Pre-AP Biology Curriculum (SCI 313/ 314)

EoC Standards
NMSBA Standards
EoC and NMSBA

Date		Hobbs Science Standards 10th- 12th Grade	NM Standards & Benchmarks	Resources Basic text is Glencoe: Biology- Living Systems
		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, attending to the precise details of explanations or descriptions. B. Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. C. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. 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 9-10 texts and topics. B. Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).		

_____ _____ _____ _____		C. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address. III. Integration of Knowledge and Ideas A. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words. B. Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem. C. Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts. IV. Range of Reading and Level of Text Complexity A. By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.		
_____ _____	**2**	**Writing Standards for Literacy** I. Text Types and Purposes A. Write arguments focused on discipline-specific content. 1. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons and evidence. 2. Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. 3. Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reason, between reasons and evidence, and between claim(s) and counterclaims. 4. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. 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 and organize ideas, concepts and information to make important connections and distinctions: include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. 2. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. 3. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts. 4. Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers. 5. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. 6. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). II. Production and Distribution of Writing		
_____		A. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.		
_____		B. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.		
_____		C. Use technology, including the Internet, to produce, publish and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. III. Research to Build and Present Knowledge		
_____		A. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.		
_____		B. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, 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** 1. Describe the essential components of an investigation, including appropriate methodologies, proper equipment, and safety precautions. 2. Design and conduct scientific investigations that include: • Testable hypotheses • Controls and variables • Methods to collect, analyze, and interpret data • Results that address hypotheses being investigated • Predictions based on results • Re-evaluation of hypotheses and additional experimentation as necessary • Error analysis. 3. Use appropriate technologies to collect, analyze, and communicate scientific data (e.g., computers, calculators, balances, microscopes). 4. Convey results of investigations using scientific concepts, methodologies, and expressions, including: • Scientific language and symbols • Diagrams, charts, and other data displays(e.g., types of graphs, tables) • Mathematical expressions and processes (e.g., mean, median, slope, proportionality) • Clear, logical, and concise communication • Reasoned arguments. 5. Understand how scientific theories are used to explain and predict natural phenomena (e.g., plate tectonics, ocean currents, structure of atom).	I, I, I, 1 I, I, I, 2 I, I, I, 3 I, I, I, 4 I, I, I, 5	Characteristics of Life Lab Measurement Lab Using a Microscope Lab Scientific Method-Optional Variable Lab Insecticide Lab Worm Lab Blood Flow Lab Genetics Lab
_____	**4**	1. Understand how scientific processes produce valid, reliable results, including: • Consistency of explanations with data and observations	I, I, II, 1	

		• Openness to peer review • Full disclosure and examination of assumptions • Testability of hypotheses • Repeatability of experiments and reproducibility of results.		
_____		2. Use scientific reasoning and valid logic to recognize: • Faulty logic • Cause and effect • The difference between observation and unsubstantiated inferences and conclusion • Potential bias	I, I, II, 2	
_____		3. Understand how new data and observations can result in new scientific knowledge.	I, I, II, 3	
_____		4. Critically analyze an accepted explanation by reviewing current scientific knowledge.	I, I, II, 4	
_____		5. Examine investigations of current interest in science (e.g., superconductivity, molecular machines, age of the universe).	I, I, II, 5	
_____		6. Examine the scientific processes and logic used in investigations of past events (e.g., using data from crime scenes, fossils), investigations that can be planned in advance but are only done once (e.g., expensive or time-consuming experiments such as medical clinical trials), and investigations of phenomena that can be repeated easily and frequently.	I, I, II, 6	
_____	**5**	1. Create multiple displays of data to analyze and explain the relationships in scientific investigations.	I, I, III, 1	
_____		2. Use mathematical models to describe, explain, and predict natural phenomena.	I, I, III, 2	
_____		3. Use technologies to quantify relationships in scientific hypotheses (e.g., calculators, computer spreadsheets and databases, graphing software, simulations, modeling).	I, I, III, 3	
_____		*4. Identify and apply measurement techniques and consider possible effects of*	I, I, III, 4	

		measurement errors.		
_____		5. *Use mathematics to express and establish scientific relationships (e.g., scientific notation, vectors, dimensional analysis).*	I, I, III, 5	
	6	**Science and Technology**		
_____		1. Know how science enables technology but also constrains it, and recognize the difference between real technology and science fiction (e.g., rockets vs. antigravity machines; nuclear reactors vs. perpetual-motion machines; medical X-rays vs. Star-Trek tricorders).	III, I, I, 1	
_____		2. Understand how advances in technology enable further advances in science (e.g., microscopes and cellular structure; telescopes and understanding of the universe).	III, I, I, 2	
_____		3. Evaluate the influences of technology on society (e.g., communications petroleum, transportation, nuclear energy, computers, medicine, genetic engineering) including both desired and undesired effects, and including some historical examples (e.g., the wheel, the plow, the printing press, the lightning rod).	III, I, I, 3	
_____		4. Understand the scientific foundations of common technologies (e.g., kitchen appliances, radio, television, aircraft, rockets, computers, medical X-rays, selective breeding, fertilizers and pesticides, agricultural equipment).	III, I, I, 4	
_____		5. Analyze the impact of digital technologies on the availability, creation, and dissemination of information.	III, I, I, 6	
_____		6. *Examine the role that New Mexico research facilities play in current space exploration (e.g., Very Large Array, Goddard Space Center*).	III, I, I, 7	
_____		7. Describe uses of radioactivity (e.g. nuclear power, nuclear medicine, radiometric dating).	III, I, I, 8	
_____		8. Understand how knowledge about the universe comes from evidence collected from advanced technology (e.g., telescopes, satellites, images, computer models).	II, III, I, 3	

_____		9. *Describe the key observations that led to the acceptance of the Big Bang theory and that the age of the universe is over 10 billion years.*	II, III, I, 4	
	7	**Science and Society**		
_____		1. Describe how human activities have affected ozone in the upper atmosphere and how it affects health and the environment.	III, I, I, 7	
_____		2. Describe how scientific knowledge helps decision makers with local, national, and global challenges (e.g., Waste Isolation Pilot Project [WIPP], mining, drought, population growth, alternative energy, climate change).	III, I, I, 9	
_____		3. Describe major historical changes in scientific perspectives (e.g., atomic theory, germs, cosmology, relativity, plate tectonics, evolution) and the experimental observations that triggered them.	III, I, I, 10	
_____		4. Know that societal factors can promote or constrain scientific discovery (e.g., government funding, laws and regulations about human cloning and genetically modified organisms, gender and ethnic bias, AIDS research, alternative-energy research).	III, I, I, 11	
_____		5. Explain how societies can change ecosystems and how these changes can be reversible or irreversible.	III,I,I, 12	
		6. Describe how environmental, economic, and political interests impact resource management and use in New Mexico.	III, I, I, 13	
	8	**Science and Individuals**		
_____		1. *Describe New Mexico's role in nuclear science (e.g., Manhattan Project, WIPP, national laboratories*).	III, I, I, 14	
_____		2. Identify how science has produced knowledge that is relevant to individual health and material prosperity.	III, I, I, 15	
_____		3. Understand that reasonable people may disagree about some issues that are of interest to both science and religion (e.g., the origin of life on Earth, the cause	III, I, I, 16	

		of the Big Bang, the future of Earth).		
_____		4. Identify important questions that science cannot answer (e.g., questions that are beyond today's science, decisions that science can only help to make, questions that are inherently outside the realm of science).	III, I, I, 17	
_____		5. Understand that scientists have characteristics in common with other individuals (e.g., employment and career needs, curiosity, desire to perform public service, greed, preconceptions and biases, temptation to be unethical, core values, including honesty and openness).	III, I, I, 18	
_____		6. Know that science plays a role in many different kinds of careers and activities (e.g., public service, volunteers, public office holders, researchers, teachers, doctors, nurses, technicians, farmers, ranchers).	III, I, I, 19	

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		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
_____ _____ _____ _____ _____	**9**	**Introduction and Safety** A. Behavior/safety in the lab (contracts) • Understand safety issues in labs and be able to identify safety equipment B. Characteristics of living things • Summarize the characteristics of living things • Relate the characteristics of life to specific examples in organisms C. Scientific method (lab reports) • Explain and contrast what scientists mean by the terms: hypothesis, theory, principle, law, model, and paradigm • Use these terms in concepts in designing experiments D. Identification, use, and care of equipment • Determine and use the appropriate type of device to measure objects in a given problem or situation E. SI-System of measurement • Recognize and use SI units in all cases of measurement, observation, and data collection	I,I,I,1-5 I,I,II,1-6 I,I,III,1-4 II,I,I, 1-3;5 III,I,I,18-19	**Labs:** • Characteristics of Life • Measurement Lab • **Using a Microscope Lab** • **Scientific Method *** "Optional variable" ○ Insecticide Lab ○ Worm Lab ○ Blood Flow ○ Genetics
_____	**10**	**Molecules and Cells** **Matter and Energy** 1. Model the structure of an atom in both words and diagrams.	II, I, I, 1 II, I, I, 2	Building Atoms Mini Lab (Fruitloops Lab) Constructing Monomers

_____		2. Distinguish between potential energy and kinetic energy using an example.		
_____ _____ _____	**11**	**Chemistry of Life** 1. Water • Describe the polar structure of water molecules and the special properties which result from that structure. 2. Inorganic compounds • Differentiate inorganic molecules from organic molecules based on their components, sizes, sources, and properties. 3. Organic compounds • Carbohydrates • Describe the structure of a carbohydrate, its monomers, and uses in living organisms. • Lipids • Describe the structure of a lipid, its monomers, and uses in living organisms. • Proteins, enzyme, catalyst • Describe the structure of a protein, its monomers, and uses in living organisms. • Explain the overall function of catalysts. • Describe the means by which an enzyme carries out a cellular reaction. • Nucleic acids • Describe the structure of a nucleic acid, its monomers, and uses in living organisms.	II, I, I, 5 II, II, III, 1 II, II, III, 2 II, II, III, 3 II, II, III, 4 II, II, III, 5 II, II, III, 7	**APEX** Core Biology Sem. 1- Unit 2 Honors Biology Sem. 1- Unit 2 How Much Water is in a Carrot? Lab Carbohydrate Lab Testing foods for presence of different biological molecules Mac Attack Activity

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_____	**12**	**Cells** **Cell Theory** 1. Describe the discovery of cells and the development of the cell theory.	II, II, II, 8 II, II, II, 10	
_____ _____	**13**	**Prokaryotic/ Eukaryotic Cells** 1. Structure • Differentiate the structure of prokaryotic and eukaryotic cells. • Differentiate plant and animal cells in terms of their structures and appearance. 2. Function • Describe the localization of cellular functions within an eukaryotic cell/ development of organelles.	II, II, III, 1 II, II, III, 2	Basic Unit of Life Microscope Lab ID Cell Game Observation of Cells
_____ _____	**14**	**Membranes** 1. Structure • Describe the structure of a plasma membrane using models/drawings. Including naming and identifying all structures that make up the plasma membrane. 2. Function	II, II, III, 4	**APEX** Core Biology Sem. 1- Unit 3 Honors Biology Sem. 1- Unit 3 Bubble Activity Osmosis Lab

		• Describe and define various ways by which substances enter and leave cells this includes the processes listed below: ▪ Diffusion ▪ Osmosis ▪ Active (including how the plasma membrane moves ions) ▪ Passive transport ▪ Facilitated diffusion 3. Cellular Communication • How cells communicate from cell to cell by secretion of a variety of chemicals. (e.g. hormones)		Egg Osmosis Gummy Bears **AP Bio Lab 1- Part A**
_____ _____	**15**	**Sub-cellular Organization** 1. Structure • Differentiate prokaryotic and eukaryotic cells in terms of the presence of organelles. • Describe the appearance and typical locations of cellular organelles. 2. Function • Describe the function of each of the organelles of eukaryotic cells. • Explain how organelles of eukaryotic cells interact. • Discuss how cell organelles contribute to the efficiency of cellular functions.	II, II, III, 1 II, II, III, 2 II, II, III, 3	**APEX** Core Biology Sem. 1- Unit 3 Honors Biology Sem. 1- Unit 3 Cell/ Organelle Drawings (with specifics on functions)
_____ _____	**16**	**Cell Growth and Reproduction** 1. Mitosis and cell cycle • Sequence the events of the cell cycle using models. • Analyze the ways in which events of the cell cycle are controlled. 2. Reproduction • Differentiate asexual and sexual reproduction, naming the organisms which carry out each process.	II, II, III, 5 II, II, III, 7	**APEX** Core Biology Sem. 2- Unit 1 Honors Biology Sem. 2- Unit 1 Cell Size Lab Surface Volume to Cell Size Lab Mitosis Model Activity Mitosis Slides Lab

_____ _____ _____	**17**	**Cellular Energetics** 1. Cellular respiration and fermentation • Describe the production of ATP in both aerobic and anaerobic conditions. 2. Photosynthesis • Briefly relate the events of the light reactions and Calvin cycle in the production of glucose.	II, II, I, 7	**APEX** Core Biology Sem. 1- Unit 4 Honors Biology Sem. 1- Unit 4 Yeast with Grapes Cell Respiration Activity Yeast & Molasses Lab Cyber Ed ATP Mini-Lesson
_____ _____	**18**	**Heredity and Evolution** **Meiosis and Gametogenesis** 1. Sequence the events of meiosis analyzing how meiosis maintains a constant number of chromosomes. 2. Infer how meiosis leads to variation in a species. **3. Safer Choices** a. Human Reproductive Structure Review b. Safer Choices Curriculum (adopted by the school board 2012)	II, II, II, 1- 7 II, II, III, 6	**APEX** Core Biology Sem. 2- Units 1 & 2 Honors Biology Sem. 2- Units 1 & 2 Mitosis v Meiosis Lab Meiosis Drawings (Oogenesis & Spermatogenesis) Human Reproduction Unit Video-"Miracle of Life"

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_____ _____ _____ _____	**19**	**Heredity and Evolution** **Molecular Genetics** 1. Structure of nucleic acids • Analyze the structure of DNA/RNA using models/drawings. 2. Roles of nucleic acids • Compare and contrast functions of DNA/RNA. • Information –preserving replication of DNA. 3. Synthesis of proteins • Relate the concept of the gene to the sequences of nucleotides in DNA. 4. Genetic changes • Alteration of genes by inserting, deleting, or substituting parts of DNA.	II, II, II, 1- 7 II, II, III, 6	**APEX** Core Biology Sem. 2- Units 1 & 2 Honors Biology Sem. 2- Units 1 & 2 DNA Models DNA Replication Lab Protein Synthesis Activity DNA Isolation Lab Cyber Ed "DNA Structure" Cyber Ed "DNA to Proteins" Who Ate the Cheese Activity CAT Lab Reading DNA Strands
_____	**20**	**Heredity** 1. Mendel's Laws • Discuss Mendel's experiments.	II, II, II, 2 II, II, II, 3 II, II, II, 4	**APEX** Core Biology Sem. 2- Unit 1 Honors Biology

_____ _____ _____		• Use of appropriate vocabulary to describe inheritable traits (i.e., genotype, phenotype). • Describe dominance, segregation, and independent assortment. 2. Probability of genetics • Relate probability to genetics. 3. Monohybrids and Dihybrids • Perform complete dominance, incomplete dominance, codominance, and sex linked crosses. • Interpret testcrosses. • Solve genetics problems using a Punnett square. 4. Patterns of inheritance • Compare simple dominance patterns. • Explain how human traits are inherited. • Know how genetic variability results from the recombination and mutation of genes. Including: ○ Sorting and recombination of genes in sexual reproduction result in a change in DNA that is passed on to offspring.		Sem. 2- Unit 1 Bead & Crosses Mini- Lab Punnett Square Activity Monohybrid & Dihyrid Crosses Reebop Lab

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_____ _____ _____	**21**	**Heredity and Evolution** **Heredity** 1. Human heredity • Explain how human traits are inherited. • Distinguish between sex chromosomes and autosomes.(i.e., human body 23 pairs of chromosomes and 1 pair determines sex). • Discuss the influence of the environment on gene expression. (i.e., radiation or chemical substances). • Describe techniques that permit diagnosis of a genetic disorder in the unborn.(Karyotyping) • Understand and Interpret pedigree charts 2. Mutations • Compare the effects of different kinds of mutations on somatic cells and gametes in organisms. 3. Application/ prediction/ problems • Give examples of application and benefits of genetic engineering. • Discuss future implication of the Human Genome Project.	II, II, II, 1- 7 II, II, III, 6	**APEX** Core Biology Sem. 2- Unit 1 Honors Biology Sem. 2- Unit 1 Pipe Cleaner Babies Dropping Your Genes Lab

	22	**Ecology**		**APEX**
			II, II, I, 1- 6	Core Biology Sem. 2- Unit 3 Honors Biology Sem. 2- Unit 3
_____		1. Principles • Define energy, potential energy and kinetic energy. • Define the first and second laws of thermodynamics. • Discuss the process of photosynthesis. • Discuss the process of respiration & how it produces energy through the manufacture of ATP, plus the cyclical nature of the process. • Describe how energy flows from the sun through plants to herbivores to carnivores and decomposers.		Man's Impact to the Environment Research
_____		2. Populations • Define and give examples to illustrate the concept of a population.		Identifying Our Biome Thermal Pollution Dandelion and Plantain Populations
_____		3. Communities • Define and give examples to illustrate the concept of a community.		Field Study of a Terrestrial Community
_____		4. Ecosystem • Define and give examples to illustrate the concept of ecosystem.(i.e., describe how organisms cooperate and compete in an ecosystem). • Describe food webs, food chains, and *relate examples of trophic levels, producers, consumers, decomposers and their importance in cycling nutrients and gases through the entire system*. • Identify and describe the water cycles, carbon cycle, and nitrogen cycle. • Distinguish between biotic and abiotic factors.		Life in a Square Meter Community
_____		5. Biomes • Define biomes. • Give examples of specific biomes.		
		6. Man's Impact of the Environment • Identify and briefly define problems due to man's activities. • Research efforts to mitigate and remediate environmental problems. • Societal changes to ecosystems		

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_____ _____ _____ _____	**23**	**Organisms and Populations** **Biodiversity and Biological Evolution** 1. Use biological evidence to sort organisms and understand how they are related. • Similarity inferred from molecular structure (DNA) closing matching classification base on anatomical similarities. • Relate taxonomy as proof for biological evolution. • Describe the evidence for the first appearance of life on earth as one-celled organisms, over 3.5 billion years ago, and for the later appearance of a diversity of multicellular organisms over millions of years. • Understand and critically analyze the data, observations, and logic supporting the conclusion that species today evolved from earlier, distinctly different species, originating from the ancestral one-celled organisms. 2. Understand that evolution is a consequence of many factors, including the ability of organisms to reproduce, genetic variability, the effect of limited resources, and natural selection. 3. Explain how natural selection favors individuals who are better able to survive reproduce, and leave offspring. 4. Analyze how evolution by natural selection and other mechanisms explains many phenomena including the fossil record of ancient life forms and	II, II, I, 2- 3 II, II, I, 7- 9 II, II, II, 10- 13 II, II, III, 5- 6	**APEX** Core Biology Sem. 2- Unit 3 Honors Biology Sem. 2- Units 3 & 4 Classification Activity Sheets Making a Taxonomic Key Project Alien Taxonomy Natural Selection with Peanuts Activity Survival of the Fittest Lab Human Hand Adaptation Lab Moth Lab Blubber Lab Predator/ Prey

		similarities (both physical and molecular) among different species. 5. Adaptations and Speciation • Identify the mechanisms which cause variations among a species, and how this potentially leads to new species. • Summarize the effects of the different types of natural selection on gene pools		

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_____ _____ _____ _____	**24**	**Plants** 1. Types • Determine the adaptations to conditions on land found in plants. • Compare and contrast characteristics of nonvascular and vascular plants. • Differentiate between gymnosperms and angiosperms. 2. Reproduction, growth, and development • Compare the life cycles of plants (alternation of generations). • Describe different patterns of growth in plants. 3. Structure, physiological, and behavioral adaptations • Identify the functions of roots, stems, leaves and flowers. • Compare and contrast structures of monocots and dicots. • Evaluate why seed plants have become the dominant plants on Earth. 4. Importance of plants • Compare the harmful and beneficial aspects of plants. 5. Response to the environment • Identify the role of plants in the environment.	II, II, I, 2- 3 II, II, I, 7- 9 II, II, II, 10- 13 II, II, III, 5- 6	**APEX** Core Biology Sem. 2- Unit 4 Honors Biology Sem. 2- Unit 4 Monocot v Diocot Lab Seed Germination & Detergent Growing Flowers Flowers for Freddy
_____	**25**	**Organisms and Populations** **Fungi** 1. Types	II, II, I, 2- 3 II, II, I, 7- 9 II, II, II, 10- 13 II, II, III, 5- 6	Bread Mold Lab

		• Compare and contrast the major characteristics of fungi. 2. Reproduction, growth, and development • Discuss the various methods of reproduction, growth and development. 3. Structure, physiological, and behavior adaptations • Infer how the structure of fungi is related to its function. 4. Importance of fungi • Compare the harmful and beneficial aspects of fungus. 5. Response to the environment • Identify the role of fungi in the environment.		

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_____ _____ _____ _____ _____	**26**	**Viruses** 1. Types of viruses • Categorize the different kinds of viruses. 2. Reproduction, growth, and development • Compare and contrast the different reproductive cycles of viruses. 3. Structure, physiological, and behavior adaptations • Infer how the structure of a virus is related to its function. 4. Importance of viruses • Compare the harmful and beneficial aspects of viruses. 5. Response to the environment • Describe different defenses against viral infection.	II, II, I, 2- 3 II, II, I, 7- 9 II, II, II, 10- 13 II, II, III, 5- 6	**APEX** Core Biology Sem. 2- Unit 2 Honors Biology Sem. 2- Unit 2 Virus Models Video "Understanding Viruses" Video "Outbreak" Video "The Flu?"
_____ _____	**27**	**Organisms and Populations** **Archaebacteria/ Eubacteria** 1. Types • Describe the basic characteristics of bacteria. 2. Reproduction, growth, and development	II, II, I, 2- 3 II, II, I, 7- 9 II, II, II, 10- 13 II, II, III, 5- 6	**APEX** Core Biology Sem. 2- Unit 2 Honors Biology Sem. 2- Unit 2 Bacterial Gram Staining Lab

_____ _____ _____		• Compare the various means of nutrition found among bacteria. • Describe growth and reproduction. 3. Structure, physiological, and behavior adaptations • Infer how the structure of bacteria is related to its function. 4. Importance of bacteria • Compare the harmful and beneficial aspects of bacteria. 5. Response to the environment • Identify the role of bacteria in the environment.		Antibiotic Activity Video "Understanding Bacteria"
_____ _____ _____ _____ _____	**28**	**Protista** 1. Types • Compare and contrast the major characteristics of protists. ▪ Alga ▪ Protozoa ▪ Fungus-like 2. Reproduction, growth, and development • Discuss the various methods of reproduction, growth and development. 3. Structure, physiological, and behavior adaptations • Infer how the structure of protists is related to its function. 4. Importance of protists • Compare the harmful and beneficial aspects of protists. 5. Response to the environment • Identify the role of protists in the environment.	II, II, I, 2- 3 II, II, I, 7- 9 II, II, II, 10- 13 II, II, III, 5- 6	Pond Water Lab
_____	**29**	**Animals-Invertebrates** 1. Types • Recognize the main characteristics separating animals into their	II, II, I, 2- 3 II, II, I, 7- 9 II, II, II, 10- 13 II, II, III, 5- 6	Video "The Blue Planet" Video "Parasitism" Video "Segmented

		various phyla. ▪ Invertebrates		Worms” Hydra Behavior Activity
_____		2. Reproduction, growth, and development • Compare the various forms of reproduction in animals. • Compare patterns of growth and development.		 Planarian Behavior Lab
_____		3. Structure, physiological, and behavior adaptations • Compare and contrast body system structure and function in animals. • Discuss behavior patterns and various adaptations as seen in animals.		Planarian Regeneration Lab
_____		4. Importance of animals • Compare harmful and beneficial aspects of animals.		
_____		5. Response to the environment • Identify the role of animals in the environment.		

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Date		Hobbs Science Standards 10th- 12th Grade	NM Standards & Benchmarks	Resources Basic text is Glencoe: Biology- Living Systems
		Students will be able to:	Strand, Standards, Benchmarks, & Performance Standards	Supplemental books, labs, videos, projects, digital curriculum
_____ _____ _____ _____ _____	**30**	**Organisms and Populations** **Animals-Vertebrates** 1. Types • Recognize the main characteristics separating animals into their various phyla. ▪ Vertebrates 2. Reproduction, growth, and development • Compare the various forms of reproduction in animals. • Compare patterns of growth and development. 3. Structure, physiological, and behavior adaptations • Compare and contrast body system structure and function in animals. • Discuss behavior patterns and various adaptations as seen in animals. 4. Importance of animals • Compare harmful and beneficial aspects of animals. 5. Response to the environment • Identify the role of animals in the environment.	II, II, I, 2- 3 II, II, I, 7- 9 II, II, II, 10- 13 II, II, III, 5- 6	**APEX** Core Biology Sem. 2- Unit 5 Honors Biology Sem. 2- Unit 5 Video "Life on Earth Series" Termite Behavior Lab Pill Bug Lab Invertebrate Dissections Squid Crayfish Starfish Vertebrate Dissections Shark Nereis Pig