


Sadlier School

Sadlier Math™

Grades K-6

Develop Mathematically
Proficient Students
Today for Tomorrow



For nearly 200 years, Sadlier has been preparing K–12 students for academic achievement and personal growth.

We partner with schools to understand their unique needs and provide innovative core instruction, supplemental solutions, and customized professional development.

We offer free online resources, masterclasses, and excellent ongoing customer support.

For almost two centuries, we have understood the importance of the family-home-school connection to learning.

Our experience creating core math instruction is legendary. Learn more about *Sadlier Math* and teach the fundamentals for future success!

Embrace the Keystones of Mathematical Learning

and Get Students
Future Ready

With *Sadlier Math*, a K-6 core math program, you have everything you need to teach math online and off, every day. The program empowers you to:

- Foster students' **conceptual understanding** and skill development using a cohesive grouping of lessons
- Offer **explicit instruction** with guided and independent practice to strengthen students' metacognitive development
- Provide essential tools to develop **problem solving** and critical thinking skills
- Promote learning with abundant real-world problem solving and incorporate **applications related to STEAM**
- Harness innovative support for teaching and learning with embedded **professional development**, robust **digital tools**, and a **comprehensive assessment plan**



Meet the Authors

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To learn more about the authors, visit [SadlierSchool.com/SadlierMath](https://www.SadlierSchool.com/SadlierMath) and click on Meet the Authors.

Foster Conceptual Understanding


Give students the fundamentals for mathematical ideals in every chapter with:

- Logically sequenced lessons and a focused curriculum
- Clear and concise instructional design
- Explicit instruction, often using models and color to guide students

Name _____

Problem Solving


Use a Model

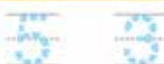


LESSON 10-9

Objective
• Use models to solve problems.

Math Words
odd
in all





_____ + _____ = ?

5 + 3 = _____ in all

Directions
Listen to understand the problem. Make a plan.
Team solve the problem. Jen puts 5 carrots in a pot to make soup. Then she puts in 3 more carrots. How many carrots in all does Jen put in the pot for soup?
• Use connecting cubes to model each group of carrots.

♥ Write the number of cubes in each part of the model.
✎ Write an addition sentence.
• Now solve the problem. How many carrots in all does Jen put in the pot for soup? Ask. Write how many in all.

LESSON 10-9
Three hundred seventy-nine • 371



“One effective way to support the development of **deep procedural fluency** is by providing students with multiple opportunities to practice using procedures in different problem contexts. Practice was traditionally associated with the solving of multiple routine problems in workbooks. We now consider practice to be multifaceted, and students learn best when they engage in different forms of practice, such as playing games, solving authentic problems, discussing ideas in peer groups, etc.”

Research Basis for *Sadlier Math*
Aki Murata, PhD

Follow step-by-step instructions and a coherent progression of skills with:

- Concrete-Pictorial-Abstract presentations
- Activities to build procedural fluency
- Real-world context to help students make connections
- Math words to build vocabulary and communicate mathematically

LESSON 14-6 Metric Units of Length

Objective
• Solve length problems with metric units of measure.

Math Words
metric unit
millimeter (mm)
centimeter (cm)
meter (m)
kilometer (km)

Iris puts beads on a 2-meter-long string. Each bead is 1 centimeter long. How many beads does Iris use?

0 m 1 2 3 4 5 6 7 8 9 10

To solve the problem, rename 2 meters as a number of centimeters.
There are 100 centimeters in 1 meter. Multiply the number of meters by 100 to rename the length as a number of centimeters.
 $2 \text{ meters} \times 100 \text{ centimeters/meter} = 200 \text{ centimeters}$

Metric Units of Length
1 meter (m) = 100 centimeters (cm)
1 meter (m) = 1000 millimeters (mm)
1 kilometer (km) = 1000 meters

Since each bead is 1 centimeter long, Iris uses 200 beads.

PRACTICE

Complete the sentence.

1. There are centimeters in 1 meter.
2. There are meters in 1 kilometer.
3. There are millimeters in 3 meters.
4. There are meters in 4 kilometers.
5. There are centimeters in 10 meters.
6. There are meters in 10 kilometers.
7. There are millimeters in 5 meters.

308 • LESSON 14-6



All Student and Teacher's Editions are also available as eBooks.

VIEW OR REQUEST A SAMPLE AT

www.SadlierSchool.com/SadlierMath

ONLINE

Nurture

Critical Thinking and Problem-Solving Skills

Create a classroom buzzing with mathematical discourse by:

- Offering students a framework for problem solving with a 4-step process
- Encouraging students to communicate with Write About It and Talk About It activities
- Providing students with multiple approaches for effective and independent problem solving

LESSON 1-6 Problem Solving Use a Four-Step Process

Objective
• Solve problems by using a four-step process.

Math Word round

Sophia records the number of pages in each book that she reads in a month. The books have 386, 218, and 322 pages. About how many pages does Sophia read in all?

Read and Understand
Read the problem more than once. Find what is known and what the question is.

What Is Known: Sophia reads 386, 218, and 322 pages.
Question: About how many pages is that in all?

Represent the Situation
Use an equation to show the problem.

$386 + 218 + 322 = \underline{\quad}$

Make and Use a Plan
Since the problem asks about how many, make an estimate instead of finding the exact sum.
Round each number to the nearest hundred.

Round 386 to 400, 218 to 200, and 322 to 300.

Then add the rounded numbers. Use that sum to write the answer.

$400 + 200 + 300 = 900$ Sophia reads about 900 pages.

Look Back
Check whether the answer makes sense.

Adding only the hundreds gives a sum of 800. So 900 is a reasonable sum.

Sophia reads about 900 pages in all.

14 • LESSON 1-6

All pages from Grade 3, Student Edition

PRACTICE

- Ms. Jones finds bugs in computer code. She found 327 bugs in code in March, 110 bugs in April, 279 bugs in May, and 89 bugs in June. About how many bugs in computer code did Ms. Jones find in all?
 - What do you know?
 - What do you need to find?
 - How can you represent the situation?
 - What is your plan?
 - How can you look back and check that your answer makes sense?
- Latanya wrote the expanded form of 648 as $600 + 40 + 8$. Alice wrote it as $600 + 4 + 8$. Decide which student made an error and explain what the error is.
- Robert said that 739 is greater than 782 because the 9 in 739 is greater than the 2 in 782. James said that 782 is greater than 739 because 8 tens are greater than 3 tens. Whose thinking is not correct? Explain why.

Bruce watches the birds in his back yard. He makes a table to show how many birds he sees this week. Use the table to answer Exercises 4–5.

Day	Birds
Sunday	37
Monday	14
Tuesday	19
Wednesday	13
Thursday	16
Friday	11
Saturday	42

- About how many birds in all does Bruce see this week?
- Look at Bruce's table. On what days does it seem that he spends more time watching birds? Explain your answer.

Write About It

8. You have learned how to round numbers to the nearest ten and the nearest hundred. How can this skill help you when you are finding sums and differences?

LESSON 1-6 • 15

Write About It activities give students the opportunity to explain mathematical concepts in writing, helping them to clarify their thinking and develop communications skills.



Research FACT: When high cognitive engagement is driven by lesson tasks, student understanding of the concepts is further achieved through well-facilitated discussions.

Source: Henning, et al., 2012; Murata, et al., 2017; NCTM, 2014

Every chapter has a special lesson devoted exclusively to a particular problem-solving strategy, included but not limited to:

- Using the four-step process
- Using a model
- Making an organized list
- Writing and solving an equation
- Exploring more than one way
- Finding a pattern
- Making a table
- Using a diagram

LESSON 16-6 Problem Solving Use a Diagram

Objective
• Use problem-solving strategies, including using a diagram.

Math Words
parallel lines
perpendicular lines
intersecting lines
angle

Kia wants to describe the layout of her town to a friend. How can Kia use a diagram and math terms to describe her town and the location of her house?

You can use a diagram to identify places and streets in Kia's town. You can use math terms to describe and explain the relationships.

Look for places on the map that appear to show parallel line relationships.

- Kia's house is located on a street that appears to be parallel to the bike path.

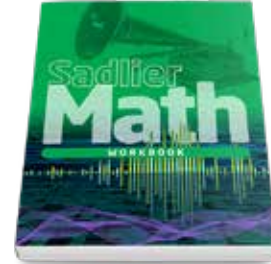
Look for places on the map that appear to show perpendicular line relationships.

- Kia's house is located on a street that appears to be perpendicular to Washington Street.

Look for places on the map that appear to show intersecting line relationships.

- Kia's house is located on a street that intersects with Washington Street.

362 • LESSON 16-6



Student Edition Workbook (Grades 3–6)

- More practice*
- Homework*

Problem Solving provides practice in presenting well-supported conclusions.

* Available in the consumable Student Editions at Grades K–2.

VIEW OR REQUEST A SAMPLE AT

www.SadlierSchool.com/SadlierMath

ONLINE

Integrate

Print and Online Resources for More Practice

With every purchase of *Sadlier Math*, free resources are available on *Sadlier Connect*, Sadlier's one-stop learning platform, at www.SadlierConnect.com to enhance learning and extend practice including:


- More than 750 Differentiated Activities
 - 213 for English Language Learners
 - 294 for Differentiated Instruction
 - 245 for Targeted Support
- Chapter Pre-Tests
- Close Reading in Math, Grades K–2: 96 pages of practice!
- Virtual Manipulatives with how-to videos
- Additional Lesson Practice, Grades K–1
- Interactive Fluency and Vocabulary Games
- Differentiated Instruction Bundles with instructional videos at Grades 3–6
- Home Chapter Support Letters to explain the shifts in teaching mathematics
- Math Vocabulary Interactive Flash Cards
- Problem of the Day
- Skills Update lessons and practice
- Mental Math and Enrichment activities
- Chapter Practice
- STEAM Lesson Plans—learn more on pages 8–9
- Blackline Masters
- Audio/Visual Glossary (English and Spanish)
- Professional Development videos
- Chapter Family Letters (English and Spanish)
- Chapter Pacing Guides

Close Reading in Math for Grades K–2

CHAPTER 1
Close Reading
in Math

Name _____

1 Listen to your teacher read the problem.
Look at the picture.



Directions

1st Read Ann has a bowl with some fish. Which fish is different?

2nd Read What is the problem asking?

3rd Read Circle all the fish in the bowl.

4th Read Let's look at the picture again. What facts do you know?

1st Read Put an **X** on each fish that is the same.

2nd Read Why are the fish the same?

3rd Read Look one more time at the picture. How can you solve the problem?

4th Read Put a **✓** on the fish that is different.

5th Read Why are the fish different?

CHAPTER 1 Close Reading in Math 1

Close Reading
in Math

1 Read each Problem Closely.

1st Read What is the problem asking?

2nd Read What facts do I know?


3rd Read How can you solve the problem?

PRACTICE Read Plan Solve Check

6. Jeff and Ted paint pictures.
Jeff uses 12 colors.
Ted uses 5 fewer colors than Jeff.
How many colors does Ted use?

Ted uses _____ colors.

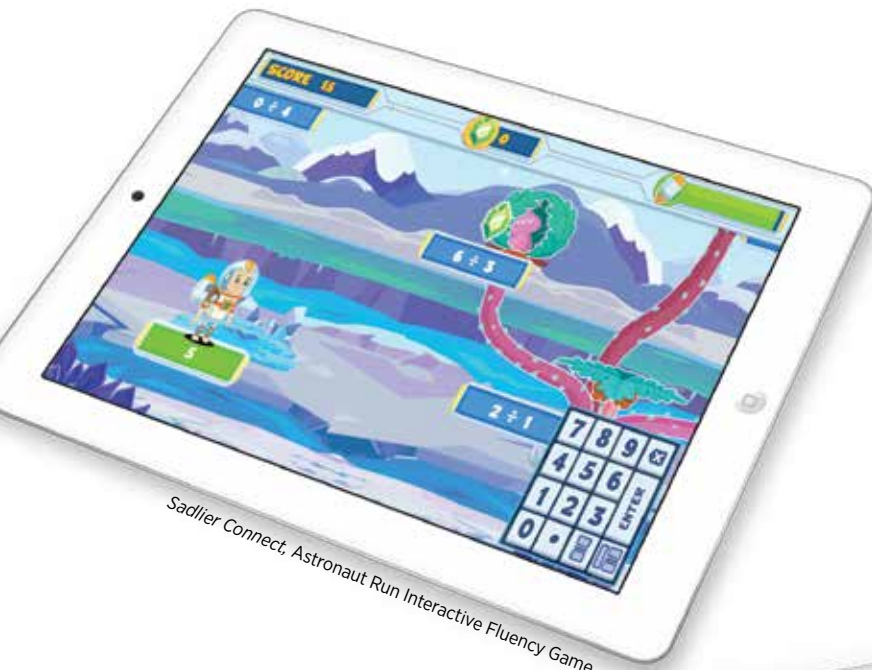
7. There are 18 berries in a bowl.
Mia eats some.
She puts 9 more berries in the bowl.
Now there are 18 berries in all.
How many berries does Mia eat?



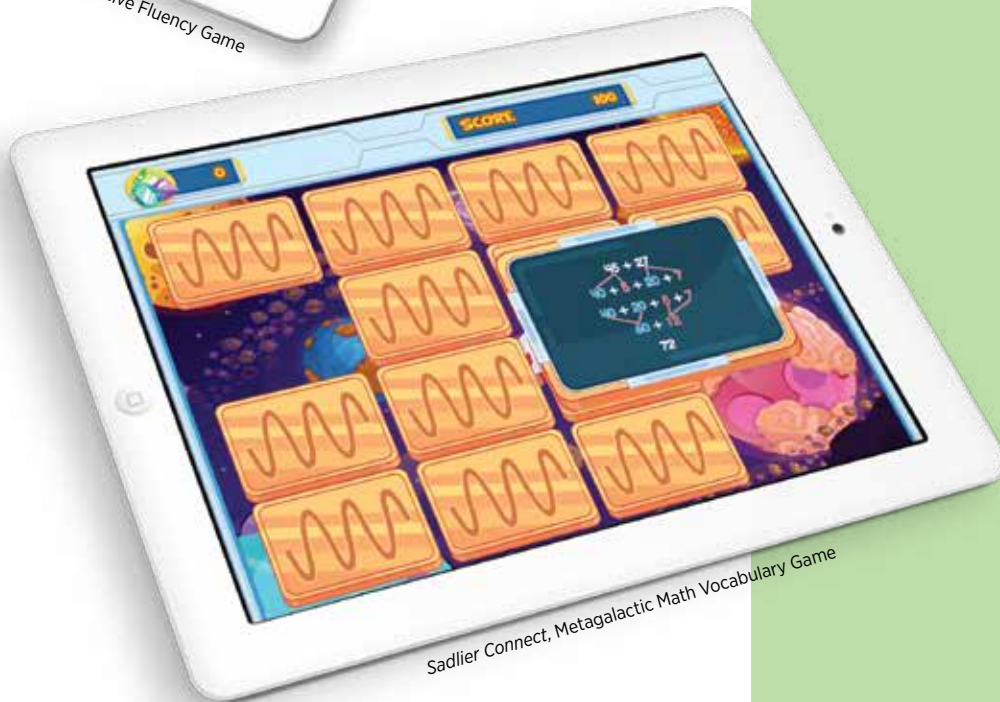
Mia eats _____ berries.

Visit Matika Worlds on *Sadlier Connect* for online gaming fun to:

- Build fluency with Astronaut Run
- Expand vocabulary with Metagalactic Match



Sadlier Connect, Astronaut Run Interactive Fluency Game



Sadlier Connect, Metagalactic Math Vocabulary Game



Learn about the research behind game play and fluency. Visit www.SadlierSchool.com/SadlierMath and click Research.



Connect STEAM to Math Instruction

Begin each chapter with a highly engaging and relevant STEAM topic that puts math in a real-world context.

Each 4-page lesson plan integrates multiple content areas and includes vocabulary, activities, student accommodations, conversation starters, teacher preparation tips, and more! All lessons are on www.SadlierConnect.com.

STEAM facts, thought-provoking questions, and suggestions for research-based projects inspire students.

CHAPTER 5 STEAM Connection

Rainforest Destruction

OVERVIEW
In this activity, students will learn about the destruction of the rainforest and the effect it has on the animals that live there. This activity connects to the Sustainable Development Goal (SDG) 15: Life on Land, which strives to sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss. Use the information under Background Information to discuss the importance of the rainforest and rainforest conservation. Use the activity after students have completed Chapter 5.

Art
English Language Arts
Environmental Science
Mathematics

OBJECTIVE
Students will work together to create an information sheet on deforestation and its effects on rainforest animals. Students will apply their understanding of multiplication to determine the number of acres destroyed over several years.

Activity Materials:
• Books and articles about the rainforest and rainforest animals
• Cardboard and markers
• Glue
• Internet access (if available)

PACING: One 60-minute class period for research
One 30-minute class period for presentations

Standards Alignment

Common Core State Standards (CCSS) for Mathematics	Common Core State Standards (CCSS) for ELA/Literacy	Mixed Generation Science Standards (MGS)
4.NBT.2 4.NBT.5	RA.4.10 WA.2.G	ESS3.A

Grade 4, CHAPTER 5 STEAM Connection 1

Key Vocabulary

biodiversity The variety of plant and animal species in an environment.

conservation The act of preserving a natural ecosystem, vegetation, or wildlife.

deforestation The act of cutting down trees in a large, forested area.

ecosystem A group of plants and animals that work together in their environment.

BACKGROUND INFORMATION

What is a tropical rainforest?
A tropical rainforest is a forest ecosystem with warm weather and high precipitation all year round. Rainforests are found along the equator in Africa, Asia, Australia, and Central and South America. Rainforests cover less than 2% of Earth's surface, but they contain more than half of the world's plants and animal species. Rainforests have four layers; from top to bottom, these are: the emergent, the canopy, the understory, and the forest floor. Each layer has specific animal and plant species that live in that particular area.

Why are rainforests important?
Rainforests are home to many different types of animals and plants. Fruit trees and medicinal plants grow in the rainforest. In addition, rainforests are critical in maintaining Earth's supply of fresh drinking water and play a key role in regulating temperatures and weather patterns around the world.

How does this relate to SDG 15: Life on Land?
The targets on SDG 15: Life on Land include ensuring the conservation of freshwater ecosystems, halting the loss of biodiversity, and preventing the extinction of threatened species. By helping students understand the importance of the rainforest and how quickly the rainforest is being destroyed through deforestation, students are working toward these SDG targets.

Activity Skills
Throughout the activity, students will:

1. Write and solve a one-digit by two-digit multiplication problem.
2. Research and complete an information sheet about a rainforest animal.
3. Identify the importance of rainforests for both people and animals. (SDG 15)

Teacher Preparation

- Research and gather books and articles on the rainforest and rainforest animals.
- Find samples of information sheets to show students how to organize their information.
- Have a list of different ecosystems such as rainforests, wetland marshes, grasslands, or deserts handy for classroom conversation.
- Read more about the targets of SDG 15: Life on Land by visiting the STEAM Connections in the Overview section for Grade 4 on SadlierConnect.com. Be prepared to start a discussion with students about this SDG.

Grade 4, CHAPTER 5 STEAM Connection 2

STEAM activities are aligned to a variety of standards.

Chapter Openers found in Student Editions



Research FACT: In the STEM disciplines, problem solving is one of the most widely used workplace skills and listed by many professional societies as a desired student proficiency.

Source: ABET, 2014; ACS Committee on Professional Training; AIP, 2015; Zorn, 2015



Are you a Catholic School? Ask your Sales Representative about previewing a sample STREAM Lesson!

EXTENSIONS

Have students:

- Visit a local aviary or zoo to observe rainforest animals.
- Research rainforest conservation organizations and how they can get involved in the work the organizations do.
- Research STEAM careers in environmental science, including wildlife biologists, park rangers, and conservationists.

ACCOMMODATIONS FOR STUDENTS

- **English Language Learners** Help non-native English speakers understand the different prefixes used in the key vocabulary of this chapter: bio-, de-, and eco-. Ask students to identify other words that start with those prefixes (biology, decompose, ecology). Explain that prefixes change the meaning of the root word. Explain the meaning of each root word and the prefix, and then have students create their own definitions.
- **Challenge** Have students research how populations of animals that live in the rainforest have changed over the years. They could create an information sheet that shows the decline in the numbers.

CONVERSATION STARTER

Read the STEAM fact in the upper right-hand corner of the Chapter Opener. Ask students to identify and describe ecosystems they are familiar with. Create a list of the ecosystems mentioned and help students recognize the benefits of each ecosystem. For example, many ecosystems have important plants that are used for medicine or animals that help keep insect populations under control.



Now ask students to choose an ecosystem from the list. Have students brainstorm different plants and animals that live in that ecosystem and how they rely on each other. It could be as simple as animals that eat plants to survive or more specific like hummingbirds that eat flowers. Explain that an environment that has high biodiversity.

Finally, have students think about how humans, whether positively or negatively. Discuss before people cut down trees (for materials or to build types of conservation efforts. Then have students from the list created during the initial classroom consider how human activity could affect those them to think of one destructive and productive two or three of the ecosystems on the list your activities to protect the ecosystem support SDG

Activity

Have students work in groups to research the following:

- The number of millions of acres of rainforest destroyed each day and year
- The total number of acres destroyed over a given number of years (assign each group a number from 2 to 9 for total number of years)
- The effect of deforestation on a specific animal or plant that lives in the rainforest (assign a specific animal or plant to each group)

Explain to students that because the number of acres destroyed is an estimate, the end of the number generally has six zeros. Because those zeros will not affect the product, students can remove the zeros to multiply by the number of years their group was assigned. After solving, students can include the same number of zeros at the end of the product.

Once students have found the total number of millions of acres that will be destroyed, they can research the rainforest animal assigned to their group. They will work together to complete an information sheet about the animal in its rainforest habitat. They should write their deforestation fact and attach it to their information sheet. For example, students might write the following:

"In [year], _____ acres of rainforest were destroyed. If _____ acres are destroyed every year for the next _____ years, then _____ acres of rainforest could be destroyed by [year]."

Have students use up to one class period to research and complete their information sheets.

Then, allow students to present their information sheets in a second class period. Allow groups 10 minutes each to make their presentations. Students should be able to answer classmates' questions after their presentations.

At the completion of all presentations, discuss with the class the importance of the rainforest. Have students discuss and brainstorm different conservation efforts to save the rainforests. These discussions introduce and touch upon the importance of SDG 15: Life on Land.

A number of organizations provide information on their websites about rainforests and conservation efforts that may be helpful for student research:

- The Rainforest Alliance has information about rainforests, conservation efforts, and how people can help on their website.
- The Nature Conservancy has information about conservation efforts in all 50 states.
- For additional research information, see the STEAM Connections in the Overview section for Grade 4 at SadlierConnect.com.

Grade 4, CHAPTER 5: STEAM Connection 4

Professional guidance for English Language Learners is in every lesson.

Collaborative activities and project-based learning are highlights of each lesson.

Get Support Every Step of the Way

In the **Teacher's Edition**, find everything you need to teach the skills and concepts with Chapter Lesson Planners. At a glance, you'll find a snapshot of the lesson progression, suggested pacing, objectives, differentiated homework support, chapter assessments, and a list of all lesson resources (print and digital) at point of use.

Suggested pacing allows for a full-year of instruction, practice, assessment, and reteaching of grade-level objectives.

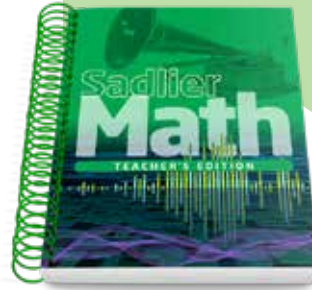
Differentiated Homework assignments target students' proficiency levels to meet individual needs.

Online resources are specified in each lesson.

Detailed Chapter Pacing Guides are on www.SadlierConnect.com.

Grade 2, Teacher's Edition

CHAPTER 1		Addition Within 20		
13 days		About the Chapter <i>pp. 1A, 1D–1F</i> Before Leaving the Chapter <i>pp. 304–309</i>		
Objective	1-1 Addition Concepts <i>p. 3</i>	1-2 Put Together <i>p. 7</i>	1-3 Related Addition Facts <i>p. 11</i>	
Math Words	Use addition to find the unknown sum or addend in word problems.	Use addition to solve word problems about putting objects together.	Add two numbers in any order.	
Materials	add, equation, plus +, equals =	addend, sum, equation	addend, order, sum, related addition facts	
Practice	connecting cubes	connecting cubes	connecting cubes	
Homework	Practice <i>pp. 3–4</i> Exit Ticket Exercise 15 More Practice <i>p. 5</i>	Practice <i>pp. 7–8</i> Exit Ticket Exercises 6, 10 More Practice <i>p. 9</i>	Practice <i>pp. 11–12</i> Exit Ticket Exercises 7, 9 More Practice <i>p. 13</i>	
Digital Resources	Homework <i>p. 6</i> Assignment Guide Basic: 1–8 On-level: 1–9 Advanced: 1, 2, 6, 7, 9, 10	Homework <i>p. 10</i> Assignment Guide Basic: 1–9 On-level: 1–11 Advanced: 1, 2, 4, 5, 10, 11	Homework <i>p. 14</i> Assignment Guide Basic: 1–7 On-level: 1–8 Advanced: 1, 2, 6–9	
	Pre-Chapter Diagnostic Test, Vocabulary Games, Number Sense Games, Blackline Masters, Interactive Edition, Struggling Learners Activity, Early Finishers Activity, ELL Activity	Vocabulary Games, Number Sense Games, Blackline Masters, Interactive Edition, Struggling Learners Activity, Early Finishers Activity, ELL Activity	Vocabulary Games, Number Sense Games, Blackline Masters, Interactive Edition, Struggling Learners Activity, Early Finishers Activity, ELL Activity	
	1-7 Three Addends <i>p. 29</i>	1-8 Problem Solving: Make and Use a Plan <i>p. 33</i>	1-9 Solve for Unknown Addends <i>p. 39</i>	
	Use mental strategies to add three numbers.	Solve problems by making and using a plan.	Use drawings and equations to find an unknown addend.	
	strategies, count on, doubles, make 10	Associative Property, doubles + 1, make 10	bar model, equation, unknown addend, doubles, doubles + 1	
	connecting cubes, ten-frames	connecting cubes, counters, ten-frames	counters	
	Practice <i>pp. 29–30</i> Exit Ticket Exercise 12 More Practice <i>p. 31</i>	Practice <i>p. 34</i> Exit Ticket Exercise 2 More Practice <i>pp. 35–36</i>	Practice <i>pp. 39–40</i> Exit Ticket Exercises 4, 6 More Practice <i>p. 41</i>	
	Homework <i>p. 32</i> Assignment Guide Basic: 1–8 On-level: 1–10 Advanced: 3, 4, 7–10	Homework <i>pp. 37–38</i> Assignment Guide Basic: 1–5 On-level: 1–10 Advanced: 3, 5–10	Homework <i>p. 42</i> Assignment Guide Basic: 1–2 On-level: 1–4 Advanced: 2–4	
	Vocabulary Games, Number Sense Games, Blackline Masters, Interactive Edition, Struggling Learners Activity, Early Finishers Activity, ELL Activity	Vocabulary Games, Number Sense Games, Blackline Masters, Interactive Edition, Struggling Learners Activity, Early Finishers Activity, ELL Activity	Vocabulary Games, Number Sense Games, Blackline Masters, Interactive Edition, Struggling Learners Activity, Early Finishers Activity, ELL Activity	



Use the easy-to-follow guidance in the Teacher's Edition.

Assessments before, during, and after the chapter give you the tools to monitor student performance and differentiate instruction as appropriate. The following are free with every purchase:

- Check Your Progress
- Performance Assessment
- Fluency Practice
- Chapter Review

Lesson Planner

<p>1-4 Count On to Add p. 15</p> <p>Count on from the greater addend to add two numbers.</p> <p>addend, count on, sum</p> <p>connecting cubes</p> <p>Practice pp. 15–16 Exit Ticket Exercises 8, 14 More Practice p. 17</p> <p>Homework p. 18 Assignment Guide Basic: 1–10 On-level: 1–12 Advanced: 4, 6, 7, 9, 11, 12</p> <p>Vocabulary Games, Number Sense Games, Blackline Masters, Interactive Edition, Struggling Learners Activity, Early Finishers Activity, ELL Activity</p>	<p>1-5 Doubles and Near Doubles p. 19</p> <p>Use doubles facts to find the sums of near doubles.</p> <p>doubles, near doubles, doubles + 1, one more, doubles – 1, one less</p> <p>counters</p> <p>Practice pp. 19–20 Exit Ticket Exercises 4, 8 More Practice p. 21</p> <p>Homework p. 22 Assignment Guide Basic: 1–8 On-level: 1–10 Advanced: 2–5, 9–10</p> <p>Vocabulary Games, Number Sense Games, Blackline Masters, Interactive Edition, Struggling Learners Activity, Early Finishers Activity, ELL Activity</p>	<p>1-6 Make 10 to Add p. 23</p> <p>Make 10 to find the sum of two numbers.</p> <p>make 10, sum, ten-frame</p> <p>counters, ten-frames</p> <p>Practice pp. 23–24 Exit Ticket Exercises 2, 3 More Practice p. 25</p> <p>Homework p. 26 Assignment Guide Basic: 1–2 On-level: 1–4 Advanced: 1, 3, 4</p> <p>Vocabulary Games, Number Sense Games, Blackline Masters, Interactive Edition, Struggling Learners Activity, Early Finishers Activity, ELL Activity</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Check Your Progress p. 27</p>
<p>1-10 Patterns in Addition p. 43</p> <p>Complete and explain patterns found in addition sentences.</p> <p>pattern rule, addend, sum</p> <p>connecting cubes, counters</p> <p>Practice pp. 43–44 Exit Ticket Exercise 3 More Practice p. 45</p> <p>Homework p. 46 Assignment Guide Basic: 1–2 On-level: 1–4 Advanced: 2–4</p> <p>Vocabulary Games, Number Sense Games, Blackline Masters, Chapter Test, Interactive Edition, Struggling Learners Activity, Early Finishers Activity, ELL Activity</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Fluency Practice p. 50 Performance Assessment p. 49 Chapter Review p. 47</p>	

For the complete Scope and Sequence or to view correlations, visit SadlierSchool.com/SadlierMath and click on Scope and Sequence and Correlations.

Enhance

Teaching with Embedded Professional Development

Sadlier Math provides effective teaching strategies along with multiple opportunities for sustained and ongoing professional learning. In the Teacher's Edition, you'll find:

- Essential questions
- Learning progressions
- Teaching tips and practices for English Language Learners, Struggling Learners, and Early Finishers
- STEAM connections

A detailed recap at the conclusion of every chapter reviews the key ideas in each chapter, including a Student Reflection, Teacher Reflection, and vocabulary review.

Division Concepts

7

About the Chapter

In this chapter, students begin their study of division as they explore the Essential Question: What are some division strategies? Students will use division rules involving 1 and 0, the relationship between multiplication and division, and estimation to determine quotients. They will also use arrays, area models, and number patterns in input-output tables to determine quotients in computational and real-world problems.

The table shows the coherence and progression of growth in work with division across the third- through fifth-grade span.

Learning Progression	Grade 3	Grade 4	Grade 5
Fluently divide within 100, using strategies such as the relationship between multiplication and division or properties of operations.	Find whole-number quotients with up to four-digit dividends and one-digit divisors using the properties of operations and the relationship between multiplication and division.	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using the properties of operations and the relationship between multiplication and division.	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors using area models.
Use division within 100 to solve word problems in situations involving equal groups and arrays.	Illustrate and explain division calculations of whole-number quotients with up to four-digit dividends and one-digit divisors using area models.	Illustrate and explain division calculations of whole-number quotients with up to four-digit dividends and two-digit divisors using area models.	Illustrate and explain division calculations of whole-number quotients with up to four-digit dividends and two-digit divisors using area models.
Identify arithmetic patterns, including patterns in the multiplication table, and explain them using properties of operations.	Generate a number pattern that follows a given multiplication or division rule.	Generate two numerical patterns using two given rules, and identify apparent relationships between corresponding terms.	Generate two numerical patterns using two given rules, and identify apparent relationships between corresponding terms.

Teaching Tips and Practices

- To estimate quotients, students will need to show fluency in multiplication facts. For example, to estimate the quotient of $306 \div 9$ students will need to know that 30 is not divisible by 9, but the product of $9 \times 3 = 27$ is close to 30 and can be used for division. Students will also need multiplication facts in insisting between multiplication and division and in problems dealing with number patterns.
- Use a variety of visual models, such as base ten blocks and arrays in addition to numeric forms, to support student understanding of division.

• Students will illustrate the calculations for a division problem using area models. They will need to use their previous understanding of the Distributive Property to break the dividend into parts that are divisible by the divisor. For example, when finding $84 \div 7$, the dividend 84 can be separated into $70 + 14$, because 70 and 14 are both divisible by 7.

STEAM Connections

- Students will explore inventions and their benefits in current society. They will learn about advances in technology and, in particular, improvements in gas mileage. They will use division to find miles-per-gallon rates and to compare storage capacities of old computers with those of new computers. (NGSS 3-5)

CHAPTER 7 • 1216

LESSON
7-1
Division Rules

Develop Concepts

Activity: Division as Separating

- Students will review the concept that division is a process of sharing or separating a set into equal parts.
- Provide students with a set of 10 hands-on or virtual counters. Explain that they will divide the set of 10 counters into groups of equal size. Have students explore the different number of equal groups that 10 can be divided into.
- Invite a student to describe one way to divide 10 into equal groups, such as 2 groups of 5. Record the resulting division problem on the board with both a division sign and a long-division symbol. Label the divisor, dividend, and quotient in both representations. You divided 10 counters into groups. How many equal groups did you divide 10 counters into? (2) How many counters were in each group? (5) Restate the division problem as You divided 10 counters into 2 equal groups. Each group has 5 counters.

- Ask for students to describe additional ways to divide 10 into equal groups and record each division with both symbols.
- Explain that each part of a division problem has a special name. The dividend is the number being divided or the starting amount. The divisor is the number that the dividend is being divided by. The quotient is the result of dividing.
- Provide a student with three sticky notes (dividend, divisor, and quotient). Have the student label one of the division problems with the three terms on the sticky notes. Repeat as desired.
- Lead a discussion with students about the meaning of division and the terms that apply to each part of a division problem. Students should note that the word division really means to separate or share equally.

Struggling Learners

Ask students to determine the following quotients:



- 5 boxes shared equally by 5 people = 1 per person
- 5 boxes shared equally by 1 person = 5 per person
- 0 boxes shared equally by 5 people = 0 per person
- 5 boxes shared equally by 0 people = not possible

Answers: 1, 1, 2, 5, 0, 0, not possible

Early Finishers

Have students answer the following questions.

- Explain, using only sentences, why the quotient and dividend are the same when the divisor is 1.
- Write a situation that describes why 0 divided by 5 is 0.

Answers:

- If the divisor is 1, that is the same as saying you are taking the number (dividend) and putting it into 1 group. That means everything is in that group. So the number in the group (quotient) equals the original number (dividend).
- Sample answer: A plate with 0 cherries is shared by 5 friends. How many cherries does each friend get? 0, because there are no cherries!

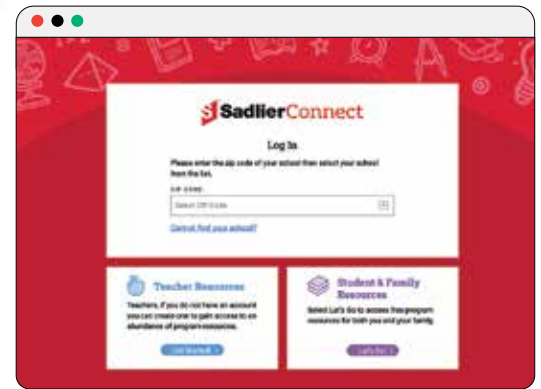
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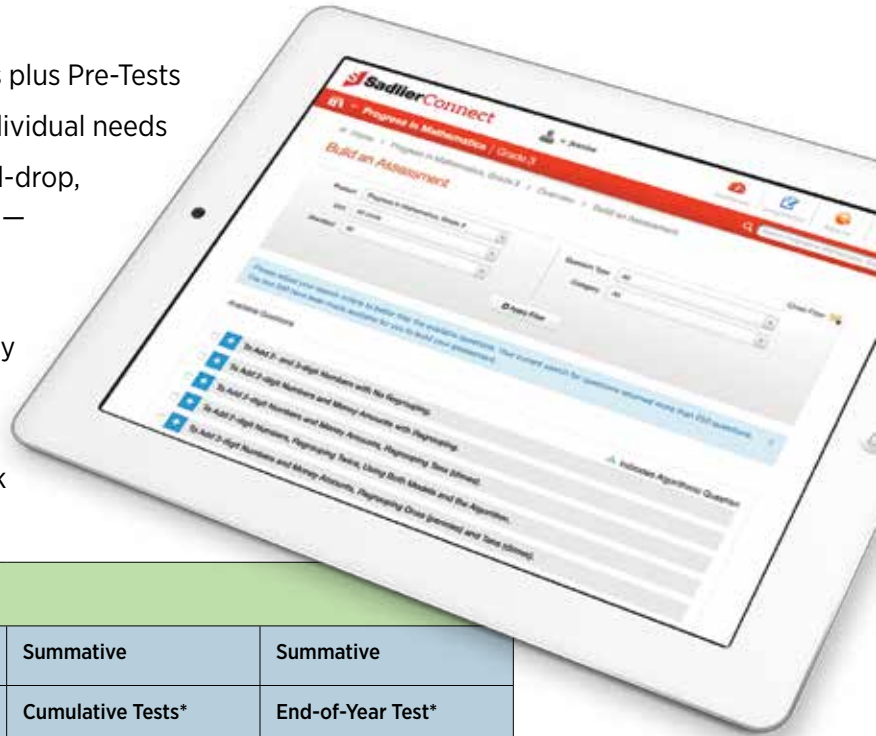
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WHAT IS ASSESSED	Previous grade-level learning objectives	Chapter prerequisite skills	Grade-level learning objectives	Lesson learning objectives	A cluster of lesson learning objectives
FREQUENCY	Once per grade level	Once per chapter	Once each per grade level	Once per lesson	Once per chapter
WHERE FOUND	<ul style="list-style-type: none"> Online Assessments Full Access™ 	FREE Digital Resources	<ul style="list-style-type: none"> Online Assessments Full Access 	Teacher's Edition	<ul style="list-style-type: none"> Student Editions Online Assessment

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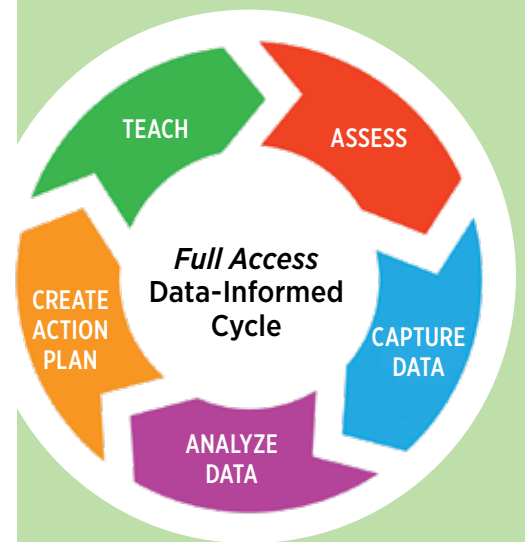
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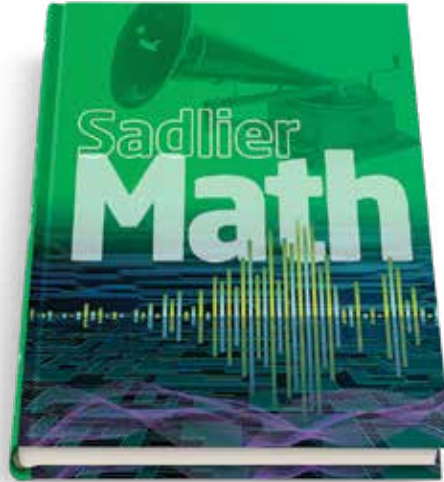
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