Biology Curriculum (SCI 311/ 312)

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., structure of a cell, 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. Review current scientific knowledge.	I, I, II, 4	
_____		5. Examine investigations of current interest in science (e.g., global warming, GMOs, trans fats,).	I, I, II, 5	
_____		6. Examine the scientific processes and logic used in investigations of past and present events (e.g., using data from crime scenes, fossils), and understand some experiments can only be conducted once.	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 technology to gather data for support of scientific processes (e.g., calculators, graphing software, simulations, modeling).	I, I, III, 3	
_____		*4. Identify and apply measurement techniques and consider possible effects of measurement errors.*	I, I, III, 4	

_____		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.	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., 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.		
_____		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, 6	
_____		7. Describe uses of radioactivity (e.g. nuclear power, nuclear medicine, radiometric dating).	III, I, I, 7	
_____		8. Understand how knowledge about the universe comes from evidence collected from advanced technology (e.g., telescopes, satellites, images, computer models).	III, I, I, 8	
_____		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, 3	

_____			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, and 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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_____ _____ _____ _____ _____	**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 • Identify the properties of water. 2. Inorganic compounds • Compare and contrast inorganic and organic molecules. 3. Organic compounds • Identify the four major biomolecules (organic molecules) of organisms. Describe the structure of each biomolecule, its monomer, and use in organisms. 1. Carbohydrates 2. Lipids 3. Proteins • Know proteins act as a catalyst. • Explain the overall function of catalysts. • Describe the means by which an enzyme carries out a cellular reaction. 4. Nucleic acids	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. 2. Know the components of the cell theory.	II, II, II, 8 II, II, II, 10	
_____ _____	**13**	**Prokaryotic/ Eukaryotic Cells** 1. Structure • Compare and contrast the structure of prokaryotic and eukaryotic cells. • Compare and contrast the plant and animal cells in terms of their structures and appearance. 2. Function • Identify the organelles found in a eukaryotic cell. • Describe the function of organelles found in a eukaryotic cell.	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.	II, II, III, 4	**APEX** Core Biology Sem. 1- Unit 3 Honors Biology Sem. 1- Unit 3 Bubble Activity

		2. Function • Describe, define, and give examples of 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 • Describe how cells signal other cells. (e.g. hormones, neurons)		Osmosis Lab Egg Osmosis Gummy Bears **AP Bio Lab 1- Part A**
_____ _____	**15**	**Sub-cellular Organization** 1. Structure • Identify the structures found in all cells. (cell membrane, nucleic acid, cytoplasm, ribosomes) • 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.(e.g.ER and golgi apparatus; nucleus and cell membrane) • 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. • List examples of asexual organisms, sexual organisms, and those	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

		organisms that carry out both.		Mitosis Model Activity Mitosis Slides Lab
_____ _____ _____	**17**	**Cellular Energetics** 1. Cellular respiration and fermentation • Identify the location of each process in a cell. • Describe the chemical equation of Cellular Respiration. • Compare and Contrast aerobic and anaerobic respiration. • Identify the two types of fermentation. (lactic acid and alcoholic) 2. Photosynthesis • Identify the location of where photosynthesis occurs in a cell. • Describe the chemical equation of Photosynthesis. • Understand that the light reaction step produces water and ATP, and the Calvin cycle/dark reaction produces 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. Understand and 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 • Identify a DNA model and a RNA model. • Create a diagram of a DNA model. • 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 • Use a DNA strand to create a mRNA strand. • Use a mRNA strand to create an amino acid chain by using a mRNA codon chart. • Relate the concept of the gene to the sequences of nucleotides in DNA. 4. Genetic changes • Define mutation, and how mutations can occur in a cell. (radiation, exposure to chemicals, etc…) • Identify how genes can be altered. (insertions, deletions, or substitutions 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. • Use of appropriate vocabulary to describe inheritable traits (i.e., genotype, phenotype). • Describe dominance, segregation, and independent assortment. 2. Probability of genetics • Use a Punnett Square to predict genetic outcomes. 3. Monohybrids and Dihybrid Crosses • Perform complete dominance, incomplete dominance, codominance, and sex linked crosses. • Solve genetics problems using a Punnett square. • Interpret Testcrosses. 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.	II, II, II, 2 II, II, II, 3 II, II, II, 4	**APEX** Core Biology Sem. 2- Unit 1 Honors Biology 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 body 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** 1. Principles • Define energy, potential energy and kinetic energy.	II, II, I, 1- 6	**APEX** Core Biology Sem. 2- Unit 3 Honors Biology

_____ _____ _____ _____ _____		• Define the first and second laws of thermodynamics. • Discuss the process of photosynthesis. • Discuss the process of respiration. • Discuss how photosynthesis and respiration work to recycle carbon. • Describe how energy flows from the sun through plants to herbivores to carnivores and decomposers. 2. Populations • Define and give examples to illustrate the concept of a population. 3. Communities • Define and give examples to illustrate the concept of a 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. 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		Sem. 2- Unit 3 Man's Impact to the Environment Research Identifying Our Biome Thermal Pollution Dandelion and Plantain Populations Field Study of a Terrestrial Community Life in a Square Meter Community

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_____ _____ _____ _____	**23**	**Biodiversity and Biological Evolution** 1. Use biological evidence to sort organisms and understand how they are related. • Describe how DNA is used as evidence for evolutionary relationships. • 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 describe how 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. Describe how evolution by natural selection and other mechanisms explains similarities (both physical and molecular) among different species.	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

		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**	**Organisms and Populations** **Plants** 1. Identify the major groups of plants and their basic characteristics that separate each into their group: Mosses, Ferns, Gymnosperms and Angiosperms. • Compare and contrast characteristics of nonvascular and vascular plants. • Differentiate between gymnosperms and angiosperms. • Identify the functions of roots, stems, leaves and flowers. • Compare and contrast structures of monocots and dicots. • Compare the harmful and beneficial aspects of plants. • 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**	**Fungi** 1. Describe the major characteristics of fungi. • Identify examples of fungi. • Compare the harmful and beneficial aspects of fungus. • Identify the role of fungi in the environment.	II, II, I, 2- 3 II, II, I, 7- 9 II, II, II, 10- 13 II, II, III, 5- 6	Bread Mold Lab

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_____	**26**	**Viruses** 1. Describe the basic structure and function of a virus. • Know that viruses are made of DNA or RNA and a protein coat. • Describe how viruses replicate. • Explain why viruses are not classified in the Linnaean Classification System. • Identify examples of disease caused by viruses and beneficial uses of viruses.	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**	**Archaebacteria/ Eubacteria** 1. Describe the basic structure and function of bacteria. • Know that bacterial cells are prokaryotic. • Describe how bacterial cells reproduce. • Differentiate between Archaebacteria & Eubacteria. • Understand that many bacteria are decomposers and recycle nutrients in ecosystems. • Identify examples of how bacteria is beneficial/harmful to organisms and their 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 2 Honors Biology Sem. 2- Unit 2 Bacterial Gram Staining Lab Antibiotic Activity Video "Understanding Bacteria"

_____	**28**	**Protista** 1. Describe the basic characteristics of the three basic groups of protists: Protozoa, Algae, and Fungus-Like. • Compare and Contrast the three groups of protists. • Identify examples of how protists are beneficial/harmful to organisms and their 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 and Vertebrates** 1. Recognize and describe the main characteristics separating animals into their various phyla. • Compare and Contrast Invertebrates and Vertebrates. • Identify examples of Invertebrates and Vertebrates. • Analyze characteristics of animals which share evolutionary relationships.	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 Worms" Hydra Behavior Activity Planarian Behavior Lab Planarian Regeneration Lab 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 Earthworm Grasshopper Crayfish Vertebrate Dissections Pig