

ESSENTIAL QUESTIONS: What do all living things need to survive? ANIMALS					
STRAND: II CONTENT OF SCIENCE			BENCHMARK: I: Know that living things have diverse forms, structures, functions, and habitats.		
STANDARD: II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES The student will be able to:	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
1 s t	1. Explain that different living organisms have distinctive structures and body systems that serve specific functions (e.g., walking, flying, swimming).	Comprehension-explain Application-classify/categorize (adaptations)	-Observe and classify different animals by their characteristics and adaptations using chart. -Create a mobile or diorama demonstrating how an animal's adaptations help it survive in its environment.	Chart Mobile/diorama	SF-Activity Book Process Skills p.9 Dinah Zike's <i>Big Book of Books</i> Unit A-Chapter 1-Lessons 4 and 5 Pages 18-33
	2. Know that humans and other living things have senses to help them detect stimuli, and that sensations (e.g., hunger) and stimuli (e.g., changes in the environment) influence the behavior of organisms.	Knowledge-know/name/tell Comprehension-discuss/distinguish Application- examine/solve Evaluation-select/justify (adaptations) (learned/instinctive behavior)	- (Groups) Read and examine animal structure cards and match each animal with its function. (Independent) Choose the three most interesting adaptations to them; write about each one and tell why they chose each one. -Match each animal with its behavior using behavioral adaptation cards. -Explore the behavioral adaptations that improve an animal's chance of survival by completing an adaptation report. -Compare ant behavior in two different environments(gel vs. dirt) by constructing a Venn Diagram. (I.I.I.PS4) (I.I.I.PS2)	Teacher observation of matches Written response about adaptations Teacher observation of matches Adaptation Report Venn Diagram	Center for Hands-On Learning <i>SURVIVAL</i> teacher's guide Lesson 5-"Structure and Function" Pg. 44-51 Center for Hands-On Learning <i>SURVIVAL</i> teacher's guide Lesson 6-"Behavioral Adaptations" Pg. 52-59 Dirt ant farm and ants Unit A-Chapter 1-Lessons 4 and 5 Pages 18-33

ESSENTIAL QUESTIONS: What do all living things need to survive? ANIMALS/PLANTS					
STRAND II CONTENT OF SCIENCE			BENCHMARK I: Know that living things have diverse forms, structures, functions, and habitats. II: Know that living things have similarities and differences and that living things change over time.		
STANDARD II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES The student will be able to:	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
1 s t	4. Describe the components of and relationships among organisms in a food chain (e.g., plants are the primary source of energy for living systems).	Knowledge-describe Application-construct/illustrate (Food chain)	-Construct a food chain layered booklet or poster by illustrating at least three living organisms beginning with a type of plant.	Layered booklet or poster	Dinah Zike's Big Book of Books SF-Activity Book-pg. 15 and pg. 53 Unit A-Chapter 3-Lesson 2 pg. 84-89 http://www.gould.edu.au/foodwebs/kids_web.htm
	5. Describe how all living things are made up of smaller units that are called cells.	Knowledge-describe Application-illustrate Analysis-investigate/compare (cells)	-Use a variety of tools to observe and study minute details of objects by observing an onion skin under a microscope. -Compare/contrast onion characteristics with and without a microscope by completing a Venn Diagram. (I.I.I.PS1)	Illustration and description of the cell. Venn Diagram	Lab Zone: Directed Inquiry pg. 4-5 Unit A-Chapter 1-Lesson 6-9
	1. Know that in any particular environment some kinds of plants and animals survive well, some survive less well, and others cannot survive at all.	Knowledge-know/name/tell Comprehension-compare Analysis-examine/investigate Synthesis- predict Evaluation-justify/discuss (ecosystems)	-Construct and analyze graphs, tables, and charts to organize, examine and evaluate information by comparing the growth of radish seeds in two different environments. -Simulate overcrowding of mice in cornfield. (I.I.II.PS2) (I.I.III.PS1-2)	Recorded Data Simulation and table	Lab Zone-Directed Inquiry pg. 108 SF-Activity Book-Process Skills Pg. 5-6 Unit A-Chapter 3-Lesson 1 pg. 79-83 Unit A-Chapter 4-Lesson 1 pg. 111-113 Unit A- Chapter 4-Lesson 3 pg. 118-123

ESSENTIAL QUESTIONS: What do all living things need to survive? ANIMALS/PLANTS					
STRAND II CONTENT OF SCIENCE			BENCHMARK II: Know that living things have similarities and differences and that living things change over time.		
STANDARD II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES The student will be able to:	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
1 s t	2. Know that a change in physical structure or behavior can improve an organism's chance of survival (e.g., a chameleon changes color, a turtle pulls its head into its shell, a plant grows toward the light).	Knowledge-know/tell/name Comprehension-predict/compare Analysis-investigate/analyze Evaluation-judge/debate (adaptations)	-Investigate camouflage by selecting insects simulated by toothpicks/pipe cleaners that have been placed on green paper. (I.I.I.PS1) (I.I.I.PS3)	Recorded data using tally marks and bar graph	Green cloth/construction paper Toothpicks/pipe cleaners Camouflage Investigation sheet Unit A-Chapter1-Lesson 5 pg. 26-33
	3. Describe how some living organisms have developed characteristics from generation to generation to improve chances of survival (e.g., spines on cacti, long beaks on hummingbirds, good eyesight on hawks).	Comprehension-describe Application-examine/illustrate Analysis-compare/identify Evaluation-discuss/determine (adaptations)	-Observe a contour feather and a down feather and compare differences using a hand lens. Students will illustrate each type of feather and discuss how the feathers help the bird survive. (I.I.I.PS2) (I.I.I.PS1)	Illustration/discussion questions/self assessment	SF-Activity Book pg. 33,35-36 Unit A-Chapter 1-Lesson 5 pg 26-33 Leveled Readers- <i>Classifying Plants and Animals</i> <i>Plant and Animal Classification</i> <i>Reptile or Amphibian?</i> www.enature.com

ESSENTIAL QUESTIONS: What do all living things need to survive? PLANTS					
STRAND II. CONTENT OF SCIENCE			BENCHMARK I: Know that living things have diverse forms, structures, functions, and habitats. II: Know that living things have similarities and differences and that living things change over time.		
STANDARD II: (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES The student will be able to:	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
1 s t	3. Describe how roots are associated with the intake of water and soil nutrients and green leaves are associated with making food from sunlight (photosynthesis).	Comprehension-describe Analysis-examine/compare Synthesis-design (plants-parts/jobs/photosynthesis)	-Investigate photosynthesis in plants and learn the function of leaves and roots by observing plant growth. (I.II.PS1) (I.II.PS2)	Investigation Logs	Center for Hands-On Learning SURVIVAL Lesson 4-“Investigating Plants” Pg. 34-43 http://tinyurl.com/2vbe8n
	1. Know that in any particular environment some kinds of plants and animals survive well, some survive less well, and others cannot survive at all.	Knowledge-know/name/tell Comprehension-describe Analysis-examine/compare Synthesis-design (plants-life cycle)	**The above investigation addresses this performance standard also. -Understand the life cycle of a pinto bean from seed to plant by observing the growth of a student created model.	See above Students illustration of each stage of life	See above Plastic baggie-paper towel-pinto beans-water-staples/stapler

ESSENTIAL QUESTIONS: What do all living things need to survive? HUMAN BODY					
STRAND II CONTENT OF SCIENCE			BENCHMARK III: Know the parts of the human body and their functions.		
STANDARD II: (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES The student will be able to:	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
1 s t	1. Know that the human body has many parts that interact to function as systems (e.g., skeletal, muscular) and describe the parts and their specific functions in selected systems (e.g., the nose, lungs, and diaphragm in the respiratory system).	Knowledge-know/tell/name Comprehension-explain Application-construct (body systems/functions)	-identify the structure and function of the skeletal, muscular, respiratory, circulatory, digestive, and nervous systems through the creation of a model of the human body and the use of system folding puzzles. -explore the shape of bones by creating a model and comparing the sturdiness of round vs. square bones.	finished human body model body system quizzes system folding puzzles recorded data	Teacher Created Materials <i>MY BODY</i> Center for Hands-On Learning <i>HEALTHY SCIENCE</i> (all lessons) Lab Zone: Directed Inquiry pg. 140 Unit A-Chapter 5-Lessons 1-3 pgs. 143-155 Leveled Readers: <i>Systems of the Human Body</i> <i>The Body's Systems</i> <i>Fighting Infections</i> Web resource: kidshealth.org
	2. Recognize that the human body is organized from cells, to tissues, to organs, to systems, to the organism.	Knowledge-recognize (structure of organisms)	-identify the structure of organisms by creating a layered look book with illustrations and explanations showing the relationship of cells, tissues, organs, systems, organisms. .	Layered look book	Dinah Zike's <i>Big Book of Books</i> Unit A-Chapter 1-Lesson 1 Pgs. 6-9 (TE-pg. 8)

ESSENTIAL QUESTIONS: How are rocks formed on Earth? ROCKS/MINERALS How does weather change over time? WEATHER					
STRAND II CONTENT OF SCIENCE			BENCHMARK II: Know the structure and formation of Earth and its atmosphere and the processes that shape them.		
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.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES The student will be able to:	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
2 n d	1. Know that the properties of rocks and minerals reflect the processes that shaped them (i.e., igneous, metamorphic, and sedimentary rocks).	Knowledge-know/tell/name Comprehension-interpret/compare Application-examine/classify Analysis- distinguish/identify/categorize (rocks and minerals)	-observe the properties of rocks and minerals and explore the ways rocks are formed by modeling the formation of crystals in rocks to determine the effect of speed of crystallization on crystal size. -explore different types of rocks and their formations through the playing of the "Rock Cycle" game.	"How Rocks Form" recorded data and written results from experiment	Center for Hands-On Learning <i>NM EARTH SCIENCE</i> Lesson 6 "How Rocks Form" Pgs. 60-67 <i>Teacher Created Materials Geology-</i> pg. 65 Unit B-Chapter 8-Lesson 1-3 Pgs. 239-249 Leveled Readers: <i>Minerals and Rocks</i> <i>Rocks and Minerals</i> <i>Fossil Detectives</i> (Edible "rocks" recipes in folder)
	2. Describe how weather patterns generally move from west to east in the United States. 3. Know that local weather information describes patterns of change over a period of time (e.g., temperature, precipitation symbols, cloud conditions, wind speed/direction).	Knowledge-know/tell/name Comprehension-describe (weather)	-describe weather patterns and recognize weather symbols through the use and discussion of maps after reading about the tools used by meteorologists. (SF-test pg. 194-199). (I.I.II.PS3) -identify and explain the water cycle by creating a water cycle wheel.	Proper ordering of weather pattern cards	Center for Hands-On Learning <i>NM EARTH SCIENCE</i> Lesson 4-"Weather Patterns" Pgs. 42-53 <i>Water Precious Water</i> pg. 27-29 Unit B-Chapter 6-Lesson 1-4 Pgs.183-199 Leveled Readers: <i>Water Cycle and Weather</i> <i>Water and Weather on Earth</i> <i>Weather and Currents</i> Website: weatherwizkids.com

ESSENTIAL QUESTIONS: How do telescopes help us understand the structure of the solar system? SPACE					
STRAND II CONTENT OF SCIENCE			BENCHMARK I: Know the structure of the solar system and the objects in the universe.		
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.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES The student will be able to:	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
2 n d	1. Understand that the number of stars visible through a telescope is much greater than the number visible to the naked eye.	Knowledge-list/know/name/recall Comprehension-understand Application-construct Analysis-investigate/explain (telescopes-types)	-explore the different uses and lenses of telescopes by creating a model and discussing how the lenses make it possible to see the stars.	"Tools of an Astronomer" notes from investigation	Center for Hands-On Learning <i>NM EARTH SCIENCE</i> Lesson 7 "Tools of Astronomer" Pgs. 68-75 "The Night Sky" Reading Material <i>Unit C-Chapter 14-Lesson 4</i> <i>Pgs. 420-425</i>
	2. Know that there are various types of telescopes that use different forms of light to observe distant objects in the sky. 3. Know that the pattern of stars (e.g., constellations) stays the same although they appear to move across the sky nightly due to Earth's rotation.	Knowledge-know/understand Comprehension-describe Application-examine (constellations)	-learn that stars appear to move across the sky due to Earth's rotation by creating a star finder to find and understand constellations.	Journal entry stating constellation findings each night.	Center for Hands-On Learning <i>NM EARTH SCIENCE</i> Lesson 8 "The Night Sky" Pgs. 76-83 "Constellations" Reading Material KidsAstronomy.com

ESSENTIAL QUESTIONS: How does science influence decisions made by people? TECHNOLOGY					
STRAND III SCIENCE AND SOCIETY				BENCHMARK I. Describe how science influences decisions made by individuals and societies.	
STANDARD I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
2 n d	3. Know that science has created ways to store and retrieve information (e.g., paper and ink, printing press, computers, CD ROMs) but that these are not perfect (e.g., faulty programming, defective hardware).	Knowledge-state/name/tell (communications)	-Use other texts and computers to research when different items were invented for storing and retrieving information and put items on a class timeline for discussion.	-timleline/discussion	Social Studies Textbook, Internet/computer lab/copy of timeline sheet (placed in 4 th grade Science Folder) Great web resource: GOOGLE "CBC Kids History of Inventions timeline"
	4. Know that both men and women of all races and social backgrounds choose science as a career.	Knowledge-know/tell/name Comprehension-compare (careers)	-Write about a person who has chosen Science as a career. Present research to the class.	-report/presentation	In Science book after each chapter, there is a biography about a certain type of Scientist they may choose from. Leveled Readers: <i>Effects of Technology</i> <i>Technology in the World</i> <i>Great Inventions</i>

ESSENTIAL QUESTIONS: What are the different forms and properties of matter? MATTER					
STRAND II. CONTENT OF SCIENCE			BENCHMARK I: Recognize that matter has different forms and properties.		
STANDARD I: (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES The students will be able to:	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
3 r d	1. Know that changes to matter may be chemical or physical and when two or more substances are combined, a new substance may be formed with properties that are different from those of the original substances (e.g., white glue and borax, cornstarch and water, vinegar and baking soda).	Knowledge-know/name/tell Application-construct Evaluation-discuss (physical change) Knowledge-know/name/tell Analysis-investigate Evaluation-discuss (chemical change)	- experiment with physical change through the use of origami. -work collaboratively to mix glue, water, food coloring, and borax and observe how the properties of the glue change.	-construction/discussion --experiment/recorded data on activity sheet/discussion	Origami paper and pattern book Lab Zone-Guided Inquiry SF-pg. 338-339 Unit C-Chapter 11-Lesson 4 Pgs. 332-337. Leveled Readers: <i>Properties of Matter</i> <i>Matter's Properties</i> <i>Lighter than Air</i>
	2. Know that materials are made up of small particles (atoms and molecules) that are too small to see with the naked eye.	Knowledge-know/recognize (particles/density)	-construct a layered book describing and illustrating the three states of matter. -understand how density of liquids causes layers to form.	-layered look book -activity book pg. 133-134	Dinah Zike's Big Book of Books SF-Activity Book Lab Zone-Directed Inquiry Pg 316
	3. Know that the mass of the same amount of material remains constant whether it is together, in parts, or in a different state.	Knowledge-know/tell/recognize Analysis-investigate Evaluation-discuss (states of matter)	-understand and discuss states of matter through making ice cream.	-observation/discussion	Ice cream recipe located in 4th grade Science folder. Unit C-Chapter 11-Lesson 1 Pgs. 319-321 (also see pg. 335 illustration)

ESSENTIAL QUESTIONS: What are the different forms of energy? ENERGY					
STRAND II CONTENT OF SCIENCE			BENCHMARK II: Know that energy is needed to get things done and that energy has different forms.		
STANDARD I: (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES The students will be able to:	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
3 r d	1. Identify the characteristics of several different forms of energy and describe how energy can be converted from one form to another	Comprehension-identify/explain (e.g., light to heat, motion to heat, electricity to heat, light, or motion).	-explore energy transformations and storage, gather data on motion, and test and modify a simple catapult.	-Engineer's notebook pg. 11 -Construction of catapult	Center for Hands-On Learning ENGINEERING TOYS Teacher's Guide-Lesson 4 "Cotton Ball Catapults" Pgs. 52-59 Unit C-Chapter 13-Lesson 1-5 Pgs. 375-393 Leveled Readers: <i>Electricity and Magnetism</i> <i>Electric and Magnetic Power</i> <i>Poles Apart</i>
	2. Recognize that energy can be stored in many ways	Comprehension-recognize/compare/describe (e.g., potential energy in gravity or springs, chemical energy in batteries).	(above investigation addresses this standard as well.)		
	3. Describe how some waves move through materials	Comprehension-describe/discuss (e.g., water, sound) and how others can move through a vacuum (e.g., x-ray, television, radio).	-students will observe how sound waves travel through constructing a can/balloon/rice model and placing it on a speaker that has been turned up and down.	-prediction/recorded data of experiment -answers to two part question	Copy of experiment and questions placed in 4 th grade Science Folder GOOGLE: pbskidszoom.org It is under ZOOM.activities.sci
	4. Demonstrate how electricity flows through a simple circuit (e.g., by constructing one).	Application-demonstrate/construct (Electricity/circuits)	-construct a simple circuit using batteries and bulbs.	-Engineers notebook pg. 14	Center for Hands-On Learning ENGINEERING TOYS teacher's guide. Lesson 6 "Batteries Included" Pg. 68-75. Unit C-Chapter 13-Lesson 2 pgs. 378-381

ESSENTIAL QUESTIONS:					
STRAND			BENCHMARK		
STANDARD					
9 w e e k s	PERFORMANCE STANDARD	CONCEPTS/SKILLS Review/Extend previously introduced skill unless noted I = Introduce R= Review AND Extend M = Master	STUDENT ACTIVITIES AND INSTRUCTIONAL STRATEGIES	ASSESSMENTS	STUDENT MATERIALS AND RESOURCES
4 t h	<p>Use MAPS scores to drive instruction.</p> <p>Analyze MAPS data to determine lowest areas for your class.</p> <p>PREVIEW 5th grade material.</p>	<p>CELLS Parts of a cell Structure: cells to tissue to organ to systems to organism to ecosystem.</p>			<p>Great website for re-teaching skills! Has many experiments!</p> <p>GOOGLE: pbskidszoom.org</p> <p>It is under ZOOM.activities.sci</p> <p>Web resource: Biology4kids.com</p>

NOTES:				
---------------	--	--	--	--