Grade 3 Curriculum Map – Science

2019-2020

TOPIC & MONTH	CONTENT	SKILLS	ASSESSMENT	Essential Question
Engineering Design Dates May/June	 Asking Questions and Defining Problems Planning and Carrying Out Investigations Constructing Explanations and Designing Solutions ETS1.A: Defining and Delimiting Engineering Problems ETS1.B: Developing Possible Solutions ETS1.C: Optimizing the Design Solution readings -" 	 Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account. Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions. At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs. Tests are often designed to identify failure points or difficulties, which suggest the elements of the design that need to be improved. Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints Vocab: 	 Activity 1: Float Your Boat Activity 2: Build A Bridge Activity 3: Keep It Cold Activity 4: Engineering Design Process Flow Chart 	 What is an engineer?
	 3-5-ETS1-1. Define a simp materials, time, or cost. 3-5-ETS1-2. Generate and constraints of the problet 3-5-ETS1-3. Plan and carr prototype that can be im 	ole design problem reflecting a need or a want that incl I compare multiple possible solutions to a problem bas m. y out fair tests in which variables are controlled and fai proved.	udes specified criteria for suc ed on how well each is likely t lure points are considered to	cess and constraints on to meet the criteria and identify aspects of a model or

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<section-header><section-header><text><text></text></text></section-header></section-header>	 Asking Questions and Defining Problems Planning and Carrying Out Investigations Science Knowledge is Based on Empirical Evidence Scientific Investigations Use a Variety of Methods PS2.A: Forces and Motion PS2.B: Types of Interactions readings -" 	 Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object's speed or direction of motion. The patterns of an object's motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted from it. Objects in contact exert forces on each other. (3-PS2-1) Electric and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other. Vocab: Newton's 1st Law of Motion Newton's 3rd Law of Motion Attract, repel, bar magnet, horseshoe magnet, magnetic poles, magnetic force, electromagnet, 	 Activity 1: Marble Curling Activity 2: Cars and Ramps Activity 3: Balloon Rockets Activity 4: Strawkets Exploring Magnetism Activity 1: Attraction Action Activity 2: Give Me Strength! Activity 3: North vs. South Activity 4: Magnetic Maze Activity 5: Electromagnet 	 How do equal and unequal forces on an object affect the object? What does the motion of an object tell you about its future motion? How does static electricity affect an object it is not in contact with? What factors affect the interaction between a magnet and an object not touching the magnet? How can magnets be used?

STANDARDS:
• 3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an
object.
• 3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future
motion.
• 3-PS2-3. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact
with each other.
• 3-PS2-4. Define a simple design problem that can be solved by applying scientific ideas about magnets

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Interdependent Relationships in Ecosystems Dates November/December	 Analyzing and Interpreting Data Engaging in Argument from Evidence LS2.C: Ecosystem Dynamics, Functioning, and Resilience LS2.D: Social Interactions and Group Behavior LS4.A: Evidence of Common Ancestry and Diversity LS4.C: Adaptation LS4.D: Biodiversity and Humans readings -" 	 When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (NYSED) Being part of a group helps some animals obtain food, defend themselves, and survive. Groups may serve different functions and vary dramatically in size. Some kinds of plants and animals that once lived on Earth are no longer found anywhere. Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments. For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all Populations live in a variety of habitats, and change in those habitats affects the organisms living there. Vocab: life cycle, birth, growth, reproduction, pride, disguise, mimicry, camouflage, herd, pod, pack, structure, process, interaction 	 Activity 1: Life Cycles Activity 2: Animals Living in Groups poster reports Activity 3: What Butterfly? Activity 4: My Beak is Better Than Yours! 	 Why do some animals form groups to survive? How do the characteristics of a habitat and an organism affect the organism's ability to survive in that ecosystem? What happens to an organism when their environment changes?
	 3-LS2-1. Construct an argument that some animals form groups that help members survive. 3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. 3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. 3-LS4-4. 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. 			

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Inheritance and Variation of Traits: Life Cycles and Traits Dates September/October	 Developing and Using Models Analyzing and Interpreting Data Constructing Explanations and Designing Solutions Scientific Knowledge is Based on Empirical Evidence LS1.B: Growth and Development of Organisms LS3.A: Inheritance of Traits LS3.B: Variation of Traits LS4.B: Natural Selection readings -" 	 Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. Many characteristics of organisms are inherited from their parents. Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. (NYSED) Some characteristics result from the interactions of both inheritance and the effect of the environment. Different organisms vary in how they look and function because they have different inherited information. The environment also affects the traits that an organism develops. Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. Vocab: inherit, acquired, heredity, traits 	 Activity 1: Data Collection Activity 2: A Chip Off the Old Block Activity 3: Post-It Party Activity 4: 	 How do organisms vary in their traits?
 STANDARDS: 3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. 3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. 3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment. 3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. 				
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Weather and Climate Dates January/February	 Planning and Carrying Out Investigations Analyzing and Interpreting Data Engaging in Argument from Evidence Obtaining, Evaluating, and Communicating Information ESS2.D: Weather and Climate ESS3.B: Natural Hazards readings -" 	 Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. (NYSED) Earth's processes continuously cycle water, contributing to weather and climate. A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts. Vocab: rain gauge, barometer, anemometer, temperature, precipitation, clouds, tornado, pressure, saturation, humidity, climate, blizzard 	 Activity 1: Making a Class Weather Station Activity 2: Clouds Activity 3: Making Frost Activity 4: Tornado In a Bottle Activity 5: It's so Humid! Activity 6: Extreme Weather Reports Activity 7: Weather and Climate Activity 8: Weather Bingo 	 What is typical weather in our part of the world during different times of the year? What is typical weather in different parts of the world and during different times of the year?
	 3-ESS2-1. Represent data in tables a 3-ESS2-2. Obtain and combine inform 3-ESS3-1. Make a claim about the m 3-ESS2-3. Plan and conduct an investigation 	nd graphical displays to describe typical weat mation to describe climates in different regi- terit of a design solution that reduces the im tigation to determine the connections betw	ather conditions expected dur ons of the world. pacts of a weather-related ha een weather and water proce	ing a particular season. zard. sses in Earth systems.