

Science & Engineering Practices (SEP's)- 1.Ask questions & define problems 2.Develop and use models 3.Plan and conduct investigations 4.Analyze and interpret data 5.Use mathematical & computational thinking 6 Construct explanations & design solutions 7.Engage in Scientific argument from evidence 8.Obtain, evaluate, and communicate information.

Crosscutting Concepts (CCC's)- 1.Patterns 2.Cause and Effect – Mechanism & Explanation 3.Scale, Proportion, and Quantity 4.Systems and System Models 5.Energy& Matter: Flows, Cycles, and Conservation 6.Structure and Function 7.Stability & Change

Brookhaven School District
Pacing Guide 2019-2020
5th Grade Science
First Nine Weeks

| Pacing | Strand Competency | SEP | CCC | Student Target Outcomes And Goals | Assessment | Technology | Resources |
|--|--|-------|-----|---|---|--|---|
| <p>Week 1 8/6-9</p> <p>FIRST LESSON</p> <p>Week 2 8/12-16</p> | <p>Ecology & Interdependence</p> <p>L.5.3A L.5.3A1</p> | 1,6,8 | 5,6 | <p>Students will demonstrate an understanding of photosynthesis and the transfer of energy from the sun into chemical energy necessary for plant growth and survival.</p> <p>Students will research and communicate the basic process of photosynthesis that is used by plants to convert light energy into chemical energy that can be stored and released to fuel an organism’s activities.</p> <p>HANDS ON STUDENT ACTIVITY TO LEARN ABOUT THE ENGINEERING DESIGN PROCESS</p> | <p>Section Quiz Read Theory</p> <p>Class Works - Plants</p> | <p>Teachers will integrate computer each week through the use of Read Theory (Differentiated Reading Comprehension)</p> <p>Class works Science Lesson Plants 3 and 4</p> <p>Learn 360 - Photosynthesis</p> <p>DE-TL6 – Elem. School – All about Plants</p> | <p>EDP - Intro to Engineering Design Process – Student Activity</p> <p>Lesson 3: Matter and Energy in Ecosystems</p> <p>Read works – Rhubarb Grows in the Dark</p> <p>Plants Are Producers (Cross-Curricular Focus)</p> <p>Photosynthesis Differentiated Passages</p> <p>Hands-on Activity: Plant Cycles: Photosynthesis & Transpiration</p> <p>Teachers Pay Teachers- Photosynthesis Interactive Notebook</p> |

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| Week 3 8/19-23 | L.5.3A.2 | 1,2,3, 7,8 | 1,2, 4,5, 8 | The students will analyze environments that do not receive direct sunlight and devise explanations as to how photosynthesis occurs, either naturally or artificially. | Read Works Vocabulary Ed Helper Class Works Plants 5 | Classworks Plants 5 Learn 360 Photosynthesis- Naturally or Artificially | Read Works – Life Finds a Way Read Works – Zebra Mussels and the Hudson River Teachers pay teachers - sunlight |
| Week 4 8/26-30 | L.5.3B L.5.3B1 | 1,3,6, 7,8 | 1,2, 3,5, 7 | The students will obtain and evaluate scientific information regarding the characteristics of different ecosystems and the organisms they support. | Read Theory | Classworks Habitats and Ecosystems 4 | Hands-On Activity Biodomes Engineering Design Project Food Chain Pyramid Differentiated Passage – What is an Ecosystem? Food Webs and Food Chains DOGO news Atacama Desert – The World’s Driest Desert Read Works - The Ecosystem of the Forest Drip-Tips and other Adaptations in the Rainforest TpT – Food Chains and Food Webs EDP – Hands On Activity – What to Bring? Lost in the Amazon |

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| | | | | | | | <p>EDP – Hands On Activity – Population Density: How Much Space Do You Have?</p> <p>EDP – Environments & Ecosystems</p> |
| <p>Week 5 9/3-6</p> <p>9-6 4.5 Wk Test</p> <p>Week 6 9/9-13</p> | L.5.3B2 | 1,2,3, 4,7,8 | 1,2, 4,5, 7 | The students will develop and use a food chain model to classify organisms as producers, consumers, or decomposers. Trace the energy flow to explain how each group of organisms obtains energy. | <p>Class Works Read Theory</p> | <p>Read Theory Differentiated Reading</p> <p>Class works Science Lesson:</p> <p>Habitats and Ecosystems 5</p> <p>Adaptations and Survival</p> | <p>DOGO news: Sneaky Venus Flytraps Use Prey for Nutrients and Energy</p> <p>Australian Scientists Hope the Giant Triton Snail Will Help Save the Great Barrier Reef</p> <p>Study Reveals Alligators will do anything For a Tasty Morsel – Even Venture into salty Waters</p> <p>ReadWorks – The Eco Pyramid</p> <p>Differentiated Reading: Producers, Consumers, and Decomposers</p> |
| Week 7 9/16-20 | L.5.3B3 | 1,2,3, 4,7,8 | 1,2, 4,5, 7 | The students will design and interpret models of food webs to justify what effects the removal or the addition of a species would have on a specific population and/or the ecosystem as a whole. | <p>Class Works Section Quiz Read Theory Model</p> | <p>Read Theory - Differentiated Reading</p> <p>Class works Science</p> | <p>DOGO News – Millions of Glowing Sea Creatures Invade U.S. Pacific Coast</p> <p>DOGO News – How the</p> |

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| | | | | | | Food Chains and Webs 4 and 5 | Removal of a 'Nuisance' Predator Wreaked Havoc on Yellowstone National Park's Ecosystem Chapter 3 Lesson 2 Textbook |
| Week 8 9/23-27 | L.5.3B.4 | 1,2,3, 4,7,8 | 1,2, 3,4, 5,7 | Students will communicate scientific or technical information that explains human positions in food webs and our potential impacts on these systems. | | Read Theory - Differentiated Reading Class works Science | Chapter 3 Lesson 2 Food Webs Page 144 Handout Lesson 2 Relationships Within Ecosystems Differentiated Passages – Limiting Factors Hands-On Activity: Acid Rain Effects |
| WEEK 9 9/30-10/4 | | | | 9 Weeks Tests Reteach/Review Skills | | | |

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Brookhaven School District
Pacing Guide 2019-2020
5th Grade Science
Second Nine Weeks

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|---------------------|------------------------------------|---------------------|-------------|---|------------------------|---|--|
| Week 10 10/7-11 | E.5.8A E.5.8A.1 E.5.8A.2 | 1,2, 4,5, 6,8 | 3,6,7 | The students develop and use scaled models of Earth’s solar system to demonstrate the size, composition, location, and order of the planets as the orbit the Sun. The students will use evidence to argue why the Sun appears brighter than other stars. | Classworks Handouts | Classworks The Solar System 3 and 4 and 5 Classworks The Sun EdHelper | Chapter 7 Lesson 3 The Planets page 340 Handout Our Planets Solar System Center Activities Wonderworld of Space Chapter 7 Lesson 1 Earth and Sun page 320 Handout: The Sun Brightness of the Sun and Other Stars page 236 (Elevate Science) EDP – Modeling the Earth-Moon System |
| Week 11 10/14-18 | E.5.8A.3 E.5.8A.4 | 3,4, 5,8 | 1,3,4, 7 | The students will describe how constellations appear to move from Earth’s perspective throughout the seasons. The student will construct scientific arguments to support claims about the importance of astronomy in navigation and exploration including the use of telescopes, compasses, and star charts. | Classworks Handouts | Classworks: The Universe 3 Astronomy 4 | Handouts: Changing Constellations Wonder World of Space – Constellations Student Reading NASA – About Constellations ReadWorks – The Most Expensive House in the |

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| | | | | | | | <p>Universe</p> <p>Navigation in the Age of Exploration</p> <p>EnglishforEveryone – Advanced Critical Reading Hubble</p> <p>DOGOnews – Groundbreaking Discovery of Exoplanets Beyond the Milkyway</p> |
| <p>Week 12 10/21-25</p> | <p>E.5.8B</p> <p>E.5.8B.1</p> | <p>2,4, 5,8</p> | <p>1,3,4, 7</p> | <p>The students will analyze and interpret data from observations and research to explain patterns in the location, movement, and appearance of the moon throughout a month and over the course of a year.</p> | <p>Classworks</p> <p>Phases of the Moon</p> <p>Textbook</p> | <p>Classworks</p> <p>Earth’s Motion 3</p> | <p>Handout – Lunacy</p> <p>Identifying Phases of the Moon</p> <p>Textbook Chapter 7 Lesson 2 Earth and Moon , page 330</p> |
| <p>Week 13 10/30- 11/01</p> <p>FALL BREAK – SHORT WEEK</p> | <p>E.5.8B.2</p> | <p>2,4, 5,7</p> | <p>1,2,3, 4,5,6</p> | <p>The students will develop and use a model of the Earth-Sun-Moon system to analyze the cyclic patterns of lunar phases, solar and lunar eclipses, and seasons.</p> | <p>Classworks</p> | <p>Classworks</p> <p>Earth’s Motion 4</p> | <p>EDP - Hands-On Activity: Lunar Lollipops: Reproducing the Moon Phases</p> <p>The Four Seasons</p> <p>DoGo News – Video of the Week – Historic Total Solar Eclipse Captivates Millions across America</p> <p>ReadWorks – The Ever Changing Sky</p> |
| <p>Week 14 11/4-8</p> | <p>E.5.8B.3</p> | <p>2,4, 5,8</p> | <p>1,2,3, 4</p> | <p>The students will develop and use models to explain the factors that result in Earth’s seasonal changes.</p> | <p>Classworks</p> | <p>Classworks</p> <p>Earth’s Motion 5</p> <p>Learn 360</p> | <p>What Causes the Seasons?</p> <p>ReadWorks – Why is it Colder in the Winter than in the Summer?</p> |

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| <p>Week 15 11/11-15</p> <p>11-13 4.5 Wk Test</p> | <p>E.5.8B.4</p> | <p>3,4, 5,6</p> | <p>3,6,7</p> | <p>The students will obtain information and analyze how our understanding of the solar system has evolved over time.</p> | <p>Classworks Learn 360 NASA</p> | <p>Classworks Astronomy 5</p> | <p>ReadWorks – Way Out World</p> <p>WonderWorld of Science – Early Astronomers</p> <p>In Pictures: Journey to the Stars</p> <p>DOGONews: Groundbreaking Discovery of Exo planets Beyond the Milky Way</p> <p>EDP - Student Activity – Astronomy Timeline</p> |
| <p>Week 16 11/18-22</p> | <p>E.S.10.1</p> | <p>1,3, 4,7, 8</p> | <p>2,5,7</p> | <p>The students will collect and organize scientific ideas that individuals and communities can use to conserve Earth’s natural resources and systems.</p> | <p>Classworks</p> | <p>Classworks Earth’s Resources 5</p> | <p>Causes of Environmental Change, Renewable and Non-Renewable Resources, Impact on Living Things, Conservation and Pollution, and Your Role in the Change –Informational Packet with text based questions.</p> <p>DOGONEWS Article: Gulf Coast Oil Spill Threatens Fragile Eco System</p> <p>Read Works Standardized Article: Solar Absorbers and the Future of Electricity</p> <p>Read Works Standardized Article: Major Pileup</p> <p>Life After Trash: Student</p> |

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| | | | | | | | Activity |
|------------------------------|---------------|-------------|---------------|---|--------------------------------------|--|--|
| Thanks. Break 11/25-29 | | | | | | | |
| Week 17 12/2-6 | E.5.10.2 | 5,6, 7,8 | 2,3,5, 6,7 | Design a process for better preparing communities to withstand manmade or natural disasters (e.g., removing oil from water or soil, systems that reduce the impact of floods, structures that resist hurricane forces). Use an engineering design process to define the problem, design, construct, evaluate, and improve the disaster plan.* | Classworks Student Activities | Classworks Earthquakes and Volcanoes | DOGONEWS Article: How the Increasing Plastic Debris in the Great Pacific Garbage Patch May Alter the Ocean’s Ecosystem Read Works Standardized Article: What a Dump Read Works Standardized Article: Spinning Thunderstorms Pollution Solutions: STUDENT ACTIVITY Building for Hurricanes: STUDENT ACTIVITY EDP – Hands-On Activity – Tornado Damage! EDP – Hands-On Activity – Naturally Disastrous |
| Week 18 12/9-13 | | | | | | | |
| Week 19 12/16-20 | 9 Weeks Tests | | | Teach/Reteach Earth Science | | | |

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Brookhaven School District
Pacing Guide 2019-2020
5th Grade Science
Third Nine Weeks

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|-------------------------------|--|---------------|-------------------|--|--|--|--|
| Week 20 Jan. 7-10, 2020 | P.5.5A.1 P.5.5A.2 P.5.5A.3 | 1,3,4, 7,8 | 1,3, 5,7 | <p>The students will obtain and evaluate scientific information to describe basic physical properties of atoms and molecules.</p> <p>The students will collect, analyze, and interpret data from measurements of the physical properties of solids, liquids, and gases (e.g., volume, shape, movement, and spacing of particles).</p> <p>Analyze matter through observations and measurements to classify materials (e.g., powders, metals, minerals, or liquids) based on their properties (e.g., color, hardness, reflectivity, electrical conductivity, thermal conductivity, response to magnetic forces, solubility, or density).</p> | Classworks Vocabulary States of Matter Atom | Classworks – Properties of Matter 3 Properties of Matter 4 Properties of Matter | <p>What is Matter – Informational text with text based questions</p> <p>Read Works Standardized Article: Matter is Everywhere</p> <p>Atoms Handout</p> <p>States of Matter – Informational text with text based questions</p> <p>Read Works Standardized Article: Structure and Properties of Matter</p> <p>Read Works Standardized Article: The Elements of Jewelry</p> |
| Week 21 Jan. 13-17 | P.5.5A.4 P.5.5A.5 | 2,6,7 | 2,3, 4,6, 7 | <p>Make and test predictions about how the density of an object affects whether the object sinks or floats when placed in a liquid.</p> <p>Design a vessel that can safely transport a dense substance (e.g., syrup, coins, marbles) through water at various distances and</p> | Classworks Student Activity | CLASSWORKS – FORCE AND MOTION (4) CLASSWORKS – FORCE AND | <p>*EDP - Watercraft STUDENT ACTIVITY</p> <p>Read Works Standardized Article: Why Do Boats Float and Rocks Sink?</p> |

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| | | | | under variable conditions. Use an engineering design process to define the problem, design, construct, evaluate, and improve the vessel.* | | MOTION (5) | EDP - Float a Clay Boat STUDENT ACTIVITY |
| Week 22 Jan 21-24 | P.5.5B.1 P.5.5B.2 | 5,6,7, 8 | 3,6, 7 | Obtain and evaluate scientific information to describe what happens to the properties of substances in mixtures and solutions. Analyze and interpret data to communicate that the concentration of a solution is determined by the relative amount of solute versus solvent in various mixtures. | Class Works | Classworks – Atoms and Molecules 5 Classworks About Energy 4 | Mixtures and Solutions - informational text with text based questions Standardized Article and Questions: Mixtures and Solutions EDP - Messing with Mixtures STUDENT ACTIVITY Parts of a Solution – informational text with text based questions |
| Week 23 Jan. 27- 31 | P.5.5B.3 P.5.5B.4 | 4,6,7, 8 | 3,4, 6, 7 | Investigate how different variables (e.g., temperature change, stirring, particle size, or surface area) affect the rate at which a solute will dissolve. Design an effective system (e.g., sifting, filtration, evaporation, magnetic attraction, or floatation) for separating various mixtures. Use an engineering design process to define the problem, design, construct, evaluate, and improve the system.* | Classworks | Classworks About Energy 4 About Energy 5 | Dissolving – informational text with text based questions To Dissolve or Not to Dissolve – STUDENT ACTIVITY Separating Mixtures and Solutions – informational text with text based |

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| | | | | | | | questions EDP - The Dirty Water Project: Design-Build-Test Your Own Water Filter – STUDENT ACTIVITY |
| Week 24 Feb. 3-7 2-6 4.5 Wk Test | P.5.5C.1 P.5.5C.2 P.5.5C.3 | 1,3,4, 7,8 | 1,2, 7 | Analyze and communicate the results of chemical changes that result in the formation of new materials (e.g., decaying, burning, rusting, or cooking). Analyze and communicate the results of physical changes to a substance that results in a reversible change (e.g., changes in states of matter with the addition or removal of energy, changes in size or shape, or combining/separating mixtures or solutions). Analyze and interpret data to support claims that when two substances are mixed, the total weight of matter is conserved. | Class Works | Classworks Heat and Light 4 Heat and Light 5 Classworks Properties of Matter 3 | Changing States of Matter – informational text with text based questions Matter Can Change with text based questions Heat Energy – Information text with text based questions Standardized Practice Article and Questions: How Matter Changes States of Matter Article and Worksheet Matter in Mixtures and Solutions – informational text with text based questions |
| Week 25 Feb 10-14 | P.5.6.1 P.5.6.2 | 4,7,8 | 1,2, 3 | Obtain and communicate information describing gravity's effect on an object. Predict the future motion of various objects based on past observation and measurement of position, direction, and speed. | Classworks | Classworks Force & Motion 3 Classworks Energy 3 | Gravity – Informational text with text based questions Read Works Standardized Article: Why Don't People On the Other Side Fall Off |

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| | | | | | | | Describing Motion – informational text with text based questions Isaac Newton’s Laws of Motion – informational text with text based questions Read Works Standardized Article: Sir Isaac Newton and LeBron James |
| Week 26 Feb 17-21 | P.5.6.3 P.5.6.4 | 2,3,4,6 | 2,3,5,6,7 | Develop and use models to explain how the amount or type of force, both contact and noncontact, affects the motion of an object. Plan and conduct scientific investigations to test the effects of balanced and unbalanced forces on the speed and/or direction of objects in motion. | Class Works | Classworks Electricity & Magnetism Classworks Heat & Light | May the Force Be With You – informational text with text based questions Read Works Standardized Article: How do Airplanes Fly? EDP - Building-Testing-Improving Paper Airplanes - Student Activity Balanced and Unbalanced Forces – informational text with text-based questions Read Works Standardized Article: How Soccer Can Help Us Understand Physics ZIP LINE – Student Activity |
| Week 27 | P.5.6.5 | 3,6,7, | 2, 6, | Predict how a change of force, mass, and/or | Class Work | Classworks | Friction – informational |

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| Feb. 24-28 | P.5.6.6 | 8 | 7 | friction affects the motion of an object to convert potential energy into kinetic energy. Design a system to increase the effects of friction on the motion of an object (e.g., non-slip surfaces or vehicle braking systems or flaps on aircraft wings). Use an engineering design process to define the problem, design, construct, evaluate, and improve the system.* | Chapter quiz Read Theory | Energy 4 Energy 5 | text with text-based questions Work, Force, and Energy – informational text with text-based questions Read Works Standardized Article: Free Transfer Read Works Standardized Article: A Ball of Energy Standardized article using a diagram: Understanding a Concept EDP - PADDLE POWER – Student Activity Read Works Standardized Article: Super Bowl EDP - Bobsled Blitz– STUDENT ACTIVITY |
| Week 28 Mar. 2-6 | Nine Weeks Test | | | | | | |

**4th Nine Weeks will be spent reviewing/reteaching skills taught previously throughout the year. Some skills will require more time than this guide allows.