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Guide ID	Description	Gr 6	Gr 7	Gr 8
6-ES-1	**Nature of Science and Lab Safety**	X	X	X
6-ES-1-1	Design and conduct scientific investigation using the Scientific Method	X	X	X
6-ES-1-2	Determine the dependent, independent and controlled variables of an experiment	X	X	X
6-ES-1-3	Undertake a design project, engaging in the design cycle, to construct and/or implement a solution that meets specific design criteria and constraints	X	X	X
6-ES-1-4	Apply scientific ideas or principles to design an object, tool, process or system	X	X	X
6-ES-1-5	Understand and use science safety rules and items in the science classroom or lab	X	X	X
6-ES-1-6	Demonstrate the proper use of equipment in the lab: eye wash, goggles, plastic gloves, fire blanket, fire extinguishers, and other items	X	X	X
6-ES-1--7	Learn about and identify possible carreers related to Earth Sciences, Life Sciences, Physics and Chemistry	X	X	X
6-ES	**Earth Science**			
6-ES-2	**Rocks and Minerals**			
6-ES-2-1	Distinguish among sedimentary, igneous, and metamorphic rocks and interpret a simple rock cycle.	X		
6-ES-2-2	Compare and contrast' the characteristics of the different layers of earth	X		
6-ES-2-3	Identify rocks and minerals given a table of physical properties.	X		
6-ES-3	**Plate Tectonics**			
6-ES-3-1	Identify the characteristics of three types of plate boundaries.	X		
6-ES-3-2	Explain the evidence for the movement of the three major plates of the earth through time	X		
6-ES-3-3	Recognize the relationship between continental drift and plate tectonics	X		
6-ES-3-4	Deduce plate movements as the major cause of geological events	X		
6-ES-4	**Forces that shape the Earth: Volcanos, Earthquakes and Erosion**			
6-E-4-1	Describe the impact of erosion and deposition of geological features.	X		
6-ES-4-2	Compare and contrast uniformitarianism and catastrophism.	X		
6-ES-4-3	Describe the types of faults and where they occur.	X		
6-ES-4-4	Identify where the earth's volcanic regions are found and explain why they are found there.	X		
6-ES-4-5	Describe what happens when a volcano erupts.	X		
6-ES-4-6	Describe how the energy of an earthquake travels through the earth.	X		
6-ES-4-7	Explain how earthquakes cause damage.	X		
6-ES-5	**Earth's Geological History**			
6-ES-5-1	Analyze how fossils provide information about the past	X		
6-ES-5-2	Identify factors that contribute to extinction.	X		

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6-ES-5-3	Identify the relative age of fossils in sedimentary rock	X		
6-ES-5-4	Demonstrate an understanding of the Geological time scale	X		
6-ES-5-5	Describe how different types of fossils are formed.	X		
6-ES-5-6	Describe characteristics of the different layers of earth	X		
6-ES-6	**Weather and Water**			
6-ES-6-1	'Describe main characteristics of major water systems such as rivers, oceans and estuaries.	X		
6-ES-6-2	Determine how temperature affects evaporation and condensation in the atmosphere	X		
6-ES-6-3	Identify the detailed features of the water cycle given a diagram (e.g. evaporation, condensation,	X		
6-ES-6-4	Anal data and make predictions about weather	X		
6-ES-6-5	Interpret weather using a weather map	X		
6-ES-7	**Astronomy and Space Science**			
6-ES-7-1	Distinguish between a day, month, year on earth based on the movements of the earth, sun and moon	X		
6-ES-7-2	Identify gravity as the force that pulls objects toward each other	X		
6-ES-7-3	Differentiate between planets according to specific characteristics such as size, composition and distance	X		
6-ES-7-4	Categorize the components of the universe (stars, planets, comets, astroids, meteors	X		
6-ES-7-5	Explain the position of the sun, moon and earth in a solar and lunar eclipse	X		
6-ES-7-6	Explain the earth/sun relationship that account for the four seasons	X		
6-ES-7-7	Predict the type of tide produced by the different positions of the earth and the moon system	X		
6-ES-7-8	Describe why the moon has phases	X		
6-ES-8	**Natural Resources**	X		
6-ES-8-1	Distinguish between renewable and nonrenewable resources	X		
6-ES-8-2	Identify various energy sources: e.g. fossil fuels, geothermal, hydroelectric, windpower and other energies	X		
6-ES-8-3	Give examples of human activities that may be harmful to the environment	X		
	Life Science			
7-LS	**Introduction to Life Science, Ecology and Population Dynamics**			
7-LS-2-1	Identifies similarities and differences among the six kingdoms of organisms.		X	
7-LS-2-2	Use dichotomous key to determine genus and species of an organism.		X	
7-LS-2-3	Describe the earth's major biomes and choose appropriate biome for an organism.		X	
7-LS-2-4	Identify biotic and abiotic factors in a biome.		X	
7-LS-2-5	Predict whether an organism can survive in a particular ecosystem.		X	
7-LS-2-6	Distinguish among commensalism, parasitism, and mutualism.		X	
7-LS-2-7	Classify organisms as producers, consumers, or decomposers in a food chain or food web.		X	
7-LS-2-8	Recognize how animals and plants are interdependent		X	
7-LS-2-9	Identify how organisms obtain food for energy.		X	
7-LS-2-10	Infer the consequences of a change in tne population size of an organism in a food chain or food web		X	
7-LS-2-11	Identify adaptations that enhance the survival of organisms in an environment.		X	
7-LS-2-12	Identify factors that contribute to extinction.		X	

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7-LS-2-13	Select and interpret the illustration that depicts the carbon/oxygen cycle.		X	
7-LS-3	**Cell Sturcture**			
7-LS-3-1	Identify the parts and functions of a compound light microscope and demonstrate its use.		X	
7-LS-3-2	Describe the basic sturctures that most cells share		X	
7-LS-3-3	Distinguish between plant and animal cells		X	
7-LS-3-4	Identify the difference in structure between prokaryotic and eukaryotic cells.		X	
7-LS-4	**Cell Process and Energy**			
7-LS-4-1	Sequence a series of diagrams depicting the movement of chromosomes during mitosis		X	
7-LS-4-2	Predict the movement of substances through osmosis or diffusion across the cell membrane given solutions		X	
7-LS-4-3	Associate the processes of photosynthesis and respiration with the appropriate cellular organelles		X	
7-LS-5	**Genetics**			
7-LS-5-1	Select models or illustrations that are representations of DNA.		X	
7-LS-5-2	Differentiate between dominant and recessive traits.		X	
7-LS-5-3	Predict the genotypes of offspring in a monohybrid cross using a Punnett Square.		X	
7-LS-5-4	Associate a change in a DNA molecule with a mutation.		X	
7-LS-5-5	Identify types of genetic engineering (e.g. gene splicing and cloning) and evaluate the impact of genetic		X	
7-LS-5-6	Describe the kinds of scientific evidence such as DNA, body structure and embryonic structure		X	
7-LS-6	**Plants**		X	
7-LS-6-1	Match a flower part with its reproductive function		X	
7-LS-6-2	Recognize a variety of pollination methods		X	
7-LS-6-3	Distinguish between sexual and asexual methods of reproduction		X	
7-LS-6-4	Recognize advantages and disadvantages of sexual and asexual reproduction		X	
7-LS-6-5	Identify photosynthesis as the food making process in plants		X	
7-LS-6-6	Identify the reactants and products of photosynthesis and respiration		X	
7-LS-6-7	Classify plants based on their characteristics (angiosperms, gymnosperms, monocots, dicots, vascular,		X	
7-LS-7	**Animals**		X	
7-LS-7-1	Select the structure that animals use to obtain oxygen and classify accordingly		X	
7-LS-7-2	Classify animals according to their means of obtaining oxygen		X	
	Physics			
8-PHY-2	**Newton's Laws, Motion and Forces**			X
8-PHY-2-1	width, height), temperature.)			X
8-PHY-2-2	Recognize that forces cause changes in speed and/or the direction of motion			X
8-PHY-2-3	Recognize the relationship between mass, force and acceleration			X
8-PHY-2-4	Describe Newton's three laws of motion and relate the first two laws to the concepts of inertia and			X
8-PHY-2-5	solve problems (with and without using vectors) pertaining to distance, speed, velocity, and time, given illustrations, diagrams, graphs, or scenarios			X
8-PHY-3	**Energy, Thermal Energy, Work and Simple Machines**			X

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8-PHY-3-1	Calculate work and power			X
8-PHY-3-2	Identify, describe and classify the six kinds of simple machines: inclined plane, wedge, screw, levers (1st, 2nd and 3rd class), wheel and axle, and pulleys (fixed, movable compound)			X
8-PHY-3-3	Choose the most appropiate simple machine to use for a specific task			X
8-PHY-3-4	Identify different forms of energy: potential, kinetic, thermal, nuclear, electromagnetic, electric			X
8-PHY-3-5	Predict the direction of heat flow between objects			X
8-PHY-3-6	Solve problems pertaining to pressure given illustrations, diagrams, graphs or scenerios			X
8-PHY-3-7	Recognize the variety of energy transformations such as conduction, convection and radiation			X
8-PHY-4	**Sound and Light Waves and the Electromagnetic Spectrum**			X
8-PHY-4-1	Identify the wavelength, frequency and amplitude of a wave			X
8-PHY-4-2	Describe the nature of light and the electromagnetic spectrum			X
8-PHY-4-3	Demonstrate examples of refraction, reflection and absorbtion of light			X
8-PHY-4-4	Describe the effects of changes in sound and light waves (e.g. the Doppler Effect)			X
	Chemistry			
8-C-5	**Matter**			X
8-C-5-1	Describe the motion, energy and arrangement of molecules in solids, liquids and gases			X
8-C-5-2	Observe and describe physical and chemical properties and changes			X
8-C-5-3	Identify and describe the different types of mixtures: homogeneous, and hetergeneous			X
8-C-6	**Atoms and the Periodic Table**			X
8-C-6-1	Describe an atom and its components: electrons, protons, neutrons and quarks			X
8-C-6-2	Determine the volume of electrons in an atom			X
8-C-6-3	Describe how the organization of the Periodic Table is used to predict the proper ties of elements			X
8-C-6-4	Identify atomic number and mass number using a Periodic Table			X
8-C-6-5	Distinguish between elements and compounds			X
8-C-6-6	Classify substances as elements or compounds from their chemical formulas			X
8-C-7	**Chemical Bonds and Equations**			X
8-C-7-1	Recognize that atoms form ionic or covalent bonds with atoms			X
8-C-7-2	Recognize that atoms may form ions or may be found in isotopes			X
8-C-7-3	Determine how temperature and concentrationnmight affect the rate of a chemical reaction (catalysts and			X
8-C-7-4	Classify a reaction is exothermic or endothermic			X
8-C-7-5	Recognize that the mass of the reactants is the same as the mass of the products, given simple chemical			X
8-C-7-6	Explain how balanced chemical equations show the Law of Mass			X
8-C-7-7	Identify and balance simple chemical equations to reinforce the Law of Conservation of Mass			
8-C-7-8	systhesis and combustion			X
8-C-8	**Solutions, Acids and Bases**			X
8-C-8-1	Identify and describe the basic properties of acids bases and test to pH			X
8-C-8-2	Describe how acids and bases form, and give examples of each			X

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8-C-8-3	Identify a substance as an acid or a base, given its pH			X