

West Deptford Middle School Curriculum Map
Science - Grade 7

Unit/ Duration	Essential Questions	Content	Skills	Assessment	Standards
Unit 1: Structure and Properties of Matter 3-4 Weeks	<ul style="list-style-type: none"> • What is matter and how do we measure it? • What is an atom and how is it structured? • How is the Periodic Table of Elements arranged and what does an element's placement tell you about the substance? • What is the difference between a physical and a chemical property and what are some examples of each? • What are the states of matter and what role does thermal 	<ul style="list-style-type: none"> • Everything in the universe is made of matter. • Elements are composed of atoms which are simple substances that can't be broken down into other substances. • How the Periodic Table is arranged. • Molecules are combinations of various elements that result in brand new substances. • Examples of physical and chemical properties of matter and the difference 	<ul style="list-style-type: none"> • Describe the basic structures of atoms and molecules • Demonstrate how both mass and volume are measured and then use this information to calculate for density. • Distinguish between weight and mass. • Describe the difference between physical and chemical properties and give examples of each. • Display the ability to read the Periodic Table of Elements and describe 	<ul style="list-style-type: none"> • Lab 1 – Measuring Matter • Lab 2 – Build an Atom • Quiz 1 – Matter and Periodic Table Quiz • Lab 3 – Build a Molecule • Quiz 2 – Physical Properties of Matter / Molecules • Lab 4 – Determining Density • Quiz 3 – Density • Quiz 4 – States of Matter / Changes of Matter • Unit Test 	<ul style="list-style-type: none"> • SCI.MS-PS1-4 • LA.6-8.CCSS.ELA-Literacy.RST.6-8.1 • LA.6-8.CCSS.ELA-Literacy.RST.6-8.7 • SCI.MS-PS1-3 • LA.6-8.CCSS.ELA-Literacy.WHST.6-8.8 • SCI.MS-PS1-1 • 8.1.8.B.1 • 8.1.8.C.1 • 9.2

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	energy play in changing matter's state?	<p>between the two groups.</p> <ul style="list-style-type: none"> • How to calculate using the density formula. • Characteristics of solids, liquids and gases and that thermal energy is responsible for the changes of phases of matter. 	<p>elements based on their location in the chart.</p> <ul style="list-style-type: none"> • Distinguish between solids, liquids and gases based on distinct characteristics 		
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Unit/ Duration	Essential Questions	Content	Skills	Assessment	Standards
Unit 2: Chemical Reactions 4 Weeks	<ul style="list-style-type: none"> • What happens when substances react chemically? • What happens to atoms of the original substances when 	<ul style="list-style-type: none"> • How to determine if a chemical reaction has occurred. • How atoms can rearrange and combine to form new substances. 	<ul style="list-style-type: none"> • Describe observable cues that a chemical reaction has occurred. • Distinguish between chemical substances 	<ul style="list-style-type: none"> • Lab 1 Classifying Reactions • Quiz 1 Physical and Chemical Changes • Lab 2 Atomic Rearrangement 	<ul style="list-style-type: none"> • SCI.MS-ESS3-5 • LA.6-8.CCSS.ELA-Literacy.RST.6-8.1 • LA.6-8.CCSS.ELA-Literacy.RST.6-8.9 • SCI.MS-ESS2-6 • LA.6-8.CCSS.ELA-Literacy.WHST.6-8.8 • SCI.MS-ESS2-5 • LA.8.CCSS.ELA-Literacy.SL.8.5 • 8.1.8.B.1 • 8.1.8.C.1 • 9.2

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	<p>a reaction occurs?</p> <ul style="list-style-type: none"> • Will the properties of the substance that is produced as part of a reaction be the same as those of the original substances? • What happens to the total mass of all atoms as a reaction takes place? • How does the amount of stored energy change during a chemical reaction? • How does the everyday definition of "heat" differ from the scientific definition? 	<ul style="list-style-type: none"> • Key, easily observable properties of chemical substances • That properties of substances may change during a chemical reaction. • That total mass in a reaction must be conserved • That some reactions can absorb energy • That some reactions can release energy • That heat is transferred from an object at higher temperature to an object at lower temperature. 	<p>based on observable properties.</p> <ul style="list-style-type: none"> • Develop an atomic level model to explain how atoms rearrange to form new substances during a chemical reaction. • Distinguish between reactions that absorb energy and reactions that release energy • Explain when heat will transfer between two objects and in which direction the heat will flow. 	<ul style="list-style-type: none"> • Quiz 2 Conservation of Mass • Quiz 3 Types of Energy and Energy Changes • Lab 3 Temperature and Thermal Energy • Lab 4 Energy Transfer • Quiz 4: Thermal Energy and Temperature • Unit 2 Test 	
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	<ul style="list-style-type: none"> When does heat transfer between two objects? How are temperature and energy related? 	<ul style="list-style-type: none"> That heat transfer stops when the objects reach the same temperature 			
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Unit/ Duration	Essential Questions	Content	Skills	Assessment	Standards
Unit 3: Matter and Energy In Organisms 3-4 Weeks	<ul style="list-style-type: none"> What is photosynthesis? Why is photosynthesis important to all living things? Where is the energy needed to perform photosynthesis created? In what organisms does photosynthesis occur? In what 	<ul style="list-style-type: none"> Photosynthesis uses carbon dioxide and water to store the energy of water in plants. It creates glucose and releases oxygen as a waste product. Photosynthesis gets its energy from the sun and occurs in the chloroplast of plants. 	<ul style="list-style-type: none"> Model the processes of Photosynthesis and Cellular Respiration Explain that the energy to power photosynthesis comes from the sun. Construct a scientific explanation based on evidence for the role of 	<ul style="list-style-type: none"> Quiz 1: Photosynthesis Lab 1: Investigating Photosynthesis Inquiry Lab Lab 2: Set Sail for the Island of Photosynthesis Activity 1: Cellular Respiration Molecular Model Activity 	<ul style="list-style-type: none"> SCI.MS-LS1-7 LA.6-8.CCSS.ELA-Literacy.RST.6-8.1 LA.6-8.CCSS.ELA-Literacy.RST.6-8.2 LA.6-8.CCSS.ELA-Literacy.RST.6-8.7 SCI.MS-LS2-4 SCI.MS-LS2-1 LA.6-8.CCSS.ELA-Literacy.WHST.6-8.1 LA.6-8.CCSS.ELA-Literacy.WHST.6-8.2 LA.6-8.CCSS.ELA-

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	<p>cell structures does photosynthesis occur?</p> <ul style="list-style-type: none"> • What is cellular respiration? • What materials are needed to perform photosynthesis? Cellular Respiration? • What materials are produced by photosynthesis? Cellular Respiration? • In what organisms does respiration occur? In what cell structures does respiration occur? • What is the relationship between Photosynthesis 	<ul style="list-style-type: none"> • Cellular respiration is the opposite of Photosynthesis. It releases the energy stored in glucose by combining it with oxygen to give off energy and releases carbon dioxide and water as waste products. This occurs in the mitochondria. • These two cycles are a system that helps keep many organisms on Earth alive. 	<p>photosynthesis in cycling matter and flow of energy in organisms.</p> <ul style="list-style-type: none"> • Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism. 	<ul style="list-style-type: none"> • Project 1: Photosynthesis and Cellular Respiration Project • Quiz 2: Cellular Respiration • Unit Test 	<p>Literacy.WHST.6-8.9</p> <ul style="list-style-type: none"> • SCI.MS-LS2-3 • LA.8.CCSS.ELA-Literacy.RI.8.8 • LA.8.CCSS.ELA-Literacy.SL.8.5 • SCI.MS-LS1-6 • SCI.MS-LS1 • 8.1.8.B.1 • 8.1.8.C.1 • 9.2
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	and Cellular Respiration?				
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Unit 4: Interdependent Relationships/ Natural Resources and Human Impact 4-5 Weeks	<ul style="list-style-type: none"> • What is a natural resource? • What makes a natural resource renewable? Non-renewable? • Where do natural resources come from? • How are natural resources used in society? What are some examples? 	<ul style="list-style-type: none"> • Sources of natural resources in terms of the atmosphere, lithosphere, hydrosphere and biosphere • How humans use natural resources • Specific examples of natural resources and their uses • The distribution of natural 	<ul style="list-style-type: none"> • Define natural resources • Identify forms of natural resources and distinguish between each in terms of their source. • Describe how natural resources play a role in society • Explain how the distribution of various natural resources were shaped by past 	<ul style="list-style-type: none"> • Quiz 1: Natural Resources • Quiz 2: Distribution and Consumption • Quiz 3: Human Impact • Water Crisis Activity • Natural Resource Activity • Mapping Our Human 	<ul style="list-style-type: none"> • SCI.MS-LS2-2 • SCI.MS-LS2-5 • LA.6-8.CCSS.ELA-Literacy.RST.6-8.1 • LA.6-8.CCSS.ELA-Literacy.RST.6-8.8 • LA.6-8.CCSS.ELA-Literacy.WHST.6-8.2 • LA.6-8.CCSS.ELA-Literacy.WHST.6-8.9 • LA.8.CCSS.ELA-Literacy.SL.8.1 • LA.8.CCSS.ELA-Literacy.SL.8.4 • 8.1.8.B.1 • 8.1.8.C.1 • 8.1.8.F.1 • 9.2

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	<ul style="list-style-type: none"> • Why does the distribution of natural resources vary across the globe? • Is there a correlation between natural resource consumption and population growth? • Can a renewable resource ever be depleted? • What impacts do humans have on Earth's environment when we gather and use natural resources? • What is the relationship between 	<p>resources on the planet varies due to different geological processes</p> <ul style="list-style-type: none"> • Changes in population affect natural resource consumption and Earth's environment. • The major impacts on Earth's environment that occur due to natural resource consumption. • How humans contribute to ecological footprint per capita 	<p>and current geological processes</p> <ul style="list-style-type: none"> • Describe how the population has changed in the last several decades and what impact this has on natural resource consumption and the Earth's environment. • Identify and describe specific impacts of human natural resource consumption. Including land depletion through deforestation and agriculture, depletion of aquifers, pollution of land 	<p>Footprint Activity</p> <ul style="list-style-type: none"> • Sustainable Solutions for Cities Project • Minimizing Human Impact Research Project • Unit Test 	
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	<p>ecological footprint per capita, human population growth, economic income and changes in biodiversity?</p> <ul style="list-style-type: none"> • Why is an ecological overshoot harmful to the planet? • What does it mean to be sustainable? • What are some examples of sustainable activities and technologies? • How does sustainability benefit both 	<ul style="list-style-type: none"> • The relationship between biodiversity, human population growth, ecological footprint per capita and economic income of a given population • Why ecological overshoot is not sustainable in the long term • The definition and requirement for sustainability • Examples of sustainable actions that individual and society as a whole can take 	<p>and air via mining, agriculture and burning of fossil fuels and global warming from deforestation and fossil fuel burning.</p> <ul style="list-style-type: none"> • Explain how the rate of change in ecological footprint is related to the rate of change in population growth and a country's economic income. • Describe how the planet's biodiversity is linked to human population and ecological footprint per capita. 		
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	<p>people and the planet?</p> <ul style="list-style-type: none"> • Is being sustainable an individual effort or a global effort? Why? 		<ul style="list-style-type: none"> • Explain why long term ecological overshoot is detrimental to the planet and its inhabitants. • Describe what actions people in a society can take to lessen ecological overshoot. • Describe sustainable actions/technologies and identify how it benefits the planet 		
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<p>Unit 5:Earth's Systems</p> <p>3-4 Weeks</p>	<ul style="list-style-type: none"> • What is the water cycle? • How is water recycled? • What effect does sunlight and gravity have on the water cycle? • What causes the ocean currents and tides? • How does water contribute to weathering and erosion? 	<ul style="list-style-type: none"> • Stages of the water cycle, including relevant vocabulary. • What causes global movement of water. • How differences in temperature and salinity form a global pattern of currents. • How weathering and erosion caused by water's movement change the lands features. 	<ul style="list-style-type: none"> • Describe the water cycle and the forces that drive it. • Explain the impact of sunlight and gravity on global movements of water. • Identify the global pattern of interconnected ocean currents. • Describe the difference between weathering and erosion along with their impact on landforms. 	<ul style="list-style-type: none"> • Activity 1: Changing Water • Quiz 1: Water Cycle • Activity 2: It's All Connected – Global Circulation • Quiz 2: Forces of the Water Cycle / Global Currents • Activity 3: Erosion and Weathering • Quiz 4: Weathering and Erosion • Unit Test 	<ul style="list-style-type: none"> • SCI.MS-ESS2-1 • SCI.MS-ESS2-4 • SCI.MS-ESS3-1 • LA.6-8.CCSS.ELA-Literacy.RST.6-8.1 • LA.6-8.CCSS.ELA-Literacy.WHST.6-8.2 • LA.6-8.CCSS.ELA-Literacy.WHST.6-8.9 • LA.8.CCSS.ELA-Literacy.SL.8.5 • 8.1.8.B.1 • 8.1.8.C.1 • 9.2
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