

# 180 DAYS™

## Lessons and Activities

### Science for Third Grade

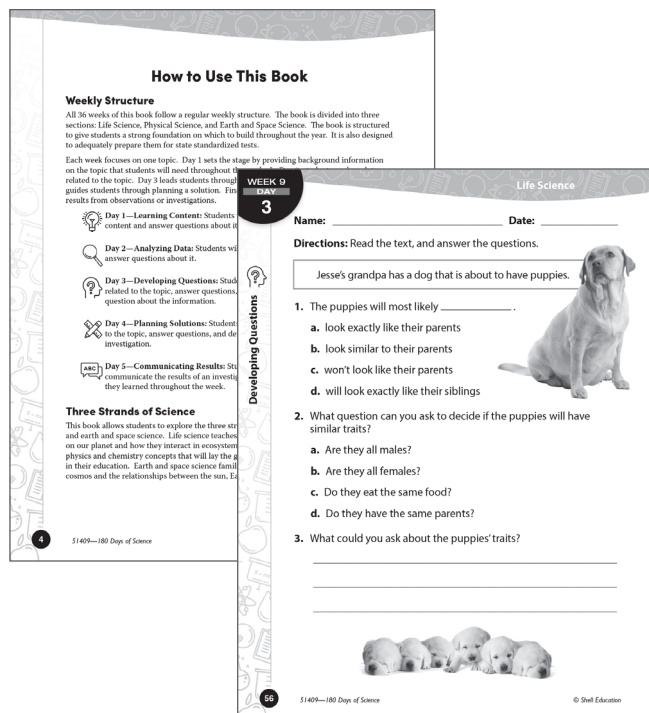
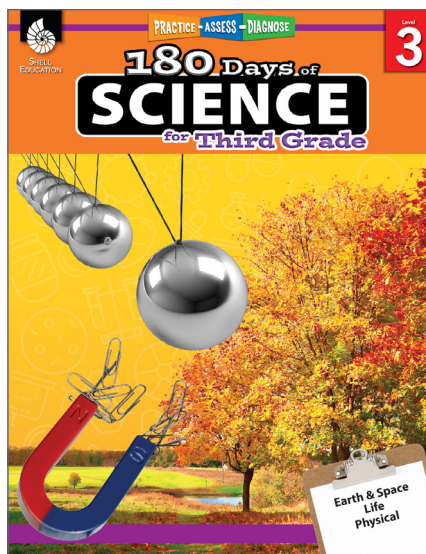
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Cover (1 page)

Table of Contents/Introduction (1 page)

How to Use This Book (3 pages)

Lesson Pages (5 pages)







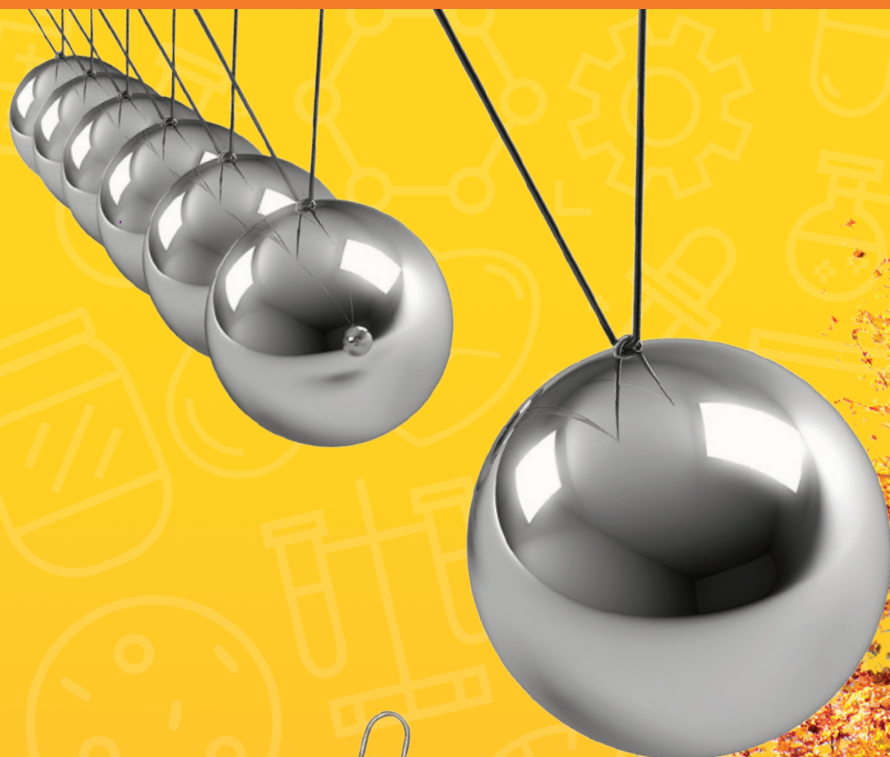
SHELL  
EDUCATION

PRACTICE - ASSESS - DIAGNOSE

Level

3

# 180 Days of **SCIENCE** for Third Grade



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	Why Animals Live in Groups
	2	Animal Jobs within Groups
	3	Life Cycle of Plants
	4	Life Cycle of Animals
	5	How Fossils Form
	6	Studying Fossils
	7	Desert Plants and Animals
	8	Habitats
	9	Parents and Offspring
	10	How Living Things Affect Each Other
	11	Variations in Animals
	12	Changes to Environments
Physical Science	1	Pulling
	2	Rolling Balls
	3	Pushing
	4	Seesaws
	5	Swinging
	6	Spinning
	7	Creating Static Electricity
	8	Magnets
	9	Effects of Static Electricity
	10	Super Magnets
	11	Keeping Things Closed with Magnets
	12	Using Magnets for Clean-Up
Earth and Space Science	1	Winter
	2	Spring
	3	Summer
	4	Fall
	5	Deserts
	6	Rainforests
	7	Tundras
	8	Temperate Climates
	9	Flooding
	10	Melting Snow and Ice with Salt
	11	Wind
	12	Sun Damage

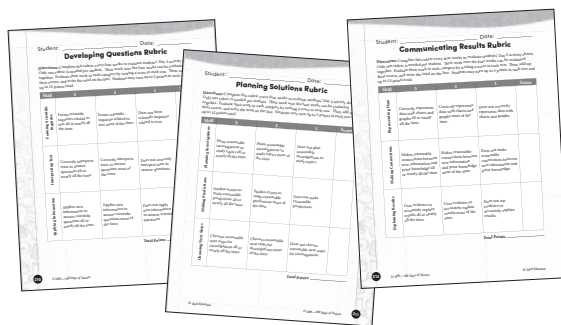
# How to Use This Book *(cont.)*

## 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 194–205. Rubrics for Day 3 (developing questions), Day 4 (planning solutions), and Day 5 (communicating results) can be found on pages 210–212 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.

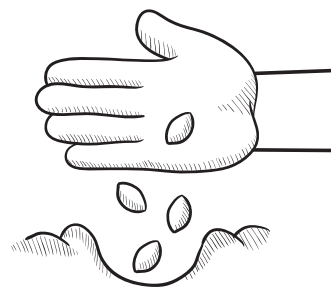


Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Directions:** Read the text, and answer the questions.

## Life Cycle of Plants

Flowering plants have similar life cycles. They begin as seeds that *germinate*, or start to grow. Then they develop into seedlings. Seedlings become plants with flowers that produce new seeds. The seeds fall to the ground and make more plants. The new plants will be the same kind as their parent. They will also make their own new plants.



1. What is the next stage *after* the seed?

- |              |                 |
|--------------|-----------------|
| a. new plant | b. seedling     |
| c. flower    | d. mature plant |

2. A new plant will \_\_\_\_\_.

- |  |   |
|--|---|
| a. make seeds before it flowers        | b. be the same kind as its parent plant |
| c. be a different kind than its parent | d. become a seedling                    |

3. Why would a young plant live in the same environment as its parent plant?

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Directions:** Habitats can change with the seasons. These changes affect the plants and animals. This chart shows some changes to a forest summer and in winter. Study the chart, and answer the questions.

Summer	Winter
river water flows	river water freezes
trees are full of leaves	most trees lose leaves
rainfall	snow
insects are active	insects die, migrate, or shelter because it is colder

1. What happens in the winter?

- a. Rivers freeze.
- b. Insects are active.
- c. Trees have leaves.
- d. It rains.

2. What would make it harder for an animal to find water in the winter?

- a. frozen rivers
- b. trees lose leaves
- c. insects die
- d. fewer hours of daylight

3. Why do some insects migrate in winter?

- a. because the rivers melt and flow
- b. because the food supply becomes plentiful
- c. because winter brings colder temperatures
- d. because trees are full of leaves



Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Directions:** Read the text, and answer the questions.

Jesse's grandpa has a dog that is about to have puppies.



1. The puppies will most likely \_\_\_\_\_.
  - a. look exactly like their parents
  - b. look similar to their parents
  - c. won't look like their parents
  - d. will look exactly like their siblings
2. What question can you ask to decide if the puppies will have similar traits?
  - a. Are they all males?
  - b. Are they all females?
  - c. Do they eat the same food?
  - d. Do they have the same parents?
3. What could you ask about the puppies' traits?

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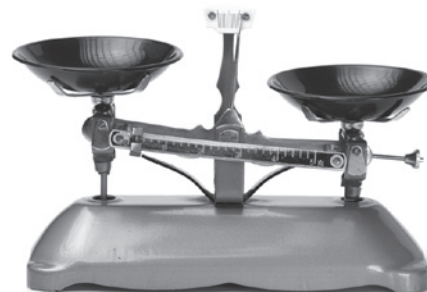
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Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Directions:** Read the text, and answer the questions.

John and his friends are preparing packages of cookies for a bake sale. They are using a pan balance to weigh the cookies. They want to put them in packages of equal weight.



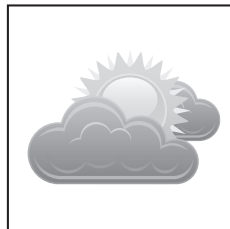
1. To make sure that the packages are equal weights, John should \_\_\_\_\_ .
  - a. include a different number of cookies in each package
  - b. guess if they're the same weight
  - c. put cookies in the pan balance until it is level
  - d. hold the packages in his hand until they feel equal
2. When John uses the pan balance to weigh the packages, \_\_\_\_\_ .
  - a. it should be level
  - b. it should tilt to the left
  - c. it should tilt to the right
  - d. it will tell John the actual weight
3. How could John use the scale if he wanted to make some packages lighter?  
\_\_\_\_\_  
\_\_\_\_\_



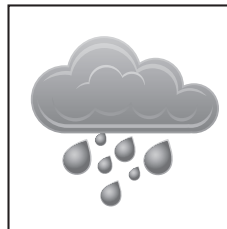
Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Directions:** Read the text, and look at the pictures. Use the pictures to write a weather prediction that makes the most sense on each blank line.

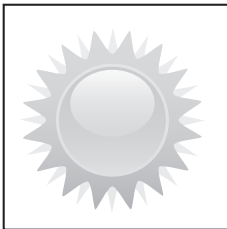
Weather predictions can be made by trying to follow a pattern of the weather. Below are two types of weather to use in the weather prediction.



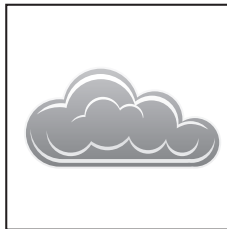
partly cloudy



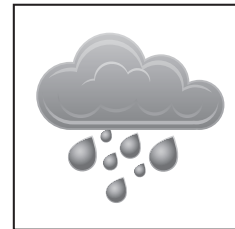
rainy



sunny



cloudy



rainy

1. Explain why you placed the predictions where you did.

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2. What would be a reasonable prediction for the day after the last rainy day? Why?

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