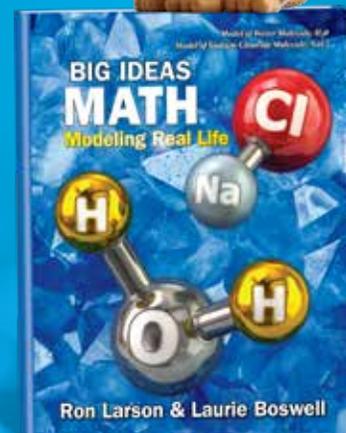
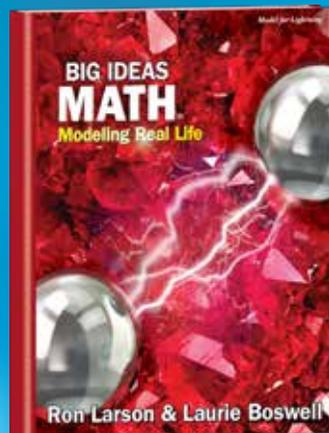
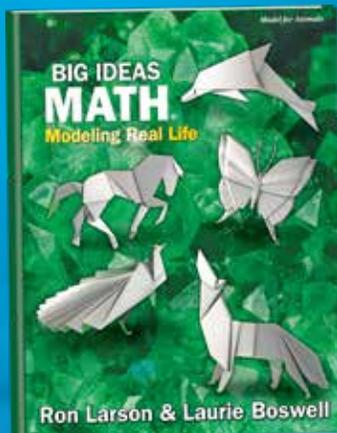
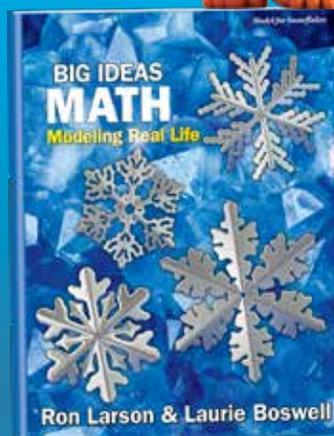
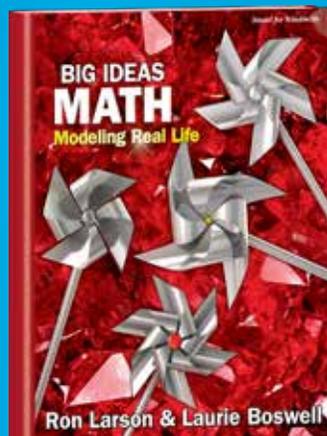
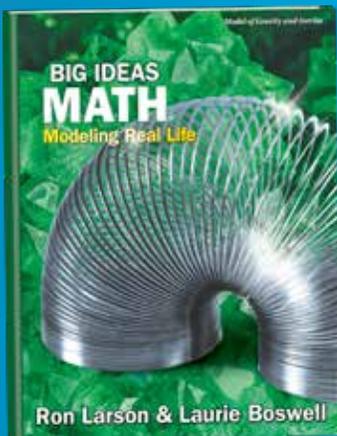


# BIG IDEAS MATH<sup>®</sup>

Grades K-5

Ron Larson & Laurie Boswell



## Modeling Real Life



# Authors and Research

Big Ideas Learning is pleased to introduce a new, research-based K–8 series, **Big Ideas Math®: Modeling Real Life**. Written by renowned authors Dr. Ron Larson and Dr. Laurie Boswell, this series uses an exploratory approach to engage students’ inquiring minds through rich explorations and in-class problem solving. With one voice from Grade K through Grade 8, students make connections through cohesive progressions and consistent, dependable instruction.

The pedagogical approach used in this program follows the best practices outlined in the most prominent and widely accepted educational research including John Hattie’s *Visible Learning*, NCTM’s *Principles to Actions*, Jo Boaler’s *Mathematical Mindsets*, Wiggins and McTighe’s *Understanding by Design*, and others.

*We created Big Ideas Math because we recognized the need for a truly balanced approach to learning, using discovery learning and scaffolded instruction.*

—Ron Larson, Ph.D.



**Ron Larson, Ph.D.**, is well known as the lead author of a comprehensive program for mathematics that spans school mathematics and college courses. He holds the distinction of Professor Emeritus from Penn State Erie, The Behrend College, where he taught

for nearly 40 years. He received his Ph.D. in mathematics from the University of Colorado. Dr. Larson’s numerous professional activities keep him actively involved in the mathematics education community and allow him to fully understand the needs of students, teachers, supervisors, and administrators.



**Laurie Boswell, Ed.D.**, is the former Head of School at Riverside School in Lyndonville, Vermont. In addition to textbook authoring, she provides mathematics consulting and embedded coaching sessions. Dr. Boswell received her Ed.D. from the University of Vermont in 2010.

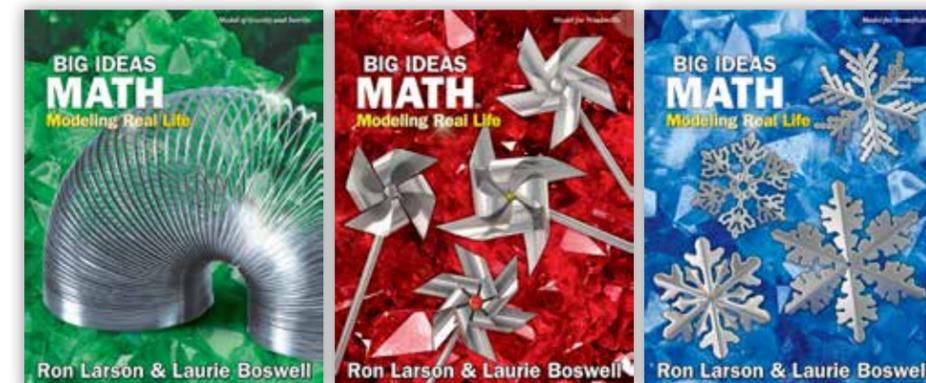
She is a recipient of the Presidential Award for Excellence in Mathematics Teaching and is a Tandy Technology Scholar. Laurie has taught math to students at all levels, elementary through college. In addition, Laurie has served on the NCTM Board of Directors and as a Regional Director for NCSM. Along with Ron, Laurie has co-authored numerous math programs and has become a popular national speaker.

*Students go deeper in their learning when they are motivated to dig in. My passion is to provide effective ways for teachers to begin each lesson.*

—Laurie Boswell, Ed.D.

## Big Ideas Math: Modeling Real Life fits the needs of today’s elementary classrooms!

- Uses learning targets and success criteria for student self-assessment
- Incorporates literacy strategies, encouraging students to read, write, and talk about math
- Helps teachers recognize the impact they have on students
- Empowers students to grow as independent learners and experience the delight of mathematics

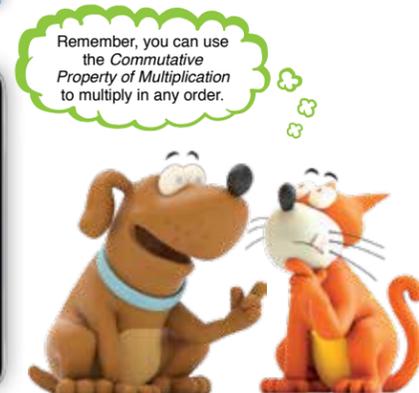


Grades K–5



Online Resources

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Differentiation	6–7
Assessment	8–9
Technology	10–11
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# Instructional Design

The **Big Ideas Math: Modeling Real Life** program uses a Universal Design for Learning to create an engaging and innovative program that uses hands-on activities and scaffolded instruction.

The instructional design guides students through concepts from surface-level to deep-level learning and allows them to transfer these skills to new concepts in a complete and comprehensive way. This allows for balanced lessons with built-in differentiation, as well as RTI support, that appeals to students and teachers alike.

Name \_\_\_\_\_

**Use the Distributive Property to Multiply** **3.4**

**Learning Targets:** Use the Distributive Property to multiply.

**Success Criteria:**

- I can draw an area model to multiply.
- I can use known facts to find a product.
- I can explain how to use the Distributive Property.

**Explore and Grow**

Use base ten blocks to model  $4 \times 16$ . Draw your model. Then find the area of the model.

$4 \times 16 = \underline{\hspace{2cm}}$

Break apart 16 to show two smaller models. Find the area of each model. What do you notice about the sum of the areas?

Area =  $\underline{\hspace{2cm}}$  Area =  $\underline{\hspace{2cm}}$

**Reasoning** How does this strategy relate to the Distributive Property? Explain.

Chapter 3 | Lesson 4

**Learning Targets and Success Criteria**<sup>1</sup> encourage students to self-assess and evaluate their learning.

Name \_\_\_\_\_

**Apply and Grow: Practice**

2. You collect 16 red leaves, 21 orange leaves, and 14 yellow leaves. How many leaves do you collect in all?

\_\_\_\_\_ leaves

3. A dentist has 41 toothbrushes. She buys some more. Now she has 85. How many toothbrushes did the dentist buy?

\_\_\_\_\_ toothbrushes

4. You make 17 origami dogs and 13 origami fish. Your friend makes 12 more origami animals than you. How many origami animals does your friend make?

**Step 1:** How many origami animals do you make?

$$\begin{array}{r} \square \\ + \square \\ \hline \square \end{array}$$

**Step 2:** How many origami animals does your friend make?

$$\begin{array}{r} \square \\ + \square \\ \hline \square \end{array}$$

\_\_\_\_\_ origami animals

one hundred ninety-one | 91

Chapter 4 | Lesson 7

**Apply and Grows** provide independent practice to help students monitor their own understanding of concepts.

**Explore and Grows** give students a hands-on approach to develop conceptual understanding.

Learning targets and success criteria help to focus student learning and make learning visible to teachers and students. With a strong emphasis on problem-solving in the classroom, students can transfer their mathematical knowledge to new concepts and apply their understanding to real-life situations. Through in-class practice and activities, students become more comfortable with the problem-solving process to become strategic mathematical thinkers.

**Think and Grow**

{14 kids are on the bleachers. 5 kids are on the stage.} 6 kids are behind the curtain. How many fewer kids are on the stage than on the bleachers?

Circle what you know. Underline what you need to find.

Solve: Kids on bleachers:  $\underline{14}$

Kids on stage:  $\underline{5}$   $\underline{9}$

$14 - 5 = \underline{9}$

$5 + \underline{9} = 14$

$\underline{9}$  fewer kids

**Show and Grow**

1. You have 7 more keychains than your friend. You have 15 keychains. How many keychains does your friend have?

You:  $\underline{\hspace{2cm}}$   $\bigcirc$   $\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

Friend:  $\underline{\hspace{2cm}}$   $\bigcirc$   $\underline{\hspace{2cm}}$  keychains

90 ninety

**Think and Grows** offer scaffolding to ensure all levels of learners attain procedural fluency.

**Show and Grows** give teachers the opportunity for continual formative assessment and student discourse.

**Think and Grow: Modeling Real Life**

Your teacher divides the items shown equally among 9 students. Write two equations that you can use to show how many straws each student gets.

Division equation: \_\_\_\_\_

Multiplication equation: \_\_\_\_\_

Item	Number
Toothpicks	72
Containers of clay	27
Straws	54

**Show and Grow**

11. Use the table above to write two equations that you can use to show how many containers of clay each student gets.

12. Use the table above to find how many more toothpicks students will get than straws.

13. Explain how a multiplication fact can help you solve  $30 \div 3 = \underline{\hspace{2cm}}$ .

166

**Think and Grow: Modeling Real Life** brings problem solving into the classroom, promoting transfer of concepts and skills into real-life situations.

<sup>1</sup> Success Criteria only appear on the Student Edition pages in grades 3 to 5.

# Teaching Support

The **Big Ideas Math: Modeling Real Life** Teaching Edition is a comprehensive resource that guides teachers throughout instruction.

**Chapter Overview**

Lesson	Learning Target	Success Criteria
4.1 Use Partial Sums to Add	Use partial sums to add.	<ul style="list-style-type: none"> <li>Write an addition equation to add the tens.</li> <li>Write an addition equation to add the ones.</li> <li>Add the partial sums.</li> </ul>
4.2 More Partial Sums	Use partial sums to add.	<ul style="list-style-type: none"> <li>Add the tens from each number.</li> <li>Add the ones from each number.</li> <li>Add the partial sums.</li> </ul>
4.3 Regroup to Add	Use regrouping to add.	<ul style="list-style-type: none"> <li>Make quick sketches to show regrouping.</li> <li>Show 10 ones regrouped as 1 ten.</li> <li>Solve the addition problem.</li> </ul>
4.4 Add Two-Digit Numbers	Use regrouping when needed to add.	<ul style="list-style-type: none"> <li>Use place-value to rewrite an addition problem.</li> <li>Show 10 ones regrouped as 1 ten.</li> <li>Solve the addition problem.</li> </ul>
4.5 Practice Adding Two-Digit Numbers	Add two-digit numbers.	<ul style="list-style-type: none"> <li>Choose a strategy to solve.</li> <li>Find the sum.</li> </ul>
4.6 Add Up to 3 Two-Digit Numbers	Add up to 3 two-digit numbers.	<ul style="list-style-type: none"> <li>Choose two of the ones digits to add first.</li> <li>Add the other ones digit.</li> <li>Add the tens to find the sum.</li> </ul>
4.7 More Problem Solving: Addition	Solve one- and two-step addition problems.	<ul style="list-style-type: none"> <li>Identify what information is given in the word problem.</li> <li>Identify what the question is asking.</li> <li>Choose a strategy to solve.</li> <li>Explain the strategy used to solve.</li> </ul>

**Laurie's Notes**

**Learning Target**  
Use partial sums to add.

**Success Criteria**

- Write an addition equation to add the tens.
- Write an addition equation to add the ones.
- Add the partial sums.

**Warm-Up**  
Practice opportunities for the following are available in the Resources by Chapter or at [BigIdeasMath.com](http://BigIdeasMath.com).

- Daily skills
- Vocabulary
- Prerequisite skills

**ELL Support**  
Explain that this lesson will focus on partial sums. Using partial sums is a strategy for adding numbers with more than one digit. Remind them that the homophone some means "several" or "a few." When you add numbers the answer is the sum. Point out that these are two different words with completely different meanings.

The **Chapter Overview** chart and the **first page of each lesson** highlight the learning targets and success criteria that guide student learning.

They encourage self-assessment and give students and teachers benchmarks for each lesson.

**Chapter Materials and Resources**

Classroom Materials	Chapter Opener	4.1	4.2	4.3	4.4	4.5	4.6	4.7	Connect and Grow
scissors	*								
base ten blocks	*	*	*	*	*	*	*	*	
whiteboards and markers	*	*	*	*	*	*	*	*	
linking cubes				*					
jar with markers					*				
two-color counters						*			
transparent spinners or paper clips							*		

**Suggested Pacing**

Day	Chapter Opener	Performance Task Preview	Vocabulary
Day 1	Lesson 4.1	Warm-Up	Dig In
Day 2	Lesson 4.2	Warm-Up	Dig In
Day 3	Lesson 4.3	Warm-Up	Dig In
Day 4	Lesson 4.4	Warm-Up	Dig In
Day 5	Lesson 4.5	Warm-Up	Dig In
Day 6	Lesson 4.6	Warm-Up	Dig In
Day 7	Lesson 4.7	Warm-Up	Dig In
Day 8	Lesson 4.7	Warm-Up	Dig In
Day 9	Connect And Grow	Performance Task	Activity
Day 10	Centers		
Day 11	Chapter Assessment		

**Chapter Materials, Resources, and Suggested Pacing** are clearly laid out for each chapter to support teachers and save planning time.

**Coherence**

**Progressions**

Grade	Grade 1	Grade 2	Grade 3
Grade 1	<ul style="list-style-type: none"> <li>Solve addition and subtraction word problems within 20.</li> <li>Determine the unknown number to complete addition and subtraction equations.</li> <li>Use strategies to add within 100.</li> </ul>	<ul style="list-style-type: none"> <li>Solve one- and two-step word problems within 100.</li> <li>Use strategies to fluently add and subtract within 100.</li> <li>Use strategies to add up to 4 two-digit numbers.</li> </ul>	<ul style="list-style-type: none"> <li>Solve one-step word problems involving measurement.</li> <li>Solve one- and two-step word problems involving data.</li> <li>Solve two-step word problems involving the four operations.</li> <li>Use strategies to fluently add and subtract within 1,000.</li> </ul>

The **Progressions** highlight the program coherence from grade to grade. Teachers can see what was covered in the previous grade and how it builds to the content they are teaching. They can also see further connections and applications in the next grade.

In the Progressions Through the Chapter, the standards are called out for every section along with guidance on where students should be tracking on their conceptual development.

**Laurie's Overview**

**About the Math**

In the last chapter students applied strategies they had learned for adding within 20 and extended them to addition to 100. They also learned new strategies such as using an open number line, breaking apart an addend, and using compensation to make a ten. This is essential for the procedures in this chapter to make sense. We are working towards the standard addition algorithm written in a vertical format. We do not want students to memorize procedures. Underlying all of the computation work students do is an understanding of place value. Base ten blocks have been used to represent numbers. The rod is a fixed group of ten students began working with in Grade 1 when they learned about place value. All of the place value experiences students have had were to develop an understanding of seventeen as being equivalent to a group of 1 ten and 7 ones. When students see the place value representation of 17, they need to know what each digit represents.

**Laurie's Overview** "About the Math" at the beginning of each chapter provides point-of-use professional development and math background. The information offers an efficient way to plan for the chapter and solidify content understanding.

**Laurie's Notes**

**Learning Target**  
Use partial sums to add.

**Success Criteria**

- Write an addition equation to add the tens.
- Write an addition equation to add the ones.
- Add the partial sums.

**Warm-Up**  
Practice opportunities for the following are available in the Resources by Chapter or at [BigIdeasMath.com](http://BigIdeasMath.com).

- Daily skills
- Vocabulary
- Prerequisite skills

**ELL Support**  
Explain that this lesson will focus on partial sums. Using partial sums is a strategy for adding numbers with more than one digit. Remind them that the homophone some means "several" or "a few." When you add numbers the answer is the sum. Point out that these are two different words with completely different meanings.

**Laurie's Notes** appear at the chapter and lesson level for embedded professional development, implementation support, questioning strategies, and differentiation tips every step of the way.

The table identifies each standard as "Preparing," "Learning," and "Complete" for each lesson.

The visuals and representations presented in the overview are meaningful for the learning objectives in that specific chapter.

Laurie's Notes offer guidance for building fluency with the mathematical processes and proficiencies.

# Differentiation

The new elementary series offers options and resources to curate a unique instructional experience. There are a variety of opportunities for reteaching, remediation, practice, enrichment, and extension in the Teaching Edition, online, and in printed resources.

**Laurie's Notes**

**Apply and Grow: Practice**

**Re-teaching Activities**

Students previously drew a quick sketch for adding 2 two-digit numbers. In this lesson the partial sum for the ones was a ten number and students circled a group of ten. They learned to add one segment to the tens column to represent the 10 ones. The last step was to record this work in a written addition problem. It is very possible that students have understood how to model the addition. Draw a quick sketch, but are unsure of the symbolism of the recorded algorithm.

**Enriching Activities**

Enriching students are not secure with place values or may not recognize the need to regroup. In adding 29 + 34 they might write 512. They have added the tens and ones correctly but do not understand place value when writing the sum.

- Exercises 2 and 3:** Have students work with a partner or small group. Compare the quick sketches of each number first. Have them decide if they need to regroup or not. One student can talk through the process aloud. Hearing someone explain the steps each time is helpful to the speaker and listener.
- Exercise 4:** If students struggle to explain when regrouping is necessary, can they write a new problem where regrouping is necessary?

**Proficient students are able to describe how regrouping is shown in an addition problem. They are able to explain what the 1 represents.**

- Exercises 2 and 3:** Have students explain how the quick sketch and addition problem are related. Where is the regrouping shown in both?

**Additional Support**

- Provide base ten blocks and a partial sums chart for students to model the problem before they draw the quick sketch. Help them recognize the partial sums in a quick sketch.

**Extension**

- Write an addition problem involving 2 two-digit numbers that does not involve regrouping. Explain why.

## Embedded Differentiation

The Teaching Edition, along with the program's print and digital resources, offer support for all levels of learners.

The comprehensive guide for Scaffolding Instruction in the Teaching Edition was thoughtfully written with both students and teachers in mind.

Throughout every lesson, Laurie's Notes provide point-of-use differentiation for emerging, proficient, and advanced learners.

## Centers or Small Group Activities

Centers in the Teaching Edition are pre-planned, "ready to go", and include materials that come with the program. Print and interactive online games use skills from the chapter in a fun and engaging way.

**Centers**

**Center 1: Solve and Cover: Addition**  
Materials: Student Edition page 181, 1 set of Solve and Cover: Addition Sum Cards per pair.  
Have students complete the activity. See page 181 for the directions.

**Center 2: Skills Trainer**  
Materials: Computer or device with Internet access.  
Have students go to [BigIdeasMath.com](http://BigIdeasMath.com) to access the Skills Trainer.

**Center 3: Addition Tic-Tac-Toe**  
Materials per pair: 1 copy of Addition Tic-Tac-Toe™, 3 ten-color counters.  
Review the rules of tic-tac-toe. Have students use ten-color counters as their X's and O's. Students take turns choosing a space on the board and solving that problem, making the strategy they use to find the sum. Once the problem is solved correctly, they place a counter on it.  
**Extension:** Encourage students to create their own tic-tac-toe boards. Allow for time to play.

**Center 4: Spin It!**  
Materials per pair: Spin It! board, transparent spinner or paper clip.  
Each student spins both spinners, writes down the numbers, and finds the sum. The student with the greater sum circles his or her sum. Students play 5 rounds. The student with the most correct sums wins the game.

**Center 5: Add It Up**  
Materials per group: Add It Up Cards™

**Materials per group: Add It Up Cards™**  
Divide students into groups of 3. Divide the cards in three piles (light gray, dark gray, and white). Give each student one of the piles. Students will mix their cards and place them face down. Each student draws one card. The first student to correctly find the sum gets one point. The student with the most points after 10 rounds wins.

## School to Home Connections

The Resources by Chapter includes Family Letters in English and Spanish. Translations to other languages are available in the online resources. The Practice pages offer QR codes that link to videos for guidance. Lesson Tutorial Videos are available for grades 3-5 to support practice and homework exercises.

Nombre: \_\_\_\_\_  
Fecha: \_\_\_\_\_

**Capítulo 3**  
**Tablas de multiplicación y estrategias**

Queda Practica

En este capítulo, el estudiante aprende estrategias para multiplicar por 3, 4, 6, 7, 8 y 9. Se multiplican el resultado de la tabla (en sumas), con.

Nombre: \_\_\_\_\_

**Chapter 3**  
**More Multiplication Facts and Strategies**

Dear Family,

In this chapter, your student is learning strategies for multiplying by 3, 4, 6, 7, 8, and 9, and for multiplying these factors. These strategies include how to use a model to multiply, how to use the Distributive Property (with addition or subtraction) to multiply, and how to use a problem-solving plan to solve multiplication word problems.

The vocabulary words associated with this chapter are: Distributive Property (with addition), Distributive Property (with subtraction), and Associative Property of Multiplication.

One opportunity to practice multiplication is when you and your student are shopping for clothes. The cards and photos are great models for practicing multiplication strategies.

- Check out the clothes on a store shelf. Pick a shirt that displays a row of shoe boxes. Ask your student how many shoes (2) are in each box. Then ask, "How many shoes are there on this shelf?" How many shoes are on (2) number of shelves with the same number of boxes? This is an example of multiplying three factors, which is covered in lesson 3.7.
- For example: For 2 shoes per box, 5 boxes on each shelf, and 4 shelves, you have  $(2 \times 5) \times 4$ .
- Ask how the answer is affected by regrouping as  $2 \times (5 \times 4)$ . Showing your student that the product stays the same demonstrates the Associative Property of Multiplication.

Model other examples with clothing items. For example, when browsing a rack of shirts, ask, "If the store sells 3 shirts every week, how many shirts will the store sell in three weeks?" You can model this example by moving the shirts to the store's next group of shirts. Encourage your student to think of multiplication equations that can help answer the question.

By the end of this chapter, your student should feel confident with the learning targets and success criteria on the next page. Encourage your student to think of other ways to use clothing items in multiplication contexts, such as how much money a store makes if the store sells a single item (2) number of times.

Have a great time learning!

Learning Target: Use partial sums to add.

Practice 4.1

46 + 21 = ?

Tens	Ones
4	6
2	1
6	0
6	7
Sum	67

40 + 20 = 60  
6 + 1 = 7

The modification suggestions relate directly to the specific content of the exercises.

**ELL Support**

After completing the example, have students work in pairs.

**Laurie's Notes**

**Think and Grow**

**Getting Started**

- Discuss what the word partial means. Relate to eating part of a meal or only having one of two sodas on.
- Introduce the vocabulary card for **partial sums**. "When you combine your tens, or tens, you are finding a partial sum. It is part of the answer. When you combine your units, or ones, you are finding a partial sum. It is the other part of the answer."

**Teaching Notes**

- Students have represented two-digit addition vertically when they used place value to break apart the addends.
- The problem is first presented horizontally. It is then written vertically in the partial sums chart where colors are used to guide students as they learn to find partial sums.
- Model:** "We want to add 51 + 38. Notice the columns are labeled Tens and Ones." Point to the 5 and ask, "What does this 5 represent?" 5 tens or 50. Ask about the 3. "How many tens altogether?" Explain that the expression 30 + 30 explains how the partial sum of 60 was found. Students trace 50 + 30 = 80.
- Repeat similar language for the ones.
- Model with Mathematics:** "You have used base ten blocks and drawn quick sketches to help you add two numbers. How does the partial sums chart help you add two numbers?" It helps you add the tens and ones to find the answer.
- Have students complete Exercises 1 and 2. Circulate among students, reminding them to use the colors to help them think about place value and the value of the numbers they are adding.
- Supporting Learners:** It is necessary to determine if students are having difficulty with the vertical structure, knowing addition facts, or some aspect related to place value. Have students tell what problem they are solving. Are they saying seventy-three plus three? Decide if base ten blocks or a hundred chart will support their understanding.
- Supporting Learners:** Relate the partial sums and sum to number bonds and/or the part-part-whole models. Show this by writing the partial sums and sum in the appropriate places in each model.
- Extension:** Ask if you could write the partial sum equation for the ones first and then the tens.
- Connect how a partial sums chart is a tool to help add two numbers. "You wrote an equation to add the tens. You wrote an equation to add the ones. How do the partial sums help you answer the addition question?"

**Additional Support**

- Provide base ten blocks and a partial sums chart for students to model the problem before they draw the quick sketch. Help them recognize the partial sums in a quick sketch.

**Extension**

- Write an addition problem involving 2 two-digit numbers that does not involve regrouping. Explain why.

## ELL Support

The ELL Support boxes are located throughout the Teaching Edition. These are quick, point-of-use notes to help teachers differentiate instruction for ELL students.

Some of the ELL notes have differentiated levels of support to provide the most effective suggestions for these students.



## Manipulative Kits and Virtual Manipulatives

Support hands-on learning and facilitate the transition from the concrete to the abstract.

**Cross-Curricular Connections**

**Language Arts**

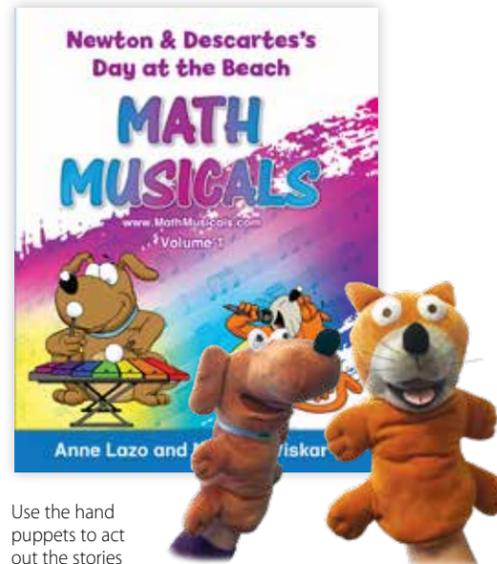
- One Hundred Hungry Ants** by Elinor J. Pinczes; Read the story aloud to students. Then, ask students to draw a picture with 10 red and more than 5 black ants. Have students write the total number of ants on their picture. Then, have students work with a partner to add their 2 sums together.

## Literature Kits

Enhance instruction with stories and support cross-curricular connections.

## Math Musicals

Storybooks and animations featuring Newton and Descartes help students see the mathematics that surrounds them in their everyday lives.



Use the hand puppets to act out the stories and songs!

## Connect and Extend Learning

**Connect and Extend Learning**

**Practice Notes**

- Review how to use regrouping to add with students.
- If additional support is needed, provide students with base ten blocks.

**Prior Skills**

- Exercises 6-8: Grade 1, Comparing Numbers Using Symbols

**Cross-Curricular Connections**

**Language Arts**

- One Hundred Hungry Ants** by Elinor J. Pinczes; Read the story aloud to students. Then, ask students to draw a picture with 10 red and more than 5 black ants. Have students write the total number of ants on their picture. Then, have students work with a partner to add their 2 sums together.

The Lesson Resources highlight options for supporting all students in their transition from surface- to deep-level understanding.

**Connect and Extend Learning**

**Extend Student Learning**

**Bodily-Kinesthetic**

- Set up stations around the room with varying numbers of counters and other objects (rubber bands, paper clips, etc.). The number of objects should all be divisible by 10. Have students rotate to the different stations in small groups, and divide the objects by 2, 5, and 10. Students should write the related multiplication facts and find the quotients. After students have visited all of the stations, go over the answers as a class.

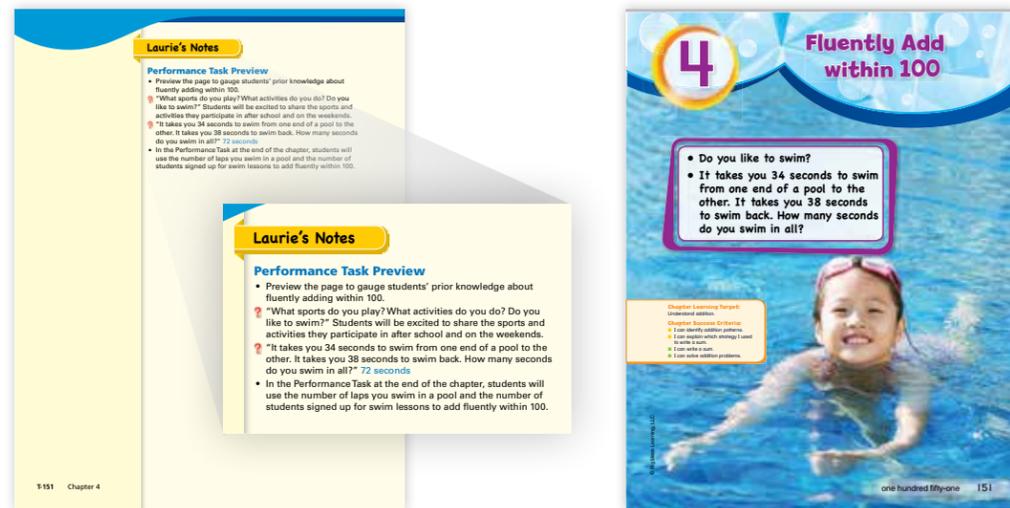
**Lesson Resources**

Surface Level	Deep Level
Resources by Chapter	Resources by Chapter
• Extra Practice	• Enrichment and Extension
• Reteach	• Chapter Self-Assessment
• Chapter Self-Assessment	Graphic Organizers
Differentiating the Lesson	Math Musicals
Tutorial Videos	Dynamic Assessment System
Skills Review Handbook	• Lesson Practice
Skills Trainer	
Math Musicals	

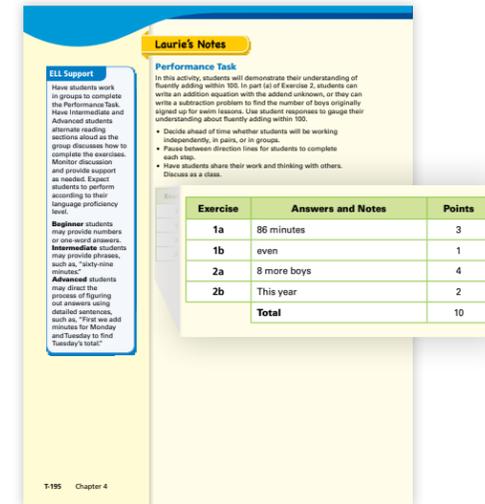
# Assessment

The K–5 program offers a variety of opportunities for both formative and summative assessment. Student ownership and accountability for learning is a vital component of fluency with the content, as well as the mathematical processes and proficiencies.

Each chapter opens with a **Performance Task Preview**. It previews what children will be learning throughout the chapter. The **Performance Task Preview** is an engaging way to hook them into the content of the chapter with some guiding questions about engaging and relevant topics. Students are given visibility into what will be expected of them at the end of the chapter to ensure accountability for learning.

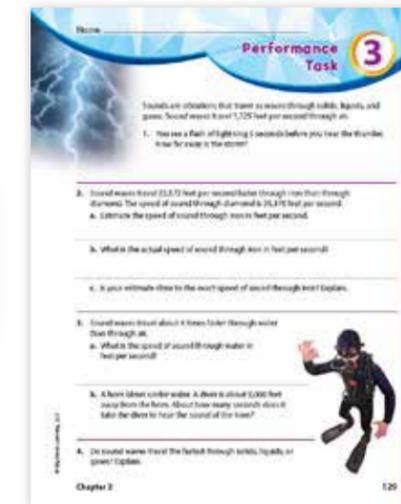


**Laurie's Notes** and the **ELL support** provide instructional support for modifying the Performance Task activity for different levels of learners as well as options for individuals, partners, and small groups.



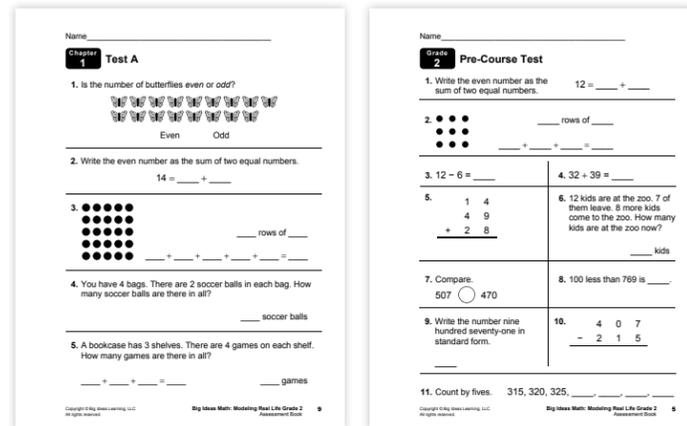
The evaluation table lays out a point structure for ease of grading and evaluation.

The **Performance Task** provides students with the opportunity to demonstrate their understanding of the chapter learning targets. It aligns with what was previewed in the Performance Task Preview.

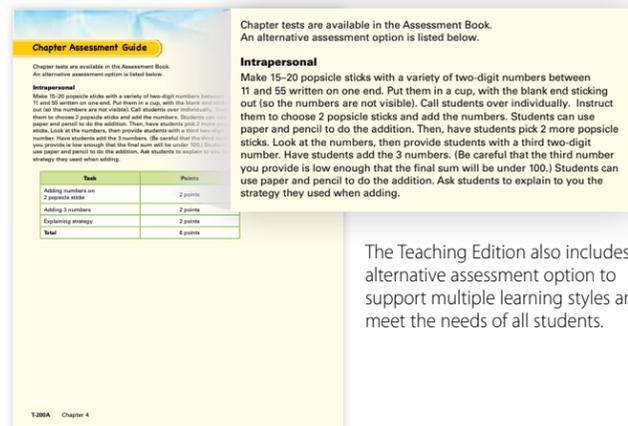


Grade 4 Performance Task

**Chapter Tests** are available in the Assessment Book. Additional assessment opportunities include **Course Benchmark Tests** (Pre-Course, Post-Course, and Cumulative), as well as **Prerequisite Skills Practice**.



Grade 2 Chapter Test | Grade 2 Pre-Course Test



The Teaching Edition also includes an alternative assessment option to support multiple learning styles and meet the needs of all students.

## Online Assessment

With the Dynamic Assessment System, teachers can build customizable assessments with *Big Ideas Math* question banks or items they create!

Items include a variety of question types such as multiple choice, technology enhanced, multiple select, essay style, and more.



# Technology

**Big Ideas Math: Modeling Real Life** comes with an innovative and dependable technology package that supports and enhances instruction for teachers and students.

## Dynamic Student Edition

The Dynamic Student Edition is a complete, interactive version of the Student Edition. Students have access to interactive explorations, digital examples, virtual manipulatives, Lesson Tutorial Videos (Grades 3-5), and digital exercises from the textbook.



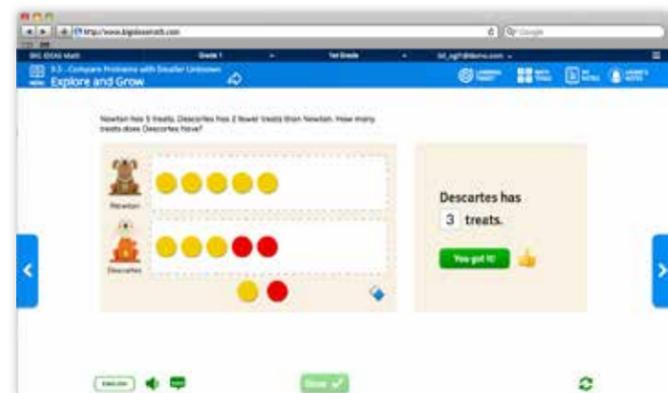
## STEAM Videos

STEAM Videos, which are available for Grades 3–5, allow students to see mathematics in real life. STEAM Performance Tasks make further connections to the mathematical content. Students learn about animals, electricity, sea levels, constellations, and more!



## Dynamic Classroom

The Dynamic Classroom mimics the students' Dynamic Student Edition, with additional resources and support for teachers. Interactive explorations and digital examples from the textbook create a 21st-century classroom atmosphere that engages students. Point-of-use Laurie's Notes guide instruction with Dig Ins, motivation suggestions, teaching tips, questions to ask the students, closure strategies, and more!

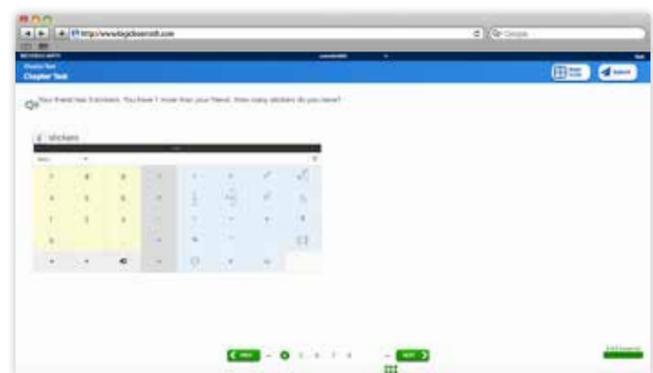


## Dynamic Assessment System

With the Dynamic Assessment System, teachers can create customizable homework and assessments with *Big Ideas Math* question banks or items they create!

Items include a variety of question types, all of which are automatically scored except for the newly released essay questions, which allow students to explain their thinking and reasoning.

The reports in this system provide the feedback teachers need to drive instruction. Students complete the assignments online and can receive immediate feedback on their progress.



## Math Musicals

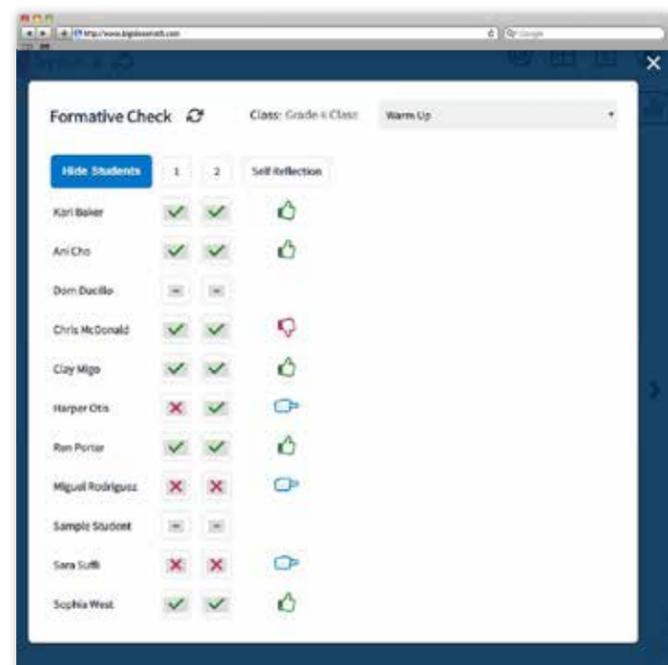
Math Musicals are a fun way of bringing music and literature into your math classroom. *Big Ideas Math's* own Newton, the dog, and Descartes, the cat, team up to provide educational stories, songs, and animations to enhance student learning.



Math Musicals bring fun into the classroom with engaging songs that support concepts with patterns, rhythm, and rhymes.

## Formative Check

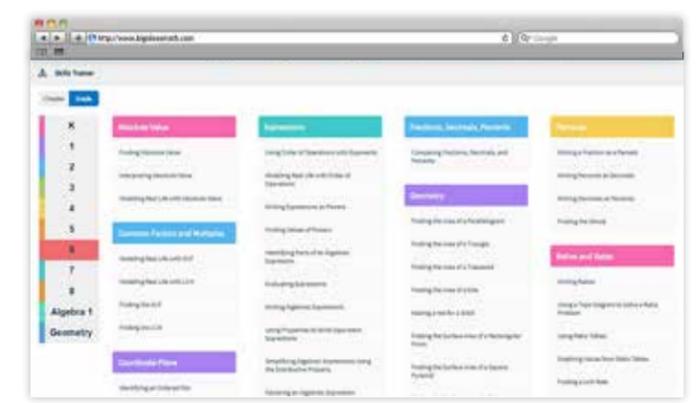
The Formative Check provides teachers with immediate feedback on student progress, making it easy to differentiate and provide support where it is needed the most.



## Skills Trainer

The Skills Trainer is an online interactive tool for skill practice that comes with detailed reports for teachers to gain insight into each student's proficiency. Students have access to every skill found within the *Modeling Real Life* series, as well as Algebra 1 and Geometry.

The Skills Trainer can be used to engage students in remediation or as the daily warm-up for the lessons!



## Components

### PRINT RESOURCES

**Student Edition (Volumes 1 and 2)**

**Teaching Edition (Volumes 1 and 2)**

#### Resources by Chapter

- Family Letter
- Warm-Ups
- Extra Practice
- Reteach
- Enrichment and Extension
- Chapter Self-Assessment\*

#### Assessment Book

- Prerequisite Skills Practice
- Course Benchmark Tests
- Chapter Tests

#### Instructional Resources

- Vocabulary Cards
- Blackline Masters
- Activities

#### Skills Review Handbook

#### Differentiated Rich Math Tasks

### ADDITIONAL RESOURCES

#### Manipulative Kits

#### Literature Kits

#### Math Musicals

#### Newton and Descartes Puppet Set

### TECHNOLOGY RESOURCES

#### Dynamic Student Edition

Includes access to Student Edition online, as well as:

- Virtual Manipulatives
- Interactive Explorations
- Digital Examples
- Lesson Tutorial Videos\*

#### Dynamic Classroom

Includes access to Teaching Edition, as well as:

- Laurie's Notes
- Virtual Manipulatives
- Interactive Explorations
- Digital Examples
- Formative Check
- Flip-To

#### Dynamic Teaching Tools

- Answer Presentation Tool\*
- Skills Trainer
- Digital Flashcards
- STEAM Videos\*
- Game Library
- Multi-Language Glossary
- Additional Online Resources
  - Lesson Plans
  - Differentiating the Lesson
  - Graphic Organizers
  - Pacing Guides
  - Worked-Out Solutions Key\*
  - Math Tool Paper

#### Dynamic Assessment System

- Customized Practice and Assessments
- Detailed Reports

#### Video Support for Teachers

- Pedagogical Approach Videos
- Concepts and Tools Videos

\*Available for Grades 3–5 only

# Big Ideas Math: Modeling Real Life offers a program that:

## INSPIRES

*Elevate student learning with a balanced approach*

## ENGAGES

*Captivate student learning with innovative technology*

## EMPOWERS

*Make learning visible through student accountability*

## GROWS

*Positively impact student performance in mathematics*

Learn more at [NGL.Cengage.com/BigIdeas](https://www.ngl.cengage.com/BigIdeas)

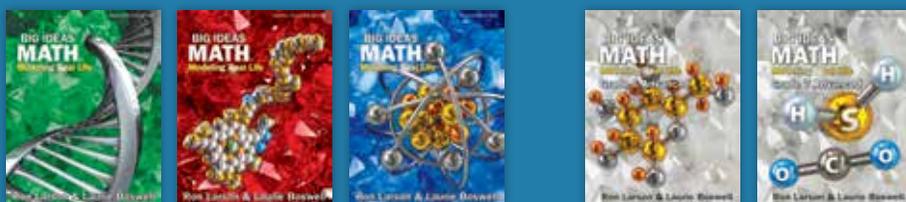
# K-12 Programs

*Big Ideas Math* programs offer a seamless articulation from elementary through high school. With a consistent author voice from level to level, students make connections through cohesive progressions and rich instruction.

*Big Ideas Math* uses a balanced approach to engage students' inquiring minds and empower them to become mathematical thinkers in their daily lives.



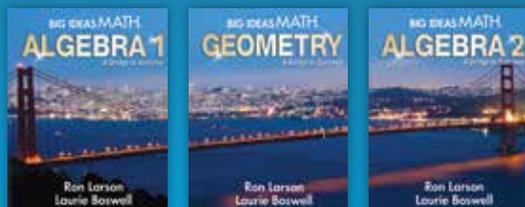
## Big Ideas Math: Modeling Real Life for Grades K-5



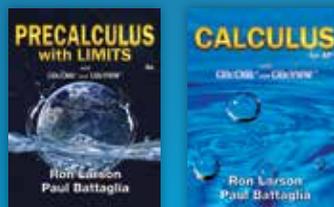
## Big Ideas Math: Modeling Real Life for Grades 6-8

Advanced middle school courses available!

Integrated Mathematics courses also available!



## Grades 9-12



## Precalculus/AP<sup>®</sup> Calculus

National Geographic Learning<sup>®</sup> proudly represents *Big Ideas Math* programs.

## Learn more!

[NGL.Cengage.com/BigIdeas](https://www.ngl.cengage.com/BigIdeas)

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