Course Description: Second Grade Science introduces students to the observation process and its importance to the study of science. Learners will identify their five senses and why they are critical to observation. Students will use these observation skills throughout the course as they examine many different types of animals and their environments. Students will begin by exploring the needs and behaviors of animals and continue into learning how scientists solve problems through engineering. As the course continues, exploring topics of matter, energy, habitats, weather, and animal characteristics continue. Students will learn through video, hands-on participation, and observation of nature. The teachers will conduct live assessments for the topics that have been covered throughout the week's lessons. Grade 2 Science allows students to expand their minds and see how the world works and how animals and nature are a part of their everyday lives.

Module	Lesson Title	Objectives
Module 1- Learning About the World	The Five Senses	• Describe each of the five senses. • Show how the five senses help people experience and make sense of the world around them.
	Human Patterns	• Identify body parts that help meet human needs. • Collect and analyze data about your body.
	Communicating with Pets	• Observe ways humans and pets communicate with each other.
Module 2- Animal Needs	Animal Needs	• Draw conclusions about the needs of animals.
	Animal Homes	• Observe local animal homes. • Compare and contrast animal homes. • Make a model of an animal home.
	Investigating Animal Needs	• Investigate needs of animals.

Module	Lesson Title	Objectives
Module 3- How Animals Act	Tracks Animal Makes	• Identify and interpret animal tracks. • Compare observations about animal tracks.
	Animal Senses	• Describe and explain how animals use their senses.
	The Five Senses and Animal Communication	• Identify various ways animals communicate. • Draw conclusions about why animals communicate in the ways they do.
	Guess the Animal Project	• Investigate a wild animal of your choosing. • Describe how the animal is able to meet their needs in their particular environment.
Module 4- Introduction to Engineering Design	Solving Problems	• List the steps of the engineering process. • Make connections between engineers and scientists.
	Defining a Problem	• Construct a definition of a problem. • Brainstorm solutions to a problem.
	Testing a Solution	• Design and test a solution. • Analyze the outcome of a design solution.
Module 5- Introduction Matter	Introduction into Matter	• Describe observable properties of matter. • Make predictions about properties of matter.
	Properties of Matter	• Collect and organize data about matter. • Create questions about matter.

Module	Lesson Title	Objectives
	Engineering Properties of Matter	• Design and test a solution to a design problem. • Analyze why some materials are better suited for a purpose than others.
Module 6- How Matter Changes	States of Matter	• Identify the three states of matter. • Illustrate examples of a solid, liquid, and gas.
	Changes in Matter	• Investigate how matter can change state through heating and cooling.
	Investigating Matter	• Construct an argument that some states of matter can be reversed and others cannot.
	Changing Matter Project	• Construct an argument that some states of matter can be reversed and others cannot. • Investigate how matter can change state through heating and cooling.
Module 7- More Changes in Matter	Heat and Temperature	• Describe how heat can be produced. • Explain the difference between heat and temperature. • Explain how heat can move from one object to another.
	Combining Substances	• Make predictions about what will happen when substances are combined. • Investigate what happens when different substances are combined.
	Insulation	• Investigate which material will keep the liquid the warmest.
Module 8- Animal Habitats	Animals Habitats	• Define habitat. • Cite evidence to support why an animal lives in a particular habitat.

Module	Lesson Title	Objectives
	Animals and Seasons	• Identify patterns in animal behavior causes by seasonal changes.
	Squirrel Habitats	• Describe the life of a squirrel. • Identify the natural habitat of a squirrel. • Construct a model of a squirrel habitat.
Module 9- Biomes Around the World	Biomes: Desert and Tundra	• Identify the characteristics of deserts and tundras. • Make observations about the different animals that live in deserts and tundras. • Differentiate between a biome and a habitat.
	Biomes: Forests	• Identify the characteristics of forests. • Make observations about the different animals that live in forests.
	Biomes: Grassland & Aquatic	• Identify the characteristics of grasslands and aquatic biomes. • Make observations about the different animals that live in grasslands and aquatic biomes.
	Biome Diorama Project	• Identify the characteristics of various biomes. • Make observations about the different animals that live in the different biomes.
Module 10- Aquatic Habitats	Salt Water	• Describe the living and nonliving things found in salt water. • Classify living and nonliving things by where they can be found.
	Wetlands	• Describe the living and nonliving things found in a wetland. • Compare salt water and fresh water habitats.

Module	Lesson Title	Objectives
	Aquatic Habitats	• Apply concepts of habitats to build an aquatic habitat. • Plan an aquatic habitat.
Module 11- Weather & Climate	The Weather	• Identify types of weather. • Collect and display data of weather conditions. • Draw conclusions about patterns in data.
	The Weather and You	• Assess different scenarios to determine the best choices for clothing, activity, or transportation.
	Climate	• Define climate. • Make observations about the local climate. • Compare and contrast climate and weather.
Module 12- Patterns on Earth and Beyond	Sun Patterns	• Observe the location of the sun in the sky throughout the day. • Make predictions about why the sun appears to be moving. • Explain the pattern of the sun's movement across the sky. • Construct a kinesthetic model of the sun and the Earth.
	Moon Patterns	• Observe the moon at night. • Make predictions about the moon. • Illustrate the phases of the moon.
	Seasonal Patterns	• Recognize weather patterns in different seasons. • Explain seasonal patterns of sunrise and sunset.
	Weather Preparedness Project	• Explain that overtime different types of weather can change the Earth. • Illustrate the difference between a quick Earth event versus a slow Earth event.

Module	Lesson Title	Objectives
Module 13- The Science of Water	Fresh Water	• Collect and display data about water. • Recognize water as a limited resource. • Identify where water is found on Earth.
	States of Water	• Investigate how water changes from liquid to solid, solid to liquid, and liquid to gas • Describe the change in form from water to ice.
	Properties of Water	• Measure and compare the volume of water using containers of various shapes and sizes. • Describe the properties of water.
Module 14- Bodies of Water	Bodies of Water	• Create a model of a body of water where they live.
	Water Cycle	• Draw a diagram of the water cycle to show how water moves from one place to another. • Describe the steps of the water cycle.
	Watersheds	• Make a model of a watershed to show how water travels.
Module 15- How Animals Adapt	Extinct Animals	• Describe how environmental changes can cause an animal to become extinct. • Explain what it means for an animal to be extinct.
	Endangered Animals	• Make observations about what can happen when basic needs are not met. • Recognize what scientists are doing to study endangered animals.
	Animal Adaptation	• Make observations about adaptations that help animals survive. • Identify how animals adapt to changing environments.

Module	Lesson Title	Objectives
	Dinosaurs vs. Birds Project	• Compare an extinct animal to a living animal.
Module 16 – Animal Differences	Animal Characteristics	• Describe characteristics of several animals. • Distinguish between various character traits of animals such as stamina, strength, and gentleness. • Classify animals based on characteristics or traits.
	Vertebrates and Invertebrates	• Identify animals that are vertebrates. • Identify animals that are invertebrates. • Distinguish between the two major animal groups: vertebrates and invertebrates.
	Warm and Cold-Blooded Animals	• Identify warm-blooded animals. • Identify cold-blooded animals. • Distinguish between warm-blooded and cold-blooded animals.
Module 17- All About Birds	Characteristics of Birds	• Describe the life of a bird. • Observe local birds. • Draw conclusions about observations made about nature.
	Different Nests for Different Birds	• Describe differences in the nests birds make. • Create a nest by using techniques birds use.
	Unique Birds	• Describe characteristics of the Swiftlet and weaverbird.
Module 18- Cold-Blooded Animals	Characteristics of Reptiles	• Identify different reptiles. • Match the reptile to its natural habitat. • Make observations about the characteristics of reptiles.
	Characteristics of Amphibians	• Identify different amphibians. • Match the amphibian to its natural habitat. • Make observations about the characteristics of amphibians.

Module	Lesson Title	Objectives
	Characteristics of Fish	• Identify different fish. • Label and describe fish. • Make observations about the characteristics of fish.
	Cold-Blooded Habitat Project	• Identify different cold-blooded animals. • Match animals with their natural habitats. • Compare and contrast the characteristics of a fish, a reptile, and an amphibian.