Pacing Guide

Content Area: 3rd Grade Science

Last Updated:

Quarter	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
3rd									
	Unit 1: Engineering Design ~ 1 week								
	Unit 2: Forces and Motion ~ 4 weeks								
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
4th									
	Units 3 & 4: Adaptations, Life Cycle of Living Organisms ~ 6 weeks								
	Unit 5: Earth Systems and Human Activity ~ 1 week								
	Unit 6: Matter ~ 1 week								

Last Edited By:

	Unit 1	Unit 2	Units 3 & 4	Unit 5	Unit 6
3rd Grade Science	Engineering Design	Force and Motion	Adaptations, Life Cycle of Organisms	Earth Systems & Human Activity	Matter
3.PS1.A.1 **Matter and Its Interactions** **Predict and investigate that water can change from a liquid to a solid (freeze), and back again (melt), or from a liquid to a gas (evaporation), and back again (condensation) as the result of temperature changes.**					
3.PS1.B.1 **Matter and Its Interactions** **Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.**					
3.PS2.B.1 **Motion and Stability: Forces and Interactions** **Plan and conduct investigations to determine the cause and effect relationship of electric or magnetic interactions between two objects not in contact with each other.**					
3.LS1.B.1 **From Molecules to Organisms:Structure and Processes** **Develop a model to compare and contrast observations on the life cycle of different plants and animals.**					
3.LS3.A.1 **Heredity: Inheritance and Variation of Traits** **Construct scientific arguments to support claims that some characteristics of Organisms are inherited from parents and some are influenced by the environment.**					
3.LS3.B.1 **Heredity: Inheritance and Variation of Traits** **Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving and finding mates.**					
3.LS3.C.1 **Heredity: Inheritance and Variation of Traits** **Construct an argument with evidence that in a particular ecosystem some organisms -- based on structural adaptations or behaviors -- can survive well, some survive less well, and some cannot.**					
3.LS3.D.1 **Heredity: Inheritance and Variation of Traits** **Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.**					
3.ESS2.D.1 **Earth's System** **Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.**					
3.ESS2.D.2 **Earth's System** **Obtain and combine information to describe climates in different regions of the world.**					
3.ESS3.B.1 **Earth and Human Activity** **Make a claim about the merit of an existing design solution (e.g. levies, tornado shelters, sea walls, etc.) that reduces the impacts of a weather-related hazard.**					

3.ETS1.A.1 **Engineering Design** **Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.**					
3.ETS1.B.1 **Engineering Design** **Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.**					
3.ETS1.C.1 **Engineering Design** **Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.**					

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Quarter	Unit of Study & Length of Unit	Priority Standards (CFAs and assessments in this unit should include ALL priority standards)	Supporting Standards (support the learning of the priority standard; assessed on a summative and benchmark assessment)	Learning Goals (Unwrap your standard - what do the students need to master?) I can... / I will...	Essential Questions (Overall question(s) about the priority standards that you have chosen for a unit) Enduring Understandings (What students should learn and perform after the unit)	Learning Activities (the assignments, homework, projects that are assigned within a unit)	Resources (any tools and/or materials that you will utilize during this unit)	Assessment (culminating presentation, project, quiz, test that demonstrates the student's understanding and mastery of ALL the standards within a unit)
3rd Quarter	Unit 5: Engineering Design 1 week	3.ETS1.B.1 Engineering Design Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.		I will investigate how people's needs and wants change over time. I will design a simple design problem and generate multiple solutions. Lastly I will test and communicate how well the solutions worked.	*__Essential Questions:__What are multiple solutions to a problem? How can we fairly test to make models better, or more effective? * __Enduring Understanding:__ We can make a plan of a simple design to satisfy a want or need. Designs can be tested for effectiveness and improvements.	* HMH Lesson 1 Solutions to a problem.(plants and water) *Exploring Engineering Problems Making and Testing Solutions *Improving Over Time, *Exploration 1 Engineer It, *Exploration 2 Looking it over, *Exploration 3 Exploring Engineering problems, *Exploration 4 Making and Testing Solutions, *Exploration 5 Improving Over Time	plants, water, plastic cups, soda bottles, plastic milk jugs, milk cartons rubber bands containers for water, tape, glue, etc.	Lesson Check, Rubric for project design, charts for evaluations
		3.ETS1.B.1 Engineering Design Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.						
		3.ETS1.C.1 Engineering Design Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.						

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1st Quarter	Unit 2: Force and Motion 4 weeks	3-PS2-1 Plan and conduct an investigation to provide evidence of the effect of balanced and unbalanced forces on the motion of the object		I can plan and conduct an investigation to produce data about the cause and effect relationship betwwen and object's motion and the forces acting on it.	**Enduring Understanding:** The motion of an object is affected by force. **Essential Questions:** What is the relationship between an object's motion and the forces acting on it.DOK 2	Lesson 1 Forces (Hands on Activities) Move the Car, Ramp Moves,(Explorations) Which Way?,What are Contact Forces?, Gravity Can bring you down,	HMH Science book, toy car, tape measure, masking tape, timer, cardboard, aluminum foil, coin, metric ruler	Lesson checks, data checks,
		3PS-2 Make observations and/or measurements of of an object's motion to provide evidence that a pattern can be used to predict future motion.		I will make observations in order to predict how an object will move based on its patterns of motion.	**Enduring Understanding:** The strength of force affects how far and fast an object moves. **Essential Question:** What is the relationship between an object's motion and the forces acting on it.DOK 2	Ramp moves, make a prediction, make a claim, explain the effect of friction.	HMH science pages,data chart, cardboard, aluminum foil, various materials for testing, coin, metric ruler, tape.	Performance indicators chart,Investgate the question, making sense chart.
		3-PS2-3 Ask questions to determine cause and effect relationships of electric or magnetic interactions beween two objectw not in contact with each other.		I will make observations in order to predict how an object will move based on its patterns of motion.	**Enduring Understanding:** Patterns of motion can determine where objects will be at a certain time in motion.**Essential Question:** How does the pattern of motion help keep objects moving at a certain pace?	Exploration 1- Move It, Exploration 2-Tick Tock, Exploration 3-Patterns in Speed and Direction, Juggling activity, observation charts to complete.	HMH Science Book,data sheets, classroom objects, scissors, tape measure, string, stopwatch, small metal washers, large metal washers	HMH workbook, data charts, lesson checks
		3.PS2.B.1 Motion and Stability: Forces and Interactions Plan and conduct investigations to determine the cause and effect relationship of electric or magnetic interactions between two objects not in contact with each other.		I will apply my understanding of the cause and effect relationship of magnetic forces to define and design problems. I will investigate patterns that are creeated by static electricity.	**Eduring Understanding:** Magnets are a force that affects many objects by attracting or repelling. **Essential Question:** How do magnets affect the environment around us? What makes magnets repel against some objects and attract others.	HMH Science consumable, Forces that Act from a Distance, *Hands on Activities* Solve a Magnet Problem, Build an Electromagnet, *Explorations* Magnets Everywhere!, It's Electric,	HMH Science consumable, bar magnet, horsseshoe magnets,various objects, insulated wire, battery holder, nail, bolt, 2 D-cell batteries, tape, metal paper clips,	Performance indicators chart,Investgate the question, making sense chart, lesson review pages
		3-PS2-4 Define a simple design problem that can be solved by applying scientific ideas about magnets		I can design and explain how changing the electromagnet affects its strength.	**Essential Question:** How can I change the strength of an electoromagnet? **Enduring Understanding:**Electromagnets can change in strength.	Exploartion 2: Build an Electormagnet, performance chart for observations.	HMH Science consumable, insulated wire, battery holders, nail, bold 2 D-cell batteries, tape, metal paperclips.	Lesson checks, data checks on experiments.

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4th Quarter	Units 3 & 4: Adaptations, Life Cycle of Living Organisms 6 weeks	3.LS1.B.1 From Molecules to Organisms:Structure and Processes Develop a model to compare and contrast observations on the life cycle of different plants and animals.		I will deveop a model to describe the patterns of change organisms go through over time.	**Enduring Understandings:** Most organisms, both animals and plants go through changes in their lifetime. **Essential Questions:** What are life cycles, how do different organisms go through the life cycle?	**Unit 3-Lesson 1-** All Organisms Have a Life Cycle, **Hands on Activities:** Exploring a Change, Comparing Life Cycles, So Many Changes **Explorations-** How Do Life Cycles Differ?, Broken Cycles,	HMH student consumables, materials for explorations, (safety goggles, non-latex gloves, seeds, plastic cup, permanent marker, soil, water, graduated cylinder), (books, colored pencils, computer, index cards)	HMH consumable pages, Lesson Checks, Observation charts.
		3.LS1.A.1 From Molecules to Organisms: Structure and Processes Construct an argument with evidence that in a particular ecosystem some Organisms -- based on structural adaptations or behaviors -- can survive well, some survive less well, and some cannot survive at all.		I will collect and interpret data to identify patterns that explain how offspring inherit traits from both of their parents.	**Enduring Understanding:** Organisms/Animals resemble their parents and siblings but are not identical to them. **Essential Questions:** Why do organisms/animals have similar characteristics to their parents and siblings, but all have their own characteristics.	**Unit 3- Lesson 2-** HMH Consumables, What do you notice, **Hands on Activities:** Exploring Change, Comparing Life Cycles **Explorations:** What Will it Look Like?, Monster Traits, Parents and Offspring.	HMH student consumables, monster parent traits table, coins, Monster Traits Handout(2), crayons, scissors, glue.	HMH consumable pages, Lesson Checks, Observation charts
		3.LS3.A.1 Heredity: Inheritance and Variation of Traits Construct scientific arguments to support claims that some characteristics of Organisms are inherited from parents and some are influenced by the environment.		I will use evidence to support a claim about how features and behaviors help organisms survive in their environment.	**Enduring Understanding:** Organisms use strategies to be successful in their environment. **Essential Questions:** What strategies can an organism use to be successful in their environment?	**Unit 3-Lesson 3-**HMH Consumables, What do you notice, **Hands on Activities:** Battle of the Beans, All for One, Differences That Win, Better Together. **Exploration3-** Differences That Win, Better Together,	HMH student consumables, 30 dry white beans, 30 dry black beans, cup, white paper, black paper, patterned paper, timer, 1 red marble, 13 blue marbles, paper bag.	HMH consumable pages, Lesson Checks, Observation Charts
		3.LS3.D.1 Heredity: Inheritance and Variation of Traits Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.		I will support a claim with evidence about how an environment can affet and influence an organism's traits.	**Enduring Understanding:** The Environment affects Traits. **Essential Question:** How does the environment affect traits of different organisms?	**Unit 4- Lesson 1** HMH Consumable, The Environment Affects Traits- What do you notice, **Hands on Activity-** Will They Grow?, Designed Environments. **Explorations-** Plants and Their Environments, Animals and Their Environments,	HMH consumables, lima beans, paper towels, permanent marker, soil, kplatic zip bag, books, colored pencils, computer, index cards	HMH consumable pages, Lesson Checks, Observation Charts
		3.LS3.C.1 Heredity: Inheritance and Variation of Traits Construct an argument with evidence that in a particular ecosystem some Organisms -- based on structural adaptations or behaviors -- can survive well, some survive less well, and some cannot.		I will construct an argument about how organiams' adaptations are suited to their particular environment and support it with evidence.	**Enduring Understanding:** Adaptations Aid Organisms' Survival **Essential Question:** What adaptations to organisms' use to aid in their survival?	**Unit 4-Lesson 2** HMH consumables, Think About It **Hands on Activities:** How do Structures Help?, How Do Behaviors Help?. **Explorations:** Adapted Organisms, Adaptation and Environment	HMH consumables, gloves, vegetable shortening, thermometer, ice bath, plastic bags, goggles, apron, books, colored pencils, internet, index cards	HMH consumable pages, lesson Checks, Observation Charts
		3.LS3.D.1 Heredity: Inheritance and Variation of Traits Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.		I will be able to describe how changes to an environmental system affect the organisms that live there. I will design a solution and make a claim about how it helps reduce the impact of environmental change on organisms in an environment.	**Enduring Understanding:** Environments Change, and this can have an effect on the organisms. **Essential Questions:** What happens to organisms that live in an environment when that environment changes?	**Unit 4- Lesson 3** HMH consumables, Think About It, **Hands on Activity**- Wild Horses, Engineer It. **Exporations-** Everything Changes, Moving Upstream,	HMH consumables, craft sticks, tape, cardboard, glue, chenille sticks, wood, clay	HMH consumable pages, Lesson Check
		3.LS4-1 Analyze and interpret data from fossils to provide evidence of the organisms and the invironments in which they lived long ago.		I will analyze and interpret data to explain how fossils provide evidence of organisms that were once alive and the environments in which they lived.	**Enduring Understanding:** Fossils are evidence of past environments **Essential Questions:** How do fossils show evidence of past environments?	**Unit 4- Lesson 4** HMH consumables, Think About It, **Hands on Activities-** How Do Fossils Form?, What Can You Learn From a Fossil? **Explorations-** Evidence of Change, Environments and Slow Change	HMH consumables, computer with internet, books, modeling clay, classroom objects,	HMH consumable pages, Lesson Check, observations

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4th Quarter	Unit 5: Earth Systems & Human Activity 1 week	3.ESS2.D.1 Earth's System Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.		I can use weather pattern data to predict the weather.	**Essential Question-**What data and patterns can I use to predect the weather? **Enduring Understanding-** Weather occurs in general patterns throughout the seasons. General predictions regarding temperature and precipitation can be made for each season.	**Unit 5, Lesson 1** We Can Predict Weather, Notice and Wonder **Hands on Activities-** Weather Here and There, Regeional Weather, **Explorations-** A Year in Change, Predicting Weather	HMH Science Consumable, 3 maps of the United States with capitals marked, newspapers with nation-wide weather reports or the internet, data, 3 downloadable maps for each group, 3 downladable class maps marked May, June, July with key showing temperatures indicated by colors, colored pencils	HMH Consumables, data charts, Lesson Check
		3.ESS3.B.1 Earth and Human Activity Make a claim about the merit of an existing design solution (e.g. levies, tornado shelters, sea walls, etc.) that reduces the impacts of a weather-related hazard.		I will analyze and interpret data to make a claim about severe weather and ways we can mitigate its efffect.	**Essential Question-** What are the wide varieties of severe weather and how can we reduce the dangers of these types of weather? **Enduring Understanding-** Humans cannot eliminate natural hazards, but we can take steps to reduce their impacts.	**Unit 5, Lesson 2** Severe Weather, Think and Notice **Hands on Activities-** The Answer is Blowing in the Wind, Engineer It, **Explorations-** Cause and Effect Weather, Reducing Risk,	HMH Science Consumable, pan 9x12, sand, water, containers for puring water, model house, small stones, plastic straws, strips of fabric,	HMH Consumable, Lesson Check
		3.ESS2.D.2 Earth's System Obtain and combine information to describe climates in different regions of the world.		I will obtain and analyze information aboute climate patterns. I will be able to describe diggerent climate zones and identify them on a map.	**Essential Question-** Are weather patterns the same or different in other parts of the world? **Enduring Understanding-** Different parts of the world have different climates depending on the rotation of the earth and how close it is to the sun.	**Unit 5- Lesson 3** Types of Climates, Notice and Wonder **Hands on Activities-** Feel the Heat, Looking for a new home **Explorations-** Out of Place,	HMH Science Consumables, clear platic globe, hair dryer, classroom world map with locations marked, sticky notes,	HMH consumables, Lesson Checks

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3rd Quarter	Unit 6: Matter 1 week	3.ESS2.D.1 Earth's System Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.		I can use weather pattern data to predict the weather.	**Essential Question-**What data and patterns can I use to predect the weather? **Enduring Understanding-** Weather occurs in general patterns throughout the seasons. General predictions regarding temperature and precipitation can be made for each season.	**Unit 5, Lesson 1** We Can Predict Weather, Notice and Wonder **Hands on Activities-** Weather Here and There, Regeional Weather, **Explorations-** A Year in Change, Predicting Weather	HMH Science Consumable, 3 maps of the United States with capitals marked, newspapers with nation-wide weather reports or the internet, data, 3 downloadable maps for each group, 3 downladable class maps marked May, June, July with key showing temperatures indicated by colors, colored pencils	HMH Consumables, data charts, Lesson Check
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