Blue HIghlights=State Power Standards

Wyoming Science Standards 2016: Physical Science Curriculum Map **Quarter 1: Chemistry**
Standards for Science Practice: Matter & Its Interactions
Unit Title : Properties of Matter
Learning Outcomes: HS-PS1-3. Plan and conduct an investigation to gather evidence to compare the structure of substances at the macroscopic scale to infer the strength of electrical forces between particles.
Key Concepts (Disciplinary Core Ideas, Crosscutting Concepts, Science & Engineering Practices): ● The structure and interactions of matter at the macroscopic scale are determined by electrical forces within and between atoms. ● Different patterns may be observed at each of the scales at which a system is studied and can provide evidence for causality in explanations of phenomena. ● Plan and conduct an investigation individually or collaboratively to produce data to serve as the basis for evidence. In the design: ○ Decide on types, amounts, and accuracy of data needed to produce reliable measurements ○ Consider limitations on the precision of the data (e.g., number of trials, cost, risk, time). ● Develop a model based on evidence to illustrate the relationships between systems or between components of a system.
Common Core Alignment **ELA/Literacy Connections:** ● RST.11.12.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

- WHST.9-12.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate, synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
- WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively, assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
- WHST.9-12.9 Draw evidence from informational texts to support analysis, reflection, and research.

Math Connections:
- HSN-Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
- HSN-Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
- HSN-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.

Weeks	Essential Questions	Practice Lessons/ Resource	District Common Assessment
3	• What are the differences between physical and chemical properties of matter? • How is the property of density determined? • How can a physical property be used to identify a substance?	Teacher designated: • Assignments • Labs/Activities • Quizzes • Tests	• Viscosity and Surface Tension • Conservation of Mass Lab

Standards for Science Practice
Matter & Its Interactions

Unit Title : Atoms & the Periodic Table

Learning Outcomes:
HS-PS1-1. 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 HS-PS1-2. Construct 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, and revise, as needed. HS-PS2-6. Communicate scientific and technical information about why the molecular-level structure is important in the functioning of materials. HS-PS1-3. Plan and conduct an investigation to gather evidence to compare the structure of substances at the macroscopic scale to infer the strength of electrical forces between particles. HS-PS1-4. 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
Key Concepts: ● Each atom has a charged substructure consisting of a nucleus, which is made of protons and neutrons, surrounded by electrons. ● The periodic table orders elements horizontally by the number of protons in the atom's nucleus and places those with similar chemical properties in columns. The repeating patterns of this table reflect patterns of outer electron states. ● The periodic table orders elements horizontally by the number of protons in the atom's nucleus and places those with similar chemical properties in columns. The repeating patterns of this table reflect patterns of outer electron states. ● A stable molecule has less energy than the same set of atoms separated; one must provide at least this energy in order to take the molecule apart. ● Nuclear processes, including fusion, fission, and radioactive decays of unstable nuclei, involve release or absorption of energy. ● In nuclear processes, atoms are not conserved, but the total number of protons plus neutrons is conserved. ● Different patterns may be observed at each of the scales at which a system is studied and can provide evidence for causality in explanations or phenomena. ● Changes of energy and matter in a system can be described in terms of energy and matter flows into, out of, and within that system. ● Use a model to predict the relationships between systems or between components of a system.

● Construct and revise an explanation based on valid and reliable evidence obtained from a variety of sources (including students' own investigations, models, theories, simulations, peer review) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future. ● Develop a model based on evidence to illustrate the relationships between systems or between components of a system.
Common Core Alignment **ELA/Literacy Connections** ● RST.9-10.7 Translate quantitative or technical information in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words. ● WHST.9-12.5 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. **Mathematics Connections** ● MP.2 Reason abstractly and quantitatively. ● HSN-Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. ● HSN-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling. ● HSN-Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. ● MP.4 Model with mathematics.

Weeks:	**Essential Questions**	**Practice Lessons/ Resource**	**District Common Assessments**
5 weeks	● In what ways does the periodic table organize what we know about the elements? ● What trends in chemical and physical properties are revealed by the periodic table?	Teacher designated: ● Assignments ● Labs/Activities ● Quizzes ● Tests	● Atom Board

Physical Science **Quarter 2**

Standards for Science Practice
Matter & Its Interactions

Unit Title : Chemical Reactions

Learning Outcomes:

HS-PS1-2. Construct 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, and revise, as needed.
`• In addition to Proficient, the Advanced student is able to 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.
• The Proficient student is able to construct an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms and knowledge of the patterns of chemical properties.
• The Basic student is able to construct an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms.
• The Below Basic student does not meet the Basic performance level.

HS-PS1-4. 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

HS-PS1-5. Apply scientific principles and use evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

HS-PS1-6. Evaluate the design of a chemical system by changing conditions to produce increased amounts of products at equilibrium, and refine the design, as needed.

HS-PS1-7. Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

HS-PS1-8. Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.

Key Concepts (Disciplinary Core Ideas, Crosscutting Concepts, Science & Engineering Practices):

- The fact that atoms are conserved, together with knowledge of the chemical properties of the elements involved, can be used to describe and predict chemical reactions.
- Chemical processes, their rates, and whether or not energy is stored or released can be understood in terms of the collisions of molecules and the rearrangements of atoms into new molecules, with consequent changes in the sum of all bond energies in the set of molecules that are matched by changes in kinetic energy.
- Chemical processes, their rates, and whether or not energy is stored or released can be understood in terms of the collisions of molecules and the rearrangements of atoms into new molecules, with consequent changes in the sum of all bond energies in the set of molecules that are matched by changes in kinetic energy. In many situations, a dynamic and condition-dependent balance between a reaction and the reverse reaction determines the numbers of all types of molecules present.
- The fact that atoms are conserved, together with knowledge of the chemical properties of the elements involved, can be used to describe and predict chemical reactions.
- The total amount of energy and matter in closed systems is conserved.
- Criteria may need to be broken down into simpler ones that can be approached systematically, and decisions about the priority of certain over others (trade-offs) may be needed.
- Different patterns may be observed at each of the scales at which a system is studied and can provide evidence for causality in explanations or phenomena.
- Mathematical representations of phenomena are used to support claims.
- Construct and revise an explanation based on valid and reliable evidence obtained from a variety of sources (including students' own investigations, models, theories, simulations, peer review) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.
- Apply scientific principles and evidence to provide an explanation of phenomena and solve design problems, taking into account possible unanticipated effects.
- Refine a solution to a complex real-world problem, based on scientific knowledge, student- generated sources of evidence, prioritized criteria, and trade off considerations.

Common Core Alignment
ELA/Literacy Connections

- SL.11-12.5 Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.
- RST.11.12.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
- WHST.9-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments,

or technical processes.
- WHST.9-12.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate, synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

Math Connections
- MP.2 Reason abstractly and quantitatively
- MP.4 Model with mathematics.
- HSN-Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
- HSN-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.
- HSN-Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Weeks:	**Essential Questions**	**Practice Lessons/ Resource**	**District Common Assessment**
9	• What determines how elements are attracted to each other in compounds? • How do elements bond? • How are properties related to bonding?	Teacher designated: • Assignments • Labs/Activities • Quizzes • Tests	• Single-Replacement Reactions • Single Replacement Lab • Rate of Reactions Lab

Physical Science
Quarter 3

Standards for Science Practice
Motion and Stability: Forces and Interactions

Unit Title : Laws of Motion and Projectile Motion

Learning Outcomes: Students will be able to:

HS-PS2-1. 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.

• In addition to Proficient, the Advanced student is able to plan and conduct an investigation to collect 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.

• The Proficient student is able to 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.

• The Basic student is able to identify and describe 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.

• The Below Basic student may be able to identify that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.

HS-PS2-2. Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.

In addition to Proficient, the Advanced student is able to plan and conduct an experiment to gather data to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.

• The Proficient student is able to use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.

• The Basic student is able to identify and describe mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.

• The Below Basic student may be able to identify that the total momentum of a system of objects is conserved when there is no net force on the system.

HS-PS2-3. Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.

• In addition to Proficient, the Advanced student is able to compare and contrast two different devices that minimizes the force on a macroscopic object during a collision.

• The Proficient student is able to apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.

• The Basic student is able to apply scientific and engineering ideas to design and evaluate a device that minimizes the force on a macroscopic object during a collision.

• The Below Basic student may be able to apply scientific and engineering ideas to evaluate a device that minimizes the force on a macroscopic object during a collision.

HS-PS2-6 Communicate scientific and technical information about why the molecular-level structure is important in the functioning of materials. •

- In addition to Proficient, the Advanced student is able to evaluate scientific and technical information to make a claim about why the molecular-level structure is important in the functioning of materials.
- The Proficient student is able to communicate scientific and technical information about why the molecular-level structure is important in the functioning of materials.
- The Basic student is able to identify scientific and technical information about how the molecular-level structure is important in the functioning of materials.
- The Below Basic student does not meet the Basic performance level.

HS-ETS1-2. Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

HS-ETS1-3. Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

HS-ETS1-4. Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

HS-PS2-4. Use mathematical representations to predict the gravitational and/or electrostatic forces between objects using Newton's Law of Gravitation and/or Coulomb's Law, respectively.

Key Concepts:

- Empirical evidence is required to differentiate between cause and correlation and make claims about specific causes and effects.
- Newton's second law accurately predicts changes in the motion of macroscopic objects.
- Analyze data using tools, technologies, and/or models (e.g., computational, mathematical) in order to make valid and reliable scientific claims or determine an optimal design solution.
- When investigating or describing a system, the boundaries and initial conditions of the system need to be defined.
- Momentum is defined for a particular frame of reference; it is the mass times the velocity of the object.
- Use mathematical representations of phenomena to describe explanations.
- Systems can be designed to cause a desired effect.
- Apply scientific ideas to solve a design problem, taking into account possible unanticipated effects.
- Design and evaluate a solution to a complex real-world problem, based on scientific knowledge, student-generated sources of

evidence, prioritized criteria, and tradeoff considerations.

- Models (e.g., physical, mathematical, computer models) can be used to simulate systems and interactions—including energy, matter, and information flows— within and between systems at different scales.
- Both physical models and computers can be used in various ways to aid in the engineering design process.

Common Core Alignment:
ELA/Literacy Connections

- RST.11-12.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
- RST.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
- RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
- RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible
- WHST.9-12.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate, synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
- WHST.9-12.9 Draw evidence from informational texts to support analysis, reflection, and research.

Mathematics Connections

- MP.2 Reason abstractly and quantitatively.
- MP.4 Model with mathematics.
- HSN-Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
- HSN-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.
- HSN-Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
- HSA-SSE.A.1 Interpret expressions that represent a quantity in terms of its context.
- HSA-SSE.B.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
- HSA-CED.A.1 Create equations and inequalities in one variable and use them to solve problems.
- HSA-CED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

● HSA-CED.A.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. ● HSF-IF.C.7 Graph functions expressed symbolically and show key features of the graph, by in hand in simple cases and using technology for more complicated cases. ● HSS-ID.A.1 Represent data with plots on the real number line (dot plots, histograms, and box plots)

Weeks:	Essential Questions	Practice Lessons/ Resource	Assessment
9	● How does the shape of graphs representing the relationship between displacement, velocity, or acceleration vs. time offer information about the motion of an object? ● How can velocity be negative? How can acceleration be negative? ● Why is the initial acceleration of a sprint runner important in determining who will win the race? ● How does the description of motion of an object change depending of the reference frame used to describe it?	Teacher designated: ● Assignments ● Labs/Activities ● Quizzes ● Tests	● Newton's Second Law Simulation Lab

Quarter 4: Physics
Standards for Science Practice: Motion and Stability: Forces and Interaction & Energy
Unit Title : Energy and waves
Learning Outcomes: HS-PS2-5. Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.

HS-PS4-1 Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

HS-PS4-5 Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.

HS-PS3-3. Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

HS-PS3-1. Create or apply a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.

HS-PS3-2. 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 position of particles (objects).

HS-PS3-4. Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system.

HS-ETS1-1. Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.

HS-ETS1-2. Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

HS-ETS1-4. Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

HS-ETS1-5. Evaluate the validity and reliability of claims in a variety of materials.

Key Concepts:

- Different patterns may be observed at each of the scales at which a system is studied and can provide evidence for causality in explanations of phenomena.

- Newton's law of universal gravitation and Coulomb's law provide the mathematical models to describe and predict the effects of gravitational and electrostatic forces between distant objects.
- Forces at a distance are explained by fields (gravitational, electric, and magnetic) permeating space that can transfer energy through space.
- Systems can be designed to cause a desired effect.
- Investigating or designing new systems or structures requires a detailed examination of the properties of different materials, the structures of different components, and connections of components to reveal its function and/or solve a problem.
- Models can be used to predict the behavior of a system, but these predictions have limited precision and reliability due to the assumptions and approximations inherent in models.
- Conservation of energy means that the total change of energy in any system is always equal to the total energy transferred into or out of the system.
- Energy cannot be created or destroyed, but it can be transported from one place to another and transferred between systems.
- Mathematical expressions, which quantify how the stored energy in a system depends on its configuration (e.g. relative positions of charged particles, compression of a spring) and how kinetic energy depends on mass and speed, allow the concept of conservation of energy to be used to predict and describe system behavior.
- The availability of energy limits what can occur in any system.
- Energy is a quantitative property of a system that depends on the motion and interactions of matter and radiation within that system. That there is a single quantity called energy is due to the fact that a system's total energy is conserved, even as, within the system, energy is continually transferred from one object to another and between its various possible forms.
- Changes of energy and matter in a system can be described in terms of energy and matter flows into, out of, and within that system.
- At the macroscopic scale, energy manifests itself in multiple ways, such as in motion, sound, light, and thermal energy.
- Criteria and constraints also include satisfying any requirements set by society, such as taking issues of risk mitigation into account, and they should be quantified to the extent possible and stated in such a way that one can tell if a given design meets them.
- Modern civilization depends on major technological systems. Engineers continuously modify these technological systems by applying scientific knowledge and engineering design practices to increase benefits while decreasing costs and risks.
- When investigating or describing a system, the boundaries and initial conditions of the system need to be defined and their inputs and outputs analyzed and described using models.
- Energy cannot be created or destroyed, but it can be transported from one place to another and transferred between systems.
- Uncontrolled systems always evolve toward more stable states— that is, toward more uniform energy distribution (e.g., water flows downhill; objects hotter than their surrounding environment cool down).

- Science and engineering complement each other in the cycle known as research and development (R&D). Many R&D projects may involve scientists, engineers, and others with wide ranges of expertise.
- Both physical models and computers can be used in various ways to aid in the engineering design process.
- Empirical evidence is required to differentiate between cause and correlation and make claims about specific causes and effects.
- Models (e.g., physical, mathematical, computer models) can be used to simulate systems and interactions—including energy, matter, and information flows— within and between systems at different scales.

Common Core Alignment:
ELA/Literacy Connection

- WHST.9-12.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate, synthesize multiple sources on the subject, demonstrating an understanding of the subject under investigation.
- WHST.9-12.9 Draw evidence from informational texts to support analysis, reflection, and research.
- WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
- SL.11-12.5 Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.
- RST.9-10.8 Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.
- RST.11-12.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. WHST.9-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
- RST.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
- RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
- RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible

Mathematics Connections

- MP.2 Reason abstractly and quantitatively.

- MP.4 Model with mathematics.
- HSN-Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
- HSN-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.
- HSN-Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
- HSA-SSE.A.1 Interpret expressions that represent a quantity in terms of its context.
- HSA-SSE.B.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

Social Studies Connection

- SS12.3.3 Analyze and evaluate the impact of current and emerging technologies at the micro and macroeconomic levels (e.g., jobs, education, trade, and infrastructure) and their impact on global economic interdependence.

Weeks:	**Teaching Points/Essential Questions**	**Practice Lessons/ Resource**	**Assessments**
9	• Why is it important to use vector quantities and not just scalar quantities to describe the motion of an object? • How does the resultant of two vectors change as the angle between the two changes? • How does the direction of the acceleration affect the direction of motion? • Why does a projectile make a parabolic path?	Teacher designated: • Assignments • Labs/Activities • Quizzes • Tests	• Conservation of Energy • Temperature Changes Everything • Investigation 4-2 - Conservation of Energy