Second Grade Science

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
• TSW use outcomes of investigations to build and refine questions, models, and explanations • TSW measure, gather, evaluate, and share evidence using tools and technologies • TSW use basic science terms and topic related science vocabulary • TSW reflect on one's own knowledge regarding how ideas change over time • TSW revise explanations on the basis of learning new information • TSW work collaboratively to evaluate questions, investigations, and models	5.1.4.A 5.1.4.B 5.1.4.B 5.1.4.C 5.1.4.C 5.1.4.C	- What is science? - How does science affect me and the things around me? - How do we use technology in science? - Why do our ideas change as it pertains to science?	• Science includes observations, collections of data, and communication skills • Similarities and differences can be made by observing • Technology helps people to meet needs and wants • People utilize technology to solve problems • There can be more than one way to solve a problem	Ongoing observation & questioning during class discussions and hands-on project work Students keep journals outlining various solutions to a problems Book and/or oral report on a scientist or inventor denoting background of the person and what that person contributed to the scientific world.

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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.

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Objective(s)	NJCCCS Alignment	Essential Questions	Understandings	Suggested Assessment Activities
• TSW describe items based on the materials of which their physical properties • TSW identify common objects as solids, liquids, or gases • TSW generate data to show that substances respond in various ways • TSW apply strategies to prove that light is needed to see an object • TSW present evidence of a relationship between a light source, a solid object and a shadow • TSW confirm that battery size impacts light, volume, and heat • TSW describe how position and motion of an object can be changed • TSW distinguish different ways objects can move • TSW describe how matter can change form	5.2.2.A 5.2.2.A 5.2.2.B 5.2.2.C 5.2.2.C 5.2.2.D 5.2.2.E 5.2.2.E 5.2.2.E	- In what way(s) can we sort objects? - In what ways can things change? - How can matter change form? - How do things move in different ways? - How do energy and matter relate?	• Water changes form • The state of matter is determined primarily by its temperature • Motion of an object can vary • Different factors can affect the motion of an object • Energy is used to do work • Energy can take many forms	Ongoing observation & questioning during class discussions and hands-on project work Sort common objects by physical attributes. Describe and illustrate how matter changes from a liquid to a solid and then return to a liquid Record the properties of various liquids

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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
• TSW group living and nonliving things according to the characteristics they share • TSW describe that a source of energy is needed for all organisms to stay alive and grow • TSW explain that plants/animals need water and/or food to survive. • TSW confirm that plants have roots for water and leaves for sunlight • TSW understand that organisms interact and are interdependent in various ways • TSW describe that a habitat supports the growth of many living organisms • TSW describe that humans can change natural habitats which may be helpful or harmful to other organisms • TSW determine the characteristic changes that occur during a life cycle	5.3.2.A 5.3.2.B 5.3.2.B 5.3.2.B 5.3..C2 5.3.2.C 5.3.2.C 5.3.2D	- What is a basic need? - How are organisms of the same kind different from each other? - Why are organisms classified? - What aspects of science affect survival?	• Basic needs are found in our surroundings • Organisms are grouped in nature based on similarities • Ling things pass through cycles of life that help continue the species existence	Ongoing observation & questioning during class discussions and hands-on project work Illustrate similarities and differences in organisms Organize pictures of living organisms to understand basic classification

• TSW describe how similar structures found in different organisms have similar functions that assist in their survival • TSW describe that variations exist within a group of the same kind of organism	5.3.2.E 5.3.2.E			

Grade 2 **Life Science** continued

Second Grade Science

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
• TSW determine a set of general rules describing when the Sun and Moon are visible based on actual sky observations • TSW describe that attributes and properties of soil vary depending on location • TSW describe the relationship between the Sun and plant growth • TSW discuss how weather influences daily activities • TSW describe evaporation and condensation • TSW list various sources of water • TSW identify natural resources used in the process of making various manufactured products	5.4.2.A 5.4.2.C 5.4.2.E 5.4.2.F 5.4.2.G 5.4.2.G 5.4.2.G	- What is changing in our world? - In what ways are the Sun and Moon important to our existence? - How do natural features make our environment unique? - What impact does water have on our environment? - What is a natural resource?	• Physical properties tend to change by location • Weather conditions can be observed and measured • Weather conditions impact the Earth's surface • Water is vital for survival	Ongoing observation & questioning during class discussions and hands-on project work Illustrate the water cycle Identify changes to the Earth's surface and possible ways these changes evolved Categorize various rocks based on softness, texture, composition, type, etc.