Physical Science Subject Group Overview

		Semester 1 (18 Weeks) Units 1-4, Midterm					Semester 2 (18 Weeks) Units 5-7, Final Exam			
Unit Name		Atomic Structure	Periodic Table and Chemical Reactions	Atomic and Molecular Motion	Energy	Midterm Exam Review	Forces & Motion	Waves	Electricity & Magnetism	Final Exam Review
Time Frame		4 Weeks	4 weeks	5 weeks	4 Weeks	1 week 2 A and 2B Days	7 Weeks	4 Weeks	6 Weeks	1 week 2 A and 2B Days
PHYSICAL SCIENCE:	**Standards**	SPS1.a.,b.,c.	SPS1.a.,b.,c. SPS2.a.,b.,c. SPS3.a.,b.	SPS5.a.,b. SPS6.a.,b.,c.,d.,e.	SPS4.a.,b.,c. SPS7.a.,b.,c.,d	SPS1.a.,b.,c, SPS2.a.,b.,c. SPS3.a.,b. SPS5.a.,b. SPS6.a.,b.,c.,d.,e SPS4.a.,b.,c. SPS7.a.,b.,c.,d	SPS8.a.,b.,c.,d.	SPS7.a. SPS9.a.,b.,c.,d.,e.	SPS10.a.,b.,c.	SPS8.a.,b.,c.,d SPS7.a. SPS9.a.,b.,c.,d.,e. SPS10.a.,b.,c
	Approaches To Learning Instructional Strategies	SEP: ● Analyze and interpret data ● Use the Periodic Table as a model ● Construct arguments and explanations ATL: ● Thinking Skills: Make inferences and draw conclusions ● Communication Skills: Organize and depict information logically	SEP: ● Develop and use models ● Analyze and interpret data ● Use the Periodic Table as a model ● Use the International Union of Pure and Applied Chemistry (IUPAC) ● Plan and Carry out Investigations ATL: ● Communication Skills: Structure information in summaries, essays, and reports	SEP: ● Ask Questions ● Plan and carry out investigations ● Develop and Use Models ● Analyze and Interpret Data ● Obtain and Communicate Information ATL: ● Thinking Skills: Make inferences and draw conclusions ● Research Skills: Collect, record, and verify data ● Thinking Skills: Practice analyzing and attributing	SEP: ● Develop and use models ● Use mathematics and computational thinking ● Construct explanations ● Plan and carry out investigations ● Analyze and interpret data ATL: ● Thinking Skills: Make inferences and draw conclusions ● Communication Skills: Collect, record, and verify data		SEP: ● Construct explanations ● Plan and carry out investigations ● Analyze and interpret data ● Use mathematics and computational thinking ● NOS Connection: Science Models, Laws, and Mechanisms, and Theories Explain Natural Phenomena ATL: ● Communication Skills: Organize and depict information logically ● Thinking Skills: Make inferences and draw conclusions	SEP: ● Analyze and interpret data ● Ask questions ● Develop and use models ATL: ● Thinking Skills: Use models and simulations to explore complex systems and issues ● Research Skills: Collect, record, and verify data	SEP: ● Construct explanations ● Use mathematical and computational thinking ● Develop and use models ● Plan and carry out investigations ATL: ● Thinking Skills: Use models and simulations to explore complex systems and issues ● Thinking Skills: Analyze complex concepts and synthesize to create new understanding	

Physical Science Subject Group Overview

				causes for failure						
	Statement of Inquiry **Statement of Inquiry and Phenomenon**	Scientific and technical advancements have enabled scientists to identify, model, and discover interactions, patterns, and relationships that exist between the natural world and human societies. **Phenomenon**: How can you use carbon dating to estimate the age of organisms?	Scientific and technical advancements have enabled scientists to identify, model, and discover interactions, patterns, and relationships that exist between the natural world and human societies. **Phenomenon**: Changes to the chemistry of Flint Michigan's water supply created dangerous levels of lead in the drinking level. Students will explore the chemistry behind the removal of lead from homes and drinking water. This Old House Video: Removal of Lead Paint	Scientific and technological modeling allow for identification of changes to systems to identify relationships. **Phenomena**: How can you explain the implosion of the gas tanker using gas laws?	Scientific and technical innovations allow us to observe, investigate, and analyze the movement and transfer of energy between systems in order to design products with desired features. **Phenomena:** **Candles can be used to power a toy car.** Nuclear Fission & Fusion - Nuclear Applications There is a great deal of energy stored in the nucleus of an atom that can be harnessed for electrical power production but the use of nuclear power does come with risks. Chernobyl Video		Scientific and technological modeling allow for identification of consequences and effects of movement to identify relationships. **Phenomena**: The swirling motion continues even after you have stopped stirring your coffee or tea. How do seatbelts and airbags make use of Newton's Laws to prevent serious injury? Changes in limb posture affect muscle forces by altering the mechanical advantage of the ground reaction force	Modeling allows us to examine patterns and changes in wave behavior in order to identify relationships between energy, frequency, wavelength, and amplitude. **Phenomena**: The pitch of a siren appears to change as it moves toward or away from the observer.	Advances in science and technology have allowed humans to design systems that harness the energy and identify the relationship between electricity and magnetism. **Phenomena:** Gravity, magnetism, electricity, and electromagnetism are used in designed systems.	
	Global Context	Orientation in Space and Time Scales, duration, frequency and variability	Scientific and technical innovation Systems, models, methods; products, processes and solutions	Identities and relationships Competition and cooperation; teams, affliction and leadership	Globalization and Sustainability Consumption, conservation, natural resources and public goods		Personal and cultural expression Critical literacy, histories of ideas, fields and disciplines; analysis and argument	Identities and relationships Competition and cooperation; teams, affliction and leadership	Globalization and Sustainability Consumption, conservation, natural resources and public goods	

Physical Science Subject Group Overview

	Key Concepts	Relationships (MYP) Change (MYP/CC)	Change (CC) Relationships (MYP) Systems (CC)	Change (CC) Relationships (MYP) Systems (CC)	Systems (MYP/CC)		Patterns (CC) Relationships (MYP) Systems (CC)	Change (MYP)	Systems (CC) Relationships (MYP)	
	Related Concepts	Energy (MYP/CC) Interactions (MYP) Patterns (MYP/CC) Models (MYP/CC) Structure and Function (MYP/CC) Transformation (MYP) Balance (MYP)	Energy (MYP/CC) Interactions (MYP) Patterns (MYP/CC) Models (MYP/CC) Transformation (MYP) Balance (MYP)	Energy (MYP/CC) Interactions (MYP) Movement (MYP/CC) Models (MYP/CC)	Energy (MYP/CC) Movement (MYP/CC)		Consequences/Cause and Effect (MYP/CC) Movement (MYP)	Energy (MYP/CC) Patterns (MYP/CC)	Energy (MYP/CC)	
	MYP Assessments Performance Tasks	**Unit 1 CSA** **MYP Criterion A** **ii.** apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations	**Unit 2 CSA** **MYP Criterion C** ii. interpret data and explain results using scientific reasoning **MYP Criterion** B ii. formulate a testable hypothesis and explain it using scientific reasoning	**Unit 3 CSA** **MYP Criterion C** ii. interpret data and explain results using scientific reasoning **MYP Criterion** B ii. formulate a testable hypothesis and explain it using scientific reasoning	**Unit 4 CSA** **MYP Criterion D** ii. discuss and evaluate the various implications of the use of science and its application in solving a specific problem or issue **MYP Criterion A** iii.analyse and evaluate information to make scientifically supported judgments.		**Unit 5 CSA** **MYP Criterion D** i. explain the ways in which science is applied and used to address a specific problem or issue **MYP Criterion A** iii. analyse and evaluate information to make scientifically supported judgments.	**Unit 6 CSA** **MYP Criterion A** ii. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations **MYP Criterion C** iii. evaluate the validity of a hypothesis based on the outcome of the scientific investigation	**Unit 7 CSA** **MYP Criterion** **MYP Criterion C** iii. evaluate the validity of a hypothesis based on the outcome of the scientific investigation **MYP Criterion A** ii. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations	
	Differentiation For Tiered Learners	SWD/504 – Accommodations Provided ELL – Reading & Vocabulary Support Gifted – Extensions/ Enrichment Tasks/Projects	SWD/504 – Accommodations Provided ELL – Reading & Vocabulary Support Gifted-Extensions /Enrichment/Tasks/Projects	SWD/504- Accommodations Provided ELL - Reading and Vocabulary Support Gifted-Extensions/Enrichment/Tasks/Projects	SWD/504 – Accommodations Provided ELL – Reading and Vocabulary Support Gifted – Extensions/Enrichment Tasks/Projects		SWD/504 – Accommodations Provided ELL – Reading & Vocabulary Support Gifted - Extensions/Enrichment Tasks/Projects	SWD/504 – Accommodations Provided ELL – Reading & Vocabulary Support Gifted - Extensions/Enrichment Tasks/Projects	SWD/504 – Accommodations Provided ELL – Reading and Vocabulary Support Gifted – Extensions/Enrichment Tasks/Projects	