Solar System</p> <p>Benchmark I: Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures</p>	<p>1. Understand how energy from the sun and other stars, in the form of light, travels long distances to reach Earth.</p> <p>2. Explain how the properties of light (e.g., emission, reflection, refraction) emitted from the sun and stars are used to learn about the universe, including:</p> <ul style="list-style-type: none"> ✓ distances in the solar system and the universe ✓ temperatures of different stars. <p>3. Understand how gravitational force acts on objects in the solar system and the universe, including:</p> <ul style="list-style-type: none"> ✓ similar action on masses on Earth and on other objects in the solar system ✓ explanation of the orbits of the planets around the sun. 	<p>Explain how light waves travel to earth and can then be used to determine information about the objects emitting the light.</p> <p>Know that anything with mass exerts gravitational force and this force, given enough mass, can cause other objects to orbit around a body.</p> <p>VOCABULARY:</p> <ol style="list-style-type: none"> 1. Speed of Light 2. Light Year 3. Parsec 4. E/M spectrum 		<p>INVESTIGATING EARTH'S SYSTEMS: Earth in Space</p> <p><u>WAVES (ASTRONOMY):</u> <i>PH SCI EXP:</i> Ch. 17, 18.5</p> <p><i>PH ALL-IN-ONEUNIT</i> p. *****</p> <p><i>PH ADAPTED READ/STDY WKBK:</i> p. 245-259</p> <p><i>PH GUIDED READ/STDY WKBK:</i> p. 255-258</p> <p><i>PH PRESENTS CD:</i> Stars, Galaxies & Universe</p> <p><u>FORCE & MOTION (ASTRONOMY):</u> <i>PH SCI EXP:</i> Ch. 10.5, 13.4</p> <p><i>PH ALL-IN-ONEUNIT</i> p. *****</p> <p><i>PH ADAPTED READ/STDY WKBK:</i> p.155-157</p> <p><i>PH GUIDED READ/STDY WKBK:</i> p.137-146,147-149</p> <p><i>PH PRESENTS CD:</i> Earth, Moon & Sun</p>

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Strand II Content of Science – EARTH AND SPACE SCIENCE

Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Essential Question: What forces and energies have the biggest influence to earth's features?

Category	Eighth Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand II: Content of Science</p> <p>EARTH & SPACE SCIENCE Earth</p> <p>Benchmark II: Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth's systems.</p>	<p>1. Describe the role of pressure (and heat) in the rock cycle.</p> <p>2. Understand the unique role water plays on Earth, including:</p> <ul style="list-style-type: none"> ✓ ability to remain liquid at most Earth temperatures ✓ properties of water related to processes in the water cycle: evaporation, condensation, precipitation, surface run-off, percolation ✓ dissolving of minerals and gases and transport to the oceans ✓ fresh and salt water in oceans, rivers, lakes, and glaciers ✓ reactant in photosynthesis. <p>3. Understand the geologic conditions that have resulted in energy resources (e.g., oil, coal, natural gas) available in New Mexico.</p>	<p>Explain why heat, pressure and water are responsible for Earth's features.</p> <p>VOCABULARY:</p> <p><u>Water</u></p> <ol style="list-style-type: none"> 1. evaporation 2. condensation 3. precipitation 4. percolation 5. photosynthesis <p><u>Rock Cycle</u></p> <ol style="list-style-type: none"> 6. sedimentary rock 7. metamorphic rock 8. igneous rock 9. rock cycle 10. plate tectonics 		<p>INVESTIGATING EARTH'S SYSTEMS: Rocks & Landforms</p> <p><u>WATER:</u> PH SCI EXP: Ch. 14.3</p> <p>PH PRESENTS CD: Earth: The Water Planet</p> <p><u>EARTH SCIENCE (ROCK CYCLE):</u> PH SCI EXP: Ch.11, 14.2</p> <p>PH ALL-IN-ONEUNIT p. *****</p> <p>PH ADAPTED READ/STDY WKBK: p.</p> <p>PH GUIDED READ/STDY WKBK: p.</p> <p>PH PRESENTS CD: Rocks</p> <p><u>EARTH SCIENCE (New Mexico):</u> NM State Distributed NM Energy Sources Material</p>

				<p><i>PH SCI EXP:</i> Ch. 13.4, 14</p> <p><i>PH ADAPTED READ/STDY</i> <i>WKBK: p.196-198</i></p> <p><i>PH GUIDED READ/STDY</i> <i>WKBK: p.182-184</i></p>
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Strand III Science & Society – **DISCOVER / INVENT** Scientific Influence

Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

Essential Question: What recent discovery or technological advancement has influenced your family the most?

Category	Eighth Grade	End Learning Mastery	Assessment(s)	Resources
<p>Strand III: Science and Society</p> <p>Discover / Invent Scientific Influence</p> <p>Benchmark I: Explain how scientific discoveries and inventions have changed individuals and societies</p>	<p>1. Analyze the interrelationship between science and technology (e.g., germ theory, vaccines).</p> <p>2. Describe how scientific information can help to explain environmental phenomena (e.g., floods, earthquakes, volcanoes, fire, extreme weather).</p> <p>3. Describe how technological revolutions have significantly influenced societies (e.g., energy production, warfare, space exploration).</p> <p>4. Critically analyze risks and benefits associated with technologies related to energy production.</p>	<p>Give examples of ways in which scientists use technological equipment to explain and warn of environmental phenomena.</p> <p>Explain, with examples, how technology has continuously shaped societal behavior.</p> <p>Know the various risks and benefits associated with the different methods of energy production.</p>		<p><u>TECHNOLOGY</u> <i>PH SCI EXP:</i> Ch. 1.4</p> <p>PH ALL-IN-ONE UNIT 1 P. 69-83 (p76!!!)</p> <p><i>PH ADAPTED READ/STDY WKBK:</i> p.14</p> <p><i>PH GUIDE READ/STDY WKBK:</i> p.17-20</p> <p><u>ALSO SEE:</u> -Airbags/Chem Reactions p.202, 203</p> <p>-Fire & Fire Safety: p.212-215</p> <p>-Polymers: p. 276-281</p> <p>-Seismic Waves: p. 530-533</p> <p>-E/M Waves: p. 578-591, 594-600, 633-641</p> <p>-Electromagnetism: P. 736-743</p> <p><u>EARTH SCIENCE:</u> <i>PH ADAPTED READ/STDY WKBK:</i> p.226-227</p>

				<p><i>PH GUIDE READ/STDY WKBK: p.209-211</i></p> <p><u>ENERGY TYPES (MRS. CHEN)</u></p> <p><i>PH ADAPTED READ/STDY WKBK: p. 243-244, 256-259, 276-280, 330-339</i></p> <p><i>PH GUIDE READ/STDY WKBK: p.225, 226, 303-314</i></p>
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BIBLIOGRAPHY & ABBREVIATIONS

Prentice Hall Science Explorer

PH SCI EXP.

Prentice Hall Science Explorer: MATH REVIEW (in Back of Text Book)

PH SCI EXP MATH REVIEW

Prentice Hall Science Explorer All-in-One Teaching Resources

PH ALL-IN-ONE

Prentice Hall Science Explorer *Adapted* Reading and Study Workbook

PH ADAPTED READ/STDY WKBK

Prentice Hall Science Explorer *Guided* Reading and Study Workbook

PH GUIDED READ/STDY WKBK

Prentice Hall Presentation Express CD-ROM

PH PRESENTS CD

Prentice Hall Inquiry Skills Activity Book III

PH INQUIRY SKILLS

UNITS

Introduction to Matter, Compounds, Mixtures and Elements:

measurements, conservation of mass, states of matter, phase changes, chemical vs. physical changes, characteristic properties (density, b.p., etc), bonds, separation of substances, physical vs. chemical changes, solutions, SLUDGE

Atomic Structure & The Periodic Table:

subatomic particles, metals, nonmetals, metalloids, carbon, carbon cycles

Electricity & Magnetism:

Static electricity, current electricity, circuits, magnets, electromagnetic interactions

Waves:

Properties of Waves, Sound waves, Light Waves, electromagnetic spectrum, color, p-waves, s-waves

Earth Science:

Earthquakes, rock cycle, plate tectonics, volcanoes, types of energy: MRS. CHEN (Review chemical energy, electrical, introduce radiant, nuclear, sound, mechanical); renewable vs. non- renewable resources, water, astronomy, energy transformations, ecosystems

Forces & Motion:

motion, gravity, potential & kinetic energy, Newton's Laws