**NACA Yearlong UbD Template**

**UbD Curriculum Template 2.0  
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Date:**

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| **Stage 1 Desired Results** | | | |
| **Directions:** Choose multiple CCSS (or other standards), copy and paste them here, and unpack them for big ideas and assessment verbs by highlighting.  Common Core State Standards ([www.corestandards.org](http://www.corestandards.org)), Next Generation Science Standards (<http://www.nextgenscience.org>), Indigenous Standards (found in Course Sites).  Strand I: Scientific Thinking and Practice  Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.  5-8 Benchmark I: Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.  1. Use a variety of print and web resources to collect information, inform investigations, and answer a scientific question or hypothesis.  2. Use models to explain the relationships between variables being investigated.  5-8 Benchmark II: Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge.  1. Describe how bias can affect scientific investigation and conclusions.  2. Critique procedures used to investigate a hypothesis.  3. Analyze and evaluate scientific explanations.  5-8 Benchmark III: Use mathematical ideas, tools, and techniques to understand scientific knowledge.  1. Understand that the number of data (sample size) influences the reliability of a prediction.  2. Use mathematical expressions to represent data and observations collected in scientific investigations.  3. Select and use an appropriate model to examine a phenomenon.  Strand II: Content of Science  Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.  5-8 Benchmark I: Know the forms and properties of matter and how matter interacts.  1. Explain how matter is transferred from one organism to another and between organisms and their environment (e.g., consumption, the water cycle, the carbon cycle, the nitrogen cycle).  2. Know that the total amount of matter (mass) remains constant although its form, location, and properties may change (e.g., matter in the food web).  3. Identify characteristics of radioactivity, including:  • decay in time of some elements to others  • release of energy  • damage to cells.  4. Describe how substances react chemically in characteristic ways to form new substances (compounds) with different properties (e.g., carbon and oxygen combine to form carbon dioxide in respiration).  5. Know that chemical reactions are essential to life processes.  5-8 Benchmark II: Explain the physical processes involved in the transfer, change, and conservation of energy.  1. Know how various forms of energy are transformed through organisms and ecosystems, including:  • sunlight and photosynthesis  • energy transformation in living systems (e.g., cellular processes changing chemical energy to heat and motion)  • effect of mankind’s use of energy and other activities on living systems (e.g., global warming, water quality).  5-8 Benchmark III: Describe and explain forces that produce motion in objects.  1. Know that forces cause motion in living systems, including:  • the principle of a lever and how it gives mechanical advantage to a muscular/skeletal system to lift objects  • forces in specific systems in the human body (e.g., how the heart generates blood pressure, how muscles contract and expand to produce motion).  Strand II: Content of Science  Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.  5-8 Benchmark I: Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.  Populations and Ecosystems  1. Identify the living and nonliving parts of an ecosystem and describe the relationships among these components.  2. Explain biomes (i.e., aquatic, desert, rainforest, grasslands, tundra) and describe the New Mexico biome.  3. Explain how individuals of species that exist together interact with their environment to create an ecosystem (e.g., populations, communities, niches, habitats, food webs).  4. Explain the conditions and resources needed to sustain life in specific ecosystems.  5. Describe how the availability of resources and physical factors limit growth (e.g., quantity of light and water, range of temperature, composition of soil) and how the water, carbon, and nitrogen cycles contribute to the availability of those resources to support living systems.  Biodiversity  6. Understand how diverse species fill all niches in an ecosystem.  7. Know how to classify organisms: domain, kingdom, phylum, class, order, family, genus, species.  5-8 Benchmark II: Understand how traits are passed from one generation to the next and how species evolve.  Reproduction  1. Know that reproduction is a characteristic of all living things and is essential to the continuation of a species.  2. Identify the differences between sexual and asexual reproduction.  3. Know that, in sexual reproduction, an egg and sperm unite to begin the development of a new individual.  4. Know that organisms that sexually reproduce fertile offspring are members of the same species.  Heredity  5. Understand that some characteristics are passed from parent to offspring as inherited traits and others are acquired from interactions with the environment.  6. Know that hereditary information is contained in genes that are located in chromosomes, including:  • determination of traits by genes  • traits determined by one or many genes  • more than one trait sometimes influenced by a single gene.  Biological Evolution  7. Describe how typical traits may change from generation to generation due to environmental influences (e.g., color of skin, shape of eyes, camouflage, shape of beak).  8. Explain that diversity within a species is developed by gradual changes over many generations  9. Know that organisms can acquire unique characteristics through naturally occurring genetic variations.  10. Identify adaptations that favor the survival of organisms in their environments (e.g., camouflage, shape of beak).  11. Understand the process of natural selection.  12. Explain how species adapt to changes in the environment or become extinct and that extinction of species is common in the history of living things.  13. Know that the fossil record documents the appearance, diversification, and extinction of many life forms.  5-8 Benchmark III: Understand the structure of organisms and the function of cells in living systems.  Structure of Organisms  1. Understand that organisms are composed of cells and identify unicellular and multicellular organisms.  2. Explain how organs are composed of tissues of different types of cells (e.g., skin, bone, muscle, heart, intestines).  Function of Cells  3. Understand that many basic functions of organisms are carried out in cells, including:  • growth and division to produce more cells (mitosis)  • specialized functions of cells (e.g., reproduction, nerve-signal transmission, digestion, excretion, movement, transport of oxygen).  4. Compare the structure and processes of plant cells and animal cells.  5. Describe how some cells respond to stimuli (e.g., light, heat, pressure, gravity).  6. Describe how factors (radiation, UV light, drugs) can damage cellular structure or function.  Strand II: Content of Science  Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth’s systems.  5-8 Benchmark I: Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures.  1. Explain why Earth is unique in our solar system in its ability to support life.  2. Explain how energy from the sun supports life on Earth.  5-8 Benchmark II: Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth’s systems.  1. Understand how the remains of living things give us information about the history of Earth, including:  • layers of sedimentary rock, the fossil record, and radioactive dating showing that life has been present on Earth for more than 3.5 billion years.  2. Understand how living organisms have played many roles in changes of Earth’s systems through time (e.g., atmospheric composition, creation of soil, impact on Earth’s surface).  3. Know that changes to ecosystems sometimes decrease the capacity of the environment to support some life forms and are difficult and/or costly to remediate.  Strand III: Science and Society  Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.  5-8 Benchmark I: Explain how scientific discoveries and inventions have changed individuals and societies.  1. Analyze the contributions of science to health as they relate to personal decisions about smoking, drugs, alcohol, and sexual activity.  2. Analyze how technologies have been responsible for advances in medicine (e.g., vaccines, antibiotics, microscopes, DNA technologies).  3. Describe how scientific information can help individuals and communities respond to health emergencies (e.g., CPR, epidemics, HIV, bio-terrorism).  [CCSS.ELA-LITERACY.RST.6-8.1](http://www.corestandards.org/ELA-Literacy/RST/6-8/1/) Cite specific textual evidence to support analysis of science and technical texts.  [CCSS.ELA-LITERACY.RST.6-8.2](http://www.corestandards.org/ELA-Literacy/RST/6-8/2/) Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.  [CCSS.ELA-LITERACY.RST.6-8.3](http://www.corestandards.org/ELA-Literacy/RST/6-8/3/) Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.  [CCSS.ELA-LITERACY.RST.6-8.4](http://www.corestandards.org/ELA-Literacy/RST/6-8/4/) 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*.  [CCSS.ELA-LITERACY.RST.6-8.5](http://www.corestandards.org/ELA-Literacy/RST/6-8/5/) 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.  [CCSS.ELA-LITERACY.RST.6-8.6](http://www.corestandards.org/ELA-Literacy/RST/6-8/6/) Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.  Integration of Knowledge and Ideas:  [CCSS.ELA-LITERACY.RST.6-8.7](http://www.corestandards.org/ELA-Literacy/RST/6-8/7/) 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).  [CCSS.ELA-LITERACY.RST.6-8.8](http://www.corestandards.org/ELA-Literacy/RST/6-8/8/) Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.  [CCSS.ELA-LITERACY.RST.6-8.9](http://www.corestandards.org/ELA-Literacy/RST/6-8/9/) Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.  Range of Reading and Level of Text Complexity:  [CCSS.ELA-LITERACY.RST.6-8.10](http://www.corestandards.org/ELA-Literacy/RST/6-8/10/) By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.      Next Generation Science Standards  MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.  MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.  MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.  MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.  MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.  MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.  MS-LS1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.  MS-LS1-8. Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.  MS-LS2 Ecosystems: Interactions, Energy, and Dynamics Students who demonstrate understanding can:  MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.  MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.  MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.  MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.  MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.\*  MS-LS3: Heredity: Inheritance and Variation of Traits  MS-LS3-1. Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.  MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.  MS-LS4: Biological Evolution: Unity and Diversity  MS-LS4-1. Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past  MS-LS4-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.  MS-LS4-3. Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.  MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals’ probability of surviving and reproducing in a specific environment  MS-LS4-5. Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.  MS-LS4-6. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time. | | | |
| Other than the big ideas explicitly in the standards you chose, what big ideas might frame this yearlong curriculum?   1. Scientific Inquiry 2. Living things and their interactions with the environment can have negative and positive impacts on our climate. 3. Relationship with nature 4. Conservation 5. Wellness (individual and communal) | | | |
| CHOSEN BIG IDEAS(S): | ***Transfer*** | | |
| *I want to my students to use scientific skills and the scientific process, so that in the long-run, on their own, they will be able to use the scientific skills and processes to research, develop new questions, answer questions, design and conduct experiments, and present their understandings and findings using qualitative and quantitative data on their own.* | | |
| ***Meaning*** | | |
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| UNDERSTANDINGS  *Students will understand that…*   * *Science provides us with the foundation to develop understandings about our world and its impact on the solar system.* | | ESSENTIAL QUESTIONS   * *How do the interactions between living and non-living things impact the health and wellness of our earth and our solar system?* |
| ***Acquisition*** | | |
| *Students will know…*  Unit 1: Characteristics of Science   * A variety of attributes are needed by scientists to successfully conduct scientific investigations and communicate results effectively.   + A system has been developed to classify and organize all living things.   + The process of scientific naming.   + Organisms are classified according to similarities in characteristics.   + The requirements to consider something living. * Unit 2: Diversity of Life   + Differences and similarities exist within the structures and functions among the six kingdoms of life.   + Living organisms can be compared scientifically and classified based on physical characteristics.   + Characteristic of all living things   + Wellness wheel and life processes * Unit 3: Interdependence of Life: Energy Flow   + Certain patterns exist in all levels of ecological organization.   + A delicate relationship exists within each level of organization.   + The sun is the primary source of energy for the living world.   + The food web demonstrates that all energy is transferred and recycled among organisms and their environment.   + Organisms depend on one another as well as their environment for survival. * Unit 4: Interdependence of Life: Biomes   + The survival of organisms in a biome is affected by living and nonliving factors.   + Terrestrial biomes and aquatic communities have similar, yet unique characteristics.   + Organisms are interdependent on their environment and each other   + Distinct relationships exists between organisms in an environment   + Biomes are organized in similar pattern from a single organism to an ecosystem * Unit 5: Cell Structure and Action   + Cells take in nutrients to grow, divide, and make needed materials   + Cell structure is related to cell function.   + Cell parts are interdependent.   + Animal cells and plants cell differ in function and structure * Unit 6: Human Body/Organization in the Body   + Levels of cellular organization (cells → tissue → organs → systems → organism)   + Levels of cellular organization serve the needs of cells for obtaining oxygen and food, and removing waste.   + The functions of the major systems (digestion, respiration, reproduction, transport/circulation, excretion, movement, control, and coordination, and for protection from disease)   + Nutritional wellness impacts individual cells   + Interdependence between different organ systems * Unit 7: Genetics   + Many traits of an organism are inherited from its biological parents.   + Genes and chromosomes determine the expressions of inherited traits.   + All organisms reproduce sexually or asexually.   + Selective breeding is used to enhance a desired trait.   + Mutations in gene expressive cause a variety of things including cancer, deformities, genetic diseases * Unit 8: Evolution (Change over Time)   + Physical characteristics of organisms change over time.   + Changes in species occur due to natural selection, reproduction and environmental conditions.   + Fossils provide evidence of change.   + ALL living things undergo change - time scale is important | | *Students will be skilled at…*  Unit 1: Characteristics of Science   * Retrieve knowledge from long-term memory, recognize, recall, locate, identify * Construct meaning, clarify, paraphrase, represent, translate, illustrate, give examples, classify, categorize, summarize, generalize, infer a logical conclusion (such as from examples given), * predict, compare/contrast, match like ideas, explain, construct models * Carry out or use a procedure in a given situation; carry out (apply to a familiar task), or use (apply) to an unfamiliar task * Break into constituent parts, determine how parts relate, differentiate between relevant-irrelevant, distinguish, focus, select, organize, outline, find coherence, deconstruct * Make judgments based on criteria, check, detect inconsistencies or fallacies, judge, critique * Reorganize elements into new patterns/structures, generate, hypothesize, design, plan, construct, produce * Use a variety of print and web resources to collect information, inform investigations, and answer a scientific question or hypothesis * Use models to explain the relationships between variables being investigated * Describe how bias can affect scientific investigation and conclusions * Critique procedures used to investigate a hypothesis * Analyze and evaluate scientific explanations * Understand that the number of data (sample size) influences the reliability of a prediction * Use mathematical expressions to represent data and observations collected in scientific investigations * Select and use an appropriate model to examine a phenomenon * Identify the living and nonliving parts of an ecosystem and describe the relationships among these components * Explain the conditions and resources needed to sustain life in specific ecosystems * Know how to classify organisms: domain, kingdom, phylum, class, order, family, genus, species |
| **Stage 2 – Evidence** | | | |
| **Evaluative Criteria** | | **Assessment Evidence** | |
| Standards-based A+ Rubric in Student-friendly Language   |  |  |  | | --- | --- | --- | | Performance Assessment Criteria and Standard Alignment | Complete | Needs Revision | | *Ex. CCSS.ELA-LITERACY.W.8.1.B*  *I can use relevant, accurate information to support a claim.* |  |  | |  |  |  | | Ask questions:   * that arise from careful observation of phenomena, models, or unexpected results, to clarify and/or seek additional information. * identify and/or clarify evidence and/or the premise(s) of an argument. * to determine relationships between independent and dependent variables and relationships in models. * to clarify and/or refine a model, an explanation, or an engineering problem. |  |  | | Develop and Use Models:   * Develop a model to describe, test and predict more abstract phenomena and design systems. * Develop and/or revise a model to show the relationships between variables. * Develop or modify a model based on evidence to match what occurs. |  |  | | * Plan and carry out investigations: * Using multiple variables and provide evidence to support explanations and solutions. * Plan an investigation individually and collaboratively. * Conduct an investigation and/or evaluate or revise the experimental design to produce data to serve as the basis for evidence that meet the goals of an investigation. * Evaluate the accuracy of various methods for collecting data. * Collect data to produce data to support evidence to scientific questions. |  |  | | Analyze and Interpret Data:   * Construct, analyze, and/or interpret displays of data to identify linear and nonlinear relationships. * Use graphical displays, maps, charts, graphs and/or tables to identify relationships. * Analyze and interpret data to determine similarities and differences in findings. |  |  | | Use mathematics and Computational Thinking:   * Use digital tools to analyze data sets for patterns and trends. * Use mathematical representations to describe and/or support scientific conclusions and design solutions. * Apply mathematical concepts and/or processes to scientific and engineering questions and problems. |  |  | | Construct Explanations and Design Solutions:   * Create, evaluate and/or refine a design solution. * Construct an explanation that includes qualitative and quantitative relationships. * Construct an explanation using models or representations. * Construct a scientific explanation based on valid and reliable evidence obtained from multiple sources. |  |  | | Engage in Argument from Evidence:   * Construct a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed world(s). |  |  | | Obtain, Evaluate and Communicate Information:   * Gather, read, synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence. * Evaluate data, hypothesis and/or conclusions in scientific and technical texts. |  |  | | | PERFORMANCE TASK(S):    What (cognitive verb + big idea):  •Create •Evaluate •Analyze •Apply •Understand •Remember  Why (copied and pasted EUs from Stage 1):  To develop an understanding of all living things, self, community and the globe in order to drive future decisions and the impact these decisions will have on the environment.  How (GRASPS, written to and for students):  **Goal:** Students will apply understandings of human impact on our environment.  **Role:** Community Liaison  **Audience:** A Native community of that represents multiple Tribal Nations of all ages.  **Situation:** The Tribal community is producing an enormous amount of waste and the landfills are overflowing. Most recently, the hydrologists have found the water is compromised with chemicals and organisms in the river are dying.  **Product, Performance, and Purpose:**  Students will present a product he/she creates that demonstrates his/her understanding of one environmental factor that may contribute to the situation. The end product should include two realistic solutions for the situation.  **Standards and Criteria for Success:** | |
| <type here> | | OTHER EVIDENCE: | |
| |  | | --- | | **Stage 3 – Learning Plan** *What units will you teach, and what skills will students master, as a result of this yearlong curriculum?* |   2015 -2016 Academic Year Curriculum Map Template   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Unit Big Idea (Title) | Unit Essential Question(s) | Unit Standard(s) | Assessment(s) | Time Frame | | What big idea anchors this unit? | What EQ will anchor conceptual, critical thinking related to the big idea? | What core standard(s) anchors this unit, and therefore what observable skills will you evaluate? | What summative assessment will provide you evidence of skills and understanding? | What is the approximate time frame for the teaching and learning in this unit? | | Unit 1: Our Earth | Why are curiosity, honesty and skepticism important in the review of scientific work?  What tools and thought processes are needed to successfully perform scientific investigations? | Benchmark I: Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures.    Benchmark II: Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth’s systems  MS-ESS2-6  MS-LS1-1  MS-LS1-6 | Formative Assessments:  Exit Tickets to evaluate daily objectives  Weekly Quizzes/Review to assess weekly objectives (may take multiple forms - not traditional m/c questions)  Case Studies  Unit Assessment - mixture of m/c, short answer, and essay questions  Summative Assessment:  Students will observe soil characteristics and    different types of earth to understand the composition of soil in relation to biomes. | 5 weeks | | Unit 2: Naming & Classifying Living Things | *What structures exist that assist us with understanding and organizing the world around us?* | Benchmark I: Explain the diverse structures and functions of living things and the complex relationships between living things and their environment.  MS-LS2-1 | Formative Assessments:  Exit Tickets to evaluate daily objectives  Weekly Quizzes/Review to assess weekly objectives (may take multiple forms - not traditional m/c questions)  Case Studies  Unit Assessment - mixture of m/c, short answer, and essay questions  Summative Assessment:  Student will collect, identify, and classify different insects from at least 5 different orders. | 4 weeks | | Unit 3: Interactions Among Organisms | What characteristics do all living things share?  How are can different organisms be classified according to their characteristics? | Benchmark I: Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.  Benchmark I: Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.    Benchmark II: Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge.    Benchmark III: Use mathematical ideas, tools, and techniques to understand scientific knowledge.  MS-LS2-1  MS-LS2-5 | Formative Assessments:  Exit Tickets to evaluate daily objectives  Weekly Quizzes/Review to assess weekly objectives (may take multiple forms - not traditional m/c questions)  Case Studies  Unit Assessment - mixture of m/c, short answer, and essay questions  Summative Assessment:  Students will experiment with soil and earthworms to evaluate the importance of plant and animal matter as contributors to soil and recognize that wildlife in many forms contributes to the diversity and balance of ecological systems. | 3 weeks | | Unit 4: Changes in Living Things | How do organisms depend on their environment for their survival?  What animals survive in which biomes and why?  How are food chains, food webs and energy pyramid all related? | Benchmark I: Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.  MS-LS2-3 | Formative Assessments:  Exit Tickets to evaluate daily objectives  Weekly Quizzes/Review to assess weekly objectives (may take multiple forms - not traditional m/c questions)  Case Studies  Unit Assessment - mixture of m/c, short answer, and essay questions  Summative Assessment:  Students will experiment with soil and earthworms to evaluate the importance of plant and animal matter as contributors to soil and recognize that wildlife in many forms contributes to the diversity and balance of ecological systems. | 3 weeks | | Unit 5: Environmental Issues | How do organisms depend on their environment for their survival?  What abiotic and biotic factors contribute to the survival of organisms in the different biomes?  How do organisms fill ecological and cultural niches? | Benchmark I: Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.  MS-LS2-1  MS-LS1-5 | Formative Assessments:  Exit Tickets to evaluate daily objectives  Weekly Quizzes/Review to assess weekly objectives (may take multiple forms - not traditional m/c questions)  Case Studies  Unit Assessment - mixture of m/c, short answer, and essay questions  Summative Assessment:  Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. | 3 weeks | | Unit 6: Cells | How does the structure of a cell allow it to carry out the basic processes of life?  What characteristics of cells are the same in all living things?  How does personal wellness choices impact our cells? | Benchmark II: Explain the physical processes involved in the transfer, change, and conservation of energy.    Benchmark III: Understand the structure of organisms and the function of cells in living systems.    Benchmark I: Explain how scientific discoveries and inventions have changed individuals and societies.    Benchmark II: Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge. | Formative Assessments:  Exit Tickets to evaluate daily objectives  Weekly Quizzes/Review to assess weekly objectives (may take multiple forms - not traditional m/c questions)  Case Studies  Unit Assessment - mixture of m/c, short answer, and essay questions  Summative Assessment | 4-5 weeks | | Unit 7: Reproduction & Growth |  | Benchmark II: Understand how traits are passed from one generation to the next and how species evolve.    Benchmark I: Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings. | Summative Assessment:  Students will observe the development of seeds from embryo to plant; students will build a board and present to 6th graders. |  | | Unit 8: Human Body/Organization of the Body | How do cells, tissues, organs, and organ systems relate to one another?  How do the higher levels of organization serve the needs of the cell?  How do the systems compare in different organisms?  How do different body systems work together to perform necessary body functions? | Benchmark III: Describe and explain forces that produce motion in objects.  MS-LS1-3 | Formative Assessments:  Exit Tickets to evaluate daily objectives  Weekly Quizzes/Review to assess weekly objectives (may take multiple forms - not traditional m/c questions)  Case Studies  Unit Assessment - mixture of m/c, short answer, and essay questions  Summative Assessment:  Students will conduct a short research project to answer short questions. | 5 weeks | | Unit 9: Matter | How do chemicals play a role in the health and wellness of living things and our environment? | Benchmark I: Know the forms and properties of matter and how matter interacts.  MS-LS1-7 | Formative Assessment:  Summative Assessment:  Students will research a chemical disaster and develop a public awareness campaign to show their understanding of the effects of chemical compounds in the environment. | 9 weeks | | | | |