

8th Grade Science Curriculum Guide

Week	Standard	Major Concept/Topic	Possible Resources	Vocabulary										
Week1		Beginning of the year skills including lab safety, notebook set up and expectations.	Lab Safety Rap: https://www.youtube.com/watch?v=xJG0ir9nDtc											
Week 2	<table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td>SC.8.P.8.2</td><td>2</td></tr><tr><td>SC.8.P.8.3</td><td>2</td></tr><tr><td>SC.8.P.8.4</td><td>2</td></tr><tr><td>SC.6.P.13.1</td><td>2</td></tr></table>	Standard	Cognitive Level	SC.8.P.8.2	2	SC.8.P.8.3	2	SC.8.P.8.4	2	SC.6.P.13.1	2	<p>Differentiate between weight and mass recognizing that weight is the amount of gravitational pull on an object and is distinct from, though proportional to, mass.</p> <p>Explore and describe the densities of various materials through measurement of their masses and volumes.</p> <p>Include:</p> <ul style="list-style-type: none">Density does not change with size of the sample.Use density formula to calculate density, mass or volume when comparing substances. <p>Classify and compare substances on the basis of characteristic physical properties that can be demonstrated or measured; for example, density, thermal or electrical conductivity, solubility, magnetic properties, melting and boiling points, and know that these</p>	<p>Textbook: Unit 6 Lesson 1 (pages 306-319) Unit 6 Lesson 2 (pages 322-335)</p> <p>Essential Lab:</p> <ul style="list-style-type: none">Seven Layer Density Column pages 96-104What's the Matter Inquiry Lab pages 46-55 Part 1-2 This lab connects physical and chemical properties as well as mentioning mixtures. Part 3 begins Physical and Chemical changes. <p>Additional Resources:</p> <ul style="list-style-type: none">BrainPop: Measuring MatterGizmos: Density; Weight and MassLAB: Crime Scene Density Lab (www.cpalms.org)Density of Blocks Activity pages 217-221Density of Rocks (Differentiated) pages 222-2238th Grade Coach<ul style="list-style-type: none">Lesson 20 pages 114-118https://www.flippedoutsience.com/unit-2---what-are-we-made-of.htmlhttps://www.youtube.com/watch?v=MraHol-Yik4&index=14&list=PLhz12vamHOnaY7nvpqtQ0SIbuJdC4HA5O	Matter Mass Weight Density Volume Electrical conductivity Solubility Malleability Luster Boiling point Magnetic attraction Melting point Thermal conductivity Solvent Solute Saturation
Standard	Cognitive Level													
SC.8.P.8.2	2													
SC.8.P.8.3	2													
SC.8.P.8.4	2													
SC.6.P.13.1	2													

		<p>properties are independent of the amount of the sample.</p> <p>Investigate and describe types of forces, including contact forces and forces acting at a distance, such as electrical, magnetic, and gravitational.</p> <p>Include:</p> <ul style="list-style-type: none">• Density does not change with size of sample. <p>Exclude:</p> <ul style="list-style-type: none">• Memorization of specific melting points or boiling points.• Calculations for conductivity, solubility or magnetic properties.												
Week 3	<p style="text-align: center;">CONTINUE</p> <table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td>SC.8.P.8.2</td><td>2</td></tr><tr><td>SC.8.P.8.3</td><td>2</td></tr><tr><td>SC.8.P.8.4</td><td>2</td></tr><tr><td>SC.6.P.13.1</td><td>2</td></tr></table>	Standard	Cognitive Level	SC.8.P.8.2	2	SC.8.P.8.3	2	SC.8.P.8.4	2	SC.6.P.13.1	2	<p>Classify and compare substances on the basis of characteristic physical properties that can be demonstrated or measured; for example, density, thermal or electrical conductivity, solubility, magnetic properties, melting and boiling points, and know that these properties are independent of the amount of the sample.</p> <p>Exclude:</p> <ul style="list-style-type: none">• Memorization of specific melting points or boiling points.• Calculations for conductivity, solubility or magnetic properties.	<p>Textbook: Unit 6 Lesson 2 (pages 322-335)</p> <p>Suggested Activity:</p> <ul style="list-style-type: none">• A lab directed at understanding solubility is a physical property. A simple activity such as dissolving food coloring in a petri dish with water and allowing the water to evaporate. The food coloring is left behind.	
Standard	Cognitive Level													
SC.8.P.8.2	2													
SC.8.P.8.3	2													
SC.8.P.8.4	2													
SC.6.P.13.1	2													

District Common Assessment- Matter Unit Test 1

Week 4		Differentiate between physical and chemical changes.	Textbook: Unit 6 Lesson 3 (pages 338-349)	Chemical change Chemical reaction Reactivity Physical change
		Explore the Law of Conservation of Mass by demonstrating and concluding that mass is conserved when substances undergo physical and chemical changes.	Essential Labs: <ul style="list-style-type: none">Physical and Chemical Changes in Matter pages 59-71Alka Seltzer Rockets http://www.physics.org/interact/physics-to-go/alka-seltzer-rocket/index.html<ul style="list-style-type: none">Use cold, room temp and hot water. Record the data for temperature and rate of reaction. This will help cement the idea that heat speeds up the reaction (SC.8.P.9.2). This also will meet the Nature of Science standard for SC.8.N.1.1.	
		Investigate and describe how temperature influences chemical changes.	Additional Resources: <ul style="list-style-type: none">BrainPop: Property ChangesLabs: Baking Soda/Vinegar (www.cpalms.org) or Popcorn LabPrecipitating Bubbles pages 237-253 (higher level ability and combined with Nature of Science lab write- up)http://www.middleschoolscience.com/bag.htm	
		Recognize that adding heat to or removing heat from a system may result in a temperature changes and possibly a change of state.		
		Investigate and describe the transformation of energy from one form to another.		
		Cite evidence to explain that energy cannot be created or destroyed, only changed from one form to another.		
		Observe and describe that heat moves in predictable ways, moving from warmer objects to cooler ones until they reach the same temperature.		
	Exclude: <ul style="list-style-type: none">Will not include mathematical computations of conservation of mass			

Week 5	<table><thead><tr><th>Standard</th><th>Cognitive Level</th></tr></thead><tbody><tr><td>SC.8.P.9.2</td><td>2</td></tr><tr><td>SC.8.P.9.1</td><td>3</td></tr><tr><td>SC.8.P.9.3</td><td>3</td></tr></tbody></table>	Standard	Cognitive Level	SC.8.P.9.2	2	SC.8.P.9.1	3	SC.8.P.9.3	3	<p>Differentiate between physical and chemical changes.</p> <p>Explore the Law of Conservation of Mass by demonstrating and concluding that mass is conserved when substances undergo physical and chemical changes.</p> <p>Investigate and describe how temperature influences chemical changes.</p>	<p>Textbook: Unit 6 Lesson 3 (pages 338-349)</p> <p>Essential Activity:</p> <ul style="list-style-type: none">• Law of Conservation of Mass Lab• Conservation of Mass pages 75-80, 83 <p>Additional Resources:</p> <ul style="list-style-type: none">• 8th Grade Coach<ul style="list-style-type: none">○ Lesson 27 pages 153-157○ Lesson 25 pages 144-148○ Lesson 26 pages 149-152	
Standard	Cognitive Level											
SC.8.P.9.2	2											
SC.8.P.9.1	3											
SC.8.P.9.3	3											
District Common Assessment - Matter Unit Test 2												
Week 6 9/16-9/20	<table><thead><tr><th>Standard</th><th>Cognitive Level</th></tr></thead><tbody><tr><td>SC.8.P.8.1</td><td>2</td></tr></tbody></table>	Standard	Cognitive Level	SC.8.P.8.1	2	Explore the scientific theory of atoms (also known as atomic theory) by using models to explain	<p>Textbook: Unit 6, Lesson 4 - 5 (Pages 354-377)</p> <p>Simulations: States of Matter</p>	Particles Solid Liquid				
Standard	Cognitive Level											
SC.8.P.8.1	2											

	<table><tr><td>SC.8.P.8.9</td><td>2</td></tr></table>	SC.8.P.8.9	2	<p>the motion of particles in solids, liquids, and gases.</p> <p>Exclude:</p> <ul style="list-style-type: none">colloid <p>Distinguish among mixtures, (including solutions) and pure substances.</p>	<p>Additional Resources:</p> <ul style="list-style-type: none">Florida Standards-Based Instruction Coach Grade 8 Investigation 1 Separating Mixtures page 175-182.Mixtures, Elements and Compounds Sort https://docs.google.com/document/d/1UVuqIGaiBEyqnfOz5qRXxoWVbwqZWfJb4JI7_0Ip3-Qg/edit?usp=sharing	<p>Gas</p> <p>Pure substances</p> <p>Homogeneous</p> <p>Heterogeneous</p> <p>Mixture</p>				
SC.8.P.8.9	2									
Week 7	<table><tr><td>Standard</td><td>Cognitive Level</td></tr><tr><td>SC.8.P.8.8</td><td>2</td></tr></table>	Standard	Cognitive Level	SC.8.P.8.8	2	<p>Identify basic examples of and compare and classify the properties of compounds, including acids, bases and salts.</p> <p>Include:</p> <ul style="list-style-type: none">Common examples of acids, bases and/or salts.Compare and contrast properties of compounds, including acids, bases and/or salts. <p>Exclude:</p> <ul style="list-style-type: none">Knowledge of the specific pH of certain substances.	<p>Textbook: unit 6, Lesson 5 (pages 364-377)</p> <p>Essential Activity:</p> <ul style="list-style-type: none">http://old.coolschoolscience.org/CoolScience/Teachers/Activities/CabbageJuice.htmSimilar activity can be done with pH paperFlorida Standards-Based Instruction Coach Grade 8 Investigation 2 Acids and Bases Activity page 183-190. <p>Additional Resources:</p> <ul style="list-style-type: none">8th grade Coach-<ul style="list-style-type: none">Lesson 29 pg. 163-1746th grade Coach-<ul style="list-style-type: none">Lesson 21 pg.128-131Lesson 23 pg. 136-13https://middleschoolscience.com/	<p>pH scale</p> <p>Acid</p> <p>Base</p> <p>Salt</p>		
Standard	Cognitive Level									
SC.8.P.8.8	2									
District Common Assessment - Mixtures, Elements Compounds and pH										
Week 8	<table><tr><td>Standard</td><td>Cognitive Level</td></tr><tr><td>SC.8.P.8.5</td><td>1</td></tr><tr><td>SC.8.P.8.7</td><td>1</td></tr></table>	Standard	Cognitive Level	SC.8.P.8.5	1	SC.8.P.8.7	1	<p>Recognize that there are a finite number of elements and that their atoms combine in a multitude of ways to produce compounds that make up all of the living and nonliving things that we encounter.</p> <p>Include:</p> <ul style="list-style-type: none">Particle movement in solids, liquids and gases. <p>Exclude:</p> <ul style="list-style-type: none">Balancing equations	<p>Textbook: Unit 6, Lessons 6 (pages 378 - 403)</p> <p>8th Grade Coach: Pages 119 -122</p> <p>Simulations:</p> <p>https://phet.colorado.edu/en/simulation/build-an-atom</p> <p>Additional Resources:</p> <ul style="list-style-type: none">8th Grade Coach<ul style="list-style-type: none">Lesson 21 pages 119-122	<p>Atom</p> <p>Proton</p> <p>Neutron</p> <p>Electron</p> <p>Nucleus</p> <p>Atomic Number</p> <p>Atomic Mass</p> <p>Electron Cloud</p> <p>Model</p> <p>Molecule</p> <p>Chemical Bond</p> <p>Compound</p>
Standard	Cognitive Level									
SC.8.P.8.5	1									
SC.8.P.8.7	1									

		<ul style="list-style-type: none">• Analysis of chemical formulas• Chemical bonding Explore the scientific theory of atoms (also known as atomic theory) by recognizing that atoms are the smallest unit of an element and are composed of subatomic particles (electrons surrounding a nucleus containing protons and neutrons). Include: <ul style="list-style-type: none">• Protons, neutrons and electrons only Exclude: <ul style="list-style-type: none">• Valence electrons• Electron configuration• Any chemical bonding						
District Common Assessment - Atoms Test/Quiz								
		1st Nine Weeks Wrap UP and Review 1st Nine Weeks TEST						
End of 1st Quarter								
Week 10	<table><tr><td>Standard</td><td>Cognitive Level</td></tr><tr><td>SC.8.P.8.6</td><td>1</td></tr></table>	Standard	Cognitive Level	SC.8.P.8.6	1	Recognize that elements are grouped in the periodic table according to similarities of their properties. Include: <ul style="list-style-type: none">• Elements 1-57 and 72-89 only• Periodic trends at a conceptual level Exclude: <ul style="list-style-type: none">• Valence electrons	Textbook: Unit 6 Lesson 7 pages 392-403 Additional Resources: <ul style="list-style-type: none">• 8th grade Coach<ul style="list-style-type: none">◦ Lesson 22 pg. 123-127• Periodic Table Scavenger Hunt	Periods Groups Families Metal Nonmetals Metalloid
Standard	Cognitive Level							
SC.8.P.8.6	1							
District Common Assessment - Periodic Table Test								

Week 11	<table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td>SC.6.L.14.1</td><td>1</td></tr><tr><td>SC.6.L.14.2</td><td>2</td></tr><tr><td>SC.6.L.14.3</td><td>2</td></tr><tr><td>SC.6.L.14.4</td><td>2</td></tr></table>	Standard	Cognitive Level	SC.6.L.14.1	1	SC.6.L.14.2	2	SC.6.L.14.3	2	SC.6.L.14.4	2	<p>Review cell theory, cell organelles and functions.</p> <p>Include:</p> <ul style="list-style-type: none">Organelles include: cell wall, cell membrane, nucleus, cytoplasm, chloroplasts and mitochondriaDifference between animal and plant cells <p>Exclude:</p> <ul style="list-style-type: none">All other organelles <p>Describe and identify patterns in the hierarchical organization of organisms from atoms to molecules and cells to tissues to organs to organ systems to organisms.</p> <p>Exclude:</p> <ul style="list-style-type: none">Cell specialization	<p>Essential Activity:</p> <ul style="list-style-type: none">Hierarchy of Living Things pages 146-151Comparing Plant and Animal Cells pages 155-161 <p>Additional Resources:</p> <ul style="list-style-type: none">6th grade Coach -<ul style="list-style-type: none">Lesson 21 pages 128-131	<p>Cell theory</p> <p>Organism</p> <p>Unicellular</p> <p>Multicellular</p> <p>Plant cell</p> <p>Animal cell</p> <p>Organelles</p> <p>Cell wall</p> <p>Cell membrane</p> <p>Cytoplasm</p> <p>Nucleus</p> <p>Chloroplast</p>
Standard	Cognitive Level													
SC.6.L.14.1	1													
SC.6.L.14.2	2													
SC.6.L.14.3	2													
SC.6.L.14.4	2													
Week 12 Week 13	<table><tr><th>Standards</th><th>Cognitive Level</th></tr><tr><td>SC.6.L.14.4.</td><td></td></tr><tr><td>SC.6.L.14.5</td><td></td></tr></table>	Standards	Cognitive Level	SC.6.L.14.4.		SC.6.L.14.5		<p>Identify and investigate the general functions of ONLY the following major systems: digestive, respiratory, circulatory, reproductive, excretory, immune, muscular and musculoskeletal; and how they interact with each other to maintain homeostasis.</p> <p>Compare and contrast types of infectious agents that may infect the human body, including viruses, bacteria, fungi, and parasites.</p> <p>Include:</p> <ul style="list-style-type: none">General functions of body systemsHow they interact to maintain homeostasis.	<p>Essential Activity:</p> <ul style="list-style-type: none">Build a Body pages 178-182 <p>Additional Resources:</p> <ul style="list-style-type: none">6th Grade Coach -<ul style="list-style-type: none">Lesson 24 pages 140-147Lesson 25 pages 148-151	<p>Organs</p> <p>Organisms</p> <p>Organ system</p> <p>Tissue</p> <p>Epithelial</p> <p>Nervous</p> <p>Muscle</p> <p>connective</p>				
Standards	Cognitive Level													
SC.6.L.14.4.														
SC.6.L.14.5														

		<ul style="list-style-type: none">• Infectious agents are limited to viruses, bacteria, and fungi.• References to homeostasis are limited to organismal level.• No more than 3 systems. <p>Exclude:</p> <ul style="list-style-type: none">• Structures and functions of individual organs in isolation.• Knowledge of diseases and causal agents.• Diagram of human reproductive system												
Week 14	<table><thead><tr><th>Standard</th><th>Cognitive Level</th></tr></thead><tbody><tr><td>SC.6.L.14.1</td><td>1</td></tr><tr><td>SC.6.L.14.2</td><td>2</td></tr><tr><td>SC.8.L.18.1</td><td>3</td></tr><tr><td>SC.8.L.18.2</td><td>3</td></tr></tbody></table>	Standard	Cognitive Level	SC.6.L.14.1	1	SC.6.L.14.2	2	SC.8.L.18.1	3	SC.8.L.18.2	3	<p>Describe and investigate the process of photosynthesis, such as the roles of light, carbon dioxide, water and chlorophyll; production of food; release of oxygen.</p> <p>Describe and investigate how cellular respiration breaks down food to provide energy and releases carbon dioxide.</p> <p>Exclude:</p> <ul style="list-style-type: none">• Stages• Interrelatedness of both photosynthesis and cellular respiration• ATP• Function of organelles related to the process• Anaerobic respiration	<p>Textbook: Unit 7 Lesson 1(pages 411-425)</p> <p>Essential Activity: The Role Play is recommended for all students. The Light Intensity Lab is recommended for additional enrichment.</p> <ul style="list-style-type: none">• Photosynthesis Role Play Activity• Effect of Light Intensity on Photosynthesis <p>Additional Resources:</p> <ul style="list-style-type: none">• 6th Grade Coach<ul style="list-style-type: none">◦ Lesson 22 pages 128 - 135	<p>Cell theory</p> <p>Organism</p> <p>Unicellular</p> <p>Multicellular</p> <p>Plant cell</p> <p>Animal cell</p> <p>Organelles</p> <p>Cell wall</p> <p>Cell membrane</p> <p>Cytoplasm</p> <p>Nucleus</p> <p>Chloroplast</p> <p>Photosynthesis</p> <p>Cellular Respiration</p> <p>Chlorophyll</p>
Standard	Cognitive Level													
SC.6.L.14.1	1													
SC.6.L.14.2	2													
SC.8.L.18.1	3													
SC.8.L.18.2	3													

Week 15		Construct a scientific model of the carbon cycle to show how matter and energy are continuously transferred within and between organisms and their physical environment.	Textbook: Unit 7 Lesson 2 (pages 428-439) Essential Activity: <ul style="list-style-type: none">• Carbon Cycle Station Game pages 140-159• Greenhouse Gases in a Bottle pages 254-257	Carbon cycle Fossil fuels	
	<table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td>SC.8.L. 18.3</td><td>3</td></tr></table>	Standard			Cognitive Level
Standard	Cognitive Level				
SC.8.L. 18.3	3				

District Common Assessment - Photosynthesis, Cellular Respiration and Carbon Cycle Test

Week 13		<p>Cite evidence that living systems follow the Law of Conservation of Mass and Energy.</p> <p>Investigate and describe the transformation of energy from one form to another.</p> <p>Cite evidence to explain that energy cannot be created or destroyed, only changed from one form to another.</p> <p>Include:</p> <ul style="list-style-type: none">Food Webs (limited two primary, secondary and tertiary)Energy PyramidsMaximum of 5 energy transfers <p>Exclude:</p>	<p>Textbook: Unit 7 Lesson 2 (pages 428-439)</p> <p><u>Florida Standards-Based Instruction Coach Grade 7</u> Investigation 2 “Describing a Food Web” pages 150-156.</p> <p>Additional Resources:</p> <ul style="list-style-type: none"><u>Florida Standards-Based Instruction Coach Grade 7</u> Investigation 2 “Describing a Food Web” pages 150-156.8th grade Coach-<ul style="list-style-type: none">Lesson 29 pg. 163-1747th grade Coach-<ul style="list-style-type: none">Lesson 20 pg. 120-124Gizmo-Prairie Ecosystem	<p>Food Web</p> <p>Primary</p> <p>Secondary</p> <p>Tertiary</p> <p>Autotrophs</p> <p>Heterotrophs</p>	

		<ul style="list-style-type: none">Food chainsTerm <i>trophic level</i>Nuclear EnergyNo calculations										
Week 14	<table><thead><tr><th>Standard</th><th>Cognitive Level</th></tr></thead><tbody><tr><td>SC.7.L.17.1</td><td>3</td></tr><tr><td>SC.7.L.17.2</td><td>2</td></tr><tr><td>SC.7.L. 17.3</td><td>3</td></tr></tbody></table>	Standard	Cognitive Level	SC.7.L.17.1	3	SC.7.L.17.2	2	SC.7.L. 17.3	3	<p>Explain and illustrate the roles of relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.</p> <p>Include:</p> <ul style="list-style-type: none">Food Webs (limited to primary, secondary and tertiary)...with a maximum of 15 organisms <p>Exclude:</p> <ul style="list-style-type: none">Food chains <p>Compare and contrast the relationships among organisms, such as mutualism, predation, parasitism, competition and commensalism.</p> <p>Include:</p> <ul style="list-style-type: none">Examples of each to be identified by the students. <p>Describe and investigate limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.</p>	<p>Essential Activity: (Choose 1)</p> <ul style="list-style-type: none">Oh Deer Activityhttps://www.troup.org/userfiles/929/My%20Files/Science/MS%20Science/7th%20Science/Ecology/flow_energy/food_web_game.pdf?id=23083Everglades Biodiversity pages 182-191 <p>Additional Resources:</p> <ul style="list-style-type: none">https://www.youtube.com/watch?v=-oVavgmveyYhttps://www.youtube.com/watch?v=ysa5OBhXz-Q7th grade Coach-<ul style="list-style-type: none">Lesson 20 pg. 120-124Lesson 21 pg. 125-128Lesson 22 pg. 129-138https://www.youtube.com/watch?v=zSmL2F1t81QSymbiosis PPT	Autotrophs Heterotrophs Producers Consumers Decomposers Symbiosis Mutualism Commensalism Parasitism Predation Competition Limiting factors
Standard	Cognitive Level											
SC.7.L.17.1	3											
SC.7.L.17.2	2											
SC.7.L. 17.3	3											
District Common Assessment - Ecology												
Week 15	<table><thead><tr><th>Standard</th><th>Cognitive Level</th></tr></thead></table>	Standard	Cognitive Level	Recognize that fossil evidence is consistent with the scientific theory	<p>Essential Activity:</p> <ul style="list-style-type: none">Birds' Beaks Adaptation	Fossil Evolution						
Standard	Cognitive Level											

	<table><tr><td>SC.7.L.15.1</td><td>2</td></tr><tr><td>SC.7.L.15.2</td><td>3</td></tr><tr><td>SC.7.L. 15.3</td><td>3</td></tr></table>	SC.7.L.15.1	2	SC.7.L.15.2	3	SC.7.L. 15.3	3	<p>of evolution that living things evolved from earlier species.</p> <p>Include:</p> <ul style="list-style-type: none">Fossil evidence being consistent with theory of evolutionFocus on progression over time from earlier species and/or the idea that not all species alive today were alive in the past. <p>Exclude:</p> <ul style="list-style-type: none">Hominoid evolution or primate fossilsRelative dating <p>Explore the scientific theory of evolution by recognizing and explaining ways in which genetic variation and environmental factors contribute to evolution by natural selection and diversity of organisms.</p> <p>Include:</p> <ul style="list-style-type: none">Environmental factors <p>Explore the scientific theory of evolution by relating how the inability of a species to adapt within a changing environment may contribute to the extinction of that species.</p>	<p>Additional Resources:</p> <ul style="list-style-type: none">7th grade Coach-<ul style="list-style-type: none">Lesson 15 pg.100-103	<p>Environmental factors</p>
SC.7.L.15.1	2									
SC.7.L.15.2	3									
SC.7.L. 15.3	3									
District Common Assessment - Fossil Evidence Quiz										

Week 16			Understand and explain that every organism requires a set of instructions that specifies its traits, that this hereditary information (DNA) contains genes located in the chromosomes of each cell, and that hereditary is the passage of these instructions from one generation to another.	Additional Resources: <ul style="list-style-type: none">• http://www.usmgk12.org/documents/M&M_Reproduction.pdf This lab will discuss reproduction as well as environmental factors that will cause species to die out.• Imaginary Alien Life Forms pages 258-262• GMOs Offspring pages 205-213• 7th grade Coach-<ul style="list-style-type: none">○ Lesson 15 pg.100-103○ Lesson 16 pg. 104-107○ Lesson 17 pg. 108-110	DNA Chromosomes Punnett square Genotype Phenotype Probability Traits Dominant Recessive Meiosis Mitosis
			Determine the probabilities for genotype and phenotype combinations using Punnett Squares and pedigrees.		
			Compare and contrast the general process of sexual reproduction requiring meiosis and asexual reproduction requires mitosis.		
			Include: <ul style="list-style-type: none">• Punnett squares and pedigrees will only address dominant and recess traits• Single individual genotype and phenotype only• Punnett squares are limited to P and F1 generations.		
			Excludes: <ul style="list-style-type: none">• Terms <i>haploid</i> and <i>diploid</i>• Human reproduction• Incomplete dominance/sex-linked traits, polygenic traits, multiple alleles, codominance• Mutations• Stages of meiosis, fertilization or zygote formation.		
Week 17					

- Human genetic disorders or diseases.

Compare and contrast the general process of sexual reproduction requiring meiosis and asexual reproduction requires mitosis.

Recognize and explore the impact of biotechnology (cloning, genetic engineering, artificial selection) on the individual, society and the environment.

Excludes:

- Terms *haploid and diploid*
- Human reproduction
- Incomplete dominance/sex-linked traits, polygenic traits, multiple alleles, codominance
- Mutations
- Stages of meiosis, fertilization or zygote formation.
- Human genetic disorders or diseases.

District Common Assessment - Heredity and Genetics

District Common Assessment - Heredity and Genetics				
Week 18		2nd Nine Weeks Wrap UP and Review 2nd Nine Weeks TEST		
Week 19		WILD CARD WEEK		
End of 2nd Quarter				

Week 20	<table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td>SC.8.E.5.3</td><td>3</td></tr></table>	Standard	Cognitive Level	SC.8.E.5.3	3	<p>Distinguish the hierarchical relationships between planets and other astronomical bodies relative to solar system, galaxy, and universe, including distance, size and composition.</p> <p>Include:</p> <ul style="list-style-type: none">• General composition of bodies in the universe.• Distances between objects in space in the context of light and space travel.• Universe contains billions of galaxies and stars.• Planets, stars, moons, asteroids, nebulae, galaxies, dwarf planets, and comets.• Comparison of quantitative data, including tables. <p>Exclude:</p> <ul style="list-style-type: none">• Specific order of planets in isolation.• Memorization of quantitative astronomical data.• Specific chemical composition of astronomical bodies.• Will not need to calculate AUs.	Textbook: Unit 3, Lessons 3 - 6 (Pages 142-197)	Planet Star Moon Galaxy Spiral galaxy Irregular galaxy Elliptical galaxy Universe Astronomical Unit Light-year
Standard	Cognitive Level							
SC.8.E.5.3	3							
Week 21	<table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td></td><td>2</td></tr></table>	Standard	Cognitive Level		2	Describe and classify specific physical properties of stars: apparent magnitude, temperature (color), size and luminosity (absolute brightness)	<p>Essential Activity:</p> <ul style="list-style-type: none">• http://www.mrsgeology.com/hertzsprung-russell-diagram/• Star Bright Apparent Magnitude Lab pages 172-178	HR Diagram Main Sequence Apparent Magnitude
Standard	Cognitive Level							
	2							

	<table><tr><td>SC.8.E.5.5</td><td></td></tr><tr><td>SC.8.E.5.6</td><td>1</td></tr></table>	SC.8.E.5.5		SC.8.E.5.6	1	<p>Include:</p> <ul style="list-style-type: none">● Focus on main sequence stars and their properties.● Absolute brightness will be used rather than luminosity. <p>Exclude:</p> <ul style="list-style-type: none">● Stellar evolution● Specific chemical composition of stars <p>Create models of solar properties, including rotation, structure of the Sun, convection, sunspots, solar flares, and prominences.</p>	<p>Additional Resources:</p> <ul style="list-style-type: none">● Size of Stars:● https://www.youtube.com/watch?v=HEeh1BH34Q● 8th grade Coach-<ul style="list-style-type: none">○ Lesson 16 pg. 91-95○ Lesson 10 pg. 60-63● Gizmo-Star Spectra● Exit Ticket for Apparent and Absolute	<p>Absolute Magnitude Luminosity Convection Radiation Sunspots Solar Flare Prominences</p>
SC.8.E.5.5								
SC.8.E.5.6	1							

District Common Assessment - Universe and Stars

Week 22			Compare and contrast the properties of objects in the Solar System, including the Sun, planets and moons to those of Earth, such as gravitational force, distance from Sun, speed, movement, temperature, and atmospheric conditions.	Textbook: Unit 3, Lesson 1 & 2 (pages 116-141)	Gravitational force Atmospheric conditions Geocentric Heliocentric Elliptical Atmosphere Comet Asteroid Meteor Meteoroid Meteorite
			Explore the Law of Gravitation by explaining the role that gravity plays in the formation of planets, stars and solar systems and determining their motions.	Essential Activities: (choose 1) <ul style="list-style-type: none">• The Martian Sun-Times pages 183-194• Activity: Planet Walk (TPT Free Resource)• Scale of Our Universe Modeling Activity pages 160-171.	
			Compare various historical models of Solar System, including geocentric and heliocentric.	Additional Resources: <ul style="list-style-type: none">• Size of the Universe 2 video 5:07 https://www.youtube.com/watch?v=i93Z7zljQ7I• 8th grade Coach-<ul style="list-style-type: none">○ Lesson 11 pg. 64-68○ Lesson 8 pg.52-55○ Lesson 9 pg. 56-59• https://www.youtube.com/watch?v=pR5VJo5ifdE• https://s3.amazonaws.com/stationlabvideos/Comet%2C+asteroid+or+meteor.mp4	
			Describe how the composition and structure of the atmosphere protects life and insulates the planet.		
			Include:		

		<ul style="list-style-type: none"> • Heliocentric and Geocentric models • Explain the role gravity plays in motion of planets, stars and solar systems • Presence, absence or thickness of atmosphere of planets. • Distance from Sun and length of year • Properties of specific planets but NOT inner and outer planets as groups. <p>Exclude:</p> <ul style="list-style-type: none"> • Chemical composition of atmosphere of planets • Memorization of quantitative astronomical data. • Relative size of Sun. • Relative distance of objects in our Solar System from the Sun. 		
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District Common Assessment - Solar System

Week 23	<div>3 weeks</div> <table><tr><td>Standard</td><td>Cognitive Level</td></tr><tr><td>SC.8.E.5.9</td><td>3</td></tr></table>		Standard	Cognitive Level	SC.8.E.5.9	3	<p>Explain the impact of objects in space on each other including:</p> <p>1. The Sun on the Earth, including seasons and gravitational attraction.</p> <p>2. The Moon on the Earth, including phases, tides, and eclipses and the relative position of each body.</p>	<p>Textbook: Unit 4, Lessons 1-3 (Pages 208-239)</p> <p>Essential Activity:</p> <ul style="list-style-type: none">• What Causes the Seasons pages 203-215• <p>Additional Resources:</p> <ul style="list-style-type: none">• 8th grade Coach-<ul style="list-style-type: none">○ Lesson 12 pg. 69-72○ Lesson 13 pg. 73-76○ Lesson 14 pg. 77-80• Gizmo- 3D or 2D Eclipse	<p>Seasons</p> <p>Tilt</p> <p>Axis</p> <p>Solstice</p> <p>New moon</p> <p>Full moon</p> <p>First quarter</p> <p>Last quarter</p> <p>Waxing</p> <p>Waning</p>
Standard			Cognitive Level						
SC.8.E.5.9			3						
Week 24									
Week 25									

Exclude:

- Umbra and penumbra

- <https://www.youtube.com/watch?v=rVE8PFYlwSM>
 - <https://www.youtube.com/watch?v=OP0cpXpw8yk>
 - <https://www.flippedoutsience.com/unit-41-what-are-celestial-cycles.html>
- Gibbous
Crescent
Spring tide
Neap Tide
High tide
Low tide

District Common Assessment Sun, Moon, and Earth

Week 26

Standard	Cognitive Level
SC.6.E.7.1	2
SC.6.E.7.2	3
SC.6.E.7.3	3
SC.6.E.7.4	3
SC.6.E.7.5	3
SC.6.E.7.6	2

Differentiate and show interactions among the geosphere, hydrosphere, cryosphere, atmosphere and biosphere.

Differentiate between weather and climate.

Explain how energy provided by the Sun influences global patterns of atmospheric movement and the temperature differences between air, water and land.

Include:

- Atmospheric conditions and the resulting phenomena.
- Effects of global warming
- Layers of atmosphere and function of each.
- Conduction, convection and radiation in Earth's systems
- Causes of wind and wind patterns

Exclude:

- Aurora
- Causes of global warming

Essential Activity: (Choose 1)

- [Heat Transfer](#) pages 41-63 (multiple activities)
- [Soil vs. Water...Which gets hotter?](#)
- [Modeling the Greenhouse Effect](#) pages 69-78

Additional Resources:

- 6th grade Coach-
 - Lesson 9 pg. 59-62
 - Lesson 10 pg. 63-66
 - Lesson 12 pg. 71-74
 - Lesson 13 pg. 75-78
- <https://www.flippedoutsience.com/unit-32-earths-balance.html>
-

Hydrosphere
Geosphere
Cryosphere
Atmosphere
Biosphere
Hurricane
Tornadoes
Lightning
Fronts
Precipitation
Convection
Conduction
Radiation
Jet streams
Wind direction
Humidity
Precipitation
Weather
Climate

- Water cycle in isolation
- Coriolis effect

District Common Assessment - Weather

Week 27

Standard	Cognitive Level
SC.7.E.6.2	3
SC.7.E.6.6	2

Describe the layers of the solid Earth, including the lithosphere, the hot convecting mantle, and the dense metallic liquid and solid cores.

Explore the scientific theory of plate tectonics by describing how the movement of Earth's crustal plates causes both slow and rapid changes in Earth's surface, including volcanic eruptions, earthquakes and mountain building.

Identify current methods for the measuring the age of Earth and its parts, including the law of superposition and radioactive dating.

Explain and give examples of how physical evidence supports scientific theories that Earth has evolved over geologic time due to natural processes.

Include:

- Layers of the Earth
- Lithosphere
- Hot convecting mantle
- Dense metallic liquid and solid cores

Review from 7th grade...choose one to implement based on students' needs.

Additional Resources:

- 7th grade Coach-
 - Lesson 6 pg. 44-48
 - Lesson 7 pg. 49-53
- [Tectonics Lab](#)
- [Crayon Rock Cycle Lab](#) pages 118-125
- [Fossils and Law of Superposition](#) pages 132-142
- [Moth Catcher](#) pages 158-166

Tectonics
Lithosphere
Convection
Mantle
Inner core
Outer core
Transform
boundary
Divergent
boundary
Convergent
boundary
Volcanoes
Earthquakes
Glaciers
Coastline
Dunes
Rivers
Mountains
Deltas
Lakes

		<ul style="list-style-type: none">Density differences in layers of the Earth. <p>Exclude:</p> <ul style="list-style-type: none">Types of volcanoesTypes of earthquake wavesCalculations or address of half-lifeKnowledge or recognition of specific organism's fossil records.Eras, periods or epochs																
Week 28	<table><thead><tr><th>Standard</th><th>Cognitive Level</th></tr></thead><tbody><tr><td>SC.7.E.6.1</td><td>2</td></tr><tr><td>SC.7.E.6.2</td><td>3</td></tr><tr><td>SC.7.E.6.3</td><td>2</td></tr><tr><td>SC.7.E.6.4</td><td>3</td></tr><tr><td>SC.7.E.6.5</td><td>2</td></tr><tr><td>SC.7.E.6.7</td><td>2</td></tr></tbody></table>	Standard	Cognitive Level	SC.7.E.6.1	2	SC.7.E.6.2	3	SC.7.E.6.3	2	SC.7.E.6.4	3	SC.7.E.6.5	2	SC.7.E.6.7	2	<p>Describe the layers of the solid Earth, including the lithosphere, the hot convecting mantle, and the dense metallic liquid and solid cores.</p> <p>Explore the scientific theory of plate tectonics by describing how the movement of Earth's crustal plates causes both slow and rapid changes in Earth's surface, including volcanic eruptions, earthquakes and mountain building.</p> <p>Identify current methods for the measuring the age of Earth and its parts, including the law of</p>	<p>Essentials Labs:</p> <ul style="list-style-type: none">See above resources <p>Additional Resources:</p> <ul style="list-style-type: none">https://www.youtube.com/watch?v=R-lak3Wvh9c	<p>Weathering</p> <p>Erosion</p> <p>Chemical weathering</p> <p>Physical weathering</p> <p>Rock cycle</p> <p>Sedimentary</p> <p>Metamorphic</p> <p>Igneous</p> <p>Aquifers</p> <p>Caverns</p> <p>Sinkholes</p> <p>Deforestation</p> <p>Urbanization</p>
Standard	Cognitive Level																	
SC.7.E.6.1	2																	
SC.7.E.6.2	3																	
SC.7.E.6.3	2																	
SC.7.E.6.4	3																	
SC.7.E.6.5	2																	
SC.7.E.6.7	2																	

		<p>superposition and radioactive dating.</p> <p>Explain and give examples of how physical evidence supports scientific theories that Earth has evolved over geologic time due to natural processes.</p> <p>Include:</p> <ul style="list-style-type: none"> • Layers of the Earth • Lithosphere • Hot convecting mantle • Dense metallic liquid and solid cores • Density differences in layers of the Earth. <p>Exclude:</p> <ul style="list-style-type: none"> • Types of volcanoes • Types of earthquake waves • Calculations or address of half-life • Knowledge or recognition of specific organism's fossil records. • Eras, periods or epochs. <p>Identify patterns within the rock cycle and relate them to surface events (weathering and erosion)</p> <p>Identify the impact that humans have had on the Earth, such as deforestation, urbanization, desertification, erosion, air and water quality, and changing the flow of water.</p> <p>Include:</p> <ul style="list-style-type: none"> • Steps of rock cycle 		Desertification
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		<ul style="list-style-type: none">Physical and chemical weatheringIdentify different types of landforms found on Earth and as it relates to Florida.Impact that humans have had on Earth.													
District Common Assessment - Rocks and Plates and Human Impact															
Week 29		3rd Nine Weeks Wrap Up and Review 3rd nine Weeks Test													
End of 3rd Quarter															
Week 30	<table><tr><td>Standard</td><td>Cognitive Level</td></tr><tr><td>SC.6.L.14.1</td><td>1</td></tr><tr><td>SC.6.L.14.2</td><td>2</td></tr><tr><td>SC.6.L.14.3</td><td>2</td></tr><tr><td>SC.6.L.14.4</td><td>2</td></tr></table>		Standard	Cognitive Level	SC.6.L.14.1	1	SC.6.L.14.2	2	SC.6.L.14.3	2	SC.6.L.14.4	2		<div></div>	
	Standard	Cognitive Level													
	SC.6.L.14.1	1													
	SC.6.L.14.2	2													
	SC.6.L.14.3	2													
SC.6.L.14.4	2														

District Common Assessment - Cells and Human Body

Week 33		<p>Analyze and describe how and why organisms are classified according to share characteristics, with emphasis on Linnaean system combined with the concept of Domain.</p> <p>Include:</p> <ul style="list-style-type: none"> • How characteristics are used to classify organisms. • The following domains: Bacteria, Archaea and Eukarya. • The following kingdoms: Protist, Fungus, Plant and Animal. • Hierarchy of classification. <p>Exclude:</p> <ul style="list-style-type: none"> • Specific organisms' scientific and common name. • Specific characteristics of individual types of organisms. • Specific characteristics of organisms classified in a particular phylum, class, order, family, genus or species. 	<p>Essential Activity:</p> <ul style="list-style-type: none"> • https://www.shapeoflife.org/sites/default/files/SoL-Lesson-Classification-comm.pdf • Classifying Pests pages 162-173 <p>Additional Resources:</p> <ul style="list-style-type: none"> • 6th Grade Coach <ul style="list-style-type: none"> ◦ Lesson 26 pages 152-157 	<p>Kingdom Phylum Class Genus Order Species Bacteria Archaea Eukarya Domain Kingdom</p>
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Week 34	<table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td>SC.7.P.10.1</td><td>1</td></tr><tr><td>SC.8.E.5.11</td><td>3</td></tr></table>	Standard	Cognitive Level	SC.7.P.10.1	1	SC.8.E.5.11	3	<p>Illustrate that the Sun's energy arrives as radiation with a wide range of wavelengths, including infrared, visible, and ultraviolet, and that white light is made up of a spectrum of many different colors.</p> <p>Include:</p> <ul style="list-style-type: none">Identify and compare and contrast the variety of types of radiation present in radiation from the Sun.Identify, compare and contrast characteristics of the EM spectrum.Identify common uses and/or applications of EM waves.Order of frequencies and wavelengths. <p>Exclude:</p> <ul style="list-style-type: none">Hazards of EM spectrum <p>Identify and compare characteristics of the electromagnetic spectrum, such as wavelength, frequency, use, and hazards, and recognize its application to an understanding of planetary images and satellite photographs.</p>	<p>Essential Activity:</p> <ul style="list-style-type: none">Mnemonic device and interactive notebook notes for RMIVUXG (Raging Martians Invade Venus Using X-Rays and Gamma) <p>Additional Resources:</p> <ul style="list-style-type: none">https://www.youtube.com/watch?v=cfXzwh3KadEFlorida Standards-Based Instruction Coach Grade 7 Investigation 1 Exploring Light Interactions and Energy Transformations page 142-147.https://www.youtube.com/watch?v=GH5W6xEeY5U7th Grade Coach<ul style="list-style-type: none">Lesson 11 pages 74-78	
Standard	Cognitive Level									
SC.7.P.10.1	1									
SC.8.E.5.11	3									
Week 35	<table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td>SC.6.P.12.1</td><td>3</td></tr></table>	Standard	Cognitive Level	SC.6.P.12.1	3	<p>Wrap up and Review for FSA</p> <p>Measure and graph distance versus time for an object moving at a constant speed. Interpret this relationship.</p>	<p>Essential Activity:</p> <ul style="list-style-type: none">Rocket Cars pages 104-121May the Force be With You pages 122-128	<p>Positive acceleration</p> <p>Negative acceleration</p>		
Standard	Cognitive Level									
SC.6.P.12.1	3									

	<div>SC.6.P.13.3</div> <div>2</div>	<p>Investigate and describe that an unbalanced force acting on an object changes its speed, or direction of motion, or both.</p> <p>Include:</p> <ul style="list-style-type: none"> • Interpretation and analysis of a graph will include relative speed of an object at various points or sections of the graph and the direction of motion. • Calculation of net force. • Direction of net force. • Conceptual understanding • Changes in speed as positive or negative acceleration. • Friction as a force in both sliding and stationary. <p>Exclude:</p> <ul style="list-style-type: none"> • Comparison of speeds of more than 5 objects. • Addition of nonparallel vectors • Not requires calculation of acceleration. • Not require use of formula $f=ma$. • Coefficient of friction. • Will not imply that a calculation is required. 		
Week 36		Wrap up and More Review FSA TEST THIS WEEK		
Week 37		WILD CARD WEEK		

Week 38		Last Week of School		

Standards for Reference:

	Standards
Quarter 1	
Quarter 2	
Quarter 3	
Quarter 4	