

Adair County High School

2020-2021

High School Science STANDARDS / PACING GUIDE

5 Key Skills

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Clarification Statement for each standard, Science and Engineering Practices, Disciplinary Core Ideas, Crosscutting Concepts and KAS Connections can be viewed by clicking on the link of the title in each section. Science classes are color coded as follows: **Integrated Science**, Chemistry I and II, **AP Biology**, **Biology**, **Earth Science**

Standard	Learning Target We are learning to.....	Window of Instruction (weeks)	Essential Vocabulary	Resources	Course Name
<p><u>Structure and Properties of Matter</u> Students who demonstrate understanding can:</p>					
<p>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.</p>	<p>1) 1) Outline the steps in the historical development of the periodic table. 2) 2) Predict similarities in properties of the elements using the periodic table. 3) 3) Relate an element's valence electron structure to its position on the periodic table. 4) 4) Identify four important trends and explain how each reflects the electron configurations of the elements.</p>	5	<p>Periodicity, periodic law, group, period, metal, nonmetal, metalloid, electron configuration, periodic trend</p>	<p>Glencoe-Physical Science textbook Glencoe Chemistry Science Textbook Wiley- General, Organic and Biochemistry Textbook CrashCourse #4 https://www.youtube.com/watch?v=0RRVV4Diomg Campbell Biology 9th Edition 2011</p>	<p>Integrated Science</p>
		4			<p>Unit 2: https://docs.google.com/document/d/1cHNDro-54ojDfHP52mDC4qhJnQc8XuYeYIAVv4q7ydl/edit?usp=sharing</p>
	<p>Unit 2: Understand the chemical context of life. Understanding the emergent properties of water that contribute to life. Explain how acidic and basic systems</p>	3			<p>AP Biology</p>

	<p>affect living organisms. compare/contrast organic and inorganic compounds and explain how each are essential for life. Explain how functional groups can alter the structure and function of compounds.</p> <p>Unit 7: Cellular Respiration</p>	2	<p>Unit 7: https://drive.google.com/open?id=1SuaDGLvJjE75EOkYPHBg2EnQOszmIHJAn_nWF24qa6U</p>	<p>Campbell Biology 9th Edition 2011</p>	
<p>HS-PS1-3 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>1) 1) Compare/Contrast strength of intermolecular forces among various substances.</p> <p>2) Physical properties of substances depend on intermolecular forces of attraction.</p>	3 4	<p>Atmospheric pressure, vapor pressure, altitude, boiling point, phase change graph, endothermic, exothermic, polarity, intermolecular forces of attraction, surface tension</p> <p>Unit 2: https://docs.google.com/document/d/1cHNDro-54ojDfHP52mDC4qhJnQc8XuYeYIAVv4q7ydl/edit?usp=sharing</p>	<p>Glencoe-Physical Science textbook</p> <p>https://www.youtube.com/watch?v=Ag4lLUXKuSM https://www.youtube.com/watch?v=ffBusZO-TO0</p> <p>Around the World simulation https://www.ck12.org/chemistry/atmospheric-pressure-in-chemistry/</p> <p>Vacuum Chamber</p> <p>Glencoe Chemistry Science Textbook</p> <p>Wiley- General, Organic and Biochemistry Textbook</p> <p>Fuse School</p> <p>Campbell Biology 9th Edition 2011</p>	<p>Integrated Science</p> <p>Chemistry I</p>

	<p>Unit 2: Understand the chemical context of life. Understanding the emergent properties of water that contribute to life. Explain how acidic and basic systems affect living organisms. compare/contrast organic and inorganic compounds and explain how each are essential for life. Explain how functional groups can alter the structure and function of compounds.</p>	3			AP Biology
<p>HS-PS1-8 Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during processes of fission, fusion, and radioactive decay.</p>	<p>1) Compare and contrast nuclear fission and nuclear fusion. 2) Demonstrate equations that represent the nuclear changes that occur during radioactive decay.</p>	5	<p>Nuclear fission, nuclear fusion, radioactivity alpha, beta and gamma particles, half-life</p>	<p>Glencoe Chemistry Science Textbook Wiley- General, Organic and Biochemistry Textbook CrashCourse #39</p>	<p>Chemistry I and Chemistry II</p>
<p>HS-PS2-6 Communicate scientific and technical information about why the molecular-level structure is important in the functioning designed materials.</p>	<p>1) 1) Explain how the arrangement and structure of atoms determines a substance's properties. 2) 2) Compare the effect of covalent and ionic bonding on the physical properties of compounds.</p> <p>Unit 2: Understand the chemical context of life.</p>	<p>5 3 3</p>	<p>Metals, nonmetals and metalloid, polarity</p> <p>Unit 2: https://docs.google.com/document/d/1cHNDro-54ojDfHP52mDC4qhJnQc8XuYeYIAVv4q7ydl/edit?usp=sharing</p> <p>Signal transduction pathway Quorum sensing</p>	<p>Glencoe-Physical Science textbook "Hunt for the Elements" Video Glencoe Chemistry Science Textbook Wiley- General, Organic and Biochemistry Textbook TutorVista Campbell Biology 9th Edition 2011</p>	<p>Integrated Science Chemistry I and Chemistry II AP Biology</p>

	<p>Understanding the emergent properties of water that contribute to life. Explain how acidic and basic systems affect living organisms. compare/contrast organic and inorganic compounds and explain how each are essential for life. Explain how functional groups can alter the structure and function of compounds.</p> <p>Unit 10: Cell Communication</p>	2	<p>Local regulators Hormones Reception Transduction Response Ligand Protein kinase Apoptosis</p>		
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Chemical Reactions
Students who demonstrate understanding can:

<p>HS-PS1-2 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>1) 1) Describe the characteristics of the of a chemical reaction. 2) 2) Write balanced chemical equations. 3) 3) Classify chemical reactions.</p> <p>Unit 2: Understand the chemical context of life. Understanding the emergent properties of water that contribute to life. Explain how acidic and basic systems</p>	5 1 3	<p>reactant, product, coefficient, synthesis, decomposition, single displacement, double displacement, combustion,</p> <p>Unit 2: https://docs.google.com/document/d/1cHNDro-54ojDfHP52mDC4qhJnQc8XuYeYIAVv4q7ydl/edit?usp=sharing</p> <p>Unit 7:</p>	<p>Glencoe-Physical Science textbook</p> <p>Chemical Reactions Unit Test https://drive.google.com/open?id=1NcDDbOyGW7KUqNV7t2bhhLdF_G_eWwmi</p> <p>Glencoe Chemistry Science Textbook</p> <p>Wiley- General, Organic and Biochemistry Textbook</p> <p>Campbell Biology 9th edition 2011</p>	<p>Integrated Science</p> <p>Chemistry I and Chemistry II</p> <p>AP Biology</p>
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	<p>affect living organisms. compare/contrast organic and inorganic compounds and explain how each are essential for life. Explain how functional groups can alter the structure and function of compounds.</p> <p>Unit 7: Cellular Respiration</p>	2	<p>https://drive.google.com/open?id=1SuaDGlvJjE75EOkYPHBg2EnQOszmIHJAn_nWF24qa6U</p>	Campbell Biology 9th edition 2011	AP Biology
<p>HS-PS1-4 Develop a model to illustrate that the release of absorption of energy from a chemical reaction system depends upon changes in total bond energy.</p>	<p>1) 1) Calculate the amount of energy released or absorbed by a chemical reaction using the bond energies of reactants and products. 2) 2) Model ionic and covalent compounds, 3) 3) Demonstrate how atoms achieve chemical stability by bonding.</p> <p>Unit 2: How does the grass of the Serengeti help the cheetah run? Illustrate how photosynthesis transforms light energy into stored chemical energy. Construct and revise an explanation based on evidence for how C, H, and O from sugar molecules may combine with other elements to form amino acids or other large C-based molecules. Illustrate that cellular respiration is a chemical process where bonds of food molecules and oxygen molecules are broken and new bonds are formed, resulting in a transfer of energy.</p>	3 4 5	<p>Ionic and covalent bond, formula unit, molecule, Lewis Dot Diagram, ion, dipole, hydrogen bond, endothermic, exothermic, activation energy, bond energy</p> <p>Unit 2: https://drive.google.com/open?id=1mpC9A_UTq1Wua-TEkS_609FTP8cPsUqIDVaUHWWv624</p> <p>Unit 7: https://drive.google.com/open?id=1SuaDGlvJjE75EOkYPHBg2EnQOszmIHJAn_nWF24qa6U</p>	<p>Glencoe-Physical Science textbook Glencoe Chemistry Science Textbook Wiley- General, Organic and Biochemistry Textbook CrashCourse #17</p> <p>Glencoe Biology 2002 Whale 2012 Zebra Teacher-made PPT https://www.youtube.com/watch?v=UllOrtzTKWM</p> <p>Campbell Biology 9th 2011</p>	<p>Integrated Science Chemistry I and Chemistry II Biology AP Biology</p>

	Unit 7: Cellular Respiration	2			
HS-PS1-5 Apply scientific principles and 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.	<p>1) Explain factors that influence the rate of a reaction</p> <p>Unit 2: Understand the chemical context of life. Understanding the emergent properties of water that contribute to life. Explain how acidic and basic systems affect living organisms. compare/contrast organic and inorganic compounds and explain how each are essential for life. Explain how functional groups can alter the structure and function of compounds.</p>	<p>1</p> <p>3</p>	<p>activation energy, catalyst, enzyme, inhibitor</p> <p>Unit 2: https://docs.google.com/document/d/1cHNDro-54ojDfHP52mDC4qhJnQc8XuYeYIAVv4q7ydl/edit?usp=sharing</p>	<p>Glencoe Chemistry Science Textbook</p> <p>Wiley- General, Organic and Biochemistry Textbook</p> <p>Khan Academy Simulation: pearsonplaces.com</p> <p>Campbell Biology 9th edition 2011</p>	<p>Chemistry I and Chemistry II</p> <p>AP Biology</p>
HS-PS1-6 Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.	<p>1) Demonstrate factor that influence the direction of a reaction.</p> <p>Unit 2: Understand the chemical context of life. Understanding the emergent properties of water that contribute to life. Explain how acidic and basic systems affect living organisms. compare/contrast organic and inorganic compounds and explain how each are essential for life. Explain how functional groups can alter the structure and function of</p>	<p>1</p> <p>3</p>	<p>Equilibrium, dynamic equilibrium</p> <p>Unit 2: https://docs.google.com/document/d/1cHNDro-54ojDfHP52mDC4qhJnQc8XuYeYIAVv4q7ydl/edit?usp=sharing</p>	<p>Glencoe Chemistry Science Textbook</p> <p>Wiley- General, Organic and Biochemistry Textbook</p> <p>CrashCourse #28</p> <p>Campbell Biology 9th edition 2011</p>	<p>Chemistry I and Chemistry II</p> <p>AP Biology</p>

	compounds.				
HS-PS1-7 Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a reaction.	<p>1) 1) Demonstrate that matter is conserved during a chemical reaction</p> <p>Unit 2: How does the grass of the Serengeti help the cheetah run? Illustrate how photosynthesis transforms light energy into stored chemical energy. Construct and revise an explanation based on evidence for how C, H, and O from sugar molecules may combine with other elements to form amino acids or other large C-based molecules. Illustrate that cellular respiration is a chemical process where bonds of food molecules and oxygen molecules are broken and new bonds are formed, resulting in a transfer of energy.</p> <p>Unit 2: Understand the chemical context of life. Understanding the emergent properties of water that contribute to life. Explain how acidic and basic systems affect living organisms. compare/contrast organic and inorganic compounds and explain how each are essential for life. Explain how functional groups can alter the structure and function of compounds.</p>	<p>1</p> <p>1</p> <p>5</p> <p>3</p>	<p>Conservation of matter</p> <p>Unit 2: https://drive.google.com/open?id=1mpC9A_UTq1Wua-TEkS_609FTP8cPsUqIDVaUHWWv624</p> <p>Unit 2: https://docs.google.com/document/d/1cHNDro-54ojDfHP52mDC4qhJnQc8XuYeYIAVv4q7ydl/edit?usp=sharing</p>	<p>Glencoe-Physical Science textbook</p> <p>Glencoe Chemistry Science Textbook</p> <p>Wiley- General, Organic and Biochemistry Textbook</p> <p>Glencoe Biology 2002 Whale 2012 Zebra</p> <p>Teacher-made PPT https://www.youtube.com/watch?v=UllOrtzTKWM</p> <p>Campbell Biology 9th edition 2011</p>	<p>Integrated Science</p> <p>Chemistry I and Chemistry II</p> <p>Biology</p> <p>AP Biology</p>

Forces and Interactions

Students who demonstrate understanding can:

HS-PS2-1 Analyze data to	1. Calculate average speed,		Average speed,	Glencoe-Physical Science textbook	Integrated Science
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<p>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>distance, time.</p> <ol style="list-style-type: none"> 2. Calculate the acceleration of an object in motion. 3. Interpret the speed of an object represented by a distance/time graph. 4. Interpret the motion of an object represented by a velocity/time graph. 5. Calculate the net force acting on an object. 6. Explain how force, mass, and acceleration are related. 7. Differentiate between types of friction. 8. Design a paper helicopter to have the slowest terminal velocity possible. 9. Use Newton’s impulse formula to calculate the amount of force acting on an object in a collision. 10. Design and build a bumper that will reduce the amount of force on the occupants of a car. Use Newton’s 2nd law to explain how to conserve fuel in an automobile. 		<p>instantaneous speed, velocity, acceleration, Force, Net Force, Balanced Force, Inertia, Friction, static friction, sliding friction, rolling friction, air resistance, centripetal acceleration, centripetal force</p>	<p>Chapter 2 Notetaking Worksheet</p> <p>Measuring Length of track lab</p> <p>Acceleration Practice Problems</p> <p>Distance, time, speed practice problems</p> <p>Graphing practice worksheet</p> <p>Graphing speed; slope worksheet</p> <p>Scientific graphs ppt</p> <p>Motion of a bowling ball lab</p> <p>Hot air balloon writing prompt</p> <p>Net force worksheet</p> <p>Net force and acceleration worksheet</p> <p>Video: What is Terminal Velocity?</p> <p>Paper helicopter lab</p> <p>Newton’s 2nd law questions</p> <p>Video: CNN Hypermiling</p> <p>Article and Writing Prompt: Quest for Ultimate Fuel Economy</p>	
<p>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.</p>	<ol style="list-style-type: none"> 1. Calculate the momentum of an object in motion. 2. Identify and draw action/reaction forces. 3. Calculate the velocity of an object after a collision. 		<p>Momentum, inertia, Newton’s 3rd law of motion</p>	<p>Glencoe-Physical Science textbook</p> <p>Article: Read “Equal and Opposite Reactions: Newton’s Third Law of Motion”</p> <p>Worksheet: “Chapter 5 Newton’s Third Law of Motion; Action Reaction Pairs”</p>	<p>Integrated Science</p>

				<p>Worksheet: "Calculating Momentum"</p> <p>Worksheet: Conservation of Momentum Practice Problems</p>	
<p>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.</p>	<ol style="list-style-type: none"> 1. Use impulse formula to calculate the amount of force acting on an object in a collision. 2. Design and build a bumper that will reduce the amount of force on the occupants of a car. 		<p>Law of conservation of momentum, impulse</p>	<p>Formative Assessment Probe: Which is safer, an old car or a new car?</p> <p>Video: 2009 Chevy Malibu vs 1959 Bel Air Crash Test Consumer Reports</p> <p>Debate: Which is safer, an old car or a new car?</p> <p>Demonstration: Egg toss</p>	<p>Integrated Science</p>
<p>HS-PS2-4 Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.</p>	<ol style="list-style-type: none"> 1. Distinguish between weight and mass. 		<p>law of gravitation, weight, weightlessness, freefall</p>	<p>Glencoe-Physical Science textbook</p> <p>What is Terminal Velocity? video</p>	<p>Integrated Science</p>
<p>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.</p>	<ol style="list-style-type: none"> 1. Describe properties of static electricity. 2. Distinguish between conductors and insulators. 3. Explain how a dry cell provides a source of voltage difference. 4. Describe the relationship among voltage difference, resistance, and current. 5. Describe the difference between series and parallel circuits. 6. Explain and calculate electrical 		<p>Static electricity, law of conservation of charge, conductor, insulator, charge by contact/induction, voltage, circuit, current, resistance, Ohm's law, series circuit, parallel circuit, electrical power, kilowatt-hour</p>	<p>Glencoe-Physical Science textbook</p>	<p>Integrated Science</p>

	power.				
Energy					
Students who demonstrate understanding can:					
HS-PS3-1 Create a computational model to calculate the change in the energy of one component in a system when the change in the energy of the other component(s) and energy flows in and out of the system are known.	<ol style="list-style-type: none"> Distinguish between potential and kinetic energy. Calculate an object's potential and kinetic energy. Describe how energy is conserved when changing from one form to another. Calculate work and power. Identify simple machines. Calculate mechanical advantage and efficiency of a machine. 		Kinetic energy, joule, potential energy, elastic potential energy, chemical potential energy, gravitational potential energy, mechanical energy, law of conservation of energy, work, power, machine, effort force, resistance force, mechanical advantage, efficiency, simple machine, lever, pulley, wheel and axle, inclined plane, screw, wedge, compound machine	Glencoe Physical Science Notetaking worksheet Ch4 and Ch5 Worksheet: Begin "Potential and Kinetic Energy Practice Problems" Notes: "Energy" Section 1 – The Nature of Energy Notes: "Energy" Section 2 – Conservation of Energy Section 2 reinforcement worksheet - Conservation of energy Section 2 Enrichment worksheet - Conservation of energy in the heart Mechanical advantage and efficiency worksheet Energy and machines lab	Integrated Science
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).	Aurora Borealis Unit <ol style="list-style-type: none"> 1) Analyze models of atoms to create and revise a scientific argument of the location of electrons within the atom. 2) Explain how energy is conserved . 3) Relate energy released from different atoms to the type of wave it produces on the light spectrum. 	5 2	light, electromagnetic spectrum, visible light, frequency, wavelength, Atom, atomic models, subatomic particles (protons, neutrons, electrons), atomic number, mass number, energy levels, electron cloud, ground state, excited state, law of conservation of energy	Glencoe-Physical Science textbook WKR in Cincinnati teaches about the atom video "Science Talk" cards--sentence starters Sentence frames-"I observed _____, therefore, I think this phenomenon occurred because _____.", markers, paper, vocabulary chart, etc. https://science.howstuffworks.com/nature/climate-weather/atmospheric/question471.htm https://www.youtube.com/watch?v=eJV_wlCm6ms Glencoe Chemistry Science Textbook Wiley- General, Organic and Biochemistry Textbook	Integrated Science Chemistry I and Chemistry II

	<p>4) 4) Illustrate various types of electromagnetic radiation by modeling waves of each type.</p> <p>5) 5) Identify elements based on characteristics of their atomic structures.</p>				
<p>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.</p>	<p>1. Design and build a speaker that converts electrical energy to sound energy.</p>		<p>Voice coil, magnetic field, permanent magnet, electromagnet</p>	<p>Speaker lab handout</p>	<p>Integrated Science</p>
<p>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 system (second law of thermodynamics)</p>					
<p>HS-PS3-5 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>Waves and Electromagnetic Radiation Students who demonstrate understanding can:</p>					
<p>HS-PS4-1 Use mathematical representations to support a claim regarding relationships among the frequency,</p>	<p>1) Calculate the frequency, wavelength and speed of a wave</p>	<p>1</p>	<p>Frequency, wavelength, speed, electromagnetic spectrum, media,</p>	<p>Glencoe Chemistry Science Textbook Wiley- General, Organic and Biochemistry Textbook</p>	<p>Chemistry I and Chemistry II</p>

wavelength, and speed of waves traveling in various media.	<p>2) Identify the major regions of the electromagnetic spectrum</p> <p>3) Compare the speeds of waves traveling in various media.</p>			Best Of Science	
HS-PS4-2 Evaluate questions about the advantages of using a digital transmission and storage of information.	1) Debate the advantages and disadvantages of digital storage of information.	1	Digital storage and digital transmission	https://dzone.com/articles/the-pros-and-cons-of-storing-data-in-the-cloud	Chemistry I and Chemistry II
HS-PS4-3 Evaluate the claims, evidence and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.	<p>Aurora Borealis Unit</p> <p>1) 1) Analyze models of atoms to create and revise a scientific argument of the location of electrons within the atom.</p> <p>2) 2) Explain how energy is conserved .</p> <p>3) 3) Relate energy released from different atoms to the type of wave it produces on the light spectrum.</p> <p>4) 4) Illustrate various types of electromagnetic radiation by modeling waves of each type.</p> <p>5) 5) Identify elements based on characteristics of their atomic structures.</p>	5 2	light, electromagnetic spectrum, visible light, frequency, wavelength, Atom, atomic models, subatomic particles (protons, neutrons, electrons), atomic number, mass number, energy levels, electron cloud, ground state, excited state, law of conservation of energy	<p>Glencoe Chemistry Science Textbook</p> <p>Wiley- General, Organic and Biochemistry Textbook</p> <p>Glencoe-Physical Science textbook</p>	<p>Chemistry I and Chemistry II</p> <p>Integrated Science</p>
HS-PS4-4 Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.	<p>Unit 2: How does the grass of the Serengeti help the cheetah run? Illustrate how photosynthesis transforms light energy into stored chemical energy. Construct and revise an explanation based on evidence for how C, H, and O from sugar molecules may combine</p>	5	<p>Unit 2:</p> <p>https://drive.google.com/open?id=1mpC9A_UTq1Wua-TEkS_609FTP8cPsUqIDVaUHWWv624</p>	<p>Unit 2:</p> <p>https://www.youtube.com/watch?v=UIIOrtzTKWM</p>	Biology

	with other elements to form amino acids or other large C-based molecules. Illustrate that cellular respiration is a chemical process where bonds of food molecules and oxygen molecules are broken and new bonds are formed, resulting in a transfer of energy.				
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.	<p>1) Explain the phenomenon of how a radio transmitter communicated with a receiver.</p> <p>2) Explain how electricity is generated by a solar cell</p>	1	Photo electric material, solar cell, MRI, remote control	Best of Science	Integrated Chemistry I
<p><u>Structure and Function</u> Students who demonstrate understanding can:</p>					
HS-LS1-1 Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.	<p>Unit 1: How does the water cause the plant to be resurrected? Distinguish/Classify between living and nonliving characteristics. Define homeostasis and make predictions when instability occurs. Cellular Hierarchy and make connections pertaining thereto. Identify water characteristics and recognize how they impact life characteristics.</p>	5	<p>Unit 1: https://drive.google.com/open?id=1904CP2nxZu8I-PnUMNKpfgBkHFfuRuwE</p>	<p>Glencoe Biology 2002 Whale 2012 Zebra Amoeba Sisters - YouTube - https://www.youtube.com/watch?v=zGysb7kpzVA Teacher-made PPT</p>	<p>Biology</p>
	<p>Unit 7: DNA and Protein Synthesis Construct an explanation for how the structure of DNA determines the structure of proteins.</p>	2	<p>Unit 7: https://drive.google.com/open?id=1f9QK96D1hOxqXotGg_3DIVo-3GqSNAmkbhWi d9z0vVg</p>		
	<p>Unit 3: Macromolecules</p>	2	<p>Unit 3: https://docs.google.com/document/d/1cHNDro-54ojDfHP52mDC4qhJnQc8XuYeYIA</p>		

	<p>Unit 10: Cell Communication</p> <p>Unit 15: Protein Synthesis</p>	<p>2</p> <p>3</p>	<p>Vv4q7ydl/edit?usp=sharing</p> <p>Signal transduction pathway Quorum sensing Local regulators Hormones Reception Transduction Response Ligand Protein kinase Apoptosis</p> <p>Unit 15: https://drive.google.com/open?id=1wfw2k_UxVEYGIBk5Kcvm7hG0tfoWxwDRAffQyatXpCU</p>		
<p>HS-LS1-2 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.</p>	<p>Unit 1: How does the water cause the plant to be resurrected? Distinguish/Classify between living and nonliving characteristics. Define homeostasis and make predictions when instability occurs. Cellular Hierarchy and make connections pertaining thereto. Identify water characteristics and recognize how they impact life characteristics.</p> <p>Unit 4: The Cell</p>	<p>5</p> <p>2</p>	<p>Unit 1: https://drive.google.com/open?id=1904CP2nxZu8I-PnUMNKpfgBkHFfuRuwE</p> <p>Unit 4: https://drive.google.com/open?id=1vH19Vw2rvYJRi9ZVJVpf19U40CIZSaTqzcn3JEyE168</p> <p>Unit 8:</p>	<p>Glencoe Biology 2002 Whale 2012 Zebra Amoeba Sisters - YouTube https://www.youtube.com/watch?v=zGysb7kpzVA Teacher-made PPT</p> <p>Campbell Biology 9th edition 2011</p>	<p>Biology</p> <p>AP Biology</p>

	<p>Unit 8: Photosynthesis</p> <p>Unit 18: Body Systems - Nervous and Endocrine</p>	<p>2</p> <p>2</p>	<p>https://drive.google.com/open?id=1NbjYwcVwN1QBahSK5xLCQuwDf_LOPwCTdrGSCCbq2jg</p> <p>Unit 18: https://drive.google.com/open?id=1iQo7mXLTaeKoWKbyTimLrLpQioFJ77bFDiUSAMFTo24</p>		
<p>HS-LS1-3 Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostatis.</p>	<p>Unit 1: How does the water cause the plant to be resurrected? Distinguish/Classify between living and nonliving characteristics. Define homeostasis and make predictions when instability occurs. Cellular Hierarchy and make connections pertaining thereto. Identify water characteristics and recognize how they impact life characteristics.</p> <p>Unit 1: investigate feedback mechanisms to maintain homeostasis. Modeling experimental design.</p> <p>Unit 5: Plasma Membrane</p> <p>Unit 6: Metabolism</p>	<p>5</p> <p>1</p> <p>2</p> <p>2</p>	<p>Unit 1: https://drive.google.com/open?id=1904CP2nxZu8I-PnUMNKpfgBkHFfuRuwE</p> <p>Unit 1: https://drive.google.com/open?id=1FO6Me0IajEtqXaCKbeMZxOJu0LJwsEMbXnswnxz6nT4</p> <p>Unit 5: https://drive.google.com/open?id=1R_YJaBGFi5qxid2q21IBjltb_-0-xZdLljloeoERqgA</p> <p>Unit 6: https://drive.google.com/open?id=1lp25YYVCmHfp4ge7DTAImJTUe5kjPdGHLBDTsQhhNc</p> <p>Unit 16:</p>	<p>Glencoe Biology 2002 Whale 2012 Zebra Amoeba Sisters - YouTube https://www.youtube.com/watch?v=zGysb7kpzVA Teacher-made PPT</p> <p>Campbell Biology 9th Edition 2011</p> <p>Campbell Biology 9th Edition 2011</p> <p>Campbell Biology 9th Edition 2011</p>	<p>Biology</p> <p>AP Biology</p> <p>AP Biology</p> <p>AP Biology</p>

	Unit 16: Gene Regulation	1	https://drive.google.com/open?id=1VodwiKHDTey14vrea7knWQYJnOgAWtvx308lr1TL9ic		
Matter and Energy in Organisms and Ecosystems Students who demonstrate understanding can:					
HS-LS1-5 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.	Unit 1: How does the water cause the plant to be resurrected? Distinguish/Classify between living and nonliving characteristics. Define homeostasis and make predictions when instability occurs. Cellular Hierarchy and make connections pertaining thereto. Identify water characteristics and recognize how they impact life characteristics.	5	Unit 1: https://drive.google.com/open?id=1904CP2nxZu8I-PnUMNKpfgBkHffuRuWE	Glencoe Biology 2002 Whale 2012 Zebra Amoeba Sisters - YouTube https://www.youtube.com/watch?v=zGysb7kpzVA Teacher-made PPT	Biology
	Unit 2: How does the grass of the Serengeti help the cheetah run? Illustrate how photosynthesis transforms light energy into stored chemical energy. Construct and revise an explanation based on evidence for how C, H, and O from sugar molecules may combine with other elements to form amino acids or other large C-based molecules. Illustrate that cellular respiration is a chemical process where bonds of food molecules and oxygen molecules are broken and new bonds are formed, resulting in a transfer of energy.	5	Unit 2: https://drive.google.com/open?id=1mpC9A_UTq1Wua-TEkS_609FTP8cPsUqIDVaUHWWv624	Unit 2: https://www.youtube.com/watch?v=UIIOrtzTKWM	
	Unit 7: Cellular Respiration	2	Unit 7: https://drive.google.com/open?id=1NbjYwcVwN1QBaHSK5xLCQuwDf_LOPwCTdrGSCCbq2jg	Campbell Biology 9th edition 2011	

<p>HS-LS1-6 Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.</p>	<p>Unit 1: How does the water cause the plant to be resurrected? Distinguish/Classify between living and nonliving characteristics. Define homeostasis and make predictions when instability occurs. Cellular Hierarchy and make connections pertaining thereto. Identify water characteristics and recognize how they impact life characteristics.</p> <p>Unit 2: How does the grass of the Serengeti help the cheetah run? Illustrate how photosynthesis transforms light energy into stored chemical energy. Construct and revise an explanation based on evidence for how C, H, and O from sugar molecules may combine with other elements to form amino acids or other large C-based molecules. Illustrate that cellular respiration is a chemical process where bonds of food molecules and oxygen molecules are broken and new bonds are formed, resulting in a transfer of energy.</p> <p>Unit 3: Macromolecules</p> <p>Unit 8: Photosynthesis</p>	<p>5</p> <p>5</p> <p>2</p> <p>2</p>	<p>Unit 1: https://drive.google.com/open?id=1904CP2nxZu8I-PnUMNKpfgBkHffuRuwE</p> <p>Unit 2: https://drive.google.com/open?id=1mpC9A_UTq1Wua-TEkS_609FTP8cPsUqIDVaUHWWv624</p> <p>Unit 3: https://docs.google.com/document/d/1cHNDro-54ojDfHP52mDC4qhJnQc8XuYeYIAVv4q7ydl/edit?usp=sharing</p> <p>Unit 8: https://drive.google.com/open?id=1NbjYwcVwN1QBaHSK5xLCQuwDf_LOPwCTdrGSCCbq2jg</p>	<p>Glencoe Biology 2002 Whale 2012 Zebra Amoeba Sisters - YouTube https://www.youtube.com/watch?v=zGysb7kpzVA Teacher-made PPT</p> <p>Unit 2: https://www.youtube.com/watch?v=UllOrtzTKWM</p> <p>Campbell Biology 9th Edition, 2011</p>	<p>Biology</p> <p>Biology</p> <p>AP Biology</p>
<p>HS-LS1-7 Use a model to illustrate that cellular respiration is a chemical process whereby the bonds</p>	<p>Unit 1: How does the water cause the plant to be resurrected? Distinguish/Classify between living and</p>	<p>5</p>	<p>Unit 1: https://drive.google.com/open?id=1904CP2nxZu8I-PnUMNKpfgBkHffuRuwE</p>	<p>Glencoe Biology 2002 Whale 2012 Zebra</p>	<p>Biology</p>

<p>of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.</p>	<p>nonliving characteristics. Define homeostasis and make predictions when instability occurs. Cellular Hierarchy and make connections pertaining thereto. Identify water characteristics and recognize how they impact life characteristics.</p> <p>Unit 2: How does the grass of the Serengeti help the cheetah run? Illustrate how photosynthesis transforms light energy into stored chemical energy. Construct and revise an explanation based on evidence for how C, H, and O from sugar molecules may combine with other elements to form amino acids or other large C-based molecules. Illustrate that cellular respiration is a chemical process where bonds of food molecules and oxygen molecules are broken and new bonds are formed, resulting in a transfer of energy.</p> <p>Unit 7: Cellular Respiration</p>	<p>5</p> <p>2</p>	<p><u>MNKpfgBkHFfuRuWE</u></p> <p>Unit 2: <u>https://drive.google.com/open?id=1mpC9A_UTq1Wua-TEkS_609FTP8cPsUqIDVaUHWWv624</u></p> <p>Unit 7: <u>https://drive.google.com/open?id=1SuaDGlVJjE75EOkYPHBg2EnQOszmIHJAn_nWF24qa6U</u></p>	<p>Amoeba Sisters - YouTube <u>https://www.youtube.com/watch?v=zGysb7kpzVA</u> Teacher-made PPT</p> <p>Unit 2: <u>https://www.youtube.com/watch?v=UllOrtzTKWM</u></p> <p>Campbell Biology 9th edition 2011</p>	<p>AP Biology</p>
<p>HS-LS2-3 Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.</p>	<p>Unit 3: How does the environment limit the size of populations?</p> <p>Discuss biotic and abiotic factors. Explain what an abiotic factor is. Name and explain how it impacted the life of a flamingo.</p> <p>Unit 9: Carbon Cycling</p>	<p>3</p> <p>1</p>	<p>Unit 3: <u>https://drive.google.com/open?id=1uPmIP2LZAzJ-bYEWXPM2h8gta69aYTLrEJWC8rrMwzg</u></p> <p>Biogeochemical cycles Reservoir Photosynthesis Respiration</p>	<p>Crimson Wing - Disney Movie</p> <p>Glencoe Biology 2002 Whale 2012 Zebra</p> <p>Campbell Biology 9th edition 2011</p>	<p>Biology</p> <p>AP Biology</p>

	Unit 12: Mendelian Genetics	1	<p>VjPb_Y</p> <p>Unit 12: https://drive.google.com/open?id=1-c50O29lv29AMfGTYg8qyppgxRnAkAJ22gCzjAVto2nM</p>		
<p>HS-LS3-1 Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.</p>	<p>Unit 7: DNA and Protein Synthesis Construct an explanation for how the structure of DNA determines the structure of proteins.</p>	2	<p>Unit 7: https://drive.google.com/open?id=1f9QK96D1hOxqXotGg_3DIVo-3GqSNAmkbhWid9z0vVg</p>	<p>Glencoe Biology 2002 Whale 2012 Zebra</p> <p>YouTube Videos</p>	Biology
	Unit 12: Mendelian Genetics	1	<p>Unit 12: https://drive.google.com/open?id=1-c50O29lv29AMfGTYg8qyppgxRnAkAJ22gCzjAVto2nM</p>	Campbell Biology 9th Edition 2011	AP Biology
	Unit 13: Chromosomal Inheritance	1	<p>Unit 13: https://drive.google.com/open?id=1TkgG-rSr280xXnKH6or4njpPcZrQsUTi957CS3TZSoo</p>		
	Unit 14: DNA	2	<p>Unit 14: https://drive.google.com/open?id=1LRKE70_vKDilpAFzK26mhnfGPC2bkKJxEKaBerGjTpo</p>		
	Unit 15: Protein Synthesis	3	<p>Unit 15: https://drive.google.com/open?id=1wfw2k_UxVEYGIBk5Kcvm7hGOfWxwDRAffQyatXpCU</p>		
<p>HS-LS3-2 Make and defend a claim based on evidence that</p>	Unit 5: Inheritance - Mendel and Meiosis	2	<p>Unit 5: https://drive.google.com/o</p>	<p>Glencoe Biology 2002 Whale</p>	Biology

<p>inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.</p>	<p>Make and defend a claim that inheritable genetic variations may result from new combinations, viable errors, and mutations.</p> <p>Unit 6: Complex Inheritance/Human Genetics, Non-Mendelian Genetics Make and defend a claim that variation may result. Express new genetic combinations through meiosis. Identify errors in replication and mutations caused by environmental factors. Apply statistics and probability to explain variation and distribution of expressed traits in population.</p> <p>Unit 11: Cell Reproduction Meiosis and Mitosis</p> <p>Unit 12: Mendelian Genetics</p>	<p>3</p> <p>2</p> <p>1</p>	<p>pen?id=1m1Lfp0Xj-x436lt8-22CBDZaztwTd2nLhC5pB_V1V8M</p> <p>Unit 6: https://docs.google.com/document/d/1Ymwpe5zFQ2PalchsM9SLvuxjojpkyd8elmRILnhjps0/edit?usp=sharing</p> <p>Unit 11: https://drive.google.com/open?id=189cbLvO4QEbvOS0naGCV8T4JMf8tzvvqnTemwVjPb_Y</p> <p>Unit 12: https://drive.google.com/open?id=1-c50O29lv29AMfGTYg8qypgxRnAkAJ22gCzjAVto2nM</p>	<p>2012 Zebra YouTube Videos</p> <p>Campbell Biology 9th edition 2011</p>	<p>AP Biology</p>
<p>HS-LS3-3 Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.</p>	<p>Unit 6: Complex Inheritance/Human Genetics, Non-Mendelian Genetics Make and defend a claim that variation may result. Express new genetic combinations through meiosis. Identify errors in replication and mutations caused by environmental factors. Apply statistics and probability to explain variation and distribution of expressed traits in population.</p>	<p>3</p>	<p>Unit 6: https://docs.google.com/document/d/1Ymwpe5zFQ2PalchsM9SLvuxjojpkyd8elmRILnhjps0/edit?usp=sharing</p> <p>Unit 12: https://drive.google.com/open?id=1-c50O29lv29AMfGTYg8qypgxRnAkAJ22gCzjAVto2nM</p>	<p>Glencoe Biology 2002 Whale 2012 Zebra YouTube Videos</p>	<p>Biology</p>

	Unit 12: Mendelian Genetics	1	pen?id=1-c50O29lv29AMfGTYg8qyypgxRnAkAJ22gCzjAVto2nM	Campbell Biology 9th edition 2011	AP Biology
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[Natural Selection and Evolution](#)
Students who demonstrate understanding can:

HS-LS4-1 Communicate scientific information that common ancestry and biological evolution are supported by multiples lines of empirica evidence.	Unit 8: Evolution Define common ancestry Make connections to evidence to support evolution Explain four factors of survival. Apply statistics and probability to genetics and evolution. Explain natural selection, adaptations, and survival of the fittest in relation to evolution. Evaluate evidence that changes in the environment may result in increases in the number of individuals of some species, the emergence of new species over time, and the extinction of other species.	6	Unit 8: <u>Evolution Unit</u>	Glencoe Biology 2002 Whale 2012 Zebra YouTube Videos	Biology
	Unit 17: Evolution	2	Unit 17: https://drive.google.com/pen?id=13F7pnmmlgj-kVjVXZIN9dEx--2CJXS3f6M-5CWykVQ	Campbell Biology 9th edition 2011	AP Biology

HS-LS4-2 Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4)	Unit 8: Evolution Define common ancestry Make connections to evidence to support evolution Explain four factors of survival. Apply statistics and probability to genetics and evolution. Explain natural selection, adaptations, and survival of the fittest in relation to evolution. Evaluate evidence that changes in the	6	Unit 8: <u>Evolution Unit</u>	Glencoe Biology 2002 Whale 2012 Zebra YouTube Videos	Biology
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<p>the proliferation of those organisms that are better able to survive and reproduce in the environment.</p>	<p>environment may result in increases in the number of individuals of some species, the emergence of new species over time, and the extinction of other species.</p> <p>Unit 17: Evolution</p>	<p>2</p>	<p>Unit 17: https://drive.google.com/open?id=13F7pnvmmIgi-kVjVXZIN9dEx--2CJXS3f6M-5CWykVQ</p>	<p>Campbell Biology 9th edition 2011</p>	<p>AP Biology</p>
<p>HS-LS4-3 Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.</p>	<p>Unit 8: Evolution Define common ancestry Make connections to evidence to support evolution Explain four factors of survival. Apply statistics and probability to genetics and evolution. Explain natural selection, adaptations, and survival of the fittest in relation to evolution. Evaluate evidence that changes in the environment may result in increases in the number of individuals of some species, the emergence of new species over time, and the extinction of other species.</p> <p>Unit 17: Evolution</p>	<p>6</p>	<p>Unit 8: <u>Evolution Unit</u></p> <p>Unit 17: https://drive.google.com/open?id=13F7pnvmmIgi-kVjVXZIN9dEx--2CJXS3f6M-5CWykVQ</p>	<p>Glencoe Biology 2002 Whale 2012 Zebra</p> <p>YouTube Videos</p> <p>Campbell Biology 9th edition 2011</p>	<p>Biology</p> <p>AP Biology</p>
<p>HS-LS4-4 Construct an explanation based on evidence for how natural selection leads to adaptation of populations.</p>	<p>Unit 8: Evolution Define common ancestry Make connections to evidence to support evolution Explain four factors of survival. Apply statistics and probability to genetics and evolution. Explain natural selection, adaptations,</p>	<p>6</p>	<p>Unit 8: <u>Evolution Unit</u></p>	<p>Glencoe Biology 2002 Whale 2012 Zebra</p> <p>YouTube Videos</p>	<p>Biology</p>

	<p>and survival of the fittest in relation to evolution. Evaluate evidence that changes in the environment may result in increases in the number of individuals of some species, the emergence of new species over time, and the extinction of other species.</p> <p>Unit 17: Evolution</p>	2	<p>Unit 17: https://drive.google.com/open?id=13F7pnvmmIgj-kVjVXZIN9dEx--2CJXS3f6M-5CWykVQ</p>	Campbell Biology 9th edition 2011	AP Biology
<p>HS-LS4-5 Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species. (2) the emergence of new species over time, and (3) the extinction of other species.</p>	<p>Unit 8: Evolution Define common ancestry Make connections to evidence to support evolution Explain four factors of survival. Apply statistics and probability to genetics and evolution. Explain natural selection, adaptations, and survival of the fittest in relation to evolution. Evaluate evidence that changes in the environment may result in increases in the number of individuals of some species, the emergence of new species over time, and the extinction of other species.</p> <p>Unit 17: Evolution</p>	6	<p>Unit 8: <u>Evolution Unit</u></p> <p>Unit 17: https://drive.google.com/open?id=13F7pnvmmIgj-kVjVXZIN9dEx--2CJXS3f6M-5CWykVQ</p>	<p>Glencoe Biology 2002 Whale 2012 Zebra</p> <p>YouTube Videos</p> <p>Campbell Biology 9th edition 2011</p>	Biology
<p><u>Space Systems</u> Students who demonstrate understanding can:</p>					
<p>HS-ESS1-1 Develop a model based on evidence to illustrate the life span of the</p>	<p>Unit 5: 1. Relate fusion to the Sun's radiation and heat. 2. Describe how stars form elements.</p>	5 weeks	<u>Earth unit 5</u>	Various classroom textbooks, you tube vieos and teacher made power points	Earth Science

sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.	3. Explain star life cycle. 4. Evaluate the Universe's formation and connect orbital motions.				
HS-ESS1-2 Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.	Unit 5: 1. Relate fusion to the Sun's radiation and heat. 2. Describe how stars form elements. 3. Explain star life cycle. 4. Evaluate the Universe's formation and connect orbital motions.	5 weeks	<u>Earth Unit 5</u>	Various classroom textbooks, you tube videos and teacher made powerpoints	Earth Science
HS-ESS1-3 Communicate scientific ideas about the way stars, over their life cycle, produce elements.	Unit 5: 1. Relate fusion to the Sun's radiation and heat. 2. Describe how stars form elements. 3. Explain star life cycle. 4. Evaluate the Universe's formation and connect orbital motions.	5 weeks	<u>Earth unit 5</u>	Various classroom textbooks, you tube videos and teacher made powerpoints	Earth Science
HS-ESS1-4 Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.	Unit 5: 1. Relate fusion to the Sun's radiation and heat. 2. Describe how stars form elements. 3. Explain star life cycle. 4. Evaluate the Universe's formation and connect orbital motions.	5 weeks		Various classroom textbooks, you tube videos and teacher made powerpoints	Earth Science
HS-ESS1-5 Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics explain the ages of crustal rocks.	Unit 1: Identify Earth's age. Explain and use method of Relative Dating and Absolute-Age Dating used to determine estimate Earth's age.	5 weeks	<u>Earth Unit 1</u>	Various classroom textbooks, you tube videos, and teacher created powerpoints	Earth Science
HS-ESS1-6 Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early	Unit 1: 1. Identify Earth's age. 2. Explain and use method of Realtive Dating and Absolute-Age Dating used to determine estimate Earth's age.	5 weeks	<u>Earth Unit 1</u>	Various classroom textbooks, you tube videos, and teacher created powerpoints	Earth Science

history.					
HS-ESS2-1 Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.	<p>Unit 2: 1. Identify Earth's layers and composition. 2. Describe the rock cycle and connect rock types to daily life. 3. Explain, predict, and illustrate how Plate Tectonics determines Earth's processes</p> <p>Unit 3: 1. Identify and describe types of mechanical and chemical weathering. 2. Analyze the impact of weathering on Earth's surfaces.</p>	<p>7 weeks</p> <p>6 weeks</p>	<p><u>Earth unit 2</u></p> <p><u>Earth Unit 3</u></p>	<p>Various classroom textbooks, you tube videos, and teacher created powerpoints</p>	<p>Earth Science</p>
<p><u>Earth's Systems</u> Students who demonstrate understanding can:</p>					
HS-ESS2-2 Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.	<p>Unit 2: 1. Identify Earth's layers and composition. 2. Describe the rock cycle and connect rock types to daily life. 3. Explain, predict, and illustrate how Plate Tectonics determines Earth's processes</p> <p>Unit 3: 1. Identify and describe types of mechanical and chemical weathering. 2. Analyze the impact of weathering on Earth's surfaces.</p>	<p>7 weeks</p> <p>6 weeks</p>	<p><u>Earth unit 2</u></p> <p><u>Earth unit 3</u></p>	<p>Various classroom textbooks, you tube videos, and teacher created powerpoints</p>	<p>Earth Science</p>
HS-ESS2-3 Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection.	<p>Unit 2: 1. Identify Earth's layers and composition. 2. Describe the rock cycle and connect rock types to daily life. 3. Explain, predict, and illustrate how Plate Tectonic's determines Earth's processess.</p>	<p>7 weeks</p>	<p><u>Earth unit 2</u></p>	<p>Various classroom textbooks, you tube videos, and teacher created powerpoints</p>	<p>Earth Science</p>
HS-ESS2-5 Plan and conduct an investigation of the	<p>1) Explain the relationship</p>	<p>4 weeks</p>	<p>Atmospheric pressure,</p>	<p>Glencoe-Physical Science textbook</p>	<p>Integrated Science</p>

<p>properties of water and its effect on Earth materials and surface processes.</p>	<p>between atmospheric pressure, vapor pressure, altitude, and boiling point.</p> <p>1) Model how water boils.</p> <p>Unit 2: 1. Identify Earth's layers and composition.</p> <p>2. Describe the rock cycle and connect rock types to daily life.</p> <p>3. Explain, predict, and illustrate how Plate Tectonic's determine Earth's processes.</p> <p>Unit 1: How does the water cause the plant to be resurrected? Distinguish/Classify between living and nonliving characteristics. Define homeostasis and make predictions when instability occurs. Explain cellular hierarchy and make connections thereto. Identify water characteristics and recognize how they impact life characteristics.</p>	<p>7 weeks</p> <p>5</p>	<p>vapor pressure, altitude, boiling point, phase change graph, endothermic, exothermic, polarity, intermolecular forces of attraction, surface tension</p> <p><u>Earth unit 2</u></p> <p>Unit 1: https://drive.google.com/open?id=1904CP2nxZu8I-PnUMNKpfgBkHFfuRuwE</p> <p><u>Earth Unit 3</u></p>	<p>https://www.youtube.com/watch?v=Ag4lLUXKuSM https://www.youtube.com/watch?v=ffBusZO-TO0 Around the World Simulation: https://www.ck12.org/chemistry/atmospheric-pressure-in-chemistry/</p> <p>Glencoe Chemistry Science Textbook</p> <p>Glencoe Biology 2002 Whale 2012 Zebra Amoeba Sisters - YouTube - https://www.youtube.com/watch?v=zGysb7kpzVA Teacher-made PPT</p> <p>Various classroom textbooks, you tube videos, and teacher made powerpoints</p>	<p>Chemistry I and Chemistry II</p> <p>Biology</p> <p>Earth Science</p>
<p>HS-ESS2-6 Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.</p>	<p>Unit 2: How does the grass of the Serengeti help the cheetah run? Illustrate how photosynthesis transforms light energy into stored chemical energy.</p> <p>Construct and revise an explanation based on evidence for how C, H, and O from sugar molecules may combine with other elements to form amino acids or other large C-based molecules. Illustrate that cellular respiration is a chemical process where bonds of food</p>	<p>5</p>	<p>Unit 2: https://drive.google.com/open?id=1mpC9A_UTq1Wua-TEkS_609FTP8cPsUqIDVaUHWWv624</p> <p><u>Earth Unit 3</u></p>	<p>Unit 2: https://www.youtube.com/watch?v=UIIOrtzTKWM</p>	<p>Biology</p>

	molecules and oxygen molecules are broken and new bonds are formed, resulting in a transfer of energy.				
HS-ESS2-7 Construct an argument based on evidence about the simultaneous coevolution of Earth systems and life on Earth.			<u>Earth Unit 3</u>		
<u>Weather and Climate</u> Students who demonstrate understanding can:					
HS-ESS2-4 Use a model to describe how variations in the flow of energy into and out of Earth systems result in changes in climate.	Unit 3: Identify and describe types of mechanical and chemical weathering. 2. Analyze the impact of weathering on Earth's surface. Unit 4: 1. Relate the Sun's energy to climate. 2. Examine how Earth's tilt impacts climate.	6 weeks 6 weeks	<u>Earth unit 2:</u> <u>Earth unit 3</u>	Various textbook resources, you tube videos, and teacher made powerpoints.	Earth Science
HS-ESS3-5 Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the rate of global or regional climate change and associated future impacts to Earth systems.	Unit 4: 1. Relate the Sun's energy to climate. 2. Examine how Earth's tilt impacts climate.	6 weeks	<u>Earth Unit 4</u>	Various textbook resources, you tube videos, and teacher made power points	Earth Science
<u>Human Sustainability</u> Students who demonstrate understanding can:					
HS-ESS3-1 Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards and changes in climate have influenced human activity.	Unit 4: 1. Relate the Sun's energy to climate. 2. Examine how Earth's tilt impacts climate.	6 weeks	<u>Earth Unit 4</u>	Various textbook resources, you tube videos, and teacher made power points	Earth Science

<p>HS-ESS3-2 Evaluate competing design solutions for developing, managing and utilizing energy and mineral resources based on benefit ratios.</p>					
<p>HS-ESS3-3 Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.</p>	<p>Unit 8: Evolution Define common ancestry Make connections to evidence to support evolution Explain four factors of survival. Apply statistics and probability to genetics and evolution. Explain natural selection, adaptations, and survival of the fittest in relation to evolution. Evaluate evidence that changes in the environment may result in increases in the number of individuals of some species, the emergence of new species over time, and the extinction of other species.</p>	<p>6</p>	<p>Unit 8: <u>Evolution Unit</u></p>	<p>Glencoe Biology 2002 Whale 2012 Zebra</p> <p>YouTube Videos</p>	<p>Biology</p>
<p>Engineering Design Students who demonstrate understanding can:</p>					
<p>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.</p>					
<p>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.</p>	<p>Unit 8: Evolution Define common ancestry Make connections to evidence to support evolution Explain four factors of survival. Apply statistics and probability to genetics and evolution. Explain natural selection, adaptations, and survival of the fittest in relation to evolution.</p>	<p>6</p>	<p>Unit 8: <u>Evolution Unit</u></p>	<p>Glencoe Biology 2002 Whale 2012 Zebra</p> <p>YouTube Videos</p>	<p>Biology</p>

	Evaluate evidence that changes in the environment may result in increases in the number of individuals of some species, the emergence of new species over time, and the extinction of other species.				
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.					
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.	Unit 8: Evolution Define common ancestry Make connections to evidence to support evolution Explain four factors of survival. Apply statistics and probability to genetics and evolution. Explain natural selection, adaptations, and survival of the fittest in relation to evolution. Evaluate evidence that changes in the environment may result in increases in the number of individuals of some species, the emergence of new species over time, and the extinction of other species.	6	Unit 8: <u>Evolution Unit</u>	Glencoe Biology 2002 Whale 2012 Zebra YouTube Videos	Biology