Second Grade Science Standards and Benchmarks

Standard #1: Scientific Thinking and Practice **Definition I:** Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.		
Benchmark #1: Use scientific methods to observe, collect, record, analyze, predict, interpret, and determine reasonableness of data.	Performance Objective 1	☐ Conduct simple investigations (e.g., measure the sizes of plants of the same kind that are grown in sunlight and in shade).
	Performance Objective 2	☐ Use tools to provide information not directly available through only the senses (e.g., magnifiers, rulers, thermometers).
	Performance Objective 3	☐ Make predictions based on observed patterns as opposed to random guessing.
	Performance Objective 4	☐ Follow simple instructions for a scientific investigation.
Benchmark #2: Use scientific thinking and knowledge and communicate findings.	Performance Objective 1	☐ Understand that in doing science it is often helpful to work with a team and share findings.
	Performance Objective 2	☐ Make accurate observations and communicate findings about investigations.
Benchmark #3: Use mathematical skills and vocabulary to analyze data, understand patterns and relationships, and communicate findings.	Performance Objective 1	☐ Record observations on simple charts or diagrams.
	Performance Objective 2	☐ Measure length, weight, and temperature with appropriate tools and express those measurements in accurate mathematical language.

Standard #2: Content of Science **Standard I (Physical Science):** Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.		
Benchmark #1: Recognize that matter has different forms and properties.	Performance Objective 1	☐ Observe that properties of substances can change when they are mixed, cooled, or heated (e.g., salt dissolves in water, ice melts).
	Performance Objective 2	☐ Describe the changes that occur when substances are heated or cooled and change from one state of matter to another (i.e., solid, liquid, and gas).
Benchmark #2: Know that energy is needed to get things done and that energy has different forms.	Performance Objective 1	☐ Describe how heat can be produced (e.g., burning, rubbing, mixing some substances).
	Performance Objective 2	☐ Know that heat moves more rapidly in thermal conductors (e.g., metal pan) than in insulators (e.g., plastic handle).
	Performance Objective 3	☐ Describe the usefulness of some forms of energy (e.g., electricity, sunlight, wind, sound) and how energy (e.g., heat, light,) can affect common objects (e.g., sunlight warms dark objects, heat melts candles).
	Performance Objective 4	☐ Observe that sound is made by vibrating objects and describe it by its pitch and loudness.
	Performance Objective 5	☐ Recognize that moving objects carry energy (kinetic energy).
Benchmark #3: Identify forces and describe the motion of objects.	Performance Objective 1	☐ Describe how the strength of a push or pull affects the change in an object's motion (e.g., how a big or small push affects how high a swing rises).
	Performance Objective 2	☐ Observe that electrically charged materials and magnets attract and repel each other, and observe their effects on other kinds of materials.
Standard #2: Content of Science **Standard II (Life Science):** Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.		
Benchmark #1: Know that living things have diverse forms, structures, functions, and habitats.	Performance Objective 1	☐ Observe that diversity exists among individuals within a population.
	Performance Objective 2	☐ Observe and describe various shapes of fungi.
	Performance Objective 3	☐ Know that bacteria and viruses are germs.
Benchmark #2: Know that living things have similarities and differences and that living things change over time.	Performance Objective 1	☐ Explain that stages of the life cycle are different for different animals (e.g., mouse, cat, horse, butterfly, frog).
	Performance Objective 2	☐ Observe that many characteristics of the offspring of living organisms (e.g., plants or animals) are inherited from their parents.
	Performance Objective 3	☐ Observe how the environment influences some characteristics of living things, (e.g., amount of sunlight required for plant growth).
Benchmark #3: Know the parts of the human body and their functions.	Performance Objective 1	☐ Identify a variety of human organs (e.g., lungs, heart, stomach, brain).
	Performance Objective 2	☐ Know that various nutrients are required for specific parts and functions of the body (e.g., milk for bones and teeth, protein for muscles, sugar for energy).
	Performance Objective 3	☐ Identify the functions of human systems (e.g., respiratory, circulatory, digestive).

Standard #2: Content of Science
Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Benchmark #1: Know the structure of the solar system and the objects in the universe.	Performance Objective 1	☐ Observe that the phase of the moon appears a little different every day but looks the same again after about four weeks.
	Performance Objective 2	☐ Observe that some objects in the night sky are brighter than others.
	Performance Objective 3	☐ Know that the sun is a star.
Benchmark #2: Know the structure and formation of Earth and its atmosphere and the processes that shape them.	Performance Objective 1	☐ Know that rocks have different shapes and sizes (e.g., boulders, pebbles, sand) and that smaller rocks result from the breaking and weathering of larger rocks.
	Performance Objective 2	☐ Understand that rocks are made of materials with distinct properties.
	Performance Objective 3	☐ Know that soil is made up of weathered rock and organic materials, and that soils differ in their capacity to support the growth of plants.
	Performance Objective 4	☐ Recognize the characteristics of the seasons

Standard #3: Science and Society
Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

Benchmark #1: Describe how science influences decisions made by individuals and societies.	Performance Objective 1	☐ Describe ways to prevent the spread of germs (e.g., soap, bleach, and cooking).
	Performance Objective 2	☐ Know that science has ways to help living things avoid sickness or recover from sickness (e.g., vaccinations, medicine) and adult supervision is needed to administer them.
	Performance Objective 3	☐ Know that some materials are better than others for making particular things (e.g., paper, cardboard, plastic, metal, and fiberglass, wood).
	Performance Objective 4	☐ Understand that everybody can do science, invent things, and formulate ideas.
	Performance Objective 5	☐ Know that science has discovered many things about objects, events, and nature and that there are many more questions to be answered.