

Grade 1 Curriculum Map – Science

2019-2020

TOPIC & MONTH	CONTENT	SKILLS	ASSESSMENT	Essential Question
Insects (Structure, Function, and Information Processing) September-October (7 weeks)	- Constructing Explanations and Designing Solutions - Obtaining, Evaluating, and Communicating Information - Scientific Knowledge is Based on Empirical Evidence - LS1.A Structure and Function - LS1.B Growth and Development of Organisms - LS1.D Information Processing - LS3.A Inheritance of Traits - LS3.B Variation of Traits - readings -"Fireflies" by Leya Roberts -"What is an Insect?" by Susan Canizares and Mary Reid -"Monarch Butterfly" by Gail Gibbons -"Dragonfly" by Stephanie St. Pierre	- All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. - Adult animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. - Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. (NYSED) Some young animals are similar to, but not exactly, like their parents. - Individuals of the same kind of animal are recognizable as similar but can also vary in many ways. Vocab: sense, insect, lifecycle, pupa, molting, larva, prey, antennae, metamorphosis, abdomen, thorax, chrysalis	- Students describe the lifecycle of an insect and put the pictures in order. - Students choose an insect and describe the body parts associated with each sense. - Students identify the common features of an insect.	- How are animals' senses different from people's senses? - How do the young change to become the adult (lifecycle)? - How are insects alike and different?
	STANDARDS: 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. 1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. 1-LS3-1. Make observations to construct an evidence-based account that some young plants and animals are similar to, but not exactly like, their parents.			

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Waves: Light and Sound October-December (7 weeks)	- Planning and Carrying Out Investigations - Constructing Explanations and Designing Solutions - Scientific Investigations Use a Variety of Methods - PS4.A Wave Properties - PS4.B Electromagnetic Radiation - PS4.C Information Technologies and Instrumentation - readings -“What’s that Sound?” by Michelle Edwards and Phyllis Root - “The Listening Walk” by Paul Showers	- Sound can make matter vibrate, and vibrating matter can make sound. - Objects can be seen if light is available to illuminate them or if they give off their own light. - Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light cannot reach. Mirrors can be used to redirect a light beam. - People also use a variety of devices to communicate (send and receive information) over long distances. Vocab: vibration, illumination, communication, investigation, shadow, opaque	- Students explain how sound is made and conduction investigations. - Students identify objects that block light and those that allow light to pass through. - Students design a device to use light or sound to communicate over a distance.	- What is sound? - How is sound made? - What is light and how would it affect our lives if we didn’t have it? - How do objects create a shadow and some do not? - How can light and sound be used for communication?
	STANDARDS: 1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. 1-PS4-2. Make observations (firsthand or from media) to construct an evidence-based account that objects can be seen only when illuminated. 1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. 1-PS4-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.			

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Space Systems: Patterns and Cycles January-February (6 weeks)	• Planning and Carrying Out Investigations • Analyzing and Interpreting Data • ESS1.A The Universe and its Stars • ESS1.B Earth and the Solar System • readings -“The Moon” by Gemma McMullen -“My Solar System” by Lorna Gutierrez -“The Stars” by Gemma McMullen -“The Sun” by Gemma McMullen -“The Magic School Bus Lost in the Solar System” by Joanna Cole	• Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. • Seasonal patterns of sunrise and sunset can be observed, described, and predicted. • Vocab: pattern, observation, prediction, rotation, sunrise, sunset	• Students will create a moon, sun, and earth mobile. They will use this to describe the movement of the sun, moon, and earth. • Students will discuss the stars and moon and explain the patterns of these objects in the sky. • Students will discuss when sunrise and sunset occur and use this information to predict	• How is the earth affected by the moon? • How do the moon, earth, stars, and sun move in space? • What are the patterns of the sun?
	STANDARDS: • 1-ESS1-1. Use observations of the Sun, moon, and stars to describe patterns that can be predicted. • 1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year.			

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Plants (Structure, Function, and Information Processing) February-April (6 weeks)	- Constructing Explanations and Designing Solutions - Obtaining, Evaluating, and Communicating Information - Scientific Knowledge is Based on Empirical Evidence - LS1.A Structure and Function - LS1.B Growth and Development of Organisms - LS1.D Information Processing - LS3.A Inheritance of Traits - LS3.B Variation of Traits - readings -“Planting Seeds” by Amy Jo -” Leaves” by Isabella Jose -”From Seed to Plant” by Gail Gibbons	- Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow - Adult plants can have young. - Plants respond to some external inputs. (NYSED) Some young plants are similar to, but not exactly, like their parents. - Individuals of the same kind of plant are recognizable as similar but can also vary in many ways. Vocab: offspring, external, survive, roots, stem, leaves, shoot, germination, sprout, seed, fruit	- Students grow a plant from a seed and describe what is needed for their survival. - Students identify the parts of a plant.	- How do adult plants help their babies survive? - What do plants need to survive? - How can plants of the same kind be similar yet different?
	STANDARDS: 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. 1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. 1-LS3-1. Make observations to construct an evidence-based account that some young plants and animals are similar to, but not exactly like, their parents.			

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Animal Classifications (Structure, Function, and Information Processing) April-June (10 weeks)	- Constructing Explanations and Designing Solutions - Obtaining, Evaluating, and Communicating Information - Scientific Knowledge is Based on Empirical Evidence - LS1.A Structure and Function - LS1.B Growth and Development of Organisms - LS1.D Information Processing - LS3.A Inheritance of Traits - LS3.B Variation of Traits - readings -“Birds” by Carolyn MacLulich -“Reptiles” by Robert Matero -“Reptiles and Amphibians” by Mary Scott -“Amazing Crocodiles & Reptiles” by Mary Ling -“Fishes” by Brian Wildsmith	- All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. - Adult animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. - Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. (NYSED) Some young animals are similar to, but not exactly, like their parents. - Individuals of the same kind of animal are recognizable as similar but can also vary in many ways. Vocab: offspring, external, survive, body coverings, camouflage, mammals, reptiles, amphibians, scales, habitat	- Students complete a science report about an animal of their choice. These include how to care for their young, how they look like their young, what they eat, body parts/coverings, where they live, and what they need/do to survive. - Students sort animals by their classifications (mammals, reptiles, amphibians, birds, fish)	- How are animals’ senses different from people’s senses? - How do adult animals help their babies survive? - How are young animals similar to their adults? How are they different?
	STANDARDS: 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. 1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. 1-LS3-1. Make observations to construct an evidence-based account that some young plants and animals are similar to, but not exactly like, their parents.			

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Engineering Design Throughout school year	• Asking Questions and Defining Problems • Developing and Using Models • Analyzing and Interpreting Data • ETS1.A Defining and Delimiting Engineering Problems • ETS1.B Developing Possible Solutions • ETS1.C Optimizing the Design Solution	• A situation that people want to change or create can be approached as a problem to be solved through engineering. • Asking questions, making observations, and gathering information are helpful in thinking about problems. • Before beginning to design a solution, it is important to clearly understand the problem. • Vocab: design, observation,	• Students identify a problem and collect information about the problem. • Students create a model and describe how it works. • Students test out their while collecting data to help improve their design.	• How will I know if my solution works? •
	STANDARDS: • K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. • K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. • K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.			