Grade Level	**2nd**
Subject	**Science**
Semester 1	**Quarter 1**
Standards	• 2.PS4.1 Plan and conduct investigations to demonstrate the cause and effect relationship between vibrating materials (turning forks, water, bell), and sounds. • 2.PS4.2 Use tools and materials to design and build a device to understand that light and sound travels in waves and can send signals over distances. • 2. PS4.3 Observe and demonstrate that waves move in regular patterns of motion by disturbing the surface of shallow and deep water. • 2.LS1.2 Obtain and communicate information to classify animals based on their physical characteristics. • 2.LS2.1 Develop and use models to compare how animals depend on their surroundings and other living things to meet their needs in the places the live. • 2. LS3.1 Use evidence to explain that living things have physical traits inherited from parents and that variations of these traits exist in groups of similar organisms. **Engineering, Technology, and Applications of Science (ETS) Standards are embedded throughout curriculum:** • 2.ETS1.1 Define a simple problem that can be solved through the development of a new or improved object or tool by asking questions, making observations, and gather accurate information about a situation people want to change. • 2.ETS1.2 Develop a simple sketch, drawing, or physical model that communicates solutions to others. • 2.ETS1.3 Recognize that to solve a problem, one may need to break the problem into parts, address each part, and then bring the parts back together. • 2.ETS1.4 Compare and contrast solutions to a design problem by using evidence to point out strengths and weaknesses of the design. • 2.ETS2.1 Use appropriate tools to make observations, record data, and refine design ideas. • 2.ETS2.2 Predict and explain how human life and the natural world would be different without current technologies.
Objectives/I Can Statements	• I can explain that sound is made when objects vibrate. • I can identify and discuss how sound energy is an important part of everyday life. • I can describe the loudness and pitch of a sound. • I can describe how sound travels across distances. • I can explain how waves need energy to move. • I can identify cause and effect relationships through observable patterns. • I can identify and describe parts and their roles as part of a larger system/object. • I can recognize, classify, and record the patterns I observe in nature or man-made objects. • I can describe how adaptations help living things survive in their environments. • I can identify and describe how animals depend on each other in their surroundings. • I can recognize the physical traits that animals inherit from parents. • I can explain why young often look like their parents. • I can identify inherited traits.
Topics	• Sound • Sound Waves • Adaptations • Heredity
Vocabulary	• loudness, vibrate, pitch • sound, wave, energy • adaptation, pollution, survive

	• characteristic, inheritance, trait, variety
Summary of Key Learning Events/Instruction	• Sound is energy you can hear. • Light is energy you can see. • There are many kinds of animals, and they have certain needs. • Use and discuss texts and other resources around the following topics: Sound, Music, Penguins, Traits • Conduct developmentally appropriate research and inquiry activities.
Instructional Materials/Resources	• HMH Tennessee Science Units 4 and 5 • Trade books • www.brainpopjr.com • https://studyjams.scholastic.com/studyjams/ • Other resources as determined by grade level team
Assessment	• Daily assignments • Exit Tickets • Individual and group projects • Formative assessments • Summative assessments

Grade Level	**2nd Grade**
Subject	**Science**
Semester 1	**Quarter 2**
Standards	• 2.ESS2.3 Compare simple maps of different land areas to observe the shapes and kinds of land and water. • 2. ESS2.4 Use information obtain from reliable resources to explain that water is found in ocean, rivers, streams, lakes, and ponds. 2. LS2.2 Predict what happens to animals when the environment changes. • 2. LS1.1 Use and evidence and observations to explain that many animals use their body parts and senses in different ways. Engineering, Technology, and Applications of Science (ETS) Standards are embedded throughout curriculum: • 2.ETS1.1Define a simple problem that can be solved through the development of a new or improved object or tool by asking questions, making observations, and gather accurate information about a situation people want to change. • 2.ETS1.2 Develop a simple sketch, drawing, or physical model that communicates solutions to others. • 2.ETS1.3 Recognize that to solve a problem, one may need to break the problem into parts, address each part, and then bring the parts back together. • 2.ETS1.4 Compare and contrast solutions to a design problem by using evidence to point out strengths and weaknesses of the design. • 2.ETS2.1 Use appropriate tools to make observations, record data, and refine design ideas. • 2.ETS2.2 Predict and explain how human life and the natural world would be different without current technologies.
Objectives/I Can Statements	• I can describe the different information that can be learned from maps. • I can explain how maps can be used to show scientific information. • I can compare the properties of natural sources of fresh water and salt water. • I can explain how organisms live, grow, respond to their environment, and reproduce. • I can identify and describe how animals use their body parts and senses in different ways for survival. • I can identify and describe how to come up with a new solution for a new or improved tool. • I can understand that objects can be deconstructed and reassembled in the same or different ways. • I can identify cause and effect relationships through observable patterns.
Topics	• Our Earth • Animals • Work Like a Scientist • Technology and Our World
Vocabulary	• longitude, latitude, globe, landmass, equator • fresh water, salt water, glacier • survive, gills, lungs, shelter • mammal, bird, reptile, vertebrate, amphibian, fish, insect, invertebrate
Summary of Key Learning Events/Instruction	• The physical and living parts of Earth are always changing. • Scientists ask about the world around them. They find answers by investigating through many methods. • Engineers use a process to design new technology to meet human needs. • Technology affects our everyday life and can affect the environment around us. • Use and discuss texts and other resources around the following topics: Oceans, Spiders, Bats, Maps, Scientific Method, Inventions

	• Conduct developmentally appropriate research and inquiry activities.
Instructional Materials/Resources	• HMH Tennessee Science Units 6, 1, 2, 5 • Trade books • www.brainpopjr.com • https://studyjams.scholastic.com/studyjams/ • other resources as determined by grade level team
Assessment	• Daily assignments • Exit Tickets • Individual and group projects • Formative assessments • Summative assessments

Grade Level	**2nd Grade**
Subject	**Science**
Semester 2	**Quarter 3**
Standards	• 2.PS2.1- Analyze the push and pull that occurs when objects collide or are connected. • 2. PS2.2- Evaluate the effects the different strengths and directions of a push or a pull on the motion of an object. • 2. PS2.3 Recognize the effect of multiple pushes and pulls on an object's movement or non-movement. • 2.PS3.1 Demonstrate how a stronger push or pull makes things go faster and how faster speeds during a collision can cause a bigger change in the shape of the colliding objects. • 2. PS3.2 Make observations and conduct experiments to provide evidence that friction produces heat and reduces or increases the motion of an objects. • 2.ESS1.1 Recognize that some of Earth's natural processes are cyclical while others have a beginning and an end. Some events happen quickly while others occur slowly over time. • 2.ESS2.1 Compare the effectiveness of multiple solutions designed to slow or prevent wind or water from changing the shape of the land. • 2. ESS2.2 Observe and analyze how blowing wind and flowing water can move Earth materials from one place to another, changing the shape of a landform and effecting the habitat of living things. Engineering, Technology, and Applications of Science (ETS) Standards are embedded throughout curriculum: • 2.ETS1.1Define a simple problem that can be solved through the development of a new or improved object or tool by asking questions, making observations, and gather accurate information about a situation people want to change. • 2.ETS1.2 Develop a simple sketch, drawing, or physical model that communicates solutions to others. • 2.ETS1.3 Recognize that to solve a problem, one may need to break the problem into parts, address each part, and then bring the parts back together. • 2.ETS1.4 Compare and contrast solutions to a design problem by using evidence to point out strengths and weaknesses of the design. • 2.ETS2.1 Use appropriate tools to make observations, record data, and refine design ideas. • 2.ETS2.2 Predict and explain how human life and the natural world would be different without current technologies.
Objectives/I Can Statements	• I can plan and conduct descriptive investigations. • I can trace the changes in the position of an object over time. • I can classify forces as pushes or pulls. • I can explain how forces can change motion. • I can demonstrate that the amount and direction of a force exerted on an object will determine how much and in what direction the object will move. • I can compare patterns of movement of objects, such as sliding, rolling, and spinning. • I can examine evidence to understand the force of friction. • I can show that friction produces heat and reduces or increases the motion of an object. • I can understand the uses and importance of measuring, recording, and interpreting weather data. • I can understand the importance and uses of tracking weather data over time. • I can identify common weather phenomena. • I can compare how water and wind shape the land. • I can make comparisons of the Earth's natural processes.

Topics	• Forces • Friction • Wind Power • Weather Patterns • Precipitation
Vocabulary	• Motion, speed, force, collide • Friction, heat • Weather pattern, water cycle, evaporate, condense, measure, precipitation
Summary of Key Learning Events/Instruction	• Forces cause change. • The physical and living parts of Earth are always changing. • Use and discuss texts and other resources around the following topics: Isaac Newton, Wind, Storms, Weather • Conduct developmentally appropriate research and inquiry activities.
Instructional Materials/Resources	• HMH Tennessee Science Units 3 and 6 • Trade books • www.brainpopjr.com • https://studyjams.scholastic.com/studyjams/ • other resources as determined by grade level team
Assessment	• Daily assignments • Exit Tickets • Individual and group projects • Formative assessments • Summative assessments

Grade Level	**2nd Grade**
Subject	**Science**
Semester 2	**Quarter 4**
Standards	• 2. LS1.3 Use simple graphical representation to show that species have unique and diverse life cycles. • 2.LS2.1Develop and use models to compare how animals depend on their surroundings and other living things to meet their needs in the places they live. • 2.LS1.2 Obtain and communicate information to classify animals based on their physical characteristics. • 2. ESS2.1 Compare the effectiveness of multiple solutions to slow or prevent wind or water form changing the shape of the land. • 2.ESS1.1 Recognize that some of Earth's natural processes are cyclical while others have a beginning and an end. Some events happen quickly while others occur slowly over time. Engineering, Technology, and Applications of Science (ETS) Standards are embedded throughout curriculum: • 2.ETS1.1Define a simple problem that can be solved through the development of a new or improved object or tool by asking questions, making observations, and gather accurate information about a situation people want to change. • 2.ETS1.2 Develop a simple sketch, drawing, or physical model that communicates solutions to others. • 2.ETS1.3 Recognize that to solve a problem, one may need to break the problem into parts, address each part, and then bring the parts back together. • 2.ETS1.4 Compare and contrast solutions to a design problem by using evidence to point out strengths and weaknesses of the design. • 2.ETS2.1 Use appropriate tools to make observations, record data, and refine design ideas. • 2.ETS2.2 Predict and explain how human life and the natural world would be different without current technologies.
Objectives/I Can Statements	• I can identify air, water, food, shelter, and space as the basic needs of animals and humans. • I can explain that a living thing will die if its basic needs are not met. • I can describe some ways in which animals depend on plants to meet their basic needs. • I can compare and contrast the basic needs of plants and animals. • I can describe and compare different kinds of animals. • I can understand the structural characteristics of animals are used to group animals. • I can observe and compare how the physical characteristics and behaviors of animals help them meet their needs. • I can define the term life cycle and explain that different animals have different life cycles. • I can explain that all life cycles include birth/hatching, growth and development, maturity, and reproduction. • I can identify some animals, including frogs and butterflies, that undergo complete metamorphosis during their life cycles. • I can describe the sequence of the stages of the amphibian, insect, bird, fish, and mammal life cycles. • I can describe how environments change over time due to many influences. • I can explain how natural events and living things change environments. • I can identify ways Earth's surface changes. • I can compare and contrast quick and gradual Earth changes. • I can describe how plants reduce erosion.

Topics	• Needs of Animals • Animal Classification • Animal Coverings • Life Cycles • Environmental Change Over Time • Weathering and Erosion • Family Life Health Curriculum
Vocabulary	• Survive, gills, lungs, shelter, oxygen • Mammal, amphibian, bird, fish, insect, reptile, vertebrate, invertebrate • Reproduce, tadpole, life cycle, larva, metamorphosis, pupa • Resource, reduce, recycle, reuse • Erosion, earthquake, volcano, flood, weathering, drought, glacier, jetty
Summary of Key Learning Events/Instruction	• There are many kinds of animals. They have certain needs. • The physical and living parts of Earth are always changing. • Use and discuss texts and other resources around the following topics: • *Various animals, Life Cycles, Weathering and Erosion, Fossils, Environmental Effects, Agriculture/Plants* • Conduct developmentally appropriate research and inquiry activities.
Instructional Materials/Resources	• HMH Tennessee Science Units 5 and 6 • Trade books • www.brainpopjr.com • https://studyjams.scholastic.com/studyjams/ • other resources as determined by grade level team
Assessment	• Daily assignments • Exit Tickets • Individual and group projects • Formative assessments • Summative assessments