

Weeks 1 – 3T	Weeks 4 – 6G
<p align="center"><b>Unit/Topic</b> <b>Introduction to Science and Science Inquiry Skills</b></p>	<p align="center"><b>Unit/Topic</b> <b>Earth’s Interior</b></p>
<p><b>SC-HS-1.2.1</b></p> <p><b>Students will:</b></p> <ul style="list-style-type: none"> <li>• select or construct accurate and appropriate representations for motion (visual, graphical and mathematical);</li> <li>• defend conclusions/explanations about the motion of objects and real-life phenomena from evidence/data.</li> </ul> <p><b>Objects change their motion only when a net force is applied. Newton’s Laws of motion are used to describe the effects of forces on the motion of objects. Conservation of mechanical energy and conservation of momentum may also be used to predict motion.</b></p> <p align="center"><b>DOK 3</b></p>	<p><b>SC-HS-4.6.8</b></p> <p><b>Students will:</b></p> <ul style="list-style-type: none"> <li>• describe the connections between the functioning of the Earth system and its sources of energy (internal and external);</li> <li>• predict the consequences of changes to any component of the Earth system.</li> </ul> <p><b>Earth systems have sources of energy that are internal and external to the Earth. The Sun is the major external source of energy. Two primary sources of internal energy are the decay of radioactive isotopes and the gravitational energy from Earth’s original formation.</b></p> <p align="center"><b>DOK 3.</b></p> <p><b>SC-HS-2.3.6</b></p> <p><b>Students will:</b></p> <ul style="list-style-type: none"> <li>• compare the limitations/benefits of various techniques ( radioactive dating, observing rock sequences and comparing fossils) for estimating geological time;</li> <li>• justify deductions about age of geologic features.</li> </ul>

**Techniques used to estimate geological time include using radioactive dating, observing rock sequences and comparing fossils to correlate the rock sequences at various locations.**

CURRICULUM			CURRICULUM		
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics
Scientific method	Measuring Skills (Metric)	Introduction to Science Lab Equipment Usage	Layers of Earth's Interior	Minerals	Rocks
Data Collection & Analysis	Problem Solving in Science	Lab Safety Skills	Earth		Rock Cycles
Graphing Data		Introduction to Branches of Science			
Variable in Experiments		Technology in Science			
<b>I CAN STATEMENTS:</b>	<b>I CAN STATEMENTS:</b>	<b>I CAN STATEMENTS:</b>	<b>I CAN STATEMENTS:</b>	<b>I CAN STATEMENTS:</b>	<b>I CAN STATEMENTS:</b>
Explain how the scientific method is used to solve problems	Design and conduct different kinds of scientific investigations for a variety of reasons.	Properly use equipment, tools, and techniques to improve scientific investigations.	Describe Earth's layers based on composition.	Explain what a mineral is and what it is composed of.	Identify the three major classifications of rocks.
Formulate testable hypotheses in	Use evidence	Identify and	Describe Earth's layers based on physical properties.	Identify and describe properties	Describe how each of the three types of rocks form.
			Explain how		

<p>scientific settings.</p> <p>Identify three types of graphs and explain the ways they are used.</p> <p>Distinguish between independent</p>	<p>and scientific knowledge to revise scientific explanation and models.</p> <p>Identify and use SI units and symbols for length, volume, mass, density, time and temperature.</p>	<p>explain what is covered in each of the main branches of science.</p> <p>Explain how science is different from technology , but it can help enhance scientific studies.</p>	<p>scientists determine Earth’s structure and composition.</p>	<p>that are used to identify and test minerals.</p>	<p>Explain the process by which one type of rock changes into another.</p>
<p><b>Critical Vocabulary</b></p> <p>Hypothesis</p> <p>Independent Variables</p> <p>Dependent Variables</p> <p>Control Variables</p> <p>Data</p> <p>Analysis</p> <p>Indirect Relationship</p> <p>Direct Relationship</p>	<p><b>Critical Vocabulary</b></p> <p>Accuracy</p> <p>Precision</p> <p>Metrics</p> <p>Volume</p> <p>Density</p> <p>Mass</p> <p>SI units</p> <p>Graph</p>	<p><b>Critical Vocabulary</b></p> <p>Accuracy</p> <p>Precision</p> <p>Lab Safety Rules</p> <p>Light microscope (and parts)</p> <p>Transmission &amp; Scanning Electron Microscope</p> <p>Various Lab Equipment</p>	<p><b>Critical Vocabulary</b></p> <p>Crust</p> <p>Mantle</p> <p>Lithosphere</p> <p>Asthenosphere</p> <p>Outer core</p> <p>Inner core</p> <p>Geology</p> <p>Uniformitarianism</p>	<p><b>Critical Vocabulary</b></p> <p>Streak</p> <p>Luster</p> <p>Hardness</p> <p>Fracture</p> <p>Cleavage</p>	<p><b>Critical Vocabulary</b></p> <p>Igneous</p> <p>Metamorphic</p> <p>Sedimentary</p> <p>Intrusive</p> <p>Extrusive</p> <p>Foliated</p>



<b>Journals</b>	<b>Journals</b>	<b>Journals</b>	<b>Journals</b>	<b>Journals</b>	<b>Journals</b>
<b>Reflections</b>	<b>Reflections</b>	<b>Reflections</b>	<b>Reflections</b>	<b>Reflections</b>	<b>Reflections</b>
<b>Bell ringers</b>	<b>Bell ringers</b>	<b>Bell ringers</b>	<b>Bell ringers</b>	<b>Bell ringers</b>	<b>Bell ringers</b>
<b>Summative</b>	<b>Summative</b>	<b>Summative</b>	<b>Summative</b>	<b>Summative</b>	<b>Summative</b>
Portfolio Development	Portfolio Development	Portfolio Development	Portfolio Development	Portfolio Development	Portfolio Development
Formulate Models	Formulate Models	Formulate Models	Formulate Models	Formulate Models	Formulate Models
Performance Events	Performance Events	Performance Events	Performance Events	Performance Events	Performance Events
Exhibits	Exhibits	Exhibits	Exhibits	Exhibits	Exhibits
End of unit test	End of unit test	End of unit test	End of unit test	End of unit test	End of unit test
<b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b>	<b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b>	<b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b>	<b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b>	<b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b>	<b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b>
Discovery					
<b>Resources Needed</b>	<b>Resources Needed</b>	<b>Resources Needed</b>	<b>Resources Needed</b>	<b>Resources Needed</b>	<b>Resources Needed</b>
Textbook	Textbook	Textbook	Textbook	Textbook	Textbook

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Weeks 7-9	Weeks 10-12
<p style="text-align: center;"><b>Unit/Topic</b> <b>Earth's Changing Structure</b></p>	<p style="text-align: center;"><b>Unit/Topic</b> <b>Earth's Water</b></p>
<p style="text-align: center;"><b>In this section IDENTIFY CORE CONTENT 4.1 Common Core Standards</b></p> <p>SC-HS-4.6.11 Students will:</p> <ul style="list-style-type: none"> <li>explain the difference between alpha and beta decay, fission and fusion;</li> <li>Identify the relationship between nuclear reactions and energy.</li> </ul> <p>Nuclear reactions convert a fraction of the mass of interacting particles into energy, and they can release much greater amounts of energy than atomic interactions. Fission is the splitting of a large nucleus into smaller pieces. Fusion is the joining of two nuclei at extremely high temperature and pressure. Fusion is the process responsible for the energy of the Sun and other stars. DOK 2</p> <p>SC-HS-2.3.6 Students will:</p> <ul style="list-style-type: none"> <li>compare the limitations/benefits of various techniques ( radioactive dating, observing rock sequences and comparing fossils) for estimating geological time;</li> <li>justify deductions about age of geologic features.</li> </ul> <p>Techniques used to estimate geological time include using radioactive dating, observing rock sequences and comparing fossils to correlate the rock sequences at various locations. DOK 3</p>	<p style="text-align: center;"><b>In this section IDENTIFY CORE CONTENT 4.1 Common Core Standards</b></p> <p>SC-HS-4.6.4 Students will:</p> <ul style="list-style-type: none"> <li>describe the components and reservoirs involved in biogeochemical cycles ( water, nitrogen, carbon dioxide and oxygen);</li> <li>explain the movement of matter and energy in biogeochemical cycles and related phenomena.</li> </ul> <p>The total energy of the universe is constant. Energy can change forms and/or be transferred in many ways, but it can neither be created nor destroyed. Movement of matter between reservoirs is driven by Earth's internal and external sources of energy. These movements are often accompanied by a change in physical and chemical properties of the matter. Carbon, for example, occurs in carbonate rocks such as limestone, in the atmosphere as carbon dioxide gas, in water as dissolved carbon dioxide and in all organisms as complex molecules that control the chemistry of life. DOK 3</p> <p>SC-HS-4.6.9 Students will:</p> <ul style="list-style-type: none"> <li>explain the cause and effect relationship between global climate and weather patterns and energy transfer (cloud cover, location</li> </ul>

SC-HS-2.3.7  
Students will:

- explain real-life phenomena caused by the convection of the Earth's mantle; predict the consequences of this motion on humans and other living things on the planet.

The outward transfer of Earth's internal heat drives convection circulation in the mantle. This causes the crustal plates to move on the face of the Earth.  
DOK 3

SC-HS-2.3.8  
Students will predict consequences of both rapid (volcanoes, earthquakes) and slow (mountain building, plate movement) earth processes from evidence/data and justify reasoning.  
The Earth's surface is dynamic; earthquakes and volcanic eruptions can be observed on a human time scale, but many processes, such as mountain building and plate movements, take place over hundreds of millions of years.  
DOK 3

- of mountain ranges, oceans); predict the consequences of changes to the global climate and weather patterns.

Global climate is determined by energy transfer from the Sun at and near Earth's surface. This energy transfer is influenced by dynamic processes such as cloud cover and the Earth's rotation and static conditions such as the position of mountain ranges and oceans.  
DOK 3

SC-HS-4.7.3  
Students will:  
predict the consequences of changes to any component (atmosphere, solid Earth, oceans, living things) of the Earth System;  
propose justifiable solutions to global problems.  
Interactions among the solid Earth, the oceans, the atmosphere and living things have resulted in the ongoing development of a changing Earth system.  
DOK 3

CURRICULUM			CURRICULUM		
Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topic	Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics
Plate Tectonics	Earthquakes	Volcanoes	Fresh Water	Mass Movement	Earth's Oceans
Continental Drift			Weathering	Water Shaping the Land	
Sea-Floor Spreading					

				Glaciers	
<b>I CAN STATEMENTS:</b>	<b>I CAN STATEMENTS:</b>	<b>I CAN STATEMENTS:</b>	<b>I CAN STATEMENTS:</b>	<b>I CAN STATEMENTS:</b>	<b>I CAN STATEMENTS:</b>
<p>Explain the Theory of Plate Tectonics and Continental Drift Describe the roles of seafloor spreading and subduction on plate tectonics.</p> <p>Differentiate between the different boundary types.</p> <p>Explain why tectonic plates move.</p>	<p>Describe the processes that cause faults and folds.</p> <p>Explain the forces and actions that cause earthquakes.</p> <p>Describe the techniques used to measure earthquakes.</p>	<p>Explain how volcanoes form</p> <p>Summarize and explain why some volcanoes erupt explosively and others are quiet.</p> <p>Identify places where volcanoes most commonly form.</p> <p>Identify landforms that are produced by magma and lava.</p>	<p>Summarize the events that make up the water cycle.</p> <p>Identify places where Earth's fresh water is found.</p> <p>Explain factors that cause weathering and erosion.</p> <p>Contrast chemical and mechanical weathering.</p> <p>Describe factors that affect the rate at which rocks weather.</p>	<p>Explain what causes mass movement.</p> <p>Describe features that are formed by surface water erosion.</p> <p>Explain what causes ground water erosion.</p> <p>Explain how glaciers form.</p> <p>Describe landscape features that are formed from glacial erosion and deposition.</p>	<p>Explain how conditions change as the depth of the ocean increases.</p> <p>Describe what causes surface currents, density currents, and upwelling.</p> <p>Explain how waves both erode and deposit sediment.</p>
<b>Critical Vocabulary</b>	<b>Critical Vocabulary</b>	<b>Critical Vocabulary</b>	<b>Critical Vocabulary</b>	<b>Critical Vocabulary</b>	<b>Critical Vocabulary</b>
<p>Pangaea</p> <p>Continental Drift</p> <p>mid-ocean ridge</p> <p>sea-floor spreading</p> <p>subduction</p>	<p>focus</p> <p>seismic waves</p> <p>epicenter</p> <p>elastic rebound theory</p> <p>seismograph</p> <p>moment magnitude</p>	<p>Ring of fire</p> <p>Intraplate volcanism</p> <p>Hot spot</p> <p>Shield volcano</p> <p>Cinder cone</p> <p>Composite cone</p>	<p>Water cycle</p> <p>Infiltration</p> <p>Transpiration</p> <p>Evaporation</p> <p>Mechanical weathering</p> <p>Chemical weathering</p> <p>Frost wedging</p>	<p>Mass movement</p> <p>Rockfall</p> <p>Rockslide</p> <p>Slump</p> <p>Mudflow</p> <p>Earthflow</p> <p>Creep</p>	<p>Salinity</p> <p>Density</p> <p>Mixed zone</p> <p>Photic zone</p> <p>Surface current</p> <p>Upwelling</p> <p>Density current</p>





<p align="center"><b>Summative</b></p> <p>Multiple choice/constructed response</p> <p align="center"><b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b></p>	<p align="center"><b>Summative</b></p> <p>Multiple choice/constructed response</p> <p align="center"><b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b></p>	<p align="center"><b>Summative</b></p> <p>Multiple choice/constructed response</p> <p align="center"><b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b></p>	<p align="center"><b>Summative</b></p> <p>Multiple choice/constructed response</p> <p align="center"><b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b></p>	<p align="center"><b>Summative</b></p> <p>Multiple choice/constructed response</p> <p align="center"><b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b></p>	<p align="center"><b>Summative</b></p> <p>Multiple choice/constructed response</p> <p align="center"><b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b></p>
<p><b>Resources Needed</b></p> <p>Textbook Video clips Discovery education Internet Library Lab equipment consumables</p>	<p><b>Resources Needed</b></p> <p>Textbook Video clips Discovery education Internet Library Lab equipment consumables</p>	<p><b>Resources Needed</b></p> <p>Textbook Video clips Discovery education Internet Library Lab equipment consumables</p>	<p><b>Resources Needed</b></p> <p>Textbook Video clips Discovery education Internet Library Lab equipment consumables</p>	<p><b>Resources Needed</b></p> <p>Textbook Video clips Discovery education Internet Library Lab equipment consumables</p>	<p><b>Resources Needed</b></p> <p>Textbook Video clips Discovery education Internet Library Lab equipment consumables</p>

<b>Weeks 13-15</b>		<b>Weeks 16-18</b>	
<b>Unit/Topic</b>		<b>Unit/Topic</b>	
<b>In this section IDENTIFY</b>		<b>In this section IDENTIFY</b>	

**CORE CONTENT 4.1**  
**Common Core Standards**

SC-HS-4.6.9

Students will:

- explain the cause and effect relationship between global climate and weather patterns and energy transfer (cloud cover, location of mountain ranges, oceans);
- predict the consequences of changes to the global climate and weather patterns.

Global climate is determined by energy transfer from the Sun at and near Earth's surface. This energy transfer is influenced by dynamic processes such as cloud cover and the Earth's rotation and static conditions such as the position of mountain ranges and oceans. DOK 3

SC-HS-4.7.3

Students will:

- predict the consequences of changes to any component (atmosphere, solid Earth, oceans, living things) of the Earth System;
  - propose justifiable solutions to global problems.
- Interactions among the solid Earth, the oceans, the atmosphere and living things have resulted in the ongoing development of a changing Earth system.  
DOK 3

***IDENTIFY GAPS for Math/Literacy in this section. These topics/skills need to be taught for 2 – 3 years to avoid gaps in student learning.***

**CORE CONTENT 4.1**  
**Common Core Standards**

SC-HS-2.3.3

Students will explain the origin of the heavy elements in planetary objects (planets, stars).

Some stars explode at the end of their lives, and the heavy elements they have created are blasted out into space to form the next generation of stars and planets. DOK 2

SC-HS-2.3.4

Students will understand that stars have life cycles of birth through death that are analogous to those of living organisms. During their lifetimes, stars

generate energy from nuclear fusion reactions that create successively heavier chemical elements.

SC-HS-2.3.5

Students will understand that the Sun, Earth and the rest of the solar system formed approximately 4.6 billion years ago from a nebular cloud of dust and gas.

SC-HS-2.3.1

Students will:

- explain phenomena (falling objects, planetary motion, satellite motion) related to gravity;
- describe the factors that affect gravitational force.

Gravity is a universal force that each mass exerts on every other mass.

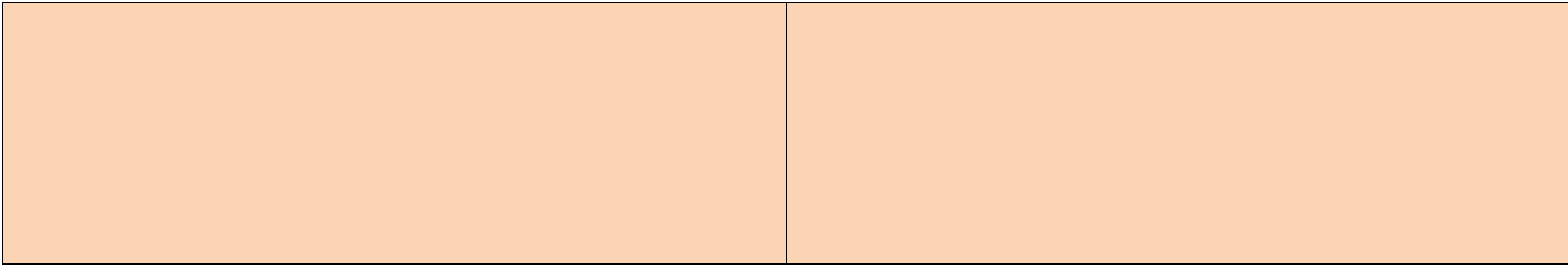
SC-HS-2.3.2

Students will:

- describe the current scientific theory of the formation of the universe (Big Bang) and its evidence;
- explain the role of gravity in the formation of the universe and its components.

The current and most widely accepted scientific theory of the mechanism of formation of the universe (Big Bang) places the origin of the universe at a time between 10 and 20 billion years ago, when the universe began in a hot dense state. According to this theory, the universe has been expanding since then. Early in the history of the universe, the first atoms to form were mainly hydrogen and helium. Over time, these elements clump together by gravitational attraction to form trillions of stars.

DOK 2



CURRICULUM			CURRICULUM		
Week 13	Week 14	Week 15	Week 16	Week 17	Week 18
Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics
The Atmosphere	The Sun & Seasons Solar Energy & Wind	Water in the Atmosphere Weather Patterns	Origin of the Solar System & The Big Bang Theory  The Inner and Outer Solar System	The sun Characteristics of Stars	Life Cycle of Stars Groups of Stars The Expanding Universe
<b>I CAN STATEMENTS:</b>  Explain how the atmosphere affects conditions on earth.  Describe what earth's atmosphere is composed of.  Explain how pressure and	<b>I CAN STATEMENTS:</b>  Describe the two modes of movement that earth makes (rotation & revolution).  Explain how Earth's surface is divided based on latitude.  Describe what	<b>I CAN STATEMENTS:</b>  Explain some ways that water condenses in the atmosphere.  Describe how clouds form.  Distinguish between the different cloud types.  Identify major	<b>I CAN STATEMENTS:</b>  Contrast the geocentric and heliocentric models of the universe.  Explain what keeps the planets in orbit around the sun.  I can summarize the events and supports of The	<b>I CAN STATEMENTS:</b>  Explain how the sun produces energy.  Explain why the sun remains constant over time.  Describe characteristics that	<b>I CAN STATEMENTS:</b>  Explain how stars form.  Explain the evolution of a low mass star.  Explain how stars are distributed in space.  Compare and contrast the

<p>density vary with altitude.</p> <p>Identify the characteristics of the major layers of Earth's atmosphere.</p>	<p>causes Earth's changing seasons.</p> <p>Explain what happens to the energy that Earth receives from the sun.</p> <p>Describe what causes winds.</p>	<p>types of precipitation.</p> <p>Explain how air masses form.</p> <p>Distinguish between the different types of fronts.</p> <p>Discuss weather types associated with cyclones and anticyclones.</p>	<p>Big Bang Theory.</p> <p>Describe the components of nebular theory.</p> <p>Identify the characteristics of the inner planets/out planets.</p>	<p>astronomers use to classify stars.</p> <p>Summarize the methods astronomers use to measure distance to stars.</p> <p>Distinguish between the classifications of stars.</p>	<p>different types of galaxies.</p> <p>Identify supports for the proposal that the universe is still expanding.</p>
<p><b>Critical Vocabulary</b></p> <p>Ozone Troposphere Stratosphere Mesosphere Thermosphere Air pressure Pressure gradient Coriolis effect Jet stream</p>	<p><b>Critical Vocabulary</b></p> <p>Heat Temperature Conduction Convection Radiation Reflection Deflection Greenhouse effect Summer solstice Winter solstice Autumnal equinox Spring equinox</p>	<p><b>Critical Vocabulary</b></p> <p>Evaporation Condensation Sublimation Humidity Relative humidity Dew point Orographic lifting Front Temperature inversion Condensation nuclei Cyclone Anticyclone westerlies</p>	<p><b>Critical Vocabulary</b></p> <p>Geocentric Heliocentric Orbit Universal law of gravitation Terrestrial planets Jovian planets Nuclear fusion</p>	<p><b>Critical Vocabulary</b></p> <p>Astronomical unit Light year Apparent magnitude Absolute magnitude Hertzsprung-Russel diagram</p>	<p><b>Critical Vocabulary</b></p> <p>Big bang theory Nebular hypothesis Protostar Supernova White dwarf Neutron star Black hole Red shift Doppler effect galaxies</p>
<p><b>Strategies/Activities</b></p> <p>Video clips Lab activities Diagrams</p>	<p><b>Strategies/Activities</b></p> <p>Diagrams Lab activities Demonstrations Video clips</p>	<p><b>Strategies/Activities</b></p> <p>Venn diagrams Demonstrations Video clips NEED energy kit</p>	<p><b>Strategies/Activities</b></p> <p>Doppler effect analogies Expanding universe lab-balloon Diagrams</p>	<p><b>Strategies/Activities</b></p> <p>Star maps Diagrams Video clips</p>	<p><b>Strategies/Activities</b></p> <p>Concept map of star's life cycle Star map</p>

Maps					
<p><b>Balanced Assessment: Formative</b></p> <p>Quiz Exit slips Thumbs up/thumbs down Teacher circulation Question/answer Think/pair/share labs</p> <p><b>Summative</b></p> <p>Multiple choice/constructed response</p> <p><b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b></p>	<p><b>Balanced Assessment: Formative</b></p> <p><b>Quiz</b> <b>Exit slips</b> <b>Thumbs up/thumbs down</b> <b>Teacher circulation</b> <b>Question/answer</b> <b>Think/pair/share</b> <b>labs</b></p> <p><b>Summative</b></p> <p>Multiple choice/constructed response</p> <p><b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b></p>	<p><b>Balanced Assessment: Formative</b></p> <p>Quiz Exit slips Thumbs up/thumbs down Teacher circulation Question/answer Think/pair/share labs</p> <p><b>Summative</b></p> <p>Multiple choice/constructed response</p> <p><b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b></p>	<p><b>Balanced Assessment: Formative</b></p> <p>Quiz Exit slips Thumbs up/thumbs down Teacher circulation Question/answer Think/pair/share labs</p> <p><b>Summative</b></p> <p>Multiple choice/constructed response</p> <p><b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b></p>	<p><b>Balanced Assessment: Formative</b></p> <p>Quiz Exit slips Thumbs up/thumbs down Teacher circulation Question/answer Think/pair/share labs</p> <p><b>Summative</b></p> <p>Multiple choice/constructed response</p> <p><b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b></p>	<p><b>Balanced Assessment: Formative</b></p> <p><b>Quiz</b> <b>Exit slips</b> <b>Thumbs up/thumbs down</b> <b>Teacher circulation</b> <b>Question/answer</b> <b>Think/pair/share</b> <b>labs</b></p> <p><b>Summative</b></p> <p>Multiple choice/constructed response</p> <p><b>Common (PLC Teams will design the common assessments, i.e., grade level, and/or depts..)</b></p>

<b>Resources Needed</b>	<b>Resources Needed</b>	<b>Resources Needed</b>	<b>Resources Needed</b>	<b>Resources Needed</b>	<b>Resources Needed</b>
Textbook Video clips Discovery education Internet Library Lab equipment consumables	Textbook Video clips Discovery education Internet Library Lab equipment consumables	Textbook Video clips Discovery education Internet Library Lab equipment consumables	Textbook Video clips Discovery education Internet Library Lab equipment consumables	Textbook Video clips Discovery education Internet Library Lab equipment consumables	Textbook Video clips Discovery education Internet Library Lab equipment consumables

Weeks 19-21	Weeks 22-24
Unit/Topic	Unit/Topic
<p style="text-align: center;"><b>In this section IDENTIFY CORE CONTENT 4.1 Common Core Standards</b></p> <p>SC-HS-1.1.3 Students will understand that solids, liquids and gases differ in the distances between molecules or atoms and therefore the energy that binds them together. In solids, the structure is nearly rigid; in liquids, molecules or atoms move around each other but do not move apart; and in gases, molecules or atoms move almost independently of each other and are relatively far apart. The behavior of gases and the relationship of the variables influencing them can be described and predicted.</p>	<p style="text-align: center;"><b>In this section IDENTIFY CORE CONTENT 4.1 Common Core Standards</b></p> <p>SC-HS-1.1.1 Students will classify or make generalizations about elements from data of observed patterns in atomic structure and/or position on the periodic table. The periodic table is a consequence of the repeating pattern of outermost electrons. DOK 2 SC-HS-1.1.2 Students will understand that the atom's nucleus is composed of protons and</p>

SC-HS-1.1.4  
Students will understand that in conducting materials, electrons flow easily; whereas, in insulating materials, they can hardly flow at all. Semiconducting materials have intermediate behavior. At low temperatures, some materials become superconductors and offer no resistance to the flow of electrons.

SC-HS-1.1.5  
Students will explain the role of intermolecular or intramolecular interactions on the physical properties (solubility, density, polarity, conductivity, boiling/melting points) of compounds. The physical properties of compounds reflect the nature of the interactions among molecules. These interactions are determined by the structure of the molecule including the constituent atoms.

DOK 2

neutrons that are much more massive than electrons. When an element has atoms that differ in the number of neutrons, these atoms are called different isotopes of the element.

CURRICULUM			CURRICULUM		
Week 19	Week 20	Week 21	Week 22	Week 23	Week 24
Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics
Classifying Matter	Solids, Liquids, Gases	Gas Law's Continued	Structure of an Atom	Ions & Isotopes	Introduction to Bonding Types
Physical Properties of Matter	Gas Laws	Phase Changes	Atomic Theory	Using the Periodic Table	
Chemical Properties of Matter					
I CAN STATEMENTS:	I CAN STATEMENTS:	I CAN	I CAN STATEMENTS:	I CAN STATEMENTS:	I CAN STATEMENTS:



<p>Explain why elements and compounds are classified as pure substances.</p> <p>Differentiate between mixtures and pure substances.</p> <p>Identify examples of physical properties of matter.</p>	<p>Explain how kinetic theory and forces of attraction are used to explain the behavior of gases, liquids, and solids.</p> <p>Summarize the behaviors of solids, liquids, and gases.</p> <p>Illustrate the factors that cause gas pressure in a</p>	<p><b>STATEMENTS:</b></p> <p>Describe the relationships between volume, temperature, and pressure of a gas.</p> <p>Calculate pressures using Gas Laws (like Boyle's Law and the combined gas law)</p> <p>Describe the</p>	<p>Identify the three subatomic particles that make up atoms.</p> <p>Compare and contrast protons, neutrons, and electrons.</p> <p>I can use atomic mass and atomic number to calculate</p>	<p>Explain what happens to electrons when atoms gain or lose energy.</p> <p>Describe the most stable configuration of electrons in an atom.</p> <p>Use the periodic table to identify representative groups.</p> <p>Use the periodic table to</p>	<p>Describe when an atom is likely and unlikely to react.</p> <p>Describe how various bonding types (ionic and covalent) work.</p> <p>Contrast ionic and covalent</p>
<p><b>Critical Vocabulary</b></p> <p>Matter Element Atom Molecule Compound Pure substance Mixture Physical properties of matter Chemical properties Reactivity Physical changes Chemical changes</p>	<p><b>Critical Vocabulary</b></p> <p>Kinetic theory Solid Liquid Gas Fluid Plasma Energy Temperature Evaporation Sublimation condensation</p>	<p><b>Critical Vocabulary</b></p> <p>Pressure Boyle's law Charles law Gay-Lussac's law</p>	<p><b>Critical Vocabulary</b></p> <p>Protons Electrons Neutrons Nucleus Electric force Isotopes Atomic number Mass number Chemical symbol Chemical formula</p>	<p><b>Critical Vocabulary</b></p> <p>Orbital Valence electron Lewis dot structure Octet rule Periodic table Groups Periods Energy level Metals Non-metals Semiconductors</p>	<p><b>Critical Vocabulary</b></p> <p>Ionic bonds Covalent bonds Metallic bonds Formula unit</p>



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<b>Resources Needed</b> Textbook Video clips Discovery education Internet Library Lab equipment consumables	<b>Resources Needed</b> Textbook Video clips Discovery education Internet Library Lab equipment consumables	<b>Resources Needed</b> Textbook Video clips Discovery education Internet Library Lab equipment consumables	<b>Resources Needed</b> Textbook Video clips Discovery education Internet Library Lab equipment consumables	<b>Resources Needed</b> Textbook Video clips Discovery education Internet Library Lab equipment consumables	<b>Resources Needed</b> Textbook Video clips Discovery education Internet Library Lab equipment consumables

Weeks 25-27	Weeks 28-30
Unit/Topic	Unit/Topic
<p style="text-align: center;"><b>In this section IDENTIFY CORE CONTENT 4.1 Common Core Standards</b></p> <p>Students will:</p> <ul style="list-style-type: none"> <li>select or construct accurate and appropriate representations for motion (visual, graphical and mathematical);</li> <li>defend conclusions/explanations about the motion of objects and real-life phenomena from evidence/data.</li> </ul> <p>Objects change their motion only when a net force is applied. Newton's</p>	<p style="text-align: center;"><b>In this section IDENTIFY CORE CONTENT 4.1 Common Core Standards</b></p> <p>Students will:</p> <ul style="list-style-type: none"> <li>select or construct accurate and appropriate representations for motion (visual, graphical and mathematical);</li> <li>defend conclusions/explanations about the motion of objects and real-life phenomena from evidence/data.</li> </ul>

Laws of motion are used to describe the effects of forces on the motion of objects. Conservation of mechanical energy and conservation of momentum may also be used to predict motion. DOK 3

Objects change their motion only when a net force is applied. Newton’s Laws of motion are used to describe the effects of forces on the motion of objects. Conservation of mechanical energy and conservation of momentum may also be used to predict motion. DOK 3  
 SC-HS-1.2.2  
 Students will:

- explain the relationship between electricity and magnetism;
- propose solutions to real life problems involving electromagnetism.

Electricity and magnetism are two aspects of a single electromagnetic force. Moving electric charges produce magnetic forces or “fields” and moving magnets produce electric forces or “fields”. This idea underlies the operation of electric motors and generators.  
 DOK 3  
 SC-HS-2.3.1  
 Students will:

- explain phenomena (falling objects, planetary motion, satellite motion) related to gravity;
- describe the factors that affect gravitational force.

Gravity is a universal force that each mass exerts on every other mass.  
 DOK 3

CURRICULUM			CURRICULUM		
Week 25	Week 26	Week 27	Week 28	Week 29	Week 30
Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics	Identify Sub-Topics
Distance & Displacement	Speed & Velocity	Acceleration	Forces Friction Gravity <b>Projectile Motion</b>	Newton’s First and Second Laws of Motion	Newton’s Third Law of Motion  Momentum

<p><b>I CAN STATEMENTS:</b></p> <p>Identify the things that are needed to describe motion completely.</p> <p>Explain how distance and displacement are different.</p> <p>Calculate and determine displacements and distances.</p>	<p><b>I CAN STATEMENTS:</b></p> <p>Contrast instantaneous speed and average speed.</p> <p>Determine how to find speed from a distance-time graph.</p> <p>Explain how velocity and speed are different.</p> <p>Summarize the process in adding velocities.</p>	<p><b>I CAN STATEMENTS:</b></p> <p>Explain how changes in velocity are described.</p> <p>Calculate acceleration.</p> <p>Explain how a speed time graph will allow one to determine acceleration.</p> <p>Explain what instantaneous acceleration is.</p>	<p><b>I CAN STATEMENTS:</b></p> <p>Explain how forces affect the motion of an object.</p> <p>Explain what friction is.</p> <p>Identify and describe examples of the four types of friction.</p> <p>Describe how gravity and air resistance impact falling objects.</p> <p>Identify the direction of Earth's gravity impact.</p>	<p><b>I CAN STATEMENTS:</b></p> <p>Explain Newton's first law and how it relates change in motion to a zero net force.</p> <p>Explain how Newton's second law relates force, mass, and acceleration.</p> <p>Summarize reasons why weight and mass are related.</p>	<p><b>I CAN STATEMENTS:</b></p> <p>Describe Newton's third law of motion.</p> <p>Explain what is needed for a large object to have a large momentum.</p> <p>Summarize the importance of momentum conservation.</p>
<p><b>Critical Vocabulary</b></p> <p>Frame of reference Motion Distance Displacement Speed velocity</p>	<p><b>Critical Vocabulary</b></p> <p>Constant speed Instantaneous speed Distance vs. time graph</p>	<p><b>Critical Vocabulary</b></p> <p>Acceleration Speed vs. time graph</p>	<p><b>Critical Vocabulary</b></p> <p>Contact forces Field forces Net force Friction Static friction Rolling friction Sliding friction Fluid friction Law of universal gravitation</p>	<p><b>Critical Vocabulary</b></p> <p>Newton's 1<sup>st</sup> law Newton's 2<sup>nd</sup> law Weight mass</p>	<p><b>Critical Vocabulary</b></p> <p>Newton's 3<sup>rd</sup> law Action force Reaction force Momentum Law of conservation of momentum</p>



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<b>Weeks 31-33</b>	<b>Weeks 34-36</b>
<b>Unit/Topic</b> <b>The Biosphere and Ecosystems</b>	<b>Unit/Topic</b> <b>Populations &amp; Human Impact on the Biosphere</b>
<p style="text-align: center;"><b>In this section IDENTIFY CORE CONTENT 4.1 Common Core Standards</b></p> <p>SC-HS-4.6.4 Students will:</p> <ul style="list-style-type: none"> <li>describe the components and reservoirs involved in biogeochemical cycles ( water, nitrogen, carbon dioxide and</li> </ul>	<p style="text-align: center;"><b>In this section IDENTIFY CORE CONTENT 4.1 Common Core Standards</b></p> <p>SC-HS-4.6.4 Students will:</p>

oxygen);

- explain the movement of matter and energy in biogeochemical cycles and related phenomena.

The total energy of the universe is constant. Energy can change forms and/or be transferred in many ways, but it can neither be created nor destroyed. Movement of matter between reservoirs is driven by Earth's internal and external sources of energy. These movements are often accompanied by a change in physical and chemical properties of the matter. Carbon, for example, occurs in carbonate rocks such as limestone, in the atmosphere as carbon dioxide gas, in water as dissolved carbon dioxide and in all organisms as complex molecules that control the chemistry of life.

DOK 3

SC-HS-4.6.12

Students will understand that the forces that hold the nucleus together, at nuclear distances, are usually stronger than the forces that would make it fly apart.

SC-HS-4.7.2

Students will:

- evaluate proposed solutions from multiple perspectives to environmental problems caused by human interaction;
- justify positions using evidence/data.

Human beings live within the world's ecosystems. Human activities can deliberately or inadvertently alter the dynamics in ecosystems. These activities can threaten current and future global stability and, if not addressed, ecosystems can be irreversibly affected.

DOK 3

SC-HS-4.7.5

Students will:

- predict the consequences of changes in resources to a population;
- select or defend solutions to real-world problems of population control.

Living organisms have the capacity to produce populations of infinite size. However, behaviors, environments and resources influence the size of populations. Models (e.g., mathematical, physical, conceptual) can be used to make predictions about changes in the size or rate of growth of a population.

DOK 3

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cycles ( water, nitrogen, carbon dioxide and oxygen);

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DOK 3

CURRICULUM			CURRICULUM		
Week 31	Week 32	Week 33	Week 34	Week 35	Week 36
<p><b>Identify Sub-Topics</b></p> <p>Levels of Organization</p> <p>Food Chains and Webs</p>	<p><b>Identify Sub-Topics</b></p> <p>Energy Flow in Ecosystems</p>	<p><b>Identify Sub-Topics</b></p> <p>Role of Climate</p> <p>Major Biomes</p>	<p><b>Identify Sub-Topics</b></p> <p>Populations</p> <p>Population</p> <p>Trends</p>	<p><b>Identify</b></p> <p>Factors Affecting Population Growth</p> <p>Human Population Sub-Topics</p>	<p><b>Identify Sub-Topics</b></p> <p>Renewable and Nonrenewable Resources</p> <p>Conservation</p> <p>Biology</p>
<p><b>I CAN STATEMENTS:</b></p> <p>Describe levels of organization used by ecologists.</p> <p>Identify the place where energy for ecosystems comes from.</p> <p>Describe how energy flows through living systems.</p> <p>Describe</p>	<p><b>I CAN STATEMENTS:</b></p> <p>Describe how matter moves among the living and nonliving parts of an ecosystem.</p> <p>Summarize the importance of nutrients living systems.</p>	<p><b>I CAN STATEMENTS:</b></p> <p>Explain how atmospheric gases maintain Earth's temperatures.</p> <p>Explain that abiotic and biotic factors work together to build ecosystems.</p> <p>Identify the characteristics of major</p>	<p><b>I CAN STATEMENTS:</b></p> <p>Identify characteristics used to describe a population.</p> <p>Identify factors that affect population size.</p> <p>Describe exponential and logistic growth trends.</p>	<p><b>I CAN STATEMENTS:</b></p> <p>Identify factors that control population growth.</p> <p>How has changes in the human population affected ecosystems.</p>	<p><b>I CAN STATEMENTS:</b></p> <p>Describe how environmental resources are classified.</p> <p>Summarize effects that humans have on natural resources.</p> <p>Describe the goals of conservation biology.</p>



