

Third Grade Science Curriculum Map

Quarter 1							
NGSSS Body of Knowledge	<i>Nature of Science</i>	<i>Nature of Science</i>	<i>Nature of Science</i>	<i>Nature of Science</i>	<i>Nature of Science/Earth and Space Science</i>	<i>Nature of Science/Earth and Space Science</i>	<i>Nature of Science/Earth and Space Science</i>
Unit of Study	Introduction to Practice of Science	Introduction to Practice of Science	Introduction to Practice of Science	Introduction to Practice of Science	Stars and Gravity	Stars and Gravity	Stars and Gravity
Target Standards	SC.3.N.1.6 : Infer based on observation.	SC.3.N.1.1 : Raise questions about the natural world, investigate them individually and in teams through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.	SC.3.N.3.2 : Recognize that scientists use models to help understand and explain how things work. SC.3.N.3.3 : Recognize that all models are approximations of natural phenomena; as such, they do not perfectly account for all observations.	SC.3.N.1.7 : Explain that empirical evidence is information, such as observations or measurements that is used to help validate explanations of natural phenomena. SC.3.N.1.3 : Keep records as appropriate, such as pictorial, written, or simple charts and graphs, of investigations conducted. SC.3.N.1.5 : Recognize that scientists question, discuss, and check each other's evidence and explanations. SC.3.N.1.4 : Recognize the importance of communication among scientists.	SC.3.E.5.3 : Recognize that the sun appears large and bright because it is the closest star to the Earth. SC.3.E.5.2 : Identify the sun as a star that emits energy; some of it in the form of light. SC.3.E.5.1 : Explain that the stars can be different; some are smaller, some are larger, and some appear brighter than others; all except the Sun are so far away that they look like points of light.	SC.3.E.6.1 : Demonstrate that radiant energy from the sun can heat objects and when the sun is not present, heat may be lost. SC.3.E.5.5 : Investigate that the number of stars that can be seen through telescopes is dramatically greater than those seen by the unaided eye.	SC.3.E.5.4 : Explore the Law of Gravity by demonstrating that gravity is a force that can be overcome.
Pacing	Weeks 1-2	Weeks 3-5	Weeks 3-5	Week 6	Weeks 7-8	Weeks 7-8	Week 9
Objective/ Learning Goal/SWBT	<ul style="list-style-type: none"> *Explore answers to questions such as "What is science?", "What do scientists study?", and "What does a scientist look like?". *Make observations and inferences of a mystery event/object/substance. *justify inferences made. *Discuss the importance of observations when making inferences. *Match each tool to its function or purpose. *Use scientific tools during an investigation. *Record, summarize, and compare observations. *Explain why there may be differences in observations between groups. 	<ul style="list-style-type: none"> *Generate testable questions about the world around them. *Form a hypothesis before investigating a student-generated question. *Investigate testable, student-generated questions *Compare free-exploration investigations to more formal explorations. *Use the steps of the scientific method. *Generate appropriate explanations based on observations (data) collected. *Explain why scientists perform multiple trials to gather evidence to support conclusions. 	<ul style="list-style-type: none"> *Explain that models can be three dimensional, two dimensional, a visualization in your mind, or a computer model. *Explain that not all models account perfectly for all attributes of real objects. *Use and/or construct different kinds of models when investigating. *Discuss why scientists use models (to help understand and explain how things work). 	<ul style="list-style-type: none"> *Construct an appropriate data collection tool (e.g., chart, table) that could be used during an investigation. *Record data collected during an investigation. *Analyze and interpret data collected during an investigation to formulate an explanation of the results. *Identify ways that scientists share their knowledge and results with one another. *Describe why and how scientists collaborate together to gain new knowledge or refine ideas *Explain that explanations of results can vary even when scientists are analyzing the same evidence. 	<ul style="list-style-type: none"> *Identify the sun as a star in our solar system that emits its own energy. *Compare the size of the sun to that of the other stars. *Explain that the sun is a medium-size star, but it appears to be the largest, brightest star in the sky because it is closest to Earth. *Explain how stars can be different. *Compare the appearance of the sun's size, brightness, and its distance from Earth compared to all the other stars. *Explain that stars are in the day sky but cannot be seen because of the sun's glare. 	<ul style="list-style-type: none"> *Predict how the sun's presence, visible or not visible, will impact objects. *Investigate the effects of the sun's heat on objects. *Explain that heat is lost when the sun is not visible. *Explain the changes that may occur when the sun is visible and not visible. *Describe the purpose of a telescope as a tool to magnify objects that are far away. *Compare images of the night sky taken with and without a telescope to demonstrate how this tool dramatically increases the number of stars that can be seen. 	<ul style="list-style-type: none"> *Explain the effect gravity has on objects. *Investigate ways to overcome the force of gravity. *Explain how gravity can be overcome.
Inquiry Flipcharts/Labs	*Mystery Box p.2	*Safety in Science p.1 *How Can You Use a Model? p.3	*Safety in Science p.1 *How Can You Use a Model? p.3	*I Can See Clearly Now p.4 *Talent Tools p.4 *How...Measure Length? p.5 *Data Two Ways p.6 *Raise the Bar p.6 *How Do...Results Compare? p.7	*Starry Lights/Let's Cook p.8 *How Many Stars Do You See? p.9 How Does the Sun Heat Earth? p.10	*Starry Lights/Let's Cook p.8 *How Many Stars Do You See? p.9 How Does the Sun Heat Earth? p.10	*Measure the Force p.9
Fusion Textbook	TE p.1-7	TE p.8-32	TE p.8-32	TE p.33-44	TE p.49-68	TE p.49-68	TE p.69-76

Third Grade Science Curriculum Map

Quarter 2

NGSSS Body of Knowledge	<i>Nature of Science/Physical Science</i>	<i>Nature of Science/Physical Science</i>	<i>Nature of Science/Physical Science</i>	<i>Nature of Science/Physical Science</i>	<i>Nature of Science/Physical Science</i>	<i>Nature of Science/Physical Science</i>
Unit of Study	Matter	Matter	Matter	Energy and Motion	Energy and Motion	Light and Heat
Target Standards	<p>SC.3.P.8.3 : Compare materials and objects according to properties such as size, shape, color, texture, and hardness.</p> <p>SC.3.P.8.1 : Measure and compare temperatures of various samples of solids and liquids.</p>	<p>SC.3.P.8.2 : Measure and compare the mass and volume of solids and liquids.</p>	<p>SC.3.P.9.1 : Describe the changes water undergoes when it changes state through heating and cooling by using familiar scientific terms such as melting, freezing, boiling, evaporation, and condensation.</p> <p>SC.3.N.3.1 : Recognize that words in science can have different or more specific meanings than their use in everyday language.</p>	<p>SC.3.P.10.1 : Identify some basic forms of energy such as light, heat, sound, electrical, and mechanical.</p> <p>(NOTE: Extensive instruction on light and heat occurs during Weeks 18-21.)</p>	<p>SC.3.P.10.2 : Recognize that energy has the ability to cause motion or create change.</p>	<p>SC.3.P.10.3 : Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another.</p> <p>SC.3.P.10.4 : Demonstrate that light can be reflected, refracted, and absorbed.</p>
Pacing	Weeks 10-12	Weeks 10-12	Weeks 13-14	Week 15	Weeks 16-17	Week 18 (continued in 19)
Objective/ Learning Goal/ SWBT	<p>*Identify physical properties of matter (observable and measurable) used to describe objects.</p> <p>*Classify objects according to similar properties. *Compare the physical properties of matter (e.g., size, shape, color, texture, hardness).</p> <p>*Read the temperature on a thermometer in both Celsius and Fahrenheit to measure heat energy.</p> <p>*Measure and compare temperatures of various samples of solids and liquids using a thermometer (Fahrenheit and Celsius).</p>	<p>*Investigate mass and volume as measurable properties of matter. *Match appropriate tools and units of measure associated with mass and volume.</p> <p>*Measure the mass and volume of solids and liquids using appropriate tools.</p> <p>*Measure the volume of solids using the water displacement method.</p> <p>*Compare the mass and volume of different solids and liquids as measured by the same group of students. *Compare measurements of solids and liquids made by different groups using the same tools and seek reasons to explain the differences across the groups.</p> <p>*Explain that two objects of the same volume may have a different mass.</p>	<p>*Review the three states of matter (solid, liquid, gas).</p> <p>*Review the properties for each state of matter.</p> <p>*Investigate melting, freezing, boiling, evaporation, and condensation of water.</p> <p>*Infer based on observations made during the water investigations.</p> <p>*Describe how water changes its state through heating and cooling.</p>	<p>*Identify and record some basic forms of energy.</p> <p>*Identify and record examples of energy from each form of energy listed: light energy, heat energy, sound energy, electrical energy, mechanical energy.</p>	<p>*Investigate and describe ways that energy can cause motion.</p> <p>*Investigate and describe how energy has the ability to create a change.</p> <p>*Identify the form of energy that causes motion or creates change in an object.</p> <p>*Infer based on observations made during motion investigations.</p>	<p>*Identify that light can come from different sources.</p> <p>*Investigate that light travels in a straight line until it strikes an object or surface.</p> <p>*Investigate and explain what happens to the path of light as it travels from the source of light to objects that are transparent, translucent, and opaque.</p> <p>*Demonstrate that when light does not pass through an object, it forms a shadow.</p> <p>*Demonstrate what happens when light bounces off of a smooth or rough surface.</p> <p>*Demonstrate what happens when light bends as it passes from one medium through another. *Identify the colors of the light spectrum.</p> <p>*Explain that the color of an object is the result of light being reflected and absorbed.</p>
Inquiry Flipcharts/Labs	Find the Volume/Sort Some Matter, p.12 How Are Mass and Volume Measured?, p. 13 How Is Temperature Measured?, p. 14 Temperature Takes a Dive, p. 15	Find the Volume/Sort Some Matter, p.12 How Are Mass and Volume Measured?, p. 13 How Is Temperature Measured?, p. 14 Temperature Takes a Dive, p. 15	How Can the State of Matter Change?, p. 16		Energy in Motion/Make It Move!, p. 17	Explore How Light Travels, p. 18 What Surfaces Reflect Light Best?, p. 9 Where There's Light, p. 20
Fusion Textbook	p.81-100	p.81-100	p.101-115	p.121-134	p.121-134	p.135-148

Third Grade Science Curriculum Map

Quarter 3

Quarter 3					
NGSSS Body of Knowledge	<i>Nature of Science/Physical Science</i>	<i>Nature of Science/Physical Science</i>	<i>Nature of Science/Life Science</i>	<i>Nature of Science/Life Science</i>	<i>Nature of Science/Life Science</i>
Unit of Study	Light and Heat	Light and Heat	Plants	Plants	Classification
Target Standards	<p>SC.3.P.10.3 : Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another.</p> <p>SC.3.P.10.4 : Demonstrate that light can be reflected, refracted, and absorbed.</p>	<p>SC.3.P.11.2 : Investigate, observe, and explain that heat is produced when one object rubs against another, such as rubbing one's hands together.</p> <p>SC.3.P.11.1 : Investigate, observe, and explain that things give off light often also give off heat.</p>	<p>SC.3.L.17.2 : Recognize that plants use energy from the sun, air, and water to make their own food.</p> <p>SC.3.L.14.1 : Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction.</p>	<p>SC.3.L.14.2 : Investigate and describe how plants respond to stimuli (heat, light, gravity), such as the way plant stems grow toward light and their roots grow downward in response to gravity.</p>	<p>SC.3.L.15.2 : Classify flowering and nonflowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics.</p>
Pacing	Week 19 (continued from week 18)	Weeks 20-21	Weeks 22-24	Weeks 25-26	Week 27 (continued in week 28)
Objective/Learning Goal/SWBT	<ul style="list-style-type: none"> *Identify that light can come from different sources. *Investigate that light travels in a straight line until it strikes an object or surface. *Investigate and explain what happens to the path of light as it travels from the source of light to objects that are transparent, translucent, and opaque. *Demonstrate that when light does not pass through an object, it forms a shadow. *Demonstrate what happens when light bounces off of a smooth or rough surface. *Demonstrate what happens when light bends as it passes from one medium through another. *Identify the colors of the light spectrum. *Explain that the color of an object is the result of light being reflected and absorbed. 	<ul style="list-style-type: none"> *Investigate and explain how rubbing two objects together produces heat (friction). *Identify everyday examples of objects rubbing against one another to produce heat *Identify objects that give off both heat and light. *Investigate ways in which light gives off heat. *Explain that when matter emits heat, it is losing heat. *Explain the relationship between light and heat. 	<ul style="list-style-type: none"> *Identify what plants need to grow (light, air, water). *Explain the process of photosynthesis in plants (the use of carbon dioxide in the air, water, and energy from the sun to make their own food). *Record observations of real plant structures in a science notebook. *Identify and describe plant structures and their major functions. 	<ul style="list-style-type: none"> *Review heat, light, and gravity. *Investigate and describe how plants respond to heat (e.g., dormancy, germination, release of pine cone seeds after a forest fire, wilting, loss of fruit, dying). *Investigate and describe how plants respond to light (e.g., overall growth, seed/fruit production, stems grow upward and bend towards light). *Investigate and describe how plants respond to gravity (e.g., roots grow downward, stem grows upward). *Experiment ways plants respond to light, heat, and gravity. 	<ul style="list-style-type: none"> *Identify flowering plants (e.g., marigolds, cacti, apple tree, oak tree). *Identify non-flowering plants that produce seeds (e.g., cypress tree, pine tree, sago palm, juniper tree). *Identify non-flowering plants that produce spores (e.g., fern, moss, horsetails, liverworts). *Classify plants into major groups based on their physical structures for reproduction. *Compare the structures of different flowering plants (Note: Flowers of flowering plants may not be visible such as grass and cactus). *Compare the structures of different nonflowering plants. *Explain the importance of communication among scientists who study plants.
Inquiry Flipcharts/Labs	Explore How Light Travels, p. 18 What Surfaces Reflect Light Best?, p. 19 Where There's Light, p. 20	Heat Race, p. 20 Where Can Heat Come From?, p. 21	Moving Up/Flowers and Cones, p. 22	How Do Plants Respond to Light?, p. 23 Make It Germinate/Gravity and Plants, p. 24	Classify Plants/Leaf Collection, p. 25
Fusion Textbook	p.135-148	p.15-157, 160-170	p.175-190, 270-271	p.193-204	p.209-222

Third Grade Science Curriculum Map

Quarter 4					
NGSSS Body of Knowledge	<i>Nature of Science/Life Science</i>	<i>Nature of Science/Life Science</i>	<i>Nature of Science/Life Science</i>	<i>Nature of Science/Life Science</i>	<i>Nature of Science/Life Science</i>
Unit of Study	Classification	Classification	Interdependence	Practice of Science	Practice of Science
Target Standards	SC.3.L.15.2 : Classify flowering and nonflowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics.	SC.3.L.15.1 : Classify animals into major groups (mammals, birds, reptiles, amphibians, fish arthropods, vertebrates, and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors.	SC.3.L.17.1 : Describe how animals and plants respond to changing seasons.	SC.3.N.1.6 : Infer based on observation. SC.3.N.1.2 : Compare the observations made by different groups using the same tools and seek reasons to explain the differences across groups.	SC.3.N.1.1 : Raise questions about the natural world, investigate them individually and in teams through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.
Pacing	Week 28 (continued from week 27)	Weeks 29-31	Weeks 32-33	Weeks 34-35	Week 36
Objective/ Learning Goal/SWBT	<ul style="list-style-type: none"> *Identify flowering plants (e.g., marigolds, cacti, apple tree, oak tree). *Identify non-flowering plants that produce seeds (e.g., cypress tree, pine tree, sago palm, juniper tree). *Identify non-flowering plants that produce spores (e.g., fern, moss, horsetails, liverworts). *Classify plants into major groups based on their physical structures for reproduction. *Compare the structures of different flowering plants (Note: Flowers of flowering plants may not be visible such as grass and cactus). *Compare the structures of different nonflowering plants. *Compare flowering and nonflowering plants. *Explain the importance of communication among scientists who study plants. 	<ul style="list-style-type: none"> *Discuss how scientists use physical characteristics and behaviors to group animals (e.g., fur, feathers, number of legs, lay eggs, nurse young). *Discuss the benefits of scientists sharing the same grouping system (classification). *Classify animals into major groups according to their characteristics. 	<ul style="list-style-type: none"> *Describe how animals are adapted to respond when changes occur in the environment (e.g., hibernation, migration, shedding, birth, color change). *Explain why animals are adapted to respond to seasonal changes in the environment (to increase the chance of survival). *Discuss why it is important for scientists from around the world to communicate and compare the changes in animals from season to season. *Describe how plants are adapted to respond when changes occur in the environment. *Explain why plants are adapted to respond to changes in the environment. *Discuss why it is important for scientists from around the world to communicate and compare the changes in plants season to season. *Compare how animals and plants respond to changes in the environment. 	<ul style="list-style-type: none"> *Predict the identity of a mystery (unknown) event/object/substance before making extensive observations. *Make observations of a mystery event/object/substance. *Make inferences based on observations of the mystery event/object/substance. *Justify inferences made (reasons for results of the scientific study of the event/object/substance). *Discuss the importance of observations when making inferences. *Summarize observations made by two different groups who have conducted the same investigation using the same tools. *Compare observations (similarities and differences) made by two different groups using the same tools. *Explain why there may be differences in observations between groups. 	<ul style="list-style-type: none"> *Generate testable questions about the world around them. *Form a hypothesis before investigating a student-generated question. *Investigate testable, student-generated questions through free exploration and teacher-designed investigations using a procedure. *Compare free-exploration investigations to more formal explorations (e.g., teacher-directed, use of the scientific method). *Use the steps of the scientific method. *Generate appropriate explanations based on observations (data) collected during the exploration/investigation. *Explain why scientists perform multiple trials to gather data to support conclusions.
Inquiry Flipcharts/Labs	Classify Plants/Leaf Collection, p. 25	Make a Backbone/Furry Help (p. 26) Invertebrate Count/Model an Insect (p. 27) How Do You Classify Things? (p. 28)	Four Seasons Collage/Through a Season , p. 29 What Do Plants Need?, p. 30	Mystery Box, p. 2 I Can See Clearly Now, p. 4 Talented Tools, p. 4 How Can You Measure Length?, p. 5 Data Two Ways, p. 6 Raise the Bar, p. 6 How Do Your Results Compare?, p. 7	Mystery Box, p. 2 I Can See Clearly Now, p. 4 Talented Tools, p. 4 How Can You Measure Length?, p. 5 Data Two Ways, p. 6 Raise the Bar, p. 6 How Do Your Results Compare?, p. 7
Fusion Textbook	p.209-222	p.223-237, 240-246	p.251-168	p.1-44	p.1-44