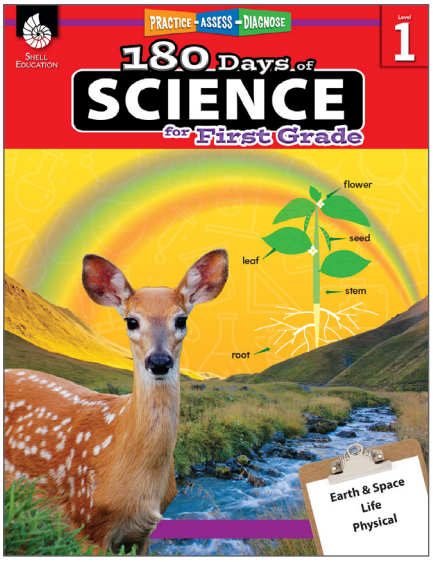
TCM Teacher Created Materials

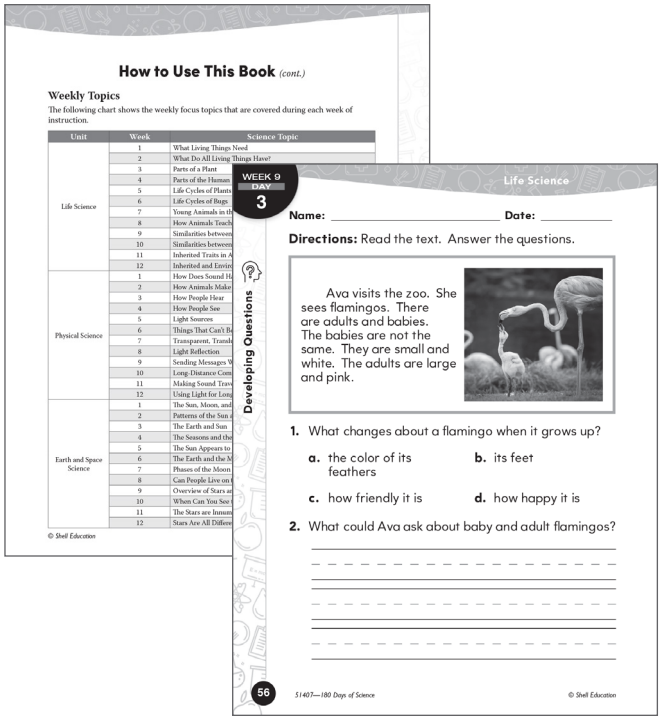
180 DAYS™

Lessons and Activities

Science for First Grade

Table of Contents





Shell Education

PRACTICE - ASSESS - DIAGNOSE

Level 1

180 Days of SCIENCE for First Grade

Table of Contents

Introduction

With today's science and technology, there are more resources than ever to help students understand how the world works. Information about science experiments you can do at home is widely available online. Many students have experience with physics concepts from games.

While students may be familiar with many of the topics discussed in this book, it is not uncommon for them to have misconceptions about certain subjects. It is important for students to learn how to apply scientific practices in a classroom setting and within their lives.

Science is the study of the physical and natural world through observation and experiment. Not only is it important for students to learn scientific facts, but it is important for them to develop a thirst for knowledge. This leads to students who are anxious to learn and who understand how to follow practices that will lead them to the answers they seek.

The Need for Practice

To be successful in science, students must understand how people interact with the physical world. They must not only master scientific practices but also learn how to look at the world with curiosity. Through repeated practice, students will learn how a variety of factors affect the world in which they live.

Understanding Assessment

In addition to providing opportunities for frequent practice, teachers must be able to assess students' scientific understandings. This allows teachers to adequately address students' misconceptions, build on their current understandings, and challenge them appropriately. Assessment is a long-term process that involves careful analysis of student responses from discussions, projects, or practice sheets. The data gathered from assessments should be used to inform instruction: slow down, speed up, or reteach. This type of assessment is called *formative assessment*.

How to Use This Book

Weekly Structure

All 36 weeks of this book follow a regular weekly structure. The book is divided into three sections: Life Science, Physical Science, and Earth and Space Science. The book is structured to give students a strong foundation on which to build throughout the year. It is also designed to adequately prepare them for state standardized tests.

Each week focuses on one topic. Day 1 sets the stage by providing background information on the topic that students will need throughout the week. In Day 2, students analyze data related to the topic. Day 3 leads students through developing scientific questions. Day 4 guides students through planning a solution. Finally, Day 5 helps students communicate results from observations or investigations.

Day 1—Learning Content: Students will read grade-appropriate content and answer questions about it.

Day 2—Analyzing Data: Students will analyze scientific data and answer questions about it.

Day 3—Developing Questions: Students will read a scenario related to the topic, answer questions, and formulate a scientific question about the information.

Day 4—Planning Solutions: Students will read a scenario related to the topic, answer questions, and develop a solution or plan an investigation.

Day 5—Communicating Results: Students accurately communicate the results of an investigation or demonstrate what they learned throughout the week.

Three Strands of Science

This book allows students to explore the three strands of science: life science, physical science, and earth and space science. Life science teaches students about the amazing living things on our planet and how they interact in ecosystems. Physical science introduces students to physics and chemistry concepts that will lay the groundwork for deeper understanding later in their education. Earth and space science familiarizes students with the wonders of the cosmos and the relationships between the sun, Earth, moon, and stars.

How to Use This Book *(cont.)*

Weekly Topics

The following chart shows the weekly focus topics that are covered during each week of instruction.

Unit	Week	Science Topic
Life Science	1	What Living Things Need
	2	What Do All Living Things Have?
	3	Parts of a Plant
	4	Parts of the Human Body
	5	Life Cycles of Plants
	6	Life Cycles of Bugs
	7	Young Animals in the Jungle
	8	How Animals Teach Their Young
	9	Similarities between Baby Animals and Their Parents
	10	Similarities between Young and Mature Plants
	11	Inherited Traits in Animals
	12	Inherited and Environmental Traits in People
Physical Science	1	How Does Sound Happen?
	2	How Animals Make Sounds
	3	How People Hear
	4	How People See
	5	Light Sources
	6	Things That Can't Be Seen
	7	Transparent, Translucent, and Opaque Objects
	8	Light Reflection
	9	Sending Messages With Sound and Light
	10	Long-Distance Communication Using Sound and Light
	11	Making Sound Travel Farther
	12	Using Light for Long-Distance Communication
Earth and Space Science	1	The Sun, Moon, and Stars
	2	Patterns of the Sun and Moon
	3	The Earth and Sun
	4	The Seasons and the Sun
	5	The Sun Appears to Move from East to West
	6	The Earth and the Moon
	7	Phases of the Moon
	8	Can People Live on the Moon?
	9	Overview of Stars and Constellations
	10	When Can You See the Stars?
	11	The Stars are Innumerable
	12	Stars Are All Different

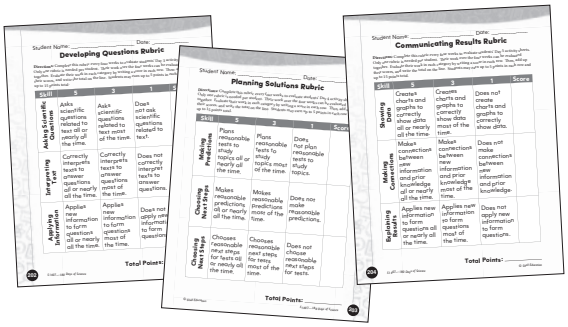
How to Use This Book *(cont.)*

Best Practices for This Series

- Use the practice pages to introduce important science topics to your students.
- Use the Weekly Topics chart on page 5 to align the content to what you're covering in class. Then, treat the pages in this book as jumping off points for that content.
- Use the practice pages as formative assessment of the science strands and key topics.
- Use the weekly themes to engage students in content that is new to them.
- Encourage students to independently learn more about the topics introduced in this series.
- Lead teacher-directed discussions of the vocabulary and concepts presented in some of the more complex weeks.
- Support students in practicing the varied types of questions asked throughout the practice pages.
- When possible, have students participate in hands-on activities to answer the questions they generate and do the investigations they plan.

Using the Resources

An answer key for all days can be found on pages 194–201. Rubrics for Day 3 (developing questions), Day 4 (planning solutions), and Day 5 (communicating results) can be found on pages 202–204 and in the Digital Resources. Use the answer keys and rubrics to assess students' work. Be sure to share these rubrics with students so that they know what is expected of them.

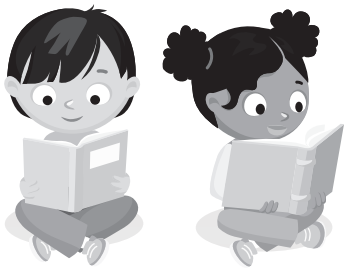


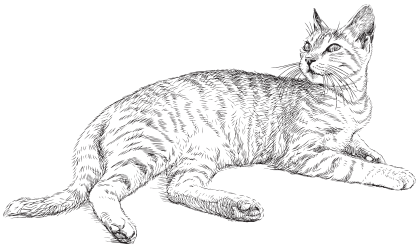
Name: _____ **Date:** _____

Directions: Read the text. Answer the questions.

What Do All Living Things Have?

All living things have parts. Plants have different parts. These parts help them grow. Animals have different parts, too. Animals use their body parts to get food. They use their parts to protect themselves. They use their body parts to move. All living things have the parts they need.





1. _____ have different parts.

a. Only animals

b. Plants and animals

c. Only plants

d. Neither plants nor animals

2. Animals have _____ the parts they need to live in their homes.

a. all of

b. most of

c. none of

d. two of

Name: _____ **Date:** _____

Directions: Study the chart. Answer the questions.

				
eye	ear	mouth	hand	nose
↓	↓	↓	↓	↓
sight	hearing	taste	touch	smell

1. Which body part helps you taste a carrot?

a. nose

b. mouth

c. ear

d. eye

2. I use my _____ to watch TV.

a. mouth

b. eyes

c. hand

d. nose

Name: _____ **Date:** _____

Directions: Read the text. Answer the questions.

Developing Questions

Ava visits the zoo. She sees flamingos. There are adults and babies. The babies are not the same. They are small and white. The adults are large and pink.

1. What changes about a flamingo when it grows up?

a. the color of its feathers

b. its feet

c. how friendly it is

d. how happy it is

2. What could Ava ask about baby and adult flamingos?

Name: _____ **Date:** _____

Directions: Read the text. Answer the questions.

Garett is playing in his room during a thunderstorm. The power goes out. The lights turn off. He sees flashes from the lightning. His room lights up when the lightning flashes.

1. What is the lightning?

a. a light source

b. a light bulb

c. a flashlight

d. sound waves

2. Should Garett use a flashlight or a night light to light his room? Why?

_____

_____

_____

_____

_____

Name: _____ Date: _____

Directions: Study the chart. Answer the questions.

Type of Light	What It Does
lighthouse 	Shows sailors dangerous areas in the dark.
spotlight 	Shows us where to look for important things.
Morse Code 	Sends a message with a pattern of flashing light.

1. Which should you use to say, "I need help."?

a. spotlight **b.** Morse Code

c. lighthouse **d.** none of these

2. Can a lighthouse send messages to many people at once?

a. yes **b.** no