

<b>Pre-K/Kindergarten Science</b>
-----------------------------------

**5.1 Science Practices:** All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

TSW = The Student Will

Objective(s)	NJCCCS Alignment	Essential Questions	Understandings	Suggested Assessment Activities
<ul style="list-style-type: none"> <li>• TSW explore scientific objects, materials, and activities</li> <li>• TSW participate in basic scientific investigations</li> <li>• TSW use science related vocabulary</li> <li>• TSW begin to use basic scientific tools to make observations</li> <li>• TSW communicate scientific knowledge with others</li> </ul>	5.1.P/K.A  5.1.P/K.B  5.1.P/K.B  5.1.P/K.B  5.1.P/K.C	<ul style="list-style-type: none"> <li>- Why do we sort objects?</li> <li>- In what ways can things change?</li> <li>- How can matter (water or wood) change?</li> <li>- How are tools helpful in science?</li> </ul>	<ul style="list-style-type: none"> <li>• Simple instruments may provide a different view of an object</li> <li>• Objects are categorized in a variety of ways</li> <li>• There can be more than one way to solve a problem</li> </ul>	<p>Ongoing observation &amp; questioning during class discussions and hands-on project work</p> <p>Chart the growth of plants using drawings to depict growth patterns</p> <p>Describe an object by stating how it is similar to or different from another object</p>

<b>Pre-K/Kindergarten Science</b>
-----------------------------------

**5.2 Physical Science:** All students will understand that physical science principles, including fundamental ideas about matter, energy, and motion, are powerful conceptual tools for making sense of phenomena in physical, living, and Earth systems science.

TSW = The Student Will

Objective(s)	NJCCCS Alignment	Essential Questions	Understandings	Suggested Assessment Activities
<ul style="list-style-type: none"> <li>• TSW begin to compare and sort common objects by physical attributes</li> <li>• TSW begin to recognize that matter can change form</li> <li>• TSW begin to use basic scientific tools to make observations</li> <li>• TSW use senses to investigate sound, heat, and light</li> <li>• TSW investigate how and why objects move</li> <li>• TSW show that the position and motion of an object can be changed</li> </ul>	5.2.2.A  5.2.P/K.A  5.2.P/K.B  5.2.P/K.C  5.2.P/K.E  5.2.P/K.E	<ul style="list-style-type: none"> <li>- Why do we sort objects?</li> <li>- In what ways can things change?</li> <li>- How can matter (water or wood) change?</li> <li>- How are tools helpful in science?</li> <li>- How is energy transferred?</li> <li>- How are movements different ?</li> </ul>	<ul style="list-style-type: none"> <li>• Matter (water) changes form</li> <li>• Simple instruments may provide a different view of an object</li> <li>• Objects are categorized in a variety of ways</li> </ul>	Ongoing observation & questioning during class discussions and hands-on project work  Have pupils categorize by: <ul style="list-style-type: none"> <li>- color</li> <li>- shape</li> <li>- size</li> <li>- texture</li> </ul> Students assemble a variety of objects (rolling toys, flat piece of paper, crumbled paper) and observe/discuss ways to move these objects

<b>Pre-K/Kindergarten Science</b>
-----------------------------------

**5.3 Life Science:** All students will understand that life science principles are powerful conceptual tools for making sense of the complexity, diversity, and interconnectedness of life on Earth. Order in natural systems arises in accordance with rules that govern the physical world, and the order of natural systems can be modeled and predicted through the use of mathematics.

TSW = The Student Will

Objective(s)	NJCCCS Alignment	Essential Questions	Understandings	Suggested Assessment Activities
<ul style="list-style-type: none"> <li>• TSW investigate and compare the basic physical characteristics of plants, humans, and other animals</li> <li>• TSW differentiate between living and non living things</li> <li>• TSW begin to recognize the diversity of plants and animals</li> <li>• TSW understand how plants and animals obtain food/water from the environment</li> <li>• TSW begin to understand that basic needs are met within our surroundings</li> <li>• TSW understand that change happens over time</li> </ul>	5.3.P/K.A  5.3.P/K.A  5.3.P/K.A  5.3.2.B  5.3.2.B  5.3.P/K.D	<ul style="list-style-type: none"> <li>- In what ways can things change?</li> <li>- What is the impact of change?</li> <li>- How does science affect me and the things around me?</li> <li>- What is a living/nonliving organism?</li> <li>- What environmental influences have an effect on living objects?</li> <li>- What is a basic need?</li> </ul>	<ul style="list-style-type: none"> <li>• Science includes observations, collection of data, and communication skills</li> <li>• Simple instruments may provide a different view of an object</li> <li>• There can be more than one way to solve a problem</li> <li>• Organisms change as they grow</li> <li>• Organisms have basic needs</li> </ul>	Ongoing observation & questioning during class discussions and hands-on project work  Develop a timeline using photographs to understand human change  Exploratory walk to identify living and nonliving organisms  Create drawings showcasing basic needs

<b>Pre-K/Kindergarten Science</b>
-----------------------------------

**5.4 Earth Systems Science:** All students will understand that Earth operates as a set of complex, dynamic, and interconnected systems, and is a part of the all-encompassing system of the universe.

TSW = The Student Will

Objective(s)	NJCCCS Alignment	Essential Questions	Understandings	Suggested Assessment Activities
<ul style="list-style-type: none"> <li>• TSW describe characteristics of earth materials</li> <li>• TSW understand the effects of sunlight on living and nonliving things</li> <li>• TSW understand the effects of daily weather</li> <li>• TSW identify the sources and uses of water</li> <li>• TSW observe and identify different kinds of weather</li> <li>• TSW build an awareness for conservation and respect for the environment</li> </ul>	5.4.P/K.C  5.4.P/K.E  5.4.P/K.F  5.4.P/K.F  5.4.P/K.F  5.4.P/K.G	<ul style="list-style-type: none"> <li>- What are the affects of sunlight?</li> <li>- What can be proved? What cannot be proved?</li> <li>- What environmental factors can affect living organisms?</li> <li>- How do people affect the environment?</li> <li>- How does the weather affect our daily lives?</li> </ul>	<ul style="list-style-type: none"> <li>• Similarities and differences can be made by observing objects</li> <li>• Science includes observations, collection of data, and communication skills</li> <li>• Weather impacts our daily life and our day to day decisions</li> <li>• Water is an essential need for living organisms</li> </ul>	Ongoing observation & questioning during class discussions and hands-on project work  Have students list three ways that weather affects a living organism  Students maintain a weather journal or draw pictures indicating the daily changes in the weather  Class weather graph and data collection