Minnesota Kindergarten Hands-On Science Investigations

IN		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Kindergarten	State Standards	0.1.1.2.1 Use observations to develop an accurate description of a natural phenomenon and compare one's observations and descriptions with those of others.	0.3.2.2.1 Monitor daily and seasonal changes in weather and summarize the changes. For example: Recording cloudiness, rain, snow and temperature. 0.3.2.2.2 Identify the sun as a source of heat and light. For example: Record the time of day when the sun shines into different locations of the school and note patterns.	0.2.1.1.1 Sort objects in terms of color, size, shape, and texture, and communicate reasoning for the sorting system.	0.4.1.1.2 Identify the external parts of a variety of plants and animals including humans. For example: Heads, legs, eyes and ears on humans and animals, flowers, stems and roots on many plants.	0.4.2.1.1 Observe a natural system or its model, and identify living and nonliving components in that system. For example: A wetland, prairie, garden or aquarium	0.4.1.1.1 Observe and compare plants and animals.
	Key Concepts	Think Like a Scientist Keep an Apple Healthy Apple Sink or Float (in the Word doc already)	Weather and seasons	Properties of Materials (hard vs. soft)	Animal characteristics	Animal Habitats	Plants
	Anchor Text:	Anchor Text: Rookie Read-About-Scientists Ask Questions by Ginger Garrett	Anchor Text: The Magic School Bus Rides the Wind by Anne Capeci	Anchor Text: Investigators: Materials: What's it Like by Janine Scott	Anchor Text: Who has These Feet? by Laura Hulbert, Erik Brooks	Anchor Test: Look and Find Out-Forest Animals	Anchor Text: Roodie Read-About Science-Life Cycles: From Seed to Plant by Lisa M. Herrington
	Investigation	Activity: **Keep an Apple Healthy** https://www.coffeecupsandcrayons.com/apple-science-experiment/	Activity: Make a Weather Vane https://www.stevespanglerscience.com/lab/experiments/weather-vane/	Activity: Sort by Observable Properties http://www.cpalms.org/Public/PreviewResourceLesson/Preview/46090	Activity: Blubber Gloves https://www.stevespanglerscience.com/lab/experiments/blubber-gloves/ https://carrotsareorange.com/animal-science-experiment/	Activity: Forest Observations https://www.fws.gov/uploadedFiles/Forests%20Are%20More%20Than%20Trees%20Curriculum%20-%20Current(1).pdf	Activity: Growing and Observing Seeds https://www.teacherspayteachers.com/FreeDownload/Growing-a-Kinder-Garden-A-Unit-About-Plants-1224263

Minnesota First Grade Hands-On Science Investigations

IN		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
First Grade	State Standards	1.1.1.1.1 When asked "How do You Know?", students support their answer with observations. For example: Use observations to tell why a squirrel is a living thing. 1.1.3.2.1 Recognize that tools are used by people, including scientists and engineers, to gather information and solve problems. For example: Magnifier, snowplow, calculator.	1.4.1.1.1 Describe and sort animals into groups in many ways, according to their physical characteristics and behaviors.	1.4.2.1.1 Recognize that animals need space, water, food, shelter and air. 1.4.2.1.2 Describe ways in which an animal's habitat provides for its basic needs. For example: Compare students' houses with animal habitats.	1.1.1.1.2 Recognize that describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.	1.3.1.3.1 Group or classify rocks in terms of color, shape and size. 1.3.1.3.2 Describe similarities and differences between soil and rocks. For example: Use screens to separate components of soil and observe the samples using a magnifier. 1.3.1.3.3 Identify and describe large and small objects made of Earth materials.	1.1.1.1.2 Recognize that describing things as accurately as possible is important in science because it enables people to compare their observations with those of others. 1.1.3.1.1 Observe that many living and nonliving things are made of parts and that if a part is missing or broken, they may not function properly
	Key Concepts	Think like a Scientist	Animal Groups	Animal Habitats	Matter	Earth Materials	Plant and Matter Interdependence
	Anchor Text:	Anchor Text: Rookie Read-About-Scientists Ask Questions by Ginger Garrett	Anchor Text: National Geographic Backyard Animals Grades PreK-1 Collection	Anchor Text: Animal Homes by Sally Hewitt	Anchor Text: Investigators: Materials: Melt It, Shape It: Glass by May Nelson	Anchor Text: Dirt by Steve Tomecek	Anchor Text: Seed Soil Sun by Cris Pterson
	Investigation	**Science Lab 2: Apple Sink or Float** https://science4superheroes.wordpress.com/2015/10/06/apple-float-or-sink/ apple sink or float (attachment) apple sink float extension (attachment) apple sink or float graph (attachment)	Activity: Animal Classification http://mpalalive.org/classroom/lesson/animal-classification	Activity: **STEM Lab: Basic Needs and Habitats** https://betterlesson.com/lesson/629786/stem-lab-basic-needs-and-habitats	Activity: **Chocolate Experiment** http://www.onceuponalearningadventure.com/2012/04/chocolate-lovers-lesson-on-matter-with.html	Activity: Soil Exploration http://growing-minds.org/documents/soil-exploration.pdf	Activity: Plant Needs https://www.education.com/science-fair/article/plants-need-sunlight-water/

Minnesota Second Grade Hands-On Science Investigations

IN		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Second Grade	State Standards	2.3.2.2.1 Measure, record and describe weather conditions using common tools. For example: Temperature, precipitation, sunrise/sunset, and wind speed/direction	2.1.2.2.2 Describe why some materials are better than others for making a particular object and how materials that are better in some ways may be worse in other ways. For example: Objects made of plastic or glass. 2.1.2.2.3 Explain how engineered or designed items from everyday life benefit people. 2.2.1.1.1 Describe objects in terms of color, size, shape, weight, texture, flexibility, strength and the types of materials in the object. 2.2.1.2.1 Observe, record, and recognize that water can be a solid or a liquid and can change from one state to another.	2.1.1.2.1 Raise questions about the natural world and seek answers by making careful observations, noting what happens when you interact with an object, and sharing the answers with others.	2.2.2.1.1 Describe an object's change in position relative to other objects or a background. For example: Forward, backward, going up, going down. 2.2.2.1.2 Demonstrate that objects move in a variety of ways, including a straight line, a curve, a circle, back and forth, and at different speeds. For example: Spinning toy and rocking toy. Another example: Construct objects that will move in a straight line or a curve such as a marble or toy car on a track. 2.2.2.2.1 Describe how push and pull forces can make objects move. For example: Push and pull objects on smooth and rough surfaces. 2.2.2.2.2 Describe how things near Earth fall to the ground unless something holds them up.	2.4.1.1.1 Describe and sort plants into groups in many ways, according to their physical characteristics and behaviors. 2.4.2.1.1 Recognize that plants need space, water, nutrients and air, and that they fulfill these needs in different ways. 2.4.3.1.1 Describe the characteristics of plants at different stages of their life cycles. For example : Use live organisms or pictures to observe the changes that occur during the life cycle of bean plants or marigolds	
	Key Concepts	Weather	Matter	Scientific Method	Motion and Energy	Plants	
	Anchor Text:	Anchor Text: Fly Guy Presents Weather by Tedd Arnold	Anchor Test: The Three Little Pigs by James Marshall	Anchor Text: Ben Franklin's Big Splash by Barb Rosenstock	Anchor Text: Emergent Science Readers: Make It Move by Susan Canizares , Betsey Chessen	Anchor Text: A Tree is a Plant by Clyde Robert Bulla	Anchor Text: Acorn to Oak Tree by Lisa M Herrington
	Investigation	Activity: Make a Weather Station http://www.ciese.org/curriculum/weatherproj2/en/lesson1.shtml	Activity: Three Little Pigs http://teachers.egfi-k12.org/three-little-pigs-design-challenge/	Activity: Skittle Science Lab http://thesciencepenguin.com/2013/09/skittles-experiment.html	Activity: A Change of Direction https://betterlesson.com/lesson/635429/a-change-of-direction-exploring-the-impact-of-forces	Activity: Classifying Plants http://www.scimathmn.org/stemtc/frameworks/2411-structure-function	Activity: Observing Plant Growth http://media.doterra.com/us/en/flyers/science-for-kids-stem-exchange-2-grade.pdf