**TEACHER:** **DATE:** **PERIOD (S):** **GRADE: 8TH**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Essential Question(s)**:       |

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| **[ ]**  | Regular | **[ ]**  | Advanced |

Next Generation Science Sunshine State Standards Check Benchmarks that align with weekly lesson plans.Big Idea 1: The Practice of Science

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| --- | --- | --- | --- |
| [ ]  | SC.8.N.1.1 | [ ]  | SC.8.N.1.4 |
| [ ]  | SC.8.N.1.2 | [ ]  | SC.8.N.1.5 |
| [ ]  | SC.8.N.1.3 | [ ]  | SC.8.N.1.6 |

Big Idea 2: The Characteristics of Scientific Knowledge

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| **[ ]**  | SC.8.N.2.1 | **[ ]**  | SC.8.N.2.2 |

Big Idea 3: The Role of Theories, Laws, Hypotheses, & Models

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| **[ ]**  | SC.8.N.3.1 | **[ ]**  | SC.8.N.3.2 |

Big Idea 4: Science & Society

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| [ ]  | SC.8.N.4.1 | [ ]  | SC.8.N.4.2 |

Big Idea 5: Earth in Space and Time

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| --- | --- | --- | --- |
| **[ ]**  | SC.8.E.5.1 | **[ ]**  | SC.8.E.5.7 |
| [ ]  | SC.8.E.5.2 | [ ]  | SC.8.E.5.8 |
| [ ]  | SC.8.E.5.3 | [ ]  | SC.8.E.5.9 |
| [ ]  | SC.8.E.5.4 | [ ]  | SC.8.E.5.10 |
| [ ]  | SC.8.E.5.5 | [ ]  | SC.8.E.5.11 |
| [ ]  | SC.8.E.5.6 | [ ]  | SC.8.E.5.12 |

Big Idea 8: Properties of Matter

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| --- | --- | --- | --- |
| [ ]  | SC.8.P.8.1 | [ ]  | SC.8.P.8.6 |
| [ ]  | SC.8.P.8.2 | [ ]  | SC.8.P.8.7 |
| [ ]  | SC.8.P.8.3 | [ ]  | SC.8.P.8.8 |
| [ ]  | SC.8.P.8.4 | [ ]  | SC.8.P.8.9 |
| [ ]  | SC.8.P.8.5 |  |  |

Big Idea 9: Changes in Matter

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| [ ]  | SC.8.P.9.1 | [ ]  | SC.8.P.9.3 |
| [ ]  | SC.8.P.9.2 | [ ]  |  |

Big Idea 18: Matter & Energy Transformation

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| --- | --- | --- | --- |
| [ ]  | SC.8.L.18.1 | [ ]  | SC.8.L.18.3 |
| [ ]  | SC.8.L.18.2 | [ ]  | SC.8.L.18.4 |

**Advanced Science Benchmarks**

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| --- | --- | --- | --- |
| **[ ]**  | SC.912.E.5.4 | [ ]  | SC.912.P.8.2 |
| [ ]  | SC.912.L.18.7 | [ ]  | SC.912.P.8.4 |
| [ ]  | SC.912.L.18.8 | [ ]  | SC.912.P.8.5 |
| [ ]  | SC.912.L.18.9 | [ ]  | SC.912.P.8.7 |
| [ ]  | SC.912.P.8.1 | [ ]  | SC.912.P.8.11 |

**LAFs/MAFs**

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| --- | --- | --- | --- |
| **[ ]**  | LACC.8.SL.1.1 | [ ]  | LACC.68.RST.1.1 |
| [ ]  | LACC.8.SL.1.2 | [ ]  | LACC.68.RST.1.2 |
| [ ]  | LACC.8.SL.1.3 | [ ]  | MAFS.8.F.2.5 |
| [ ]  | LACC.8.SL.2.4 | [ ]  | MAF8.SP.1.4 (ADV) |
| [ ]  | LACC.8.SL.2.5 | [ ]  | MAFS.8.G.3.9 |
| [ ]  | LACC.68.RST.1.3 | [ ]  | LACC.68.RST.2.4 |
| [ ]  | LACC.68.RST.2.5 | [ ]  | LACC.68.RST.2.6 |
| [ ]  | LACC.68.RST.3.7 | [ ]  | LACC.68.RST.3.8 |
| [ ]  | LACC.68.RST.3.9 | [ ]  | LACC.68.RST.4.10 |
| [ ]  | LACC.68.WHST.1.1 | [ ]  | LACC.68.WHST.1.2 |
| [ ]  | LACC.68.WHST.2.4 | [ ]  | LACC.68.WHST.2.5 |
| [ ]  | LACC.68.WHST.2.6 | [ ]  | LACC.68.WHST.3.7 |
| [ ]  | LACC.68.WHST.3.8 | [ ]  | LACC.68.WHST.3.9 |
|  |  |  | LACC.68.WHST.4.10 |

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| Monday**Objective(s):**      **Activity Description:**      **Assignment/Assessment:**

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| [ ]  Writing  | [ ]  Inquiry | [ ]  Collaboration | [ ]  Organization | [ ]  Reading  |

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| Tuesday**Objective(s):**      **Activity Description:**       **Assignment/Assessment:**

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| [ ]  Writing  | [ ]  Inquiry | [ ]  Collaboration | [ ]  Organization | [ ]  Reading  |

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| Wednesday**Objective(s):**      **Activity Description:**      **Assignment/Assessment:**

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| [ ]  Writing  | [ ]  Inquiry | [ ]  Collaboration | [ ]  Organization | [ ]  Reading  |

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| Thursday Objective:       **Activity Description:**      **Assignment/Assessment:**

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| [ ]  Writing  | [ ]  Inquiry | [ ]  Collaboration | [ ]  Organization | [ ]  Reading  |

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| Friday**Objective(s):**      **Activity Description:**      **Assignment/Assessment:**

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| [ ]  Writing  | [ ]  Inquiry | [ ]  Collaboration | [ ]  Organization | [ ]  Reading  |

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| Grade: 8 |

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| **BENCHMARK CODE** | **BENCHMARK** |

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| SC.8.N.1.1 | Define a problem from the eighth grade curriculum using appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| SC.8.N.1.2 | Design and conduct a study using repeated trials and replication.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| SC.8.N.1.3 | Use phrases such as "results support" or "fail to support" in science, understanding that science does not offer conclusive 'proof' of a knowledge claim.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| SC.8.N.1.4 | Explain how hypotheses are valuable if they lead to further investigations, even if they turn out not to be supported by the data.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| SC.8.N.1.5 | Analyze the methods used to develop a scientific explanation as seen in different fields of science.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| SC.8.N.1.6 | Understand that scientific investigations involve the collection of relevant empirical evidence, the use of logical reasoning, and the application of imagination in devising hypotheses, predictions, explanations and models to make sense of the collected evidence.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| **BENCHMARK CODE** | **BENCHMARK** |

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| SC.8.N.2.1 | Distinguish between scientific and pseudoscientific ideas. *Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| SC.8.N.2.2 | Discuss what characterizes science and its methods.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| **BENCHMARK CODE** | **BENCHMARK** |

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| SC.8.N.3.1 | Select models useful in relating the results of their own investigations.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| SC.8.N.3.2 | Explain why theories may be modified but are rarely discarded.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| **BENCHMARK CODE** | **BENCHMARK** |

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| SC.8.N.4.1 | Explain that science is one of the processes that can be used to inform decision making at the community, state, national, and international levels.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| SC.8.N.4.2 | Explain how political, social, and economic concerns can affect science, and vice versa.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| **BENCHMARK CODE** | **BENCHMARK** |

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| SC.8.E.5.1 | Recognize that there are enormous distances between objects in space and apply our knowledge of light and space travel to understand this distance.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| SC.8.E.5.2 | Recognize that the universe contains many billions of galaxies and that each galaxy contains many billions of stars.*Cognitive Complexity/Depth of Knowledge Rating:* Low |

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| SC.8.E.5.3 | Distinguish the hierarchical relationships between planets and other astronomical bodies relative to solar system, galaxy, and universe, including distance, size, and composition.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| SC.8.E.5.4 | Explore the Law of Universal Gravitation by explaining the role that gravity plays in the formation of planets, stars, and solar systems and in determining their motions.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| SC.8.E.5.5 | Describe and classify specific physical properties of stars: apparent magnitude (brightness), temperature (color), size, and luminosity (absolute brightness).*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| SC.8.E.5.6 | Create models of solar properties including: rotation, structure of the Sun, convection, sunspots, solar flares, and prominences.*Cognitive Complexity/Depth of Knowledge Rating:* Low |

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| SC.8.E.5.7 | 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 the Sun, speed, movement, temperature, and atmospheric conditions.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| SC.8.E.5.8 | Compare various historical models of the Solar System, including geocentric and heliocentric.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| SC.8.E.5.9 | Explain the impact of objects in space on each other including: 1. the Sun on the Earth including seasons and gravitational attraction
2. the Moon on the Earth, including phases, tides, and eclipses, and the relative position of each body.*Cognitive Complexity/Depth of Knowledge Rating:* High
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| SC.8.E.5.10 | Assess how technology is essential to science for such purposes as access to outer space and other remote locations, sample collection, measurement, data collection and storage, computation, and communication of information.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| SC.8.E.5.11 | 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.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| SC.8.E.5.12 | Summarize the effects of space exploration on the economy and culture of Florida.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| **BENCHMARK CODE** | **BENCHMARK** |

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| SC.8.P.8.1 | Explore the scientific theory of atoms (also known as atomic theory) by using models to explain the motion of particles in solids, liquids, and gases.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| SC.8.P.8.2 | 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.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| SC.8.P.8.3 | Explore and describe the densities of various materials through measurement of their masses and volumes.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| SC.8.P.8.4 | 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.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| SC.8.P.8.5 | 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. *Cognitive Complexity/Depth of Knowledge Rating:* Low |

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| SC.8.P.8.6 | Recognize that elements are grouped in the periodic table according to similarities of their properties.*Cognitive Complexity/Depth of Knowledge Rating:* Low |

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| SC.8.P.8.7 | 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 sub-atomic particles (electrons surrounding a nucleus containing protons and neutrons).*Cognitive Complexity/Depth of Knowledge Rating:* Low |

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| SC.8.P.8.8 | Identify basic examples of and compare and classify the properties of compounds, including acids, bases, and salts.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| SC.8.P.8.9 | Distinguish among mixtures (including solutions) and pure substances.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| **BENCHMARK CODE** | **BENCHMARK** |

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| SC.8.P.9.1 | Explore the Law of Conservation of Mass by demonstrating and concluding that mass is conserved when substances undergo physical and chemical changes.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| SC.8.P.9.2 | Differentiate between physical changes and chemical changes.*Cognitive Complexity/Depth of Knowledge Rating:* Moderate |

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| SC.8.P.9.3 | Investigate and describe how temperature influences chemical changes.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| **BENCHMARK CODE** | **BENCHMARK** |

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| SC.8.L.18.1 | Describe and investigate the process of photosynthesis, such as the roles of light, carbon dioxide, water and chlorophyll; production of food; release of oxygen.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| SC.8.L.18.2 | Describe and investigate how cellular respiration breaks down food to provide energy and releases carbon dioxide.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| SC.8.L.18.3 | 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.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| SC.8.L.18.4 | Cite evidence that living systems follow the Laws of Conservation of Mass and Energy.*Cognitive Complexity/Depth of Knowledge Rating:* High |

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| [**SC.912.E.5.4:**](http://www.floridastandards.org/Standards/PublicPreviewBenchmark1883.aspx)  | Explain the physical properties of the Sun and its dynamic nature and connect them to conditions and events on Earth. |
| [**SC.912.L.18.7:**](http://www.floridastandards.org/Standards/PublicPreviewBenchmark2050.aspx)  | Identify the reactants, products, and basic functions of photosynthesis. |
| [**SC.912.L.18.8:**](http://www.floridastandards.org/Standards/PublicPreviewBenchmark2051.aspx)  | Identify the reactants, products, and basic functions of aerobic and anaerobic cellular respiration. |
| [**SC.912.L.18.9:**](http://www.floridastandards.org/Standards/PublicPreviewBenchmark2052.aspx)  | Explain the interrelated nature of photosynthesis and cellular respiration. |
| [**SC.912.P.8.1:**](http://www.floridastandards.org/Standards/PublicPreviewBenchmark1902.aspx)  | Differentiate among the four states of matter. |
| [**SC.912.P.8.2:**](http://www.floridastandards.org/Standards/PublicPreviewBenchmark1903.aspx)  | Differentiate between physical and chemical properties and physical and chemical changes of matter. |
| [**SC.912.P.8.4:**](http://www.floridastandards.org/Standards/PublicPreviewBenchmark1905.aspx)  | Explore the scientific theory of atoms (also known as atomic theory) by describing the structure of atoms in terms of protons, neutrons and electrons, and differentiate among these particles in terms of their mass, electrical charges and locations within the atom. |
| [**SC.912.P.8.5:**](http://www.floridastandards.org/Standards/PublicPreviewBenchmark1906.aspx)  | Relate properties of atoms and their position in the periodic table to the arrangement of their electrons. |
| [**SC.912.P.8.7:**](http://www.floridastandards.org/Standards/PublicPreviewBenchmark1908.aspx)  | Interpret formula representations of molecules and compounds in terms of composition and structure. |
| [**SC.912.P.8.11:**](http://www.floridastandards.org/Standards/PublicPreviewBenchmark1910.aspx)  | Relate acidity and basicity to hydronium and hydroxyl ion concentration and pH. |