

Seventh Grade MYP Year 2 - Year at a Glance (Scope and Sequence)			Meridian 2016-2017
Unit 1 What is Science? (Scientific Investigations)	Unit 2 - What gets you moving? (Energy in ecosystems)	Unit 3 – What is a Cycle?(Cycles in Nature)	
Unit 1 (3 weeks)	(7 weeks)	(5 weeks)	
<p>2A plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;</p> <p>2B design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology; 2C collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;</p> <p>2D construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and</p> <p>2E analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.</p> <p>3A in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student</p>	<p>7A contrast situations where work is done with different amounts of force to situations where no work is done such as moving a box with a ramp and without a ramp, or standing still</p> <p>10B describe how biodiversity contributes to the sustainability of an ecosystem</p> <p>10A observe and describe how different environments, including microhabitats in school yards and biomes, support different varieties of organisms</p> <p>10C observe, record, and describe the role of ecological succession such as in a microhabitat of a garden with weeds</p> <p>8B analyze the effects of weathering, erosion, and deposition on the environment in ecoregions of Texas</p> <p>8A predict and describe how different types of catastrophic events impact ecosystems such as floods, hurricanes, or tornadoes</p> <p>8C model the effects of human activity on groundwater and surface water in a watershed</p>	<p>5A recognize that radiant energy from the Sun is transformed into chemical energy through the process of photosynthesis</p> <p>5C diagram the flow of energy through living systems, including food chains, food webs, and energy pyramid</p> <p>5B demonstrate and explain the cycling of matter within living systems such as in the decay of biomass in a compost bin</p> <p>6A identify that organic compounds contain carbon and other elements such as hydrogen, oxygen, phosphorus, nitrogen or sulfur</p>	
<p>Scientific Investigation and Reasoning (TEKS taught throughout the year)</p> <p>Safety, lab skills and procedures</p> <p>1A demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards; and</p> <p>1B practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.</p> <p>Scientific investigation</p> <p>2A plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;</p> <p>2B design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;</p> <p>2C collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;</p> <p>2D construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and</p> <p>2E analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.</p> <p>3A in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;</p> <p>3B use models to represent aspects of the natural world such as human body systems and plant and animal cells</p> <p>3C identify advantages and limitations of models such as size, scale, properties, and materials; and</p> <p>3D relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.</p> <p>4A use appropriate tools to collect, record, and analyze information, including life science models, hand lens, stereoscopes, microscopes, beakers, Petri dishes, microscope slides, graduated cylinders, test tubes, meter sticks, metric rulers, metric tape measures, timing devices, hot plates, balances, thermometers, calculators, water test kits, computers, temperature and pH probes, collecting nets, insect traps, globes, digital cameras, journals/notebooks, and other equipment as needed to teach the curriculum; and</p> <p>4B use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.</p>			
Mid-term will include Units 1-3			

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Unit 4 – What is Life? (Processes of Life)	Unit 5 – How do we Adapt? (Natural Selection and Adaptations)	Unit 6 – Who are you? (Human Body)	
(5 weeks)	(6 weeks)	(7 weeks)	
<p>12C recognize levels of organization in plants and animals, including cells, tissues, organs, organ systems and organisms</p> <p>12F recognize that according to cell theory all organisms are composed of cells and cells carry on similar functions such as extracting energy from food to sustain life</p> <p>12D differentiate between structure and function in plant and animal cell organelles, including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast and vacuole</p> <p>7C demonstrate and illustrate forces that affect motion in everyday life such as turgor pressure</p> <p>14A define heredity as the passage of genetic instructions from one generation to the next generation</p> <p>14B compare the results of uniform or diverse offspring from sexual reproduction or asexual reproduction</p> <p>14C recognize that inherited traits of individuals are governed in the genetic material found in the genes within chromosomes in the nucleus</p> <p>9A analyze the characteristics of objects in our solar system that allow life to exist [on Earth] such as the proximity of the Sun, presence of water, and composition of the atmosphere</p> <p>9B identify the accommodations, considering the characteristics of our solar system, that enabled manned space exploration</p>	<p>11C identify some changes in genetic traits that have occurred over several generations through natural selection and selective breeding such as the Galapagos Medium Ground Finch (<i>Geospiza fortis</i>) or domestic animals</p> <p>11B explain variation within a population or species by comparing external features, behaviors, or physiology of organisms that enhance their survival such as migration, hibernation, or storage of food in a bulb</p> <p>11A examine organisms or their structures such as insects or leaves and use dichotomous keys for identification</p> <p>12A investigate and explain how internal structures of organisms have adaptations that allow specific functions such as gills in fish, hollow bones in birds, or xylem in plants</p> <p>13A investigate how organisms respond to external stimuli found in the environment such as phototropism and fight or flight</p> <p>13B describe and relate responses in organisms that may result from internal stimuli such as wilting in plants and fever or vomiting in animals that allow them to maintain balance</p>	<p>12B identify the main functions of the systems of the human organism, including circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems</p> <p>6B distinguish between physical and chemical changes in matter in the digestive system</p> <p>6C recognize how large molecules are broken down into smaller molecules such as carbohydrates can be broken down into sugars</p> <p>7B illustrate the transformation of energy within an organism such as the transfer from chemical energy to heat and thermal energy in digestion</p> <p>13A investigate how organisms respond to external stimuli found in the environment such as phototropism and fight or flight</p> <p>13B describe and relate responses in organisms that may result from internal stimuli such as wilting in plants and fever or vomiting in animals that allow them to maintain balance.</p> <p>12E compare the functions of a cell to the functions of organisms such as waste removal</p>	
<p>MYP Science Assessment Criteria</p> <p>Criterion A: Knowing and Understanding</p> <ul style="list-style-type: none"> i. Describe scientific knowledge ii. Apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations iii. Interpret information to make scientifically supported judgements <p>Criterion B: Inquiring and Designing</p> <ul style="list-style-type: none"> i. Describe a problem or question to be tested by a scientific investigation ii. Outline a testable hypothesis and explain it using scientific reasoning iii. Describe how to manipulate the variables, and describe how data will be collected iv. Design scientific investigations <p>Criterion C: Processing and Evaluating</p> <ul style="list-style-type: none"> i. Present collected and transformed data ii. Interpret data and outline results using scientific reasoning iii. Discuss the validity of a prediction based on the outcome of the scientific investigation iv. Discuss the validity of the method v. Describe improvements or extensions to the method <p>Criterion D: Reflecting on the Impacts of Science</p> <ul style="list-style-type: none"> i. Summarize the ways in which science is applied and used to address a specific problem or issue ii. Describe and summarize the various implications of using science and its application in solving a specific problem or issue iii. Apply scientific language effectively iv. Document the work of others and sources of information used 			
<p>Final Exam will cover Units 4-6</p>			

