Next Generation Science Standards

Aligned to Rourke Dual Language Science Titles
Grade 2

Introduction

Second Grade

The performance expectations in second grade help students formulate answers to questions such as:

- How does land change and what are some things that cause it to change?
- What are the different kinds of land and bodies of water?
- How are materials similar and different from one another, and how do the properties of the materials relate to their use?
- What do plants need to grow?
- How many types of living things live in a place?

Second grade performance expectations include PS1, LS2, LS4, ESS1, ESS2, and ETS1 Disciplinary Core Ideas from the NRC Framework. Students are expected to develop an understanding of what plants need to grow and how plants depend on animals for seed dispersal and pollination. Students are also expected to compare the diversity of life in different habitats. An understanding of observable properties of materials is developed by students at this level through analysis and classification of different materials.

Students are able to apply their understanding of the idea that wind and water can change the shape of the land to compare design solutions to slow or prevent such change. Students are able to use information and models to identify and represent the shapes and kinds of land and bodies of water in an area and where water is found on Earth. The crosscutting concepts of patterns; cause and effect; energy and matter; structure and function; stability and change; and influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for these disciplinary core ideas.

In the second grade performance expectations, students are expected to demonstrate grade-appropriate proficiency in developing and using models, planning and carrying out investigations, analyzing and interpreting data, constructing explanations and designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information. Students are expected to use these practices to demonstrate understanding of the core ideas.

Structure and Properties of Matter

Science Next Generation Standards	Book Title	ISBN Number	Comparative Measure Level
2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. [Clarification Statement: Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share.]	***Matter Comes in All Shapes*** *Formas de la materia* • This book explains matter. It gives examples and non-examples of matter. ***Natural or Man Made?*** ¿Natural o artificial? • This book explores the characteristics of natural and man-made objects.	9781617419416 9781612369150 9781617419584 9781612369310	400 450 450 500

Structure and Properties of Matter (Cont.)

Science Next Generation Standards	Book Title	ISBN Number	Comparative Measure Level
2-PS1-2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. [Clarification Statement: Examples of properties could include, strength, flexibility, hardness, texture, and absorbency.] [Assessment Boundary: Assessment of quantitative measurements is limited to length.]	***Floating or Sinking?*** *¿Flota o se hunde?* • This book explains density and what makes things float or sink. ***Everything Under the Sun*** *Todo bajo el Sol* • This book explores matter and how objects can described by physical properties.	9781617419409 9781612369143 9781595152923 9781600444548	350 400 600 625

Structure and Properties of Matter (Cont.)

Science Next Generation Standards	Book Title	ISBN Number	Comparative Measure Level
2-PS1-3. Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. [Clarification Statement: Examples of pieces could include blocks, building bricks, or other assorted small objects.]	***Made of Metal*** *Hecho de metal* • This book explores the properties (attributes) and uses of metal.	9781595152688 9781600448850	450 500

Structure and Properties of Matter (Cont.)

Science Next Generation Standards	Book Title	ISBN Number	Comparative Measure Level
2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. [Clarification Statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.]	***Hot or Cold?*** *Caliente y frio* • This book explains differences between hot and cold. ***Melting Matter*** *Materia derretida* • This book explains what happens when objects experience different conditions (ie. hot/cold, wet/dry).	9781627172592 9781627172660 9781617419546 9781612369273	500 550 600 625

Interdependent Relationships in Ecosystems

Science Next Generation Standards	Book Title	ISBN Number	Comparative Measure Level
2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow. [Assessment Boundary: Assessment is limited to testing one variable at a time.]	***Plants Make their Own Food*** *Las plantas producen su propio alimento* • This book describes the process of photosynthesis and how plants and animals help each other survive.	9781617419492 9781612369228	500 550
	So, What about Soil? *Entonces, ¿qué pasa con el suelo?* • This book is about the importance of soil, its components and attributes, and how the properties of soil affect plant growth.	9781627172578 9781627172622	500 550
	Trees: Earth's Lungs *Los árboles: Pulmones de la Tierra* • Young readers will discover why trees are so important to a healthy Earth.	9781615905430 9781627172608	400 450
	Seeds *Las semillas* *This book describes different kinds of seeds.*	9781600446955 9781627172615	450 500

Interdependent Relationships in Ecosystems (Cont.)

Science Next Generation Standards	Book Title	ISBN Number	Comparative Measure Level
2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.	***Seeds, Bees and Pollen*** *Semillas, abejas y polen* • This book explains the several processes of reproduction in plants	9781617419508 9781612369235	500 550

Interdependent Relationships in Ecosystems (Cont.)

Science Next Generation Standards	Book Title	ISBN Number	Comparative Measure Level
2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats [Clarification Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.] [Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats.]	***What Do Critters Do in Winter?*** *¿Que hacen los animales en invierno?* • This book describes how animals deal with winter and cold weather. ***What's on the Food Chain Menu*** *¿Qué hay en el menú de la cadena alimenticia?* • This book explains how food chains support life in various habitats.	9781617419485 9781612369211 9781617419478 9781612369204	500 550 450 500

Earth's Systems: Processes that Shape the Earth

Science Next Generation Standards	Book Title	ISBN Number	Comparative Measure Level
2-ESS1-1. Make observations from media to construct an evidence-based account that Earth events can occur quickly or slowly. [Clarification Statement: Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly and erosion of rocks, which occurs slowly.] [Assessment Boundary: Assessment does not include quantitative measurements of timescales.]	***Earth's Changing Surface*** *La superfice cambiante de la Tierra* • This book explores the many different features of the Earth and how the surface of the planet is constantly changing.	9781617419386 9781612369129	400 450

Earth's Systems: Processes that Shape the Earth (Cont.)

Science Next Generation Standards	Book Title	ISBN Number	Comparative Measure Level
2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. [Clarification Statement: Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.]	***Oceans*** *Los océanos* • Explores the world's oceans, discusses the dangerous currents and storms produced from the ocean and talks about marine life and keeping the ocean clean. ***Studying Weather and Climate*** *Estudiamos el tiempo y el clima* • This book explains the difference between weather and climate. It explores a variety of weather conditions.	9781615905539 9781627172639 9781617419515 9781612369242	625 675 550 600
2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area. [Assessment Boundary: Assessment does not include quantitative scaling in models.]	***Waterways*** *Vías acuáticas* • Learn about waterways through simple text and photos. ***Water World*** *Mundo acuatico* • This book describes our uses for water and our dependence on water.	9781606945360 9781606945872 9781617419713 9781627172653	150 200 250 300

Science Next Generation Standards	Book Title	ISBN Number	Comparative Measure Level
2-ESS2-3. Obtain information to identify where water is found on Earth and that it can be solid or liquid.	***Where Did the Water Go?*** *¿Hacia donde se va el agua?* • This book explains the three forms of water and how water changes.	9781617419539 9781612369266	550 600
	Glaciers *Los glaciares* • Beautiful photos and text examines the issues faced by glacier habitats and how they can be saved.	9781627172585 9781627172646	725 775

Engineering Design

Science Next Generation Standards	Book Title	ISBN Number	Comparative Measure Level
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.	***Measuring our World*** *Midamos nuestro entoro* • Introduces students to various measuring tools and different ways of measuring objects.	9781595152725 9781600448867	350 400
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.	***Put It Together*** *Juntemos las partes* • This book explores the concept of properties of materials and the effect when we use them in combination.	9781595152756 9781600448898	350 400
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.	***Solving Science Questions: A Book About Scientific Processes*** *Resolver problemas cientificos* • This book explores the scientific process.	9781600447037 9781627172677	500 550