6th Grade Science Curriculum

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

Date		Hobbs Science Standards 6th Grade EoC Standards for 8th Grade EoC Standards for 6th Grade	NM Standards & Benchmarks	Resources Basic text is Glencoe- Level Red
		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
	1	**Reading Standards for Literacy** I. Key Ideas and Details _____ A. Cite specific textual evidence to support analysis of science and technical texts. _____ B. Determine the central ideas or conclusion of a text; provide an accurate summary of the text distinct from prior knowledge or opinions. _____ C. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. II. Craft and Structure _____ 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. _____ 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. _____ C. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text. III. Integration of Knowledge and Ideas _____ 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).		**See Google Docs for resources**

_____ _____		B. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text. 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.		
_____ _____ _____	**2**	**Writing Standards for Literacy** I. Text Types and Purposes A. Write arguments focused on discipline-specific content 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. B. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. 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 the information or explanation presented. II. Production and Distribution of Writing A. Produce clear and coherent writing in which the development, organization,		**See Google Docs for resources**

_____ _____ _____ _____ _____ _____		and style are appropriate to task, purpose, and audience. 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. C. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently. III. Research to Build and Present Knowledge 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. 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. C. Draw evidence from informational texts to support analysis reflection and research. IV. Range of Writing 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.		
_____ _____ _____	**3**	**Scientific Thinking and Practice** Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting and validating to think critically. I. Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions and communicate findings. A. Construct appropriate graphs from data and develop qualitative and quantitative statements about the relationships between variables being investigated. B. Examine the reasonableness of data supporting a proposed scientific explanation. C. Justify predictions and conclusions based on data. 1. I can interpret and evaluate data. 2. I can make predictions and create hypotheses.	I, I, I, 1 I, I, I, 2 I, I, I, 3	**See Google Docs for resources**

_____	**4**	**Scientific Thinking and Practice** Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting and validating to think critically. II. Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge. A. Understand that scientific knowledge is continually reviewed, critiqued and revised as new data becomes available. B. Understand that scientific investigations use common processes that include the collection of relevant data and observations, accurate measurements, the identification and control of variables and logical reasoning to formulate hypotheses and explanations. C. Understand that not all investigations results in defensible, scientific explanations. 1. I can identify bias in a scientific investigation.	I, I, II, 1 I, I, II, 2 I, I, II, 3	**See Google Docs for resources**
_____ _____	**5**	**Scientific Thinking and Practice** Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting and validating to think critically. III. Use mathematical ideas, tools and techniques to understand scientific knowledge. A. Evaluate the usefulness and relevance of data to an investigation. B. Use probabilities, patterns and relationships to explain data and observations.	I, I, III, 1 I, I, III, 2	**See Google Docs for resources**
_____ _____	**6**	**Science and Society** Understand how scientific discoveries, inventions, practices and knowledge influence, and are influenced by, individuals and societies. I. Explain how scientific discoveries and inventions have changed individuals and societies. A. Examine the role of scientific knowledge in decisions (e.g., space exploration, what to eat, preventive medicine and medical treatment). B. Describe the technologies responsible for revolutionizing information processing and communications (e.g., computers, cellular phones, Internet).	III, I, I, 1 III, I, I, 2	**See Google Docs for resources**

6th Grade Science Curriculum

(1st 9 Weeks- 2nd 4.5 Weeks)

Date		Hobbs Science Standards 6th Grade	NM Standards & Benchmarks	Resources Basic text is Glencoe- Level Red
		Processing Skills will continue to be addressed.		
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
	7	**Physical Science- Matter** Understand the structure and properties of matter, the characteristics of energy and the interactions between matter and energy. I. Know the forms and properties of matter and how matter interacts. _____ A. *Identify the states of matter in terms of molecular motion (solid, liquid and gas*) _____ B. Understand that substances have characteristic properties and identify the properties of various substances (e.g., density, boiling point, solubility, chemical reactivity). _____ C. Use properties to identify substances (e.g., for minerals: the hardness, streak, color, reactivity to acid, cleavage, fracture). _____ D. Know that there are about 100 known elements that combine to produce compounds in living organisms and nonliving substances. _____ E. Know the differences between chemical and physical properties and how these properties can influence the interactions of matter. 1. I can identify the characteristics of various states of matter (solid, liquid, gas). 2. I can distinguish between the different properties of various substances.	II, I, I, 1 II, I, I, 2 II, I, I, 3 II, I, I, 4	**See Google Docs for resources**

6th Grade Science Curriculum

(2nd 9 Weeks- 3rd 4.5 Weeks)

Date		Hobbs Science Standards 6th Grade	NM Standards & Benchmarks	Resources Basic text is Glencoe- Level Red
		Processing Skills will continue to be addressed.		
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
	8	**Physical Science- Energy** Understand the structure and properties of matter, the characteristics of energy and the interactions between matter and energy. I. Explain the physical processes involved in the transfer, change and conservation of energy.		**See Google Docs for resources**
_____		A. Identify various types of energy (e.g. heat, light, mechanical, electrical, chemical, nuclear).	II, I, II, 1	
_____		B. Understand that heat energy can be transferred through conduction, radiation and convection.	II, I, II, 2	
_____		C. Know that there are many forms of energy transfer but that the total amount of energy is conserved (i.e., that energy is neither created nor destroyed).	II, I, II, 3	
_____		D. Understand that some energy travels as waves (e.g. seismic, light, sound), including: • The sun as source of energy for many processes on Earth *(water cycle, nitrogen cycle, carbon cycle).* • Different wavelengths of sunlight (e.g., visible, ultraviolet, infrared). • Vibrations of matter (e.g., sound, earthquakes). • Different speeds through different materials.	II, I, II, 4	
		1. I can compare and contrast forms of energy transfer.		

6th Grade Science Curriculum

(2nd 9 Weeks- 4th 4.5 Weeks)

Date		Hobbs Science Standards 6th Grade	NM Standards & Benchmarks	Resources Basic text is Glencoe- Level Red
		Processing Skills will continue to be addressed.		
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
	9	**Physical Science- Motion** Understand the structure and properties of matter, the characteristics of energy and the interactions between matter and energy. I. Describe and explain forces that produce motion in objects *(Newton's Laws)*. A. Know that every object exerts gravitation force on every other object dependent on the masses and distance of separation (e.g., motions of celestial objects, tides). B. Know that gravitation force is hard to detect unless one of the objects (e.g., Earth) has a lot of mass. 1. I can understand the relationship between mass and distance.	II, I, III, 1 II, I, III, 2	**See Google Docs for resources**

6th Grade Science Curriculum

(3rd 9 Weeks- 5th 4.5 Weeks)

Date		Hobbs Science Standards 6th Grade	NM Standards & Benchmarks	Resources Basic text is Glencoe- Level Red
		Processing Skills will continue to be addressed.		
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
	10	**Earth and Space Science- Structure** Understand the structure of Earth, the solar system and the universe; the interconnections among them; and the processes and interactions of Earth's systems. II. Describe the structure of Earth and its atmosphere and explain how energy, matter and forces shape Earth's systems.		**See Google Docs for resources**
_____		A. Know that Earth is composed of layers that include a crust, mantle and core *(inner and outer)*.	II, III, II, 1	
_____		B. Know that Earth's crust is divided into plates that move very slowly, in response to movements in the mantle. *Discuss evidence for long-term movement (plate tectonic theory, continental drift theory, Pangaea).*	II, III, II, 2	
_____		C. Know that sedimentary, igneous and metamorphic rocks contain evidence of the materials, temperatures and forces that created them.	II, III, II, 3	
_____		D. Know that landforms are created and change through a combination of constructive and destructive forces, including: • Weathering of rock and soil, transportation, deposition of sediment and tectonic activity • Similarities and differences between current and past processes on Earth's surface (e.g., erosion, plate tectonics, changes in atmospheric composition). • Impact of volcanoes and faults on New Mexico geology.	II, III, II, 7	
_____		E. Understand the history of Earth and how information about it comes	II, III, II, 8	

		from layers of sedimentary rock, including: • Sediments and fossils as a record of a very slowly changing world. • Evidence of asteroid impact, volcanic and glacial activity. 1. I can identify and differentiate between the layers of the Earth that include a crust, mantle, and core. 2. I can understand that Earth's crust is divided into plates that move very slowly, in response to movements in the mantle. 3. I can understand that sedimentary, igneous, and metamorphic rocks contain evidence of the materials, temperatures, and forces that created them. 4. I can explain that landforms are created through a combination of constructive and destructive forces.		

6th Grade Science Curriculum

(3rd 9 Weeks- 6th 4.5 Weeks)

Date		Hobbs Science Standards 6th Grade	NM Standards & Benchmarks	Resources Basic text is Glencoe- Level Red
		Processing Skills will continue to be addressed.		
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
	11	**Earth and Space Science- Weather and Climate** Understand the structure of Earth, the solar system and the universe; the interconnections among them; and the processes and interactions of Earth's systems. II. Describe the structure of Earth and its atmosphere and explain how energy, matter and forces shape Earth's systems. A. Describe the composition (i.e., nitrogen, oxygen, water vapor) and strata of Earth's atmosphere and differences between the atmosphere of Earth and those of other planets. B. Understand factors that create and influence weather and climate, including: • Heat, air movement, pressure, humidity, oceans. • How clouds form by condensation of water vapor. • How weather patterns are related to atmospheric pressure. • Global patterns of atmospheric movement (e.g., El Nino). • Factors that can impact Earth's climate (e.g., volcanic eruptions, impacts of asteroids, glaciers). C. Understand how to use weather maps and data (e.g., barometric pressure, wind speed, humidity) to *measure and* predict weather. 1. I can identify the layers of the atmosphere. 2. I can identify factors that influence weather changes.	_____ II, III, II, 4 _____ II, III, II, 5 _____ II, III, II, 6	**See Google Docs for resources**

6th Grade Science Curriculum

(4th 9 Weeks- 7th 4.5 Weeks)

Date		Hobbs Science Standards 6th Grade	NM Standards & Benchmarks	Resources Basic text is Glencoe- Level Red
		Processing Skills will continue to be addressed.		
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
	12	**Earth and Space Science- Astronomy** Understand the structure of Earth, the solar system and the universe; the interconnections among them; and the processes and interactions of Earth's systems. 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. A. Describe the objects in the universe, including: • Billions of galaxies, each containing billions of stars. • Different sizes, temperatures and colors of stars in the Milky Way galaxy. • *Life cycle of stars* B. Locate the solar system in the Milky Way galaxy. C. Identify the components of the solar system and describe their defining characteristics and motions in space, including: • Sun as a medium-sized star. • Sun's composition (i.e., hydrogen, helium) and energy production. • Nine planets, their moons, asteroids. D. Know that the regular and predictable motions of the Earth-moon-sun system explain phenomena on Earth, including:	II, III, I, 1 II, III, I, 2 II, III, I, 3 II, III, I, 4	**See Google Docs for resources**

		• Earth's motion in relation to a year, a day, the seasons, the phases of the moon, eclipses, tides and shadows. • Moon's orbit around Earth once in 28 days in relation to the phases of the moon. 1. I can differentiate between objects in the universe (e.g., a planet, a star, a galaxy). 2. I can explain the life cycle of a star. 3. I can identify the components of the solar system. 4. I can explain Earth's motion in relation to a year, a day, the seasons, the phases of the moon, eclipses, tides and shadows. 5. I can explain how the moon's orbit around Earth once in 28 days relates to the phases of the moon.		
_____ _____ _____	**13**	**Life Science- Ecosystems** Understand the properties, structures and processes of living things and the interdependence of living things and their environments. I. Explain the diverse structures and functions of living things and the complex relationships between living things and their environments. A. Understand how organisms interact with their physical environments to meet their needs (i.e., food, water, air) and how the water cycle is essential to most living systems. B. Describe how weather and geologic events (e.g., volcanoes, earthquakes) affect the function of living systems. C. Describe how organisms have adapted to various environmental conditions. 1. I can describe how organisms have adapted to various environmental conditions.	II, II, I, 1 II, II, I, 2 II, II, I, 3	**See Google Docs for resources**

6th Grade Science Curriculum

(4th 9 Weeks- 8th 4.5 Weeks)

Date		Hobbs Science Standards 6th Grade	NM Standards & Benchmarks	Resources Basic text is Glencoe- Level Red
		Processing Skills will continue to be addressed.		
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
	14	**Life Science- Evolution** Understand the properties, structures and processes of living things and the interdependence of living things and their environments. II. Understand how traits are passed from one generation to the next and how species evolve. A. Understand that fossil record provides data for how living organisms have evolved. *B. Geologic time scale* C. Describe how species have responded to changing environmental conditions over time (e.g., extinction, adaptation). 1. I can connect the fossil record to the changing of environmental conditions over time (e.g., adaptation and extinction). 2. I can summarize the geologic time scale.	II, II, II, 1 II, II, II, 2	**See Google Docs for resources**
	15	**Life Science- Biochemistry** Understand the properties, structures and processes of living things and the interdependence of living things and their environments. III. Understand the structure of organisms and the function of cells in living systems. A. Explain how fossil fuels were formed from animal and plant cells. B. Describe the differences between substances that were produced by living organisms (e.g., fossil fuels) and substances that result from	II, II, III, 1 II, II, III, 2	**See Google Docs for resources**

		nonliving processes (e.g., igneous rocks). 1. I know that some substances are produced by living organisms (e.g., fossil fuels).		
	16	**Sex Ed**		Choosing the Best