Physical Science
Curriculum Mapping
2019-2020
Mark Joachim

<table>
<tr><td colspan="2">Unit: The Nature of Science</td><td>Time: August 2019</td></tr>
<tr><td colspan="3">Standards Taught</td></tr>
<tr><td colspan="3">Students will investigate using the scientific method and measuring using the International System.</td></tr>
<tr><td>Differentiation/Assessment:</td><td>Classroom Management and Environment:</td><td>What will the students be doing?</td></tr>
<tr><td>Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.</td><td>The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.</td><td>The students will be using layered curriculum as they work through the introductory chapter. discussing what physical science is, how to use the scientific method,.</td></tr>
<tr><td>Prior Knowledge Needed</td><td>Vocabulary</td><td>Assessments</td></tr>
<tr><td>Students have a limited foundation in physical science that they will draw upon in this course.</td><td>Scientific methods
Modeling
SI units</td><td>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.</td></tr>
<tr><td>Reflection:
This chapter is a review of science concepts from previous courses, and getting the students familiar with using the computer to submit assignments on line.</td><td colspan="2">Essential Questions:
What is physical science?
What are scientific methods?
How are graphs used and displayed, understanding the advantages and disadvantage of how each is used?
Why is the metric system important in science?</td></tr>
<tr><td>Relevance:</td><td colspan="2">Students need to understand and use graphs, and how the metric system is in used in science.</td></tr>
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Unit: *Energy and Motion*	**Time:** *September- November 2019*	
Standards Taught		
• *HS-PS2-1*, *HS-PS2-2*, *HS-PS2-3*, • *HS-PS3-3-2*, *HS-PS3-3-3*, *HS-PS3-3-4*,		
Differentiation/Assessment:	**Classroom Management and Environment:**	**What will the students be doing?**
Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.	*The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.*	*The students will be describing motion, velocity, acceleration, force, weight, Newton's laws, and friction.* *~ Hands on labs with; Hotwheels © cars measuring, speed, acceleration and momentum.* *Simulating a bungee drop using Barbie© dolls.* *Using salt on ice to freeze a liquid.*
Prior Knowledge Needed	**Vocabulary**	**Assessments**
Students have a limited foundation in physical science that they will draw upon in this course.	*Motion, velocity, acceleration, force, weight, Newton's laws, Distance, displacement, speed, average speed, instantaneous speed, friction, net force, balanced force, inertia, law of gravitation, centripetal force, centripetal acceleration, momentum, kinetic energy, potential energy, elastic potential energy, chemical potential energy, gravitational potential energy, mechanical energy, law of conservation of energy, work, power, machine, effort force, resistance force, mechanical advantage, efficiency, simple machine, lever, pulley, wheel and axle, inclined plane, screw, wedge, compound machine, temperature, thermal energy, heat, specific heat, conduction, convection, radiation, insulator, solar energy, solar collector, heat engine, internal combustion engine, heat mover*	*Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.*

Reflection: *This unit is important in the study of motion and forces. This is hands on, and students did well with this unit.*	**Essential Questions:** • *How is motion related to velocity and acceleration?* • *How are force, motion, and weight related?* • *Why is inertia a concern in a vehicle accident?* • *Why are safety "specs" and crash test dummies necessary ?*	
Relevance:	Students are just beginning to drive, and to understand the responsibilities and capabilities, and the consequences of themselves and those around them.	

Unit: *Electricity and Energy Resources*	**Time:** *December 2019*	
Standards Taught • *HS-PS2-4* • *HS-PS3-3, HS-PS3-5,*		
Differentiation/Assessment:	**Classroom Management and Environment:**	**What will the students be doing?**
Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.	*The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.*	*Students will have hands on labs with holiday lights and batteries making circuits. Discussing how the electromagnet is used in their electrical devices and vehicles.*
Prior Knowledge Needed	**Vocabulary**	**Assessments**
Students have a limited foundation in physical science that they will draw upon in this course.	*Static electricity, law of conservation of charge, conductor, insulator, charging by contact, charging by induction, voltage difference, circuit, electric current, resistance, Ohm's law, series circuit, parallel circuit, electrical power, kilo-watt hour, magnetism, magnetic pole, magnetic domain, electromagnet, galvanometer, electric motor, electromagnetic induction, generator, turbine, direct current(DC), alternating current(A), transformer.*	*Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.*

Reflection: *Students worked with circuits And were able to make parallel and series circuits Student build on their knowledge of linear motion to circular motion.*	**Essential Questions:** •
Relevance:	*The students expanded their knowledge of electricity and energy resources, and working with circuits. Understanding how they are used in their daily lives, and with holiday lights.*

Unit: *The Nature of Matter*		**Time:** *January - March 2020*
Standards Taught • HS-PS1-1, HS-PS1-2, HS-PS1-3, HS-PS1-4, HS-PS1-5, HS-PS1-8, • HS-PS2-5		
Differentiation/Assessment:	**Classroom Management and Environment:**	**What will the students be doing?**
Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.	*The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.*	*The students will be discussing momentum, impulse, work and energy*
Prior Knowledge Needed	**Vocabulary**	**Assessments**
Students have a limited foundation in physical science that they will draw upon in this course.	*Kinetic theory, melting point, heat of fusion, boiling point, heat of vaporization, diffusion, plasma, thermal expansion, buoyancy, pressure, viscosity, pascal, substance, element, compound, heterogenous mixture, homogenous mixture, solution, colloid, Tyndall effect, suspension, physical property, physical change, distillation,*	*Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests*

	chemical change, law of conservation of Mass, atom, nucleus, electron, proton, neutron, quark, electron cloud, atomic number, mass number, isotope, average atomic mass, periodic table, group, electron dot diagram, period, chemical formula, chemically stable, chemical bond, ion, ionic bond, covalent bond, polar molecule, nonpolar molecule, binary compound, oxidation number, polyatomic ion, hydrate,	
Reflection: *Students worked with circuits And were able to make parallel and series circuits*	**Essential Questions:** • *How do electrical lines in the house work safely?* • *How doe elements combine to form compounds?*	
Relevance:	*Students worked with circuits understanding how they are used in their daily lives, and with holiday lights.*	

<table>
<tr><td colspan="2">Unit: Interactions of Matter</td><td>Time: April - May 2020</td></tr>
<tr><td colspan="3">Standards Taught</td></tr>
<tr><td colspan="3">• HS-PS1-6, HS-PS1-7,</td></tr>
<tr><td>Differentiation/Assessment:</td><td>Classroom Management and Environment:</td><td>What will the students be doing?</td></tr>
<tr><td>Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.</td><td>The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.</td><td>The students will be investigating chemical bonds, how and why elements interact and combine.</td></tr>
<tr><td>Prior Knowledge Needed</td><td>Vocabulary</td><td>Assessments</td></tr>
<tr><td>Students have a limited foundation in science that they will upon in this course.</td><td>Chemical formula, chemically stable, chemical bond, ion, ionic bond, covalent bond, oxidation number, binary compound, oxidation number, polyatomic ion, hydrate, molecule, polar molecule, polar molecule, nonpolar molecule, metal, malleable, ductile, metallic bonding, radioactive element, transition element, nonmetal, diatomic element, metalloids, allotrope, semiconductor,</td><td>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests</td></tr>
<tr><td>Reflection:
Students are really interested in ‘blowing something up’.</td><td colspan="2">Essential Questions:
• Why do certain elements combine, and others do not?
• How is a bond broken once a compound is formed?</td></tr>
<tr><td>Relevance:</td><td colspan="2">Conservation of matter is important in combining and breaking apart compounds.</td></tr>
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