

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 1- Science Skills</b></p> <p>Week 1- What is Science?</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-1.</b> Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> Scientists are curious and approach problems in a specific way.</p> <p><b><u>Activities</u></b> Intro to Science activity Vocabulary Bill Nye video</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Science</li> <li>● Technology</li> <li>● Chemistry</li> <li>● Physics</li> <li>● Geology</li> <li>● Astronomy</li> <li>● Biology</li> </ul>	<p>Questions over Bill Nye Video</p>

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<p><b>Unit 1- Science Skills</b></p> <p>Week 2 Using the Scientific Approach and Measurements</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-1.</b> Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> Scientists are curious and approach problems in a specific way.</p> <p><b><u>Activities</u></b> Notes Webquest - Scientific Method Lab - Intro to Lab Equipment</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Scientific method</li> <li>● Observation</li> <li>● Hypothesis</li> <li>● Manipulated variable</li> <li>● Responding variable</li> <li>● Controlled experiment</li> <li>● Scientific theory</li> <li>● Scientific law</li> <li>● Model</li> <li>● Scientific notation</li> <li>● Length</li> <li>● Mass</li> <li>● Volume</li> <li>● Density</li> <li>● Conversion factor</li> <li>● Precision</li> <li>● Significant figures</li> <li>● Accuracy</li> <li>● Thermometer</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Lab questions</p>

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<p><b>Unit 1- Science Skills</b></p> <p>Week 3- Presenting Scientific Data</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-1.</b> Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> Scientists are curious and approach problems in a specific way.</p> <p><b><u>Activities</u></b> Notes Review</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Slope</li> <li>● Direct proportion</li> <li>● Inverse proportion</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Chapter review</p> <p>Unit 1 Test</p>

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<p><b>Unit 2-</b> Properties of Matter</p> <p>Week 4- Classifying Matter and Physical Properties</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-1.</b> Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> Matter is all around us and it can be classified into many different categories.</p> <p><b><u>Activities</u></b> Vocabulary Density Lab Simulation Notes Physical vs Chemical Lab Google Slide Report</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Pure Substance</li> <li>● Element</li> <li>● Atom</li> <li>● Compound</li> <li>● Heterogeneous Mixture</li> <li>● Homogeneous mixture</li> <li>● Solution</li> <li>● Suspension</li> <li>● Colloid</li> <li>● Physical properties</li> <li>● Viscosity</li> <li>● Conductivity</li> <li>● Malleability</li> <li>● Melting point</li> <li>● Boiling point</li> <li>● Filtration</li> <li>● Distillation</li> <li>● Physical change</li> </ul>	<p>Lab Report</p> <p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p>

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<p><b>Unit 2-</b> Properties of Matter</p> <p>Week 5- Chemical Properties</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-1.</b> Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> Matter is all around us and it can be classified into many different categories.</p> <p><b><u>Activities</u></b> Notes</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Chemical Property</li> <li>● Flammability</li> <li>● Reactivity</li> <li>● Chemical change</li> <li>● precipitate</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Chapter review</p> <p>Unit 2 Test</p>

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<p><b>Unit 3-</b> States of Matter</p> <p>Week 6- Solids, Liquids and Gases and the Gas Laws</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-1.</b> Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> Matter exists in three states of matter on earth, Solid, Liquid and Gas.</p> <p><b><u>Activities</u></b> States of Matter Webquest Notes Gas Lab Gas Lab Simulation</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Solid</li> <li>● Liquid</li> <li>● Gas</li> <li>● Kinetic energy</li> <li>● Pressure</li> <li>● Absolute zero</li> <li>● Charles' law</li> <li>● Boyle's law</li> </ul>	<p>Lab Report</p> <p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p>

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<p><b>Unit 3-</b> States of Matter</p> <p>Week 7- Phase Changes</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-1.</b> Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> Matter exists in three states of matter on earth, Solid, Liquid and Gas.</p> <p><b><u>Activities</u></b> Solid Liquid Gas Lab Simulation Notes Solutions Lab Bill Nye</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Phase change</li> <li>● Endothermic</li> <li>● Heat of fusion</li> <li>● Exothermic</li> <li>● Vaporization</li> <li>● Heat of vaporization</li> <li>● Evaporation</li> <li>● Vapor pressure</li> <li>● Condensation</li> <li>● Sublimation</li> <li>● deposition</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Lab Report</p> <p>Chapter review</p> <p>Unit 3 Test</p>

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<p><b>Unit 4- Atomic Structure</b></p> <p>Week 8- Studying Atoms and the structure of atoms</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-1.</b> Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> Matter is made of Atoms which are the building blocks and our model of an atom has evolved over time.</p> <p><b><u>Activities</u></b> Vocabulary Notes Build an Atom lab Simulation Bill Nye</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Proton</li> <li>● Electron</li> <li>● Neutron</li> <li>● Atomic number</li> <li>● Nucleus</li> <li>● Mass number</li> <li>● isotopes</li> </ul>	<p>Lab Report</p> <p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Questions over Bill Nye Video</p>

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<p><b>Unit 4- Atomic Structure</b></p> <p>Week 9- Modern Atomic Theory</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-1.</b> Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> Matter is made of Atoms which are the building blocks and our model of an atom has evolved over time.</p> <p><b><u>Activities</u></b> Notes Atom Webquest</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Energy levels</li> <li>● Electron cloud</li> <li>● Orbital</li> <li>● Electron configuration</li> <li>● Ground state</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Chapter review</p> <p>Unit 4 Test</p>

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<p><b>Unit 5-</b> The Periodic Table</p> <p>Week 1- Organizing the elements.</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-1.</b> Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> What are periodic trends and why are they important?</p> <p><b><u>Activities</u></b> Element Poster Vocabulary</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>• Periodic Table</li> </ul>	<p>Element Poster Evaluation</p>

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<p><b>Unit 5-</b> The Periodic Table</p> <p>Week 2 The Modern Periodic Table</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-1.</b> Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> How is the modern periodic table organized?</p> <p><b><u>Activities</u></b> Notes Webquest - Scientific Method Groups of the periodic table slide report</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Period</li> <li>● Group</li> <li>● Periodic law</li> <li>● Atomic mass unit</li> <li>● Metals</li> <li>● Transition metals</li> <li>● Nonmetals</li> <li>● metalloids</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Slide report evaluation</p>

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<p><b>Unit 5-</b> The Periodic Table</p> <p>Week 3- Representative Groups</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-1.</b> Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> Why do elements in a group have similar properties?</p> <p><b><u>Activities</u></b> Notes Video Review</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Valence electron</li> <li>● Alkali metal</li> <li>● Alkaline earth metal</li> <li>● Halogens</li> <li>● Noble gasses</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Chapter review</p> <p>Unit 5 Test</p>

STATE STANDARDS [ICP]

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 6-</b> Chemical Bonds</p> <p>Week 4- Ionic Bonding and Covalent Bonding</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-2.</b> Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> What is one way in which elements can achieve stable electron configurations?</p> <p><b><u>Activities</u></b> Vocabulary Paper Clip Lab Notes</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter PS1.B: Chemical Reactions</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Electron dot diagram</li> <li>● Ion</li> <li>● Anion</li> <li>● Cation</li> <li>● Chemical bond</li> <li>● Ionic bond</li> <li>● Chemical formula</li> <li>● Crystals</li> <li>● Covalent bond</li> <li>● Molecule</li> <li>● Polar covalent bond</li> </ul>	<p>Lab Report</p> <p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 6-</b> Chemical Bonds</p> <p>Week 5- Naming compounds and writing formulas</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-2.</b> Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> What information do the name and formula of an ionic or molecular formula provide?</p> <p><b><u>Activities</u></b> Notes Lab WebQuest</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Polyatomic ion</li> <li>● Metallic bond</li> <li>● Alloy</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Lab Report</p>

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<p><b>Unit 6-</b> Chemical Bonds</p> <p>Week 6- Chemical Bonds Review and test.</p> <p>Short week- Thanksgiving break</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-2.</b> Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p>	<p><b><u>Phenomenon</u></b> Electrons are the glue that holds matter together.</p> <p><b><u>Activities</u></b> Review</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter PS1.B: Chemical Reactions</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>		<p>Chapter review</p> <p>Unit 6 Test</p>

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<p><b>Unit 7- Chemical Reactions</b></p> <p>Week 7- Describing Reactions and Types of Reactions</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-2.</b> Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p> <p><b>HS-ICP1-4.</b> Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.</p>	<p><b><u>Phenomenon</u></b> Matter is neither created nor destroyed in chemical reactions so mass is conserved.</p> <p><b><u>Activities</u></b> Chemical Reactions WebQuest Notes Chemical Reactions Lab Bill Nye</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter PS1.B: Chemical Reactions</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Reactants</li> <li>● Products</li> <li>● Chemical equation</li> <li>● Coefficients</li> <li>● Mole</li> <li>● Molar mass</li> <li>● Synthesis reaction</li> <li>● Decomposition reaction</li> <li>● Single replacement reaction</li> <li>● Double replacement reaction</li> <li>● Combustion reaction</li> <li>● Oxidation - reduction reaction</li> </ul>	<p>WebQuest Evaluation</p> <p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Lab Report</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 7- Chemical Reactions</b></p> <p>Week 8- Energy changes in reactions and reaction rates</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-2.</b> Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p> <p><b>HS-ICP1-4.</b> Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.</p>	<p><b><u>Phenomenon</u></b> What happens to chemical bonds and energy during a chemical reaction?</p> <p><b><u>Activities</u></b> Notes Review</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter PS1.B: Chemical Reactions</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Chemical energy</li> <li>● Exothermic reaction</li> <li>● Endothermic reaction</li> <li>● Reaction rate</li> <li>● catalyst</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Chapter review</p> <p>Unit 7 Test</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Final Review and test</b></p> <p>Week 9 - All topics covered in Q1 and Q2</p>	<p><b>Key summary</b></p> <p><b>HS-ICP1-1.</b> Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p><b>HS-ICP1-2.</b> Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.</p> <p><b>HS-ICP1-3.</b> Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p> <p><b>HS-ICP1-4.</b> Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.</p>	<p><b><u>Phenomenon</u></b> Scientific Knowledge builds on the work of scientists who came before us.</p> <p><b><u>Activities</u></b> Review over the entire semester.</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS1.A: Structure and Properties of Matter PS1.B: Chemical Reactions</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.5: Energy and Matter CC 6. Structure and Function CC 4. Systems and System Models CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>All Vocab from Q1 and Q2</li> </ul>	<p>Review questions</p> <p>Semester 1 Final Exam</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 1- Motion</b></p> <p>Week 1- Distance and Displacement.</p>	<p><b>Key summary</b></p> <p><b>HS-ICP2-1.</b> Analyze data to support the claim that Newton’s second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.</p>	<p><b><u>Phenomenon</u></b> What is the relationship between displacement, velocity, and acceleration?</p> <p><b><u>Activities</u></b> Vocabulary Notes Webquest - Velocity and Acceleration Bill Nye Video on Motion</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS2.A: Forces and Motion</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Frame of Reference</li> <li>● Relative motion</li> <li>● Vector</li> <li>● Resultant vector</li> </ul>	<p>Webquest Evaluation</p> <p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 1- Motion</b></p> <p>Week 2 Speed Velocity and Acceleration</p>	<p><b>Key summary</b></p> <p><b>HS-ICP2-1.</b> Analyze data to support the claim that Newton’s second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.</p>	<p><b><u>Phenomenon</u></b> What is the relationship between displacement, velocity, and acceleration?</p> <p><b><u>Activities</u></b> Notes Acceleration Lab Chapter Review Chapter Test</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS2.A: Forces and Motion</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Speed</li> <li>● Average speed</li> <li>● Instantaneous speed</li> <li>● Velocity</li> <li>● Acceleration</li> <li>● Linear graph</li> <li>● Nonlinear graph</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Lab report evaluation</p> <p>Unit 1 Test</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 2- Forces and Motion</b></p> <p>Week 3- Newton's Laws of Motion</p>	<p><b>Key summary</b></p> <p><b>HS-ICP2-1.</b> Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.</p>	<p><b><u>Phenomenon</u></b> What forces are in a car crash?</p> <p><b><u>Activities</u></b> Vocabulary Webquest</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS2.A: Forces and Motion</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Force</li> <li>● Newton</li> <li>● Net force</li> <li>● Friction</li> <li>● Static friction</li> <li>● Sliding friction</li> <li>● Rolling friction</li> <li>● Fluid Friction</li> <li>● Air resistance</li> <li>● Gravity</li> <li>● Terminal velocity</li> <li>● Projectile motion</li> </ul>	<p>Evaluate Webquest</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p>Unit 2- Forces and Motion</p> <p>Week 4- Forces</p>	<p><b>Key summary</b></p> <p><b>HS-ICP2-1.</b> Analyze data to support the claim that Newton’s second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.</p>	<p><b><u>Phenomenon</u></b> What forces are in a car crash?</p> <p><b><u>Activities</u></b> Notes Newton’s Laws Lab Bill Nye Gravity and Friction</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS2.A: Forces and Motion</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Force</li> <li>● Newton</li> <li>● Net force</li> <li>● Friction</li> <li>● Static friction</li> <li>● Sliding friction</li> <li>● Rolling friction</li> <li>● Fluid Friction</li> <li>● Air resistance</li> <li>● Gravity</li> <li>● Terminal velocity</li> <li>● Projectile motion</li> </ul>	<p>Lab Report</p> <p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p>

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Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 2-</b> Forces and Motion</p> <p>Week 5- Newton's Laws of Motion</p>	<p><b>Key summary</b></p> <p><b>HS-ICP2-1.</b> Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.</p>	<p><b><u>Phenomenon</u></b> What forces are in a car crash?</p> <p><b><u>Activities</u></b> Notes Egg Drop Lab Understanding Car Crashes Video</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS2.A: Forces and Motion</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Inertia</li> <li>● Mass</li> <li>● Weight</li> <li>● Momentum</li> <li>● Law of conservation of momentum</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Lab Report</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 2-</b> Forces and Motion</p> <p>Week 6- Universal Forces</p>	<p><b>Key summary</b></p> <p><b>HS-ICP2-1.</b> Analyze data to support the claim that Newton’s second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.</p>	<p><b><u>Phenomenon</u></b> What forces are in a car crash?</p> <p><b><u>Activities</u></b> Notes Circus Physics Video Chapter review Chapter Test</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS2.A: Forces and Motion</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Electromagnetic Force</li> <li>● Strong nuclear force</li> <li>● Weak nuclear force</li> <li>● Gravitational force</li> <li>● Centripetal force</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Chapter review</p> <p>Unit 2 Test</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 3-</b> Work, Power and Machines</p> <p>Week 7- Work and Power and how work is used in machines.</p>	<p><b>Key summary</b></p> <p><b>HS-ICP2-1.</b> Analyze data to support the claim that Newton’s second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.</p>	<p><b><u>Phenomenon</u></b> How can you improve the efficiency of Machines?</p> <p><b><u>Activities</u></b> Notes Levers Lab Bill Nye Simple Machines Simple Machine Webquest</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS2.A: Forces and Motion</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Work</li> <li>● Power</li> <li>● Horsepower</li> <li>● Joule</li> <li>● Watt</li> <li>● Machine</li> <li>● Input distance</li> <li>● Output force</li> <li>● Work output</li> <li>● Input force</li> <li>● Work input</li> <li>● Output distance</li> </ul>	<p>WebQuest Evaluation</p> <p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Lab Report</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 3-</b> Work, Power and Machines</p> <p>Week 8- Mechanical Advantage and Efficiency</p>	<p><b>Key summary</b></p> <p><b>HS-ICP2-1.</b> Analyze data to support the claim that Newton’s second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.</p>	<p><b><u>Phenomenon</u></b> How can you improve the efficiency of Machines?</p> <p><b><u>Activities</u></b> Notes Review Unit test</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS2.A: Forces and Motion</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Mechanical Advantage</li> <li>● Actual mechanical advantage</li> <li>● Ideal mechanical advantage</li> <li>● Efficiency</li> <li>● Lever</li> <li>● Fulcrum</li> <li>● Input arm</li> <li>● Output arm</li> <li>● Wheel and axle</li> <li>● Inclined plane</li> <li>● Wedge</li> <li>● Screw</li> <li>● Pulley</li> <li>● Compound machine</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Chapter review</p> <p>Unit 3 Test</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 4- Energy</b></p> <p>Week 9- Forms of energy and energy conversion and conservation</p>	<p><b>Key summary</b></p> <p><b>HS-ICP3-1.</b> Quantitatively analyze various scenarios to describe how the change of energy in one component in a system responds to the change in energy of the other components and flow of energy into and out of the system are known.</p> <p><b>HS-ICP3-2.</b> Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects).</p>	<p><b><u>Phenomenon</u></b> What is the most effective energy resource for your state?</p> <p><b><u>Activities</u></b> Vocabulary Notes Bill Nye Energy</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS3.A: Definitions of Energy PS3.B: Conservation of Energy and Energy Transfer</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.5: Using Mathematics and Computational Thinking SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Energy</li> <li>● Kinetic energy</li> <li>● Potential energy</li> <li>● Gravitational potential energy</li> <li>● Elastic potential energy</li> <li>● Mechanical energy</li> <li>● Thermal energy</li> <li>● Chemical energy</li> <li>● Electrical energy</li> <li>● Electromagnetic energy</li> <li>● Nuclear energy</li> <li>● Energy conversion</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 4- Energy</b></p> <p>Week 10- Energy resources</p>	<p><b>Key summary</b></p> <p><b>HS-ICP3-1.</b> Quantitatively analyze various scenarios to describe how the change of energy in one component in a system responds to the change in energy of the other components and flow of energy into and out of the system are known.</p> <p><b>HS-ICP3-2.</b> Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects).</p>	<p><b><u>Phenomenon</u></b> What is the most effective energy resource for your state?</p> <p><b><u>Activities</u></b> Energy Webquest Notes Online Simulation Chapter test</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS3.A: Definitions of Energy PS3.B: Conservation of Energy and Energy Transfer</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.5: Using Mathematics and Computational Thinking SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Nonrenewable energy resources</li> <li>● Fossil fuels</li> <li>● Renewable energy resources</li> <li>● Hydroelectric energy</li> <li>● Solar energy</li> <li>● Geothermal energy</li> <li>● Biomass energy</li> <li>● Energy conservation</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Chapter review</p> <p>Unit 4 Test</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 5-</b> Thermal Energy and Heat</p> <p>Week 11- Thermal Energy and Matter</p>	<p><b>Key summary</b></p> <p><b>HS-ICP3-1.</b> Quantitatively analyze various scenarios to describe how the change of energy in one component in a system responds to the change in energy of the other components and flow of energy into and out of the system are known.</p> <p><b>HS-ICP3-2.</b> Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects).</p>	<p><b><u>Phenomenon</u></b> What is thermal pollution and how can it be reduced?</p> <p><b><u>Activities</u></b> Vocabulary Notes Renewable energy slide report Online simulation</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS3.A: Definitions of Energy PS3.B: Conservation of Energy and Energy Transfer</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.5: Using Mathematics and Computational Thinking</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Heat</li> <li>● Temperature</li> <li>● Absolute zero</li> <li>● Thermal expansion</li> <li>● Specific heat</li> <li>● calorimeter</li> </ul>	<p>Slide report Evaluation</p> <p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p>Unit 5- Thermal Energy and Heat</p> <p>Week 12 - Speed Velocity and Acceleration</p>	<p><b>Key summary</b></p> <p><b>HS-ICP3-1.</b> Quantitatively analyze various scenarios to describe how the change of energy in one component in a system responds to the change in energy of the other components and flow of energy into and out of the system are known.</p> <p><b>HS-ICP3-2.</b> Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects).</p>	<p><b><u>Phenomenon</u></b> What is thermal pollution and how can it be reduced?</p> <p><b><u>Activities</u></b> Thermal Energy Webquest Notes Bill Nye Heat Chapter review Chapter test</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS3.A: Definitions of Energy PS3.B: Conservation of Energy and Energy Transfer</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.5: Using Mathematics and Computational Thinking</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Conduction</li> <li>● Thermal conductor</li> <li>● Thermal insulator</li> <li>● Convection</li> <li>● Convection current</li> <li>● Radiation</li> <li>● Thermodynamics</li> <li>● Heat engine</li> <li>● Waste heat</li> <li>● External combustion engine</li> <li>● Internal combustion engine</li> <li>● Central heating system</li> <li>● Heat pump</li> <li>● refrigerant</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Chapter review</p> <p>Unit 5 Test</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 6-</b> Mechanical waves and sound</p> <p>Week 13- Properties of Mechanical Waves</p>	<p><b>Key summary</b></p> <p><b>HS-ICP4-1.</b> Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves.</p>	<p><b><u>Phenomenon</u></b> What are some useful applications of refraction?</p> <p><b><u>Activities</u></b> Notes Bill Nye Sound</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS3.C: Relationship Between Energy and Forces PS4.A: Wave Properties</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.5: Using Mathematics and Computational Thinking</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Mechanical Wave</li> <li>● Medium</li> <li>● Crest</li> <li>● Trough</li> <li>● Transverse wave</li> <li>● Compression</li> <li>● Rarefaction</li> <li>● Longitudinal wave</li> <li>● Surface wave</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 6-</b> Mechanical waves and sound</p> <p>Week 14- Behavior of Waves</p>	<p><b>Key summary</b></p> <p><b>HS-ICP4-1.</b> Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves.</p>	<p><b><u>Phenomenon</u></b> What are some useful applications of refraction?</p> <p><b><u>Activities</u></b> Notes Wave Webquest Online Simulation</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS3.C: Relationship Between Energy and Forces PS4.A: Wave Properties</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.5: Using Mathematics and Computational Thinking SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Periodic Motion</li> <li>● Period</li> <li>● Frequency</li> <li>● Hertz</li> <li>● Wavelength</li> <li>● Amplitude</li> <li>● Reflection</li> <li>● Refraction</li> <li>● Diffraction</li> <li>● Interference</li> <li>● Constructive interference</li> <li>● Destructive interference</li> <li>● Standing wave</li> <li>● Node</li> <li>● antinode</li> </ul>	<p>Webquest evaluation</p> <p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 6-</b> Mechanical waves and sound</p> <p>Week 15- Sound and Hearing</p>	<p><b>Key summary</b></p> <p><b>HS-ICP4-1.</b> Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves.</p>	<p><b><u>Phenomenon</u></b> What are some useful applications of refraction?</p> <p><b><u>Activities</u></b> Notes Sound Webquest Chapter review Chapter test</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS3.C: Relationship Between Energy and Forces PS4.A: Wave Properties</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.5: Using Mathematics and Computational Thinking SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Sound Waves</li> <li>● Intensity</li> <li>● Decibel</li> <li>● Loudness</li> <li>● Pitch</li> <li>● Sonar</li> <li>● Doppler effect</li> <li>● resonance</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Webquest evaluation</p> <p>Chapter review</p> <p>Unit 6 Test</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 7-</b> The Electromagnetic Spectrum and Light</p> <p>Week 16- Electromagnetic Waves and the Electromagnetic spectrum</p>	<p><b>Key summary</b></p> <p><b>HS-ICP3-5.</b> Gather data to build a model to describe and explain the flow of current through series and parallel electric circuits.</p> <p><b>HS-ICP4-1.</b> Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves.</p>	<p><b><u>Phenomenon</u></b> What are the health risks of radiation?</p> <p><b><u>Activities</u></b> Vocabulary Notes Bill Nye Light Light and optics Webquest</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS3.C: Relationship Between Energy and Forces PS4.A: Wave Properties</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.5: Using Mathematics and Computational Thinking SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Electromagnetic Waves</li> <li>● Electric Field</li> <li>● Magnetic field</li> <li>● Electromagnetic radiation</li> <li>● Photoelectric effect</li> <li>● Photons</li> <li>● Intensity</li> <li>● Electromagnetic spectrum</li> <li>● Amplitude modulation</li> <li>● Frequency Modulation</li> <li>● Thermograms</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Webquest evaluation</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 7- The Electromagnetic Spectrum and Light</b></p> <p>Week 17- Behavior of light and Color</p>	<p><b>Key summary</b></p> <p><b>HS-ICP3-5.</b> Gather data to build a model to describe and explain the flow of current through series and parallel electric circuits.</p> <p><b>HS-ICP4-1.</b> Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves.</p>	<p><b><u>Phenomenon</u></b> What are the health risks of radiation?</p> <p><b><u>Activities</u></b> Notes EM radiation Mini Essays</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS3.C: Relationship Between Energy and Forces PS4.A: Wave Properties</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.5: Using Mathematics and Computational Thinking SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Transparent</li> <li>● Translucent</li> <li>● Opaque</li> <li>● Image</li> <li>● Regular reflection</li> <li>● Diffuse reflection</li> <li>● Mirage</li> <li>● Polarized light</li> <li>● Scattering</li> <li>● Dispersion</li> <li>● Primary color</li> <li>● Secondary color</li> <li>● Complementary colors of light</li> <li>● Pigment</li> <li>● Complementary colors of pigments</li> <li>● Luminous</li> <li>● Incandescent</li> <li>● Fluorescence</li> <li>● Phosphor</li> <li>● Laser</li> <li>● coherent light</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Essays</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Unit 8- Magnetism</b></p> <p>Week 18- Magnets, Electromagnetism and Electrical energy</p>	<p><b>Key summary</b></p> <p><b>HS-ICP3-4.</b> Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.</p> <p><b>HS-ICP3-5.</b> Gather data to build a model to describe and explain the flow of current through series and parallel electric circuits.</p>	<p><b><u>Phenomenon</u></b> How does an electric motor work?</p> <p><b><u>Activities</u></b> Notes Magnetism Lab Chapter review Unit test</p> <p><b><u>DCI (Disciplinary Core Ideas)</u></b> PS3.B: Conservation of Energy and Energy Transfer PS3.C: Relationship Between Energy and Forces</p> <p><b><u>SEPS (Science and Engineering Practices)</u></b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.5: Using Mathematics and Computational Thinking SEP.6: Constructing Explanations and Designing Solutions</p> <p><b><u>CCC (Crosscutting Concepts)</u></b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>● Magnetic Force</li> <li>● Magnetic Pole</li> <li>● Magnetic field</li> <li>● Magnetosphere</li> <li>● Magnetic domain</li> <li>● Ferromagnetic material</li> <li>● Electromagnetic force</li> <li>● Solenoid</li> <li>● Electromagnet</li> <li>● Galvanometer</li> <li>● Electric motor</li> <li>● Electromagnetic induction</li> <li>● Generator</li> <li>● Transformer</li> <li>● turbine</li> </ul>	<p>Section Assessment Questions in the book.</p> <p>Guided Reading Worksheets</p> <p>Lab Report</p> <p>Chapter review</p> <p>Unit 8 Test</p>

Period	Standards and Performance Expectations	Suggested Activities and Resources 3D Dimensions	Critical Vocabulary	Assessments
<p><b>Final Exam Review</b></p> <p><b>All Key Ideas covered in Q3 and Q4</b></p>	<p><b>Key summary</b></p> <p><b>HS-ICP2-1.</b> Analyze data to support the claim that Newton’s second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.</p> <p><b>HS-ICP3-1.</b> Quantitatively analyze various scenarios to describe how the change of energy in one component in a system responds to the change in energy of the other components and flow of energy into and out of the system are known.</p> <p><b>HS-ICP3-2.</b> Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects).</p> <p><b>HS-ICP3-4.</b> Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.</p> <p><b>HS-ICP3-5.</b> Gather data to build a model to describe and explain the flow of current through series and parallel electric circuits.</p>	<p><b>Phenomenon</b> Scientific Knowledge builds on the work of scientists who came before us.</p> <p><b>Activities</b> Review over the entire semester.</p> <p><b>DCI (Disciplinary Core Ideas)</b> PS3.A: Definitions of Energy PS3.B: Conservation of Energy and Energy Transfer PS3.C: Relationship Between Energy and Forces</p> <p><b>SEPS (Science and Engineering Practices)</b> SEP.2: Developing and Using Models SEP.3: Planning and Carrying Out Investigations SEP.4: Analyzing and Interpreting Data SEP.5: Using Mathematics and Computational Thinking SEP.6: Constructing Explanations and Designing Solutions</p> <p><b>CCC (Crosscutting Concepts)</b> CC.1: Patterns CC.2: Cause and Effect CC 4. Systems and System Models CC 6. Structure and Function CC 7. Stability and Change</p>	<ul style="list-style-type: none"> <li>All Vocab from Q3 and Q4</li> </ul>	<p>Review questions</p> <p>Semester 1 Final Exam</p>