

8th Grade Science Curriculum

(1st 9 Weeks- 1st 4.5 9 Weeks)

Date		Hobbs Science Standards 8 th Grade EoC Standards	NM Standards & Benchmarks	Resources Basic text is <u>Glencoe- Level Blue</u>
		By being embedded throughout the curriculum, these Processing Skills will be addressed throughout the year.		
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	1	<p style="text-align: center;">Reading Standards for Literacy</p> <p>I. Key Ideas and Details</p> <p style="padding-left: 20px;">A. Cite specific textual evidence to support analysis of science and technical texts.</p> <p style="padding-left: 20px;">B. Determine the central ideas or conclusion of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.</p> <p style="padding-left: 20px;">C. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>II. Craft and Structure</p> <p style="padding-left: 20px;">A. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.</p> <p style="padding-left: 20px;">B. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.</p> <p style="padding-left: 20px;">C. Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.</p> <p>III. Integration of Knowledge and Ideas</p> <p style="padding-left: 20px;">A. Integrate quantitative or technical information expressed in words in a text with a version of that information, expressed visually (e.g., in a flowchart, diagram, model, graph, or table).</p>		See Google Docs for resources

<hr/> <hr/> <hr/>		<p>B. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.</p> <p>C. Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p> <p>IV. Range of Reading and Level of Text Complexity</p> <p>A. By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.</p>		
<hr/> <hr/> <hr/>	<p>2</p>	<p style="text-align: center;">Writing Standards for Literacy</p> <p>I. Text Types and Purposes</p> <p>A. Write arguments focused on discipline-specific content</p> <ol style="list-style-type: none"> 1. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. 2. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources. 3. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence 4. Establish and maintain a formal style. 5. Provide a concluding statement or section that follows from and supports the argument presented. <p>B. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p> <ol style="list-style-type: none"> 1. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. 2. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples. 3. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts. 4. Use precise language and domain-specific vocabulary to inform about or explain the topic. 5. Establish and maintain a formal style and objective tone. 6. Provide a concluding statement or section that follows form and supports 		<p style="text-align: center;">See Google Docs for resources</p>

		<p>the information or explanation presented.</p> <p>II. Production and Distribution of Writing</p> <p>A. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p>B. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.</p> <p>C. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</p> <p>III. Research to Build and Present Knowledge</p> <p>A. Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>B. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source, and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.</p> <p>C. Draw evidence from informational texts to support analysis reflection and research.</p> <p>IV. Range of Writing</p> <p>A. Write routinely over extended timeframes (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</p>		
	3	<p>Scientific Thinking and Practice</p> <p>Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting and validating to think critically.</p> <p>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>A. Evaluate the accuracy and reproducibility of data and observations.</p> <p>B. Use a variety of technologies to gather, analyze and interpret scientific data.</p> <p>C. Know how to recognize and explain anomalous data.</p>	<p>I, I, I, 1</p> <p>I, I, I, 2</p> <p>I, I, I, 3</p>	See Google Docs for resources
	4	<p>Scientific Thinking and Practice</p> <p>Understand the processes of scientific investigations and use inquiry and scientific</p>		See Google Docs for resources

<p>_____</p> <p>_____</p> <p>_____</p>		<p>ways of observing, experimenting, predicting and validating to think critically.</p> <p>II. Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge.</p> <p>A. Examine alternative explanations for observations.</p> <p>B. Describe ways in which science differs from other ways of knowing and from other bodies of knowledge (e.g., experimentation, logical arguments, skepticism).</p> <p>C. Know that scientific knowledge is built on questions posed as testable hypotheses, which are tested until the results are accepted by peers.</p>	<p>I, I, II, 1</p> <p>I, I, II, 2</p> <p>I, I, II, 3</p>	
<p>_____</p> <p>_____</p>	<p>5</p>	<p style="text-align: center;">Scientific Thinking and Practice</p> <p>Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting and validating to think critically.</p> <p>III. Use mathematical ideas, tools and techniques to understand scientific knowledge.</p> <p>A. 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>B. Create models to describe phenomena.</p>	<p>I, I, III, 1</p> <p>I, I, III, 2</p>	<p style="text-align: center;">See Google Docs for resources</p>
<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>6</p>	<p style="text-align: center;">Science and Society</p> <p>Understand how scientific discoveries, inventions, practices and knowledge influence, and are influenced by, individuals and societies.</p> <p>I. Explain how scientific discoveries and inventions have changed individuals and societies.</p> <p>A. Analyze the interrelationship between science and technology (e.g., germ theory, vaccines).</p> <p>B. Describe how scientific information can help to explain environmental phenomena (e.g., floods, earthquakes, volcanoes, fire, extreme weather).</p> <p>C. Describe how technological revolutions have significantly influenced societies (e.g., energy production, warfare, space exploration).</p> <p>D. Critically analyze risks and benefits associated with technologies related to energy production.</p>	<p>III, I, I, 1</p> <p>III, I, I, 2</p> <p>III, I, I, 3</p> <p>III, I, I, 4</p>	<p style="text-align: center;">See Google Docs for resources</p>

8th Grade Science Curriculum

(1st 9 Weeks- 2nd 4.5 Weeks)

Date		Hobbs Science Standards 8 th Grade	NM Standards & Benchmarks	Resources
		Processing Skills will continue to be addressed.		Basic text is <u>Glencoe- Level Blue</u>
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
<p>_____</p> <p>_____</p> <p>_____</p>	7	<p style="text-align: center;">Physical Science- Properties of Matter</p> <p>Understand the structure and properties of matter, the characteristics of energy and the interactions between matter and energy.</p> <p>I. Know the forms and properties of matter and how matter interacts.</p> <p style="padding-left: 20px;">A. Know how to use density, boiling point, freezing point, conductivity and color to identify various substances.</p> <p style="padding-left: 20px;">B. Distinguish between metals and non-metals.</p> <p style="padding-left: 20px;">C. Understand the differences among elements, compounds and mixtures by:</p> <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 style="text-align: center;">II, I, I, 1</p> <p style="text-align: center;">II, I, I, 2</p> <p style="text-align: center;">II, I, I, 3</p>	<p style="text-align: center;">See Google Docs for resources</p> <p style="text-align: center;">Layered Solution Lab</p> <p style="text-align: center;">Density Lab</p>

8th Grade Science Curriculum

(2nd 9 Weeks- 3rd 4.5 Weeks)

Date		Hobbs Science Standards 8 th Grade	NM Standards & Benchmarks	Resources
		Processing Skills will continue to be addressed.		Basic text is <u>Glencoe- Level Blue</u>
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
<p>_____</p> <p>_____</p> <p>_____</p>	8	<p style="text-align: center;">Physical Science- Structure of Matter</p> <p>Understand the structure and properties of matter, the characteristics of energy and the interactions between matter and energy.</p> <p>II. Know the forms and properties of matter and how matter interacts.</p> <p>A. Identify the protons, neutrons and electrons within an atom and describe their locations (i.e., in the nucleus or in motion outside the nucleus).</p> <p>B. Explain that elements are organized in the periodic table according to their properties.</p> <p>C. Know that compounds are made of two or more elements, but not all sets of elements can combine to form compounds.</p>	<p>II, I, I, 4</p> <p>II, I, I, 5</p> <p>II, I, I, 6</p>	See Google Docs for resources

8th Grade Science Curriculum

(2nd 9 Weeks- 4th 4.5 Weeks)

Date		Hobbs Science Standards 8 th Grade	NM Standards & Benchmarks	Resources
		Processing Skills will continue to be addressed.		Basic text is <u>Glencoe- Level Blue</u>
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	9	<p style="text-align: center;">Physical Science- Changes in Matter</p> <p>Understand the structure and properties of matter, the characteristics of energy and the interactions between matter and energy.</p> <p>III. Know the forms and properties of matter and how matter interacts.</p> <p>A. Know that phase changes are physical changes that can be reversed (e.g., evaporation, condensation, melting).</p> <p>B. Describe various familiar physical and chemical changes that occur naturally (e.g., snow melting, photosynthesis, rusting, burning).</p> <p>C. Identify factors that influence the rate at which chemical reactions occur (e.g., temperature, concentration).</p> <p>D. Know that chemical reactions can absorb energy (endothermic reactions) or release energy (exothermic reactions).</p>	<p>II, I, I, 7</p> <p>II, I, I, 8</p> <p>II, I, I, 9</p> <p>II, I, I, 10</p>	See Google Docs for resources

8th Grade Science Curriculum

(3rd 9 Weeks- 5th 4.5 Weeks)

Date		Hobbs Science Standards 8 th Grade	NM Standards & Benchmarks	Resources
		Processing Skills will continue to be addressed.		Basic text is <u>Glencoe- Level Blue</u>
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
<p>_____</p> <p>_____</p> <p>_____</p>	10	<p style="text-align: center;">Life Science- Life</p> <p>Understand the properties, structures and processes of living things and the interdependence of living things and their environments.</p> <p>III. Understand the structure of organisms and the function of cells in living systems.</p> <p>A. Describe how cells use chemical energy obtained from food to conduct cellular functions (i.e., respiration).</p> <p>B. Explain that photosynthesis in green plants captures the energy from the sun and stores it chemically.</p> <p>C. Describe how chemical substances can influence cellular activity (e.g., pH).</p>	<p>II, II, III, 1</p> <p>II, II, III, 2</p> <p>II, II, III, 3</p>	See Google Docs for resources
<p>_____</p> <p>_____</p> <p>_____</p>	11	<p style="text-align: center;">Life Science- Heredity</p> <p>Understand the properties, structures and processes of living things and the interdependence of living things and their environments.</p> <p>II. Understand how traits are passed from one generation to the next and how species evolve.</p> <p>A. Understand that living organisms are made mostly of molecules consisting of a limited number of elements (e.g., carbon, hydrogen, nitrogen, oxygen).</p> <p>B. Identify DNA as the chemical compound involved in heredity in living organisms.</p> <p>C. Describe the widespread role of carbon in the chemistry of living systems.</p>	<p>II, II, II, 1</p> <p>II, II, II, 2</p> <p>II, II, II, 3</p>	See Google Docs for resources

	12	<p style="text-align: center;">Life Science- Ecosystems</p> <p>Understand the properties, structures and processes of living things and the interdependence of living things and their environments.</p> <p>I. Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.</p> <p>A. Describe how matter moves through ecosystems (e.g., water cycle, carbon cycle).</p> <p>B. Describe how energy flows through ecosystems (e.g., sunlight, green plants, food for animals).</p> <p>C. 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>		See Google Docs for resources
_____			II, II, I, 1	
_____			II, II, I, 2	
_____			II, II, I, 3	

8th Grade Science Curriculum

(3rd 9 Weeks- 6th 4.5 Weeks)

Date		Hobbs Science Standards 8 th Grade	NM Standards & Benchmarks	Resources Basic text is <u>Glencoe- Level Blue</u>
		Processing Skills will continue to be addressed.		
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	13	<p style="text-align: center;">Physical Science- Energy Transformation</p> <p>Understand the structure and properties of matter, the characteristics of energy and the interactions between matter and energy.</p> <p>I. Explain the physical processes involved in the transfer, change and conservation of energy.</p> <p>A. Know that energy exists in many forms and that when energy is transformed some energy is usually converted to heat.</p> <p>B. 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> <ul style="list-style-type: none"> • Transformation of gravitational potential energy of position into kinetic energy of motion by a falling object. <p>C. Distinguish between renewable and nonrenewable sources of energy.</p> <p>D. Know that electrical energy is the flow of electrons through electrical conduction that connect sources of electrical energy to points of use, including:</p> <ul style="list-style-type: none"> • Electrical current paths through parallel and series circuits. • Production of electricity by fossil-fueled and nuclear power plants, wind generators, geothermal plants and solar cells. • Use of electricity by appliances and equipment (e.g., calculators, hair dryers, light bulbs, motors). 	<p>II, I, II, 1</p> <p>II, I, II, 2</p> <p>II, I, II, 3</p> <p>II, I, II, 4</p>	See Google Docs for resources

	14	<p style="text-align: center;">Physical Science- Waves</p> <p>Understand the structure and properties of matter, the characteristics of energy and the interactions between matter and energy.</p> <p>II. Explain the physical processes involved in the transfer, change and conservation of energy.</p> <p>A. Understand how light and radio waves carry energy through a 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>B. 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. • Ripples made by objects dropped in water. 	<p>II, I, II, 5</p> <p>II, I, II, 6</p>	See Google Docs for resources
	15	<p style="text-align: center;">Physical Science- Forces</p> <p>Understand the structure and properties of matter, the characteristics of energy and the interactions between matter and energy.</p> <p>I. Describe and explain forces that produce motion in objects.</p> <p>A. Know that there are fundamental forces in nature (e.g., gravity, electromagnetic forces, nuclear forces).</p> <p>B. Know that a force has both magnitude and direction.</p> <p>C. Analyze the separate forces acting on an object at rest or in 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>D. Know that electric charge produces electrical fields and magnets produce magnetic fields.</p> <p>E. 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>F. Know that Earth has a magnetic field.</p>	<p>II, I, III, 1</p> <p>II, I, III, 2</p> <p>II, I, III, 3</p> <p>II, I, III, 4</p> <p>II, I, III, 5</p> <p>II, I, III, 6</p>	See Google Docs for resources

	16	<p align="center">Physical Science- Motion</p> <p>Understand the structure and properties of matter, the characteristics of energy and the interactions between matter and energy.</p> <p>II. Describe and explain forces that produce motion in objects.</p> <p>A. Know that an object's motion is always described relative to some other object or point (i.e., frame of reference).</p> <p>B. 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). • 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>II, I, III, 7</p> <p>II, I, III, 8</p>	<p>See Google Docs for resources</p>

8th Grade Science Curriculum

(4th 9 Weeks- 7th 4.5 Weeks)

Date		Hobbs Science Standards 8 th Grade	NM Standards & Benchmarks	Resources Basic text is <u>Glencoe- Level Blue</u>
		Processing Skills will continue to be addressed.		
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
<p>_____</p> <p>_____</p> <p>_____</p>	17	<p style="text-align: center;">Earth and Space Science</p> <p>Understand the structure of Earth, the solar system and the universe; the interconnections among them; and the processes and interactions of earth's systems.</p> <p>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>A. Understand how energy from the sun and other stars, in the form of light, travels long distances to reach Earth.</p> <p>B. 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>C. 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>II, III, I, 1</p> <p>II, III, I, 2</p> <p>II, III, I, 3</p>	See Google Docs for resources

8th Grade Science Curriculum

(4th 9 Weeks- 8th 4.5 Weeks)

Date		Hobbs Science Standards 8 th Grade	NM Standards & Benchmarks	Resources Basic text is <u>Glencoe- Level Blue</u>
		Processing Skills will continue to be addressed.		
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
<p>_____</p> <p>_____</p> <p>_____</p>	18	<p style="text-align: center;">Earth and Space Science</p> <p>Understand the structure of Earth, the solar system and the universe; the interconnections among them; and the processes and interactions of Earth's systems.</p> <p>I. Describe the structure of Earth and its atmosphere and explain how energy, matter and forces shape Earth's systems.</p> <p>A. Describe the role of pressure (and heat) in the rock cycle.</p> <p>B. 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>C. Understand the geologic conditions that have results in energy resources (e.g., oil, coal, natural gas) available in New Mexico.</p>	<p style="text-align: center;">II, III, II, 1 II, III, II, 2</p> <p style="text-align: center;">II, III, II, 3</p>	See Google Docs for resources
	19	Sex Ed		