

IB Subject Group Overview
Fondren Middle School_Sciences_Y1_Subject Overview

Content : Fondren Middle School_Sciences_Y1_Subject Overviews								
Unit Title	MYP Key Concept	MYP Related Concepts	MYP Global Context	Statement of Inquiry	MYP Objectives	ATL Skills	Content (topics, knowledge, skills, and outcomes)	Assessment
Unit 1 So "ELE"mentary	Relationships	Sciences <ul style="list-style-type: none"> • Consequences • Interaction • Models 	Scientific and technical innovation	Connections based on evidence discovered through environmental patterns that help us identify properties.	-A Knowing and understanding <ul style="list-style-type: none"> • ii. apply scientific knowledge and understanding to solve problems set in familiar situations and suggest solutions to problems set in unfamiliar situations -B Inquiring and designing <ul style="list-style-type: none"> • iii. outline how to manipulate the 	Thinking <ul style="list-style-type: none"> -Critical thinking skills -Creative thinking skills 	Texas Safety Standards.SCI.6.1 B Practice appropriate use and conservation of resources including disposal, reuse, or recycling of materials.SCI.6.2 A Plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology.SCI.6.2B Design and implement	Design a shirt using elements, compounds, and mixtures. Research how the compound is beneficial or non-beneficial to the world.

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					variables, and outline how data will be collected -C Processing and evaluating • iii. discuss the validity of a prediction based on the outcome of the scientific investigatio n -D Reflecting on the impacts of science • iii. apply scientific language effectively		experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology.SCI.6. 2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers.SCI.6. 2D Construct tables, using repeated trials and means, to organize data and identify patterns.SCI.6.3B Use models to represent	
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							aspects of the natural world such as a model of Earth's layers.SCI.6.3C Identify advantages and limitations of models such as size, scale, properties, and materials.SCI.6.4 A Use appropriate tools to collect, record, and analyze information including: journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other	
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							<p>equipment as needed to teach the curriculum.SCI.6.5A Know that an element is a pure substance represented by chemical symbols.ⓈSCI.6.5C Differentiate between elements and compounds on the most basic level. ELPS: English Language Proficiency Standards* ELPS C.1a Use prior knowledge and experiences to understand meanings in English.* ELPS C.2g Understand the general meaning, main points, and important details of spoken language ranging from situations in</p>	
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							which topics, language, and contexts are familiar to unfamiliar.* ELPS C.4c Develop basic sight vocabulary, derives meaning of environmental print, and comprehends English vocabulary and language structures used routinely in written classroom materials. CCRS: College and Career Readiness Standards* CCRS 5.1E Use models to make predictions.* CCRS 7.1A Know that physical and chemical properties can be	
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							used to describe and classify matter.* CCRS 7.2A Recognize and classify pure substances (elements, compounds) and mixtures	
Unit 2 The DenSITY in the DEN	Connections	<p>Sciences</p> <ul style="list-style-type: none"> • Interaction • Patterns 	<p>Identities and relationships</p> <p>Scientific and technical innovation</p> <p>Scientific and technical innovation</p>	<p>There are constant connections and patterns among people, objects, and organisms that are in result of the interaction they naturally have</p>	<p>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 the use of science and its application in solving a 	<p>*Communication skills</p> <p>Exchanging thoughts, messages and information effectively through interaction</p> <ul style="list-style-type: none"> • Give and receive meaningful feedback • Use appropriate forms of writing for different purposes and audiences <p>Reading, writing and using language to gather and</p>	<p>TEKS, ELPS, and CCRSCI.6.1A Demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards.SCI.6.1 B Practice appropriate use and conservation of resources including disposal, reuse, or recycling of materials.SCI.6.2 B Design and implement experimental investigations by making observations,</p>	<p>Design a lab and calculate density</p>

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					<p>specific problem or issue</p>	<p>communicate information</p> <ul style="list-style-type: none"> • Make inferences and draw conclusions <p>Learning Experiences By completing a lab</p> <p>* Reflection skills (Re-)considering the process of learning; choosing and using ATL skills</p> <ul style="list-style-type: none"> • Consider content <ul style="list-style-type: none"> - What did I learn about today? - What don't I yet understand? - What questions do I have now? <p>*Critical thinking skills Analysing and evaluating</p>	<p>asking welldefined questions, formulating testable hypotheses, and using appropriate equipment and technology.SCI.6.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers.SCI.6.2D Construct tables, using repeated trials and means, to organize data and identify patterns.SCI.6.2E Analyze data to formulate reasonable explanations, communicate valid</p>	
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						issues and ideas <ul style="list-style-type: none"> • Practise observing carefully in order to recognise problems • Interpret data • Draw reasonable conclusions and generalizations • Test generalizations and conclusions 	conclusions supported by the data, and predict trends.SCI.6.3A 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 the scientific evidence of those scientific explanations so as to encourage critical thinking by the student.SCI.6.3D Relate the impact of research on scientific thought and society including the history of science and	
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							contributions of scientists as related to the content.SCI.6.4A Use appropriate tools to collect, record, and analyze information including:journal s/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other equipment as needed to teach the curriculum.SCI.6.4B Use preventative safety equipment including chemical splash goggles,	
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							aprons, and gloves and be prepared to use emergency safety equipment including an eye/face wash, a fire blanket, and a fire extinguisher. ©S CI.6.6B Calculate density to identify an unknown substance.	
Unit 3 Million Dollar Homes	Change	Sciences <ul style="list-style-type: none"> • Energy • Transformation 	Personal and cultural expression	Energy can neither be created nor destroyed, energy can only change forms, so as the world constantly changes how can we conserve energy in a format that helps solidify our future.	B Inquiring and designing <ul style="list-style-type: none"> • iii. outline how to manipulate the variables, and outline how data will be collected • iv. design scientific investigations. D Reflecting on the	I Communication skills Exchanging thoughts, messages and information effectively through interaction <ul style="list-style-type: none"> • Negotiate ideas and knowledge with peers and teachers Reading, writing and using language to gather and	<ul style="list-style-type: none"> • TEKS, ELPS, and CCRS SCI.6.1A Demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards. SCI.6.1B Practice appropriate use and conservation of resources including disposal, reuse, or recycling of materials. 	Action: Students will have be required to build a house or an amusement park that illustrates the different types of energy

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					<p>impacts of science</p> <ul style="list-style-type: none"> • ii. describe and summarize the various implications of the use of science and its application in solving a specific problem or issue • iii. apply scientific language effectively 	<p>communicate information</p> <ul style="list-style-type: none"> • Paraphrase accurately and concisely <p>Information literacy skills Finding, interpreting, judging and creating information</p> <ul style="list-style-type: none"> • Access information to be informed and inform others • Make connections between various sources of information <p>Transfer skills Utilizing skills and knowledge in multiple contexts</p> <ul style="list-style-type: none"> • Combine knowledge, understanding and skills to create products or solutions 	<p>SCI.6.2A Plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology.</p> <p>SCI.6.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers.</p> <p>SCI.6.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.</p>	<p>transformation. Demonstration: Students will have to demonstrate their knowledge of energy transformation by designing a house or amusement part.</p>
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							<p>SCI.6.3A 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 the scientific evidence of those scientific explanations so as to encourage critical thinking by the student.</p> <p>SCI.6.3B Use models to represent aspects of the natural world such as a model of Earth's layers.</p> <p>SCI.6.3C Identify advantages and limitations of models such as size, scale,</p>	
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							<p>properties, and materials. SCI.6.4A Use appropriate tools to collect, record, and analyze information including: journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other equipment as needed to teach the curriculum. SCI.6.4B Use preventative safety equipment including chemical splash goggles, aprons, and gloves and be prepared to use emergency</p>	
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							<p>safety equipment including an eye/face wash, a fire blanket, and a fire extinguisher.</p> <p>ⓈSCI.6.8A Compare and contrast potential and kinetic energy.</p> <p>ⓈSCI.6.9C Demonstrate energy transformations such as the energy in a flashlight battery changes from chemical energy to electrical energy to light energy</p>	
Unit 4 Green Means Go!!!	Logic	<p>Sciences</p> <ul style="list-style-type: none"> • Interaction • Movement 	Scientific and technical innovation	Explore changes the motion of objects as a result of forces being applied	C: Processing and evaluating ii. interpret data and outline results using scientific reasoning	<p>Research-Finding, interpreting, judging and creating information</p> <ul style="list-style-type: none"> • Collect, record and verify data 	<p>TEKS, ELPS, and CCRSⓈSCI.6.8C Calculate average speed using distance and time measurements.</p> <p>ⓈSCI.6.8D Measure and graph changes in motion.SCI.6.1A</p>	Design an eco-friendly car to calculate the speed

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					D: Reflecting on the impacts of science iii. apply scientific language effectively		Demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards.SCI.6.2 A Plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology.SCI.6.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers.SCI.6.2D Construct tables, using	
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							repeated trials and means, to organize data and identify patterns.SCI.6.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.SCI.6.3B Use models to represent aspects of the natural world such as a model of Earth's layers.SCI.6.3C Identify advantages and limitations of models such as size, scale, properties, and materials.SCI.6.3D Relate the impact of research on scientific thought and society including the	
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							history of science and contributions of scientists as related to the content.SCI.6.4A Use appropriate tools to collect, record, and analyze information including:journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other equipment as needed to teach the curriculum.	
Unit 5 All Shook Up	Identity	Sciences <ul style="list-style-type: none"> Evidence 	Identities and relationships	Plate tectonics cause major geological	A: Knowing and understanding	Self-management -(Re-)considering the process of	SCI.6.1A Demonstrate safe practices during laboratory and field	Build a model of earth with proporti

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				<p>events on Earth.</p>	<p>ii. apply scientific knowledge and understanding to solve problems set in familiar situations and suggest solutions to problems set in unfamiliar situations</p> <p>D: Reflecting on the impacts of science</p> <p>i. summarize the ways in which science is applied and used to address a specific problem or issue</p> <p>ii. describe and</p>	<p>learning; choosing and using ATL skills</p> <ul style="list-style-type: none"> • Develop new skills, techniques and strategies for effective learning • Focus on the process of creating by imitating the work of others 	<p>investigations as outlined in the Texas Safety Standards.</p> <p>SCI.6.1B Practice appropriate use and conservation of resources including disposal, reuse, or recycling of materials.</p> <p>SCI.6.2A Plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology.</p> <p>SCI.6.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings,</p>	<p>oned layers and one landform</p>
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					<p>summarize the various implications of the use of science and its application in solving a specific problem or issue</p>		<p>writing, and graphic organizers. SCI.6.2D Construct tables, using repeated trials and means, to organize data and identify patterns. SCI.6.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. SCI.6.3B Use models to represent aspects of the natural world such as a model of Earth's layers. SCI.6.3C Identify advantages and limitations of models such as size, scale, properties, and materials. SCI.6.3D Relate the impact of</p>	
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							research on scientific thought and society including the history of science and contributions of scientists as related to the content. SCI.6.4A Use appropriate tools to collect, record, and analyze information including: journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other equipment as needed to teach the curriculum.	
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Unit 6 Ecology	Relationships Systems	Sciences <ul style="list-style-type: none"> • Energy • Interaction 	Globalization and sustainability	The decisions we make impact the relationships and interactions within a system.	A: Knowing and understanding i. outline scientific knowledge ii. apply scientific knowledge and understanding to solve problems set in familiar situations and suggest solutions to problems set in unfamiliar situations iii. interpret information to make scientifically supported judgments. C: Processing and evaluating	Self-management- (Re-)considering the process of learning; choosing and using ATL skills • Consider ethical, cultural and environmental implications	B.7E Analyze and evaluate the relationship of natural selection to adaptation and to the development of diversity in and among species. B.10C Analyze the levels of organization in biological systems and relate the levels to each other and to the whole system. B.11B Investigate and analyze how organisms, populations, and communities respond to external factors. B.11C Summarize the role of microorganisms in both maintaining and disrupting the health of both organisms and ecosystems.	Design and investigate ecosystems
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					<p>ii. interpret data and outline results using scientific reasoning</p> <p>D: Reflecting on the impacts of science</p> <p>i. summarize the ways in which science is applied and used to address a specific problem or issue</p> <p>ii. describe and summarize the various implications of the use of science and its application in solving a specific</p>		<p>B.11D Describe how events and processes that occur during ecological succession can change populations and species diversity.</p> <p>B.12A Interpret relationships, including predation, parasitism, commensalism, mutualism, and competition among organisms.</p> <p>B.12B Compare variations and adaptations of organisms in different ecosystems.</p> <p>B.12C Analyze the flow of matter and energy through trophic levels using various models, including food chains, food webs, and</p>	
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					problem or issue iii. apply scientific language effectively		ecological pyramids. B.12D Recognize that long-term survival of species is dependent on changing resource bases that are limited. B.12E Describe the flow of matter through the carbon and nitrogen cycles and explain the consequences of disrupting these cycles. B.12F Describe how environmental change can impact ecosystem stability. Knowledge & Skills TBD	
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The prescribed **MYP Key Concepts** for a subject area must be covered over the course of the year by every teacher of that subject.

MYP Related Concepts must be taught over the course of the MYP program.

MYP Global Context must be covered over the course of the year by each teacher.

The **Statement of Inquiry** is constructed for a unit by combining a key concept, one or more related concepts, and a global context in a meaningful statement that the students can understand.

MYP assessment requires teachers to assess the prescribed subject-group objectives using the assessment criteria for each subject group in each year of the program. **MYP Objectives** and strands must be assessed twice per school year by each teacher.

MYP ATL Skills must show a progression and be covered over the course of the MYP program.

Content includes the topics, knowledge, skills and outcomes required by the state and district.

Summative assessment tasks should be directly linked to the statement of inquiry and provide varied opportunities for students to demonstrate their, knowledge, understanding, and skills.

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