Grade 2

Overview

The science standards for grade two focus on instilling in students the understanding that everyone has the ability to participate in science and to explore scientific ideas. Students begin to build on the concept that in science it is helpful to collaborate with others, to work as a team and to share thoughts, ideas, and discoveries. Second graders explore the life, earth, and physical sciences within the framework of the following topics: “Animals” (basic needs, environments, and life cycles); “Weather” (weather terminology and weather conditions); “Properties and Changes in Matter” (solids and liquids); and “Magnetism” (attracting and repelling).

The science standards for grade two provide richness and a wide variety of learning experiences, materials, and instructional strategies to accommodate a broad range of students’ individual differences. Students actively engage in learning by observing, interacting with materials and with people, and asking questions as they explore new concepts and expand their understanding.

Scientific Inquiry

The skills of scientific inquiry, including knowledge and use of tools, are not taught as separate skills in science, but are embedded throughout because these process skills are fundamental to all science instruction and content. A table of the PK–12 of scientific inquiry standards and Indicators: is provided in appendix A.

Standard:	**2Sa:**	**The student will demonstrate an understanding of scientific inquiry, including the processes, skills, and mathematical thinking necessary to conduct a simple scientific investigation.**
Indicators:	**2Sa.1:**	Carry out simple scientific investigations to answer questions about familiar objects and events.
	2Sa.2:	Use tools (including thermometers, rain gauges, balances, and measuring cups) safely, accurately, and appropriately when gathering specific data in US customary (English) and metric units of measurement.
	2Sa.3:	Represent and communicate simple data and explanations through drawings, tables, pictographs, bar graphs, and oral and written language.
	2Sa.4:	Infer explanations regarding scientific observations and experiences.
	2Sa.5:	Use appropriate safety procedures when conducting investigations.

Animals

Standard:	**2Sb:**	**The student will demonstrate an understanding of the needs and characteristics of animals as they interact in their own distinct environments. (Life Science)**
Indicators:	**2Sb.1:**	Recall the basic needs of animals (including air, water, food, and shelter) for energy, growth, and protection.
	2Sb.2:	Classify animals (including mammals, birds, amphibians, reptiles, fish, and insects) according to their physical characteristics.
	2Sb.3:	Explain how distinct environments throughout the world support the life of different types of animals.
	2Sb.4:	Summarize the interdependence between animals and plants as sources of food and shelter.
	2Sb.5:	Illustrate the various life cycles of animals (including birth and the stages of development).

Weather

Standard:	**2Sc:**	**The student will demonstrate an understanding of daily and seasonal weather conditions. (Earth Science)**
Indicators:	**2Sc.1:**	Explain the effects of moving air as it interacts with objects.
	2Sc.2:	Recall weather terminology (including temperature, wind direction, wind speed, and precipitation as rain, snow, sleet, and hail).

	2Sc.3:	Illustrate the weather conditions of different seasons.
	2Sc.4:	Carry out procedures to measure and record daily weather conditions (including temperature, precipitation amounts, wind speed as measured on the Beaufort scale, and wind direction as measured with a windsock or wind vane).
	2Sc.5:	Use pictorial weather symbols to record observable sky conditions.
	2Sc.6:	Identify safety precautions that one should take during severe weather conditions.

Properties and Changes in Matter

Standard:	**2Sd:**	**The student will demonstrate an understanding of the properties of matter and the changes that matter undergoes. (Physical Science)**
Indicators:	**2Sd.1:**	Recall the properties of solids and liquids.
	2Sd.2:	Exemplify matter that changes from a solid to a liquid and from a liquid to a solid.
	2Sd.3:	Explain how matter can be changed in ways such as heating or cooling, cutting or tearing, bending or stretching.
	2Sd.4:	Recognize that different materials can be mixed together and then separated again.

Magnetism

Standard:	**2Se:**	**The student will demonstrate an understanding of force and motion by applying the properties of magnetism. (Physical Science)**
Indicators:	**2Se.1:**	Use magnets to make an object move without being touched.
	2Se.2:	Explain how the poles of magnets affect each other (that is, they attract and repel one another).
	2Se.3:	Identify everyday uses of magnets.