

**Oneness-Family School - First through Third Grade - Science Benchmark Overview**  
**Academy: Physical Science**

<b>PHYSICAL SCIENCE</b>		
<b>First Grade</b>	<b>Second Grade</b>	<b>Third Grade</b>
<p><b>Matter</b></p> <p>Observe their surroundings in their environment.</p> <p>Compare and contrast their findings.</p> <p>Determine the three types of matter by learning about volume, shape, and size.</p> <p>Determine the properties of matter.</p>	<p><b>Matter</b></p> <p>Describes chemical changes present when two substances are combined</p> <p>Utilizes all five senses to accurately describe the characteristics of all three states of matter</p>	<p><b>Atoms</b></p> <p>Recalls the history of chemistry</p> <p>Describes the relationship between matter and atoms</p> <p>Identifies and builds elements on the Atomic Diagram Board</p> <p>Discriminates between electrons, protons, and neutrons</p> <p>Describes and demonstrates the formation of atomic number and weight by accurately constructing atoms on the Bohr Model Board</p> <p>Describes the formation of water, its physical properties in all three states of matter, and how it is measured</p>
<p><b>Water</b></p> <p>Observe the surface tension properties of water.</p> <p>Observe what is water pressure.</p> <p>Observe water pressure on a large scale.</p> <p>Observe the density of water in relation to various objects.</p>	<p><b>Water</b></p> <p>Discriminates between and describes atmospheric and hydrostatic pressure</p> <p>Identifies emulsifying agents and describes how they work with other substances</p>	<p><b>Chemical Properties</b></p> <p>Understands that the combination of substances may or may not result in a chemical reaction</p>

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<p><b>Magnets</b></p> <p>Introduce the concept of magnets and the history of the discovery</p> <p>Introduce the concept of force and its, using magnets</p>	<p><b>Magnets</b></p> <p>Recalls the history of the discovery of magnets</p> <p>Defines a magnet and describes how they work with the example of a compass</p> <p>Describes the process of magnet formation with domains and poles</p> <p>Identifies forces that affect domains within a magnet</p> <p>Understands how to separate specific elements within a simple mixture</p>	<p><b>Periodic Table</b></p> <p>Describes the structure of the periodic table of elements, its groupings, and the qualities that determine into which group each element is placed</p> <p>Researches and reports on the history and use of an element</p> <p>Explains the concept of chemical equilibrium in a reaction</p> <p>Identifies and discriminates between homogeneous and heterogeneous mixtures</p>
<p><b>Measurement</b></p> <p>Introduce students on the various methods of measurement by introducing them in a historical context.</p> <p>The student uses various tools to measure objects in the experiment.</p> <p>Introduce the student to the concept of equilibrium when weighing objects.</p> <p>Introduce the student to the concept of equilibrium when weighing objects.</p>	<p><b>Measurement</b></p> <p>Recalls the various methods of measurement and can accurately them in a historian context recalls the concept of equilibrium and can accurately use the concept when weighing objects</p> <p>Continues to use various tools to measure objects in experiments</p>	<p><b>Atoms / Measurement</b></p> <p>Identifies at least 10 of the physical properties of matter</p> <p>Identifies the specific elements necessary for life and their corresponding atomic structure</p> <p>Describes how different molecules interact with one another in relation to noble and inert gases</p>

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Introduce the student to using a thermometer		
<p><b>Mass</b></p> <p>Introduce the student that air has mass</p>	<p><b>Mass</b></p> <p>Recall the concept that air has mass</p> <p>Introduce the effect of various chemical reactions to air</p> <p>Identify the process that can be used to change the properties of material construction, concept, outcome</p>	<p><b>Chemistry</b></p> <p>Observes and describes the processes present in a chemical reaction</p> <p>Describes chemical changes in the process of oxidation</p> <p>Discriminates between an acid and a base and explains what results from their combination</p> <p>Describes the relationship between starches and iodine in the human diet</p>
<p><b>Energy &amp; Electricity</b></p> <p>Introduce the student to the electromagnetic spectrum.</p>	<p><b>Energy &amp; Electricity</b></p> <p>Describes the relationship between energy, heat, light, and movement</p> <p>Describes the function of a circuit through terminals and batteries</p> <p>Discriminates between the different characteristics and functions of insulators and conductors</p>	<p><b>Energy &amp; Electricity</b></p> <p>Continued exploration of energy / electricity</p>
<p><b>Energy/Friction</b></p> <p>Introduce the student to the concept of friction, force, and effort</p>	<p><b>Energy/Friction</b></p> <p>Recall the concepts of friction, forces, and effort</p>	<p><b>Energy/Friction</b></p> <p>Continued exploration of the concepts of friction, forces, and effort</p>

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<p><b>Electricity</b></p> <p>Introduce the student to the concept of static electricity</p> <p>Introduce the student to the concept of friction, force, and effort.</p>	<p><b>Electricity</b></p> <p>Constructs a switch and describes its function within a circuit</p> <p>Describes the formation of an electromagnet</p>	<p><b>Electricity</b></p>
<p><b>Weather</b></p> <p>Introduce the student to the three parts of the Earth?</p> <p>Introduce the student to the scientific definition of weather.</p>	<p><b>Weather</b></p> <p>Identifies the elements within Earth’s atmosphere and their relation to the oxygen cycle</p> <p>Identifies discriminates between, as well as describes all four layers of the atmosphere</p> <p>Understands and demonstrates how the mass of air affects the air pressure in different atmospheric layers</p> <p>Describes how temperature affects air pressure</p> <p>Constructs and accurately reads a barometer</p> <p>Identifies all three factors that affect the temperature on Earth</p> <p>Constructs and accurately reads a weather vane</p>	<p><b>Weather</b></p> <p>Describes Earth’s magnetosphere and its function (thermodynamics)</p> <p>Converts temperatures back and forth between Fahrenheit and Celsius</p> <p>Discriminates between continental, maritime, polar, and tropical air masses, and their relationship to anticyclones and cyclones</p> <p>Describes the air cycle and its relation to air movement on the Earth’s surface</p> <p>Identifies the factors affecting air movement in the troposphere and the names of the resulting movements</p> <p>Describes the following four types of precipitation and how they are formed:</p> <ul style="list-style-type: none"> <li>● Rain</li> <li>● Snow</li> <li>● Sleet</li> </ul>

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	<p>Measures wind speed accurately using an anemometer</p> <p>Describes the multiple roles of moisture in the atmosphere</p> <p>Discriminates between, and describes the characteristics and formation of stratus, cumulus, cirrus, and nimbus clouds</p>	<ul style="list-style-type: none"><li>● Hail</li></ul> <p>Understands relative humidity and its relation to the dew point</p> <p>Constructs, accurately read and explains the function of hygrometers</p> <p>Describes how warm and cold fronts form and the resulting weather patterns</p> <p>Explains the formation of a squall line and the resulting weather patterns</p> <p>Describe the formation and characteristics of the following weather phenomena:</p> <ul style="list-style-type: none"><li>● Convection Thunderstorm</li><li>● Tornado</li><li>● Hurricane</li></ul>