

180 DAYS™

Lessons and Activities Science for Kindergarten

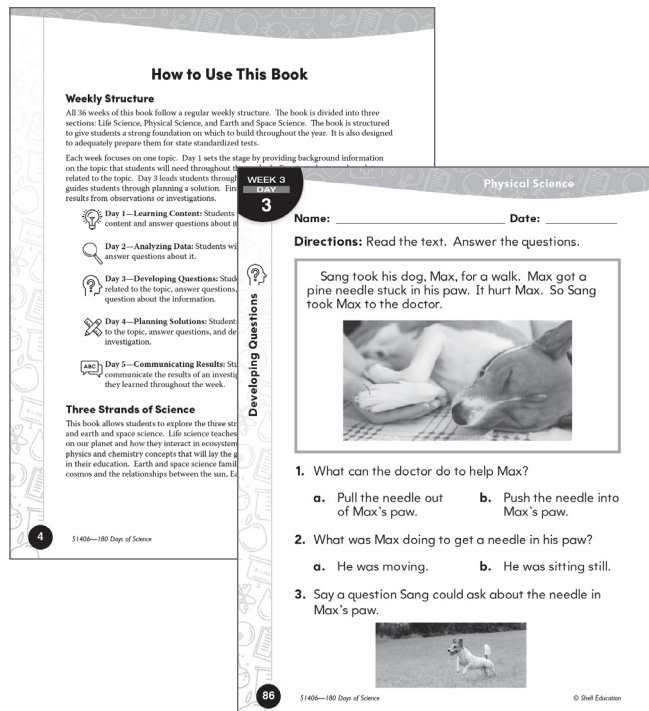
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SHELL
EDUCATION

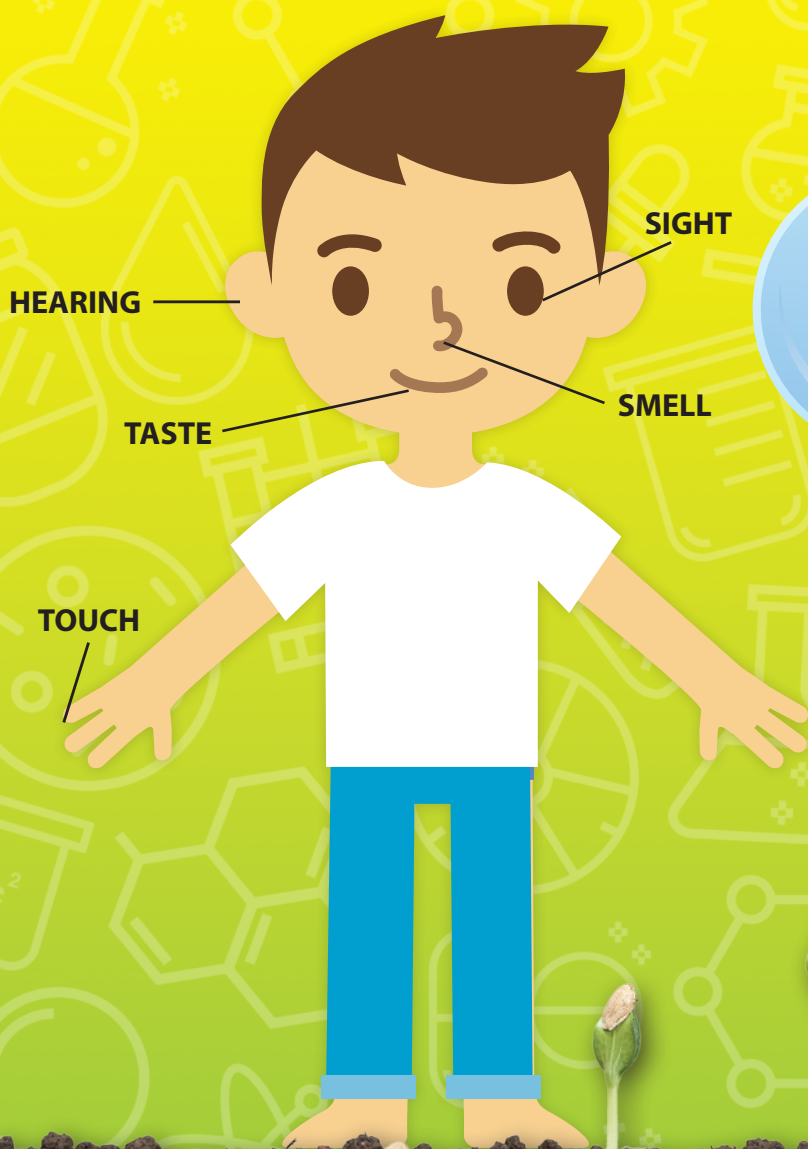
PRACTICE - ASSESS - DIAGNOSE

Level

K

180 Days of SCIENCE

for Kindergarten



Earth & Space
Life
Physical

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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	Living Things
	2	Plants and Animals
	3	The Human Body
	4	Animal Bodies
	5	Plant Parts
	6	Flowers
	7	Bees and Other Bugs
	8	Animal Habitats
	9	Homes and Habitats
	10	Baby Animals
	11	Seeds to Sprouts
	12	Healthy Living
Physical Science	1	What Things Are Made Of
	2	Light or Heavy?
	3	How Things Move
	4	Gravity
	5	Magnets in Motion
	6	Sight
	7	Sound
	8	Smell
	9	Taste
	10	Touch
	11	Solid, Liquid, Gas
	12	Science Tools
Earth and Space Science	1	Weather Patterns
	2	Seasonal Changes
	3	Winter Wonders
	4	Spring Things
	5	Sizzling Summer
	6	Fall Features
	7	Land, Water, Air
	8	Deserts, Tundras, and Savannas
	9	From Rainforests to Oceans
	10	The Sun, Moon, and Stars
	11	Earth
	12	Taking Care of Earth

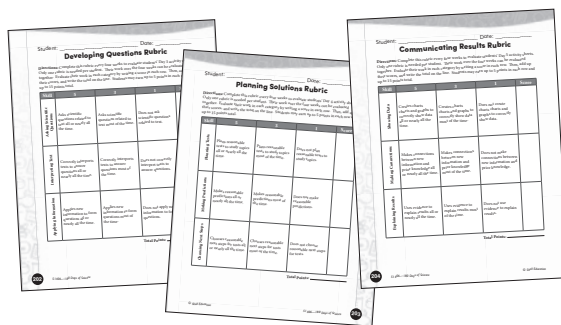
How to Use This Book *(cont.)*

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.
- Read the text passages aloud to students.
- 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 194–200. 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.



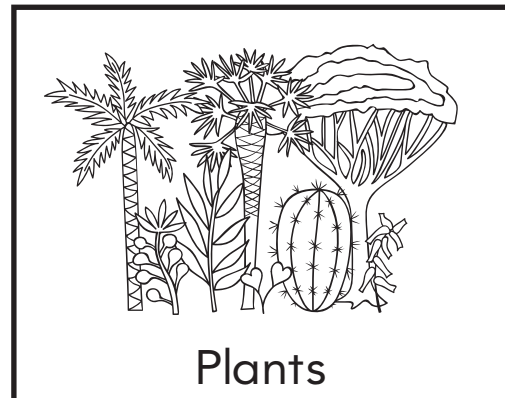
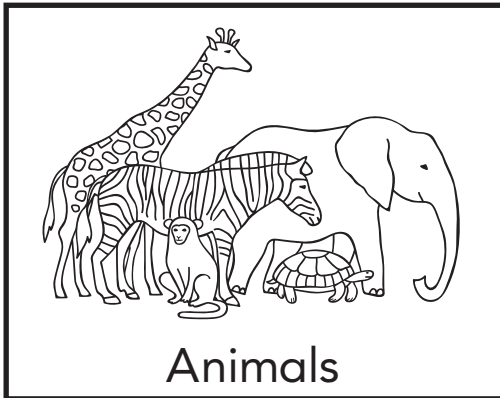


Name: _____ Date: _____

Directions: Read the text. Answer the questions.

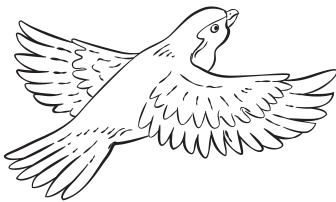
Plants and Animals

Plants and animals are alive. Plants start as seeds. Animals move from place to place. Plants stay in one place. Animals start as babies.

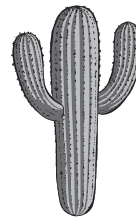


1. Which one is the animal?

a. bird

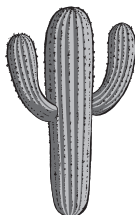


b. cactus



2. Which living thing stays in one place?

a. cactus






b. bird





Name: _____ Date: _____

Directions: Use the chart to answer the questions.

Body Coverings		
Fur	Feathers	Scales
		

1. Which animal has fur?

a. rabbit

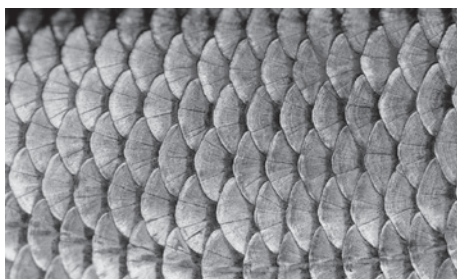


b. snake



2. How can you tell if an animal is a bird?

a. It has scales.



b. It has feathers.





Name: _____ Date: _____

Directions: Read the text. Answer the questions.

Sang took his dog, Max, for a walk. Max got a pine needle stuck in his paw. It hurt Max. So Sang took Max to the doctor.



1. What can the doctor do to help Max?
 - a. Pull the needle out of Max's paw.
 - b. Push the needle into Max's paw.
2. What was Max doing to get a needle in his paw?
 - a. He was moving.
 - b. He was sitting still.
3. Say a question Sang could ask about the needle in Max's paw.



Name: _____ Date: _____

Directions: Read the text. Answer the questions.

Ally likes swimming. Ally likes to jump into her pool. Ally uses her feet to push. She pushes herself up into the air.



1. Where are Ally's feet before she jumps?

a. in the pool



b. on the ground



2. What happens after she jumps?

a. She falls down.

b. She floats in the air.

3. What could Ally do to make a big splash?

a. jump higher



b. wear goggles



Name: _____ Date: _____

Directions: Read the text. Follow the steps.

Which child hears the dogs barking the loudest? Color their clothes red. Who hears the dogs the softest? Color their clothes blue. Color the rest of the picture.

