

# Bluebonnet Learning Math Deep Dive

# Aligned to the TEKS and ELPS with Student Learning Research

## Materials Not Aligned with Research

**Stand-alone scope and sequence and modules**

**Isolated practice of skills** by standard, at **one point** in the year

Prioritize **procedural skill and fluency** at expense of strong Tier 1 instruction

**Below grade-level tasks** grounded in remediation

Problems requiring **one word or numerical answer** without justification

## Materials Designed Based on Research

Strategic and **coherent modules and lessons sequenced** to build upon learning within modules and across grades

**Concentrates time and effort** on going deep on the **most important** topics for the grade level

Balances **conceptual understanding, procedural skill and fluency, and application**

All students working on **grade-level tasks**

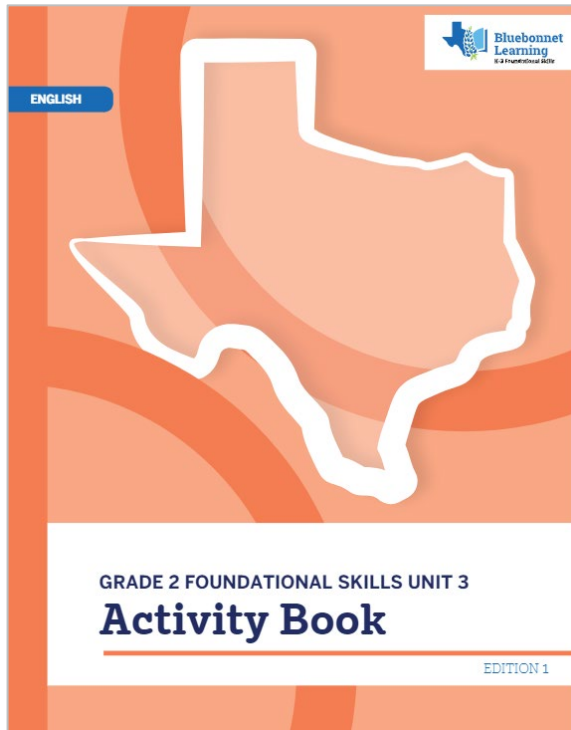
Provides **multiple opportunities for practice, discussion, representation, and writing**

# Bluebonnet Learning K–5 Math

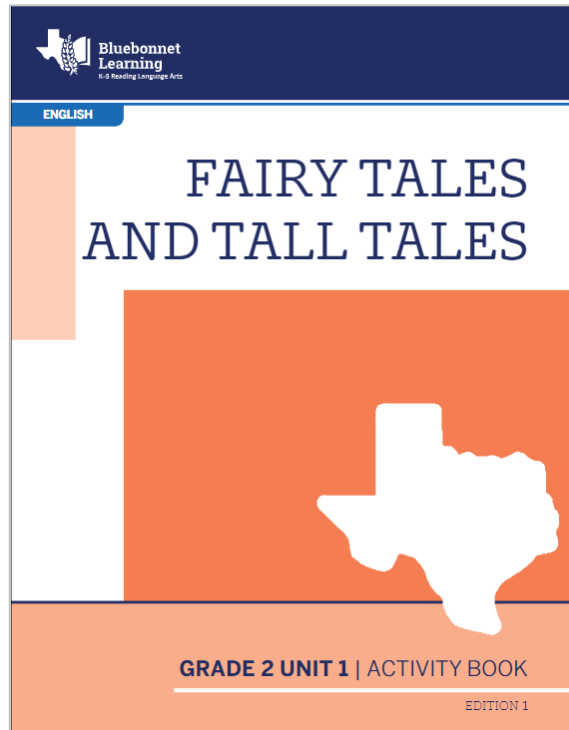
# Bluebonnet Learning Instructional Materials

## Reading Language Arts (RLA)

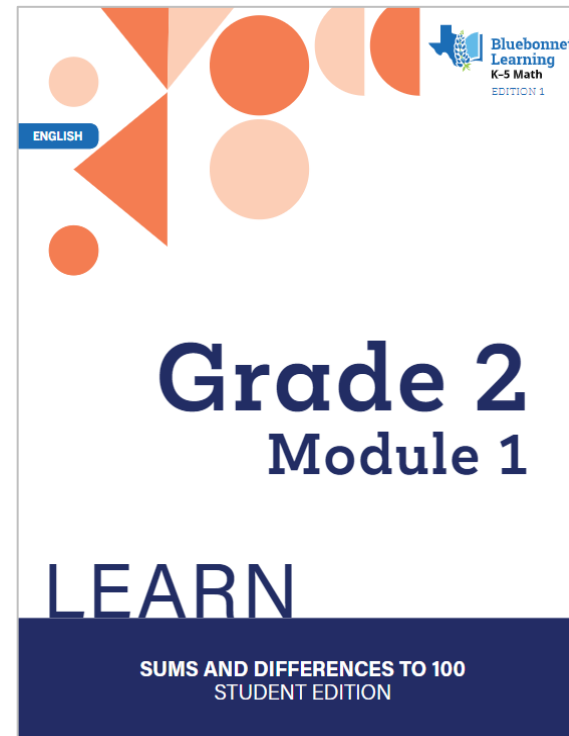
## Mathematics



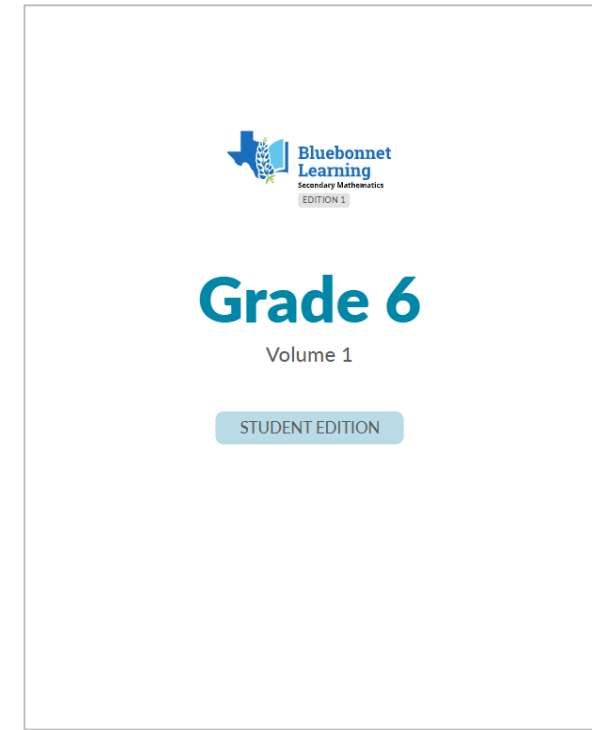
K-3 Foundational Skills



K-5 RLA Knowledge



K-5 Math



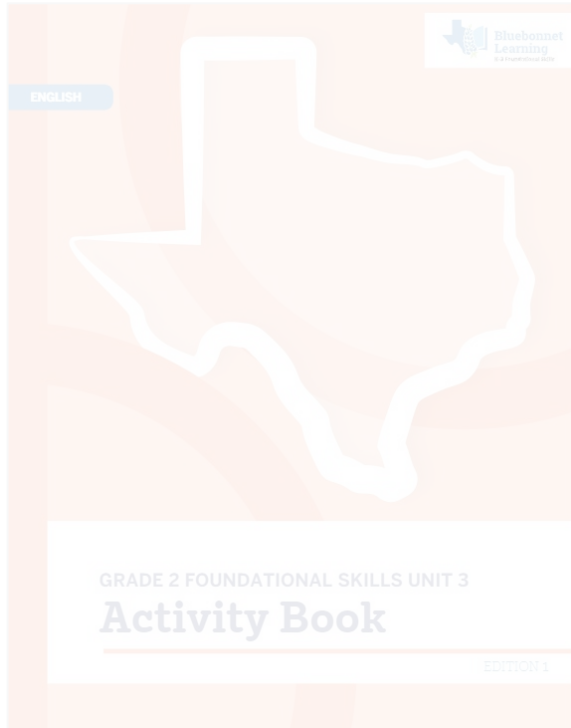
Secondary Mathematics



# Bluebonnet Learning Instructional Materials

## Reading Language Arts (RLA)

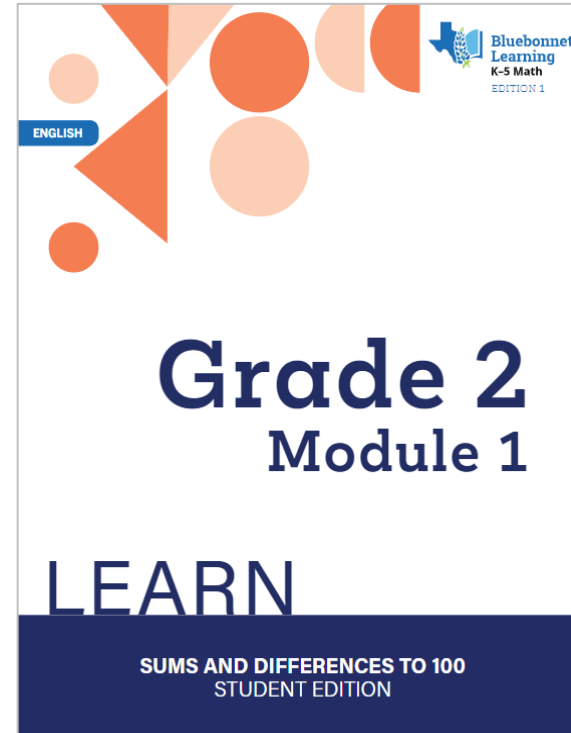
## Mathematics



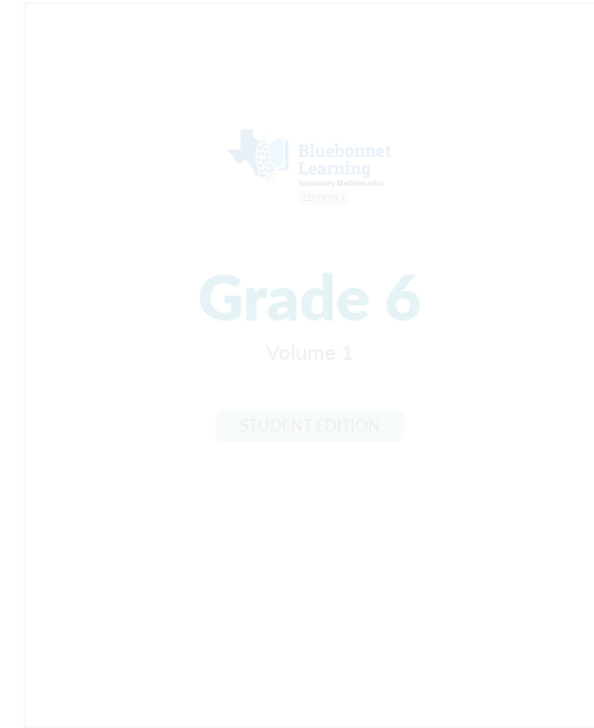
K-3 Foundational Skills



K-5 RLA Knowledge



K-5 Math



Secondary Mathematics

# Bluebonnet Learning K–5 Math Progression of Mathematical Concepts

Bluebonnet Learning  
K-5 Math  
EDITION 1

ENGLISH

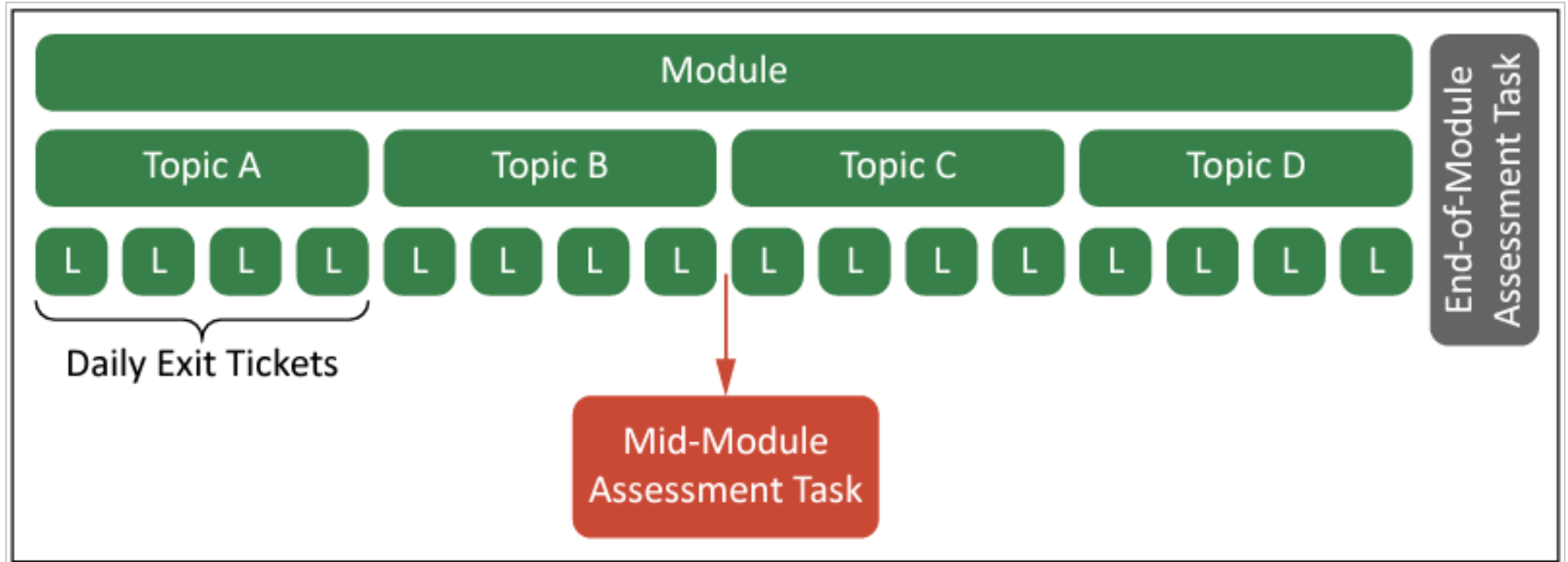
# Grade K Course Guide

TEACHER EDITION

	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	
1st TRIMESTER	M1: Numbers to 10 (41 days)	M1: Sums and Differences to 10 (43 days)	M1: Sums and Differences to 100 (9 days)	M1: Properties of Multiplication and Division and Solving Problems with Units of 2–5 and 10 (22 days)	M1: Place Value, Rounding, and Algorithms for Addition and Subtraction (23 days)	M1: Place Value and Decimals (19 days)	1st QUARTER
			M2: Addition and Subtraction of Length Units (11 days)				
	M2: Two-Dimensional and Three-Dimensional Shapes (10 days)	M2: Introduction to Place Value Through Addition and Subtraction Within 20 (33 days)	M3: Place Value, Counting, and Comparison of Numbers to 1,200 (22 days)	M2: Place Value and Problem Solving with Units of Measure (31 days)	M2: Unit Conversions and Problem Solving with Metric Measurement (10 days)	M2: Multi-Digit Whole Number and Decimal Operations (37 days)	
M3: Comparison of Length, Weight, Capacity, and Numbers to 10 (33 days)	M4: Addition and Subtraction Within 200 with Word Problems to 100 (30 days)		M3: Multiplication and Division with Units of 0, 1, 6–9, and Multiples of 10 (26 days)	M3: Multi-Digit Multiplication and Division (38 days)			
2nd TRIMESTER	M4: Number Pairs, Addition and Subtraction to 10 (44 days)	M3: Ordering and Comparing Length Measurements as Numbers (13 days)	M5: Addition and Subtraction Within 1,000 with Word Problems Within 1,000 (23 days)	M4: Multiplication and Area (10 days)	M4: Angle Measure and Plane Figures (20 days)	M3: Addition and Subtraction of Fractions (18 days)	2nd QUARTER
		M4: Place Value, Comparison, Addition and Subtraction to 40 (23 days)	M6: Foundations of Multiplication, Division, and Area (22 days)	M5: Fractions as Numbers on the Number Line (36 days)		M4: Multiplication and Division of Fractions (30 days)	
3rd TRIMESTER	M5: Numbers 10–20, Counting to 100, and Understanding Work (31 days)	M5: Identifying, Composing, and Partitioning Shapes (18 days)	M7: Problem Solving with Length, Money, and Data (29 days)	M6: Financial Literacy and Data (17 days)	M5: Fraction Equivalence, Ordering, and Operations (35 days)	M5: Addition and Multiplication with Volume and Area (23 days)	3rd QUARTER
		M6: Place Value, Comparison, Understanding Income with Addition and Subtraction to 100 (35 days)					
	M6: Analyzing, Comparing, and Composing Shapes (6 days)	M8: Time, Shapes, and Fractions as Equal Parts of Shapes (19 days)	M7: Geometry and Measurement Word Problems (23 days)	M6: Introduction to Decimals and Financial Literacy (22 days)	M6: Problem Solving with the Coordinate Plane and Data (38 days)		
					M7: Exploring Measurement with Multiplication and Data (17 days)		4th QUARTER

Key:			
Number	Geometry	Number and Geometry, Measurement	Fractions

# Bluebonnet Learning K–5 Math: Modules, Topics, Lessons, and Assessment




# Bluebonnet Learning K–5 Math Lesson Structure

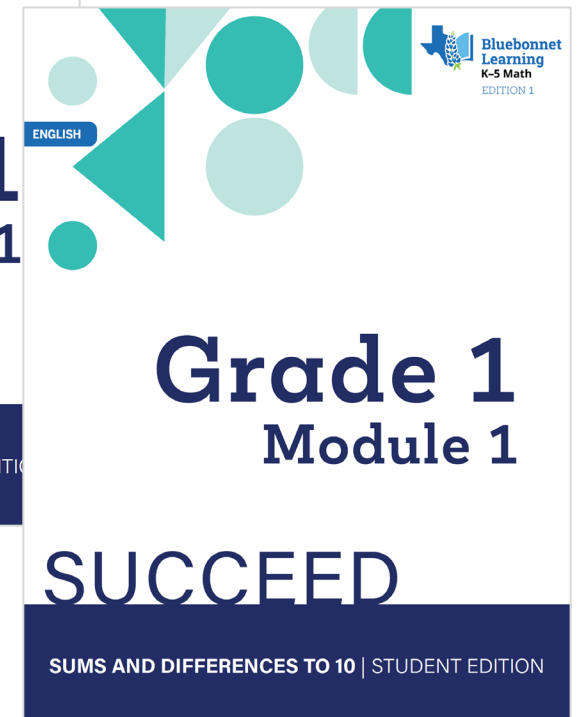
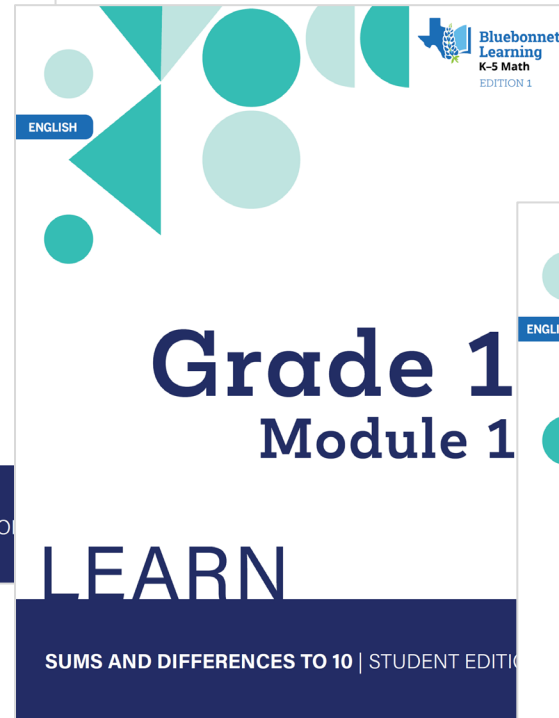
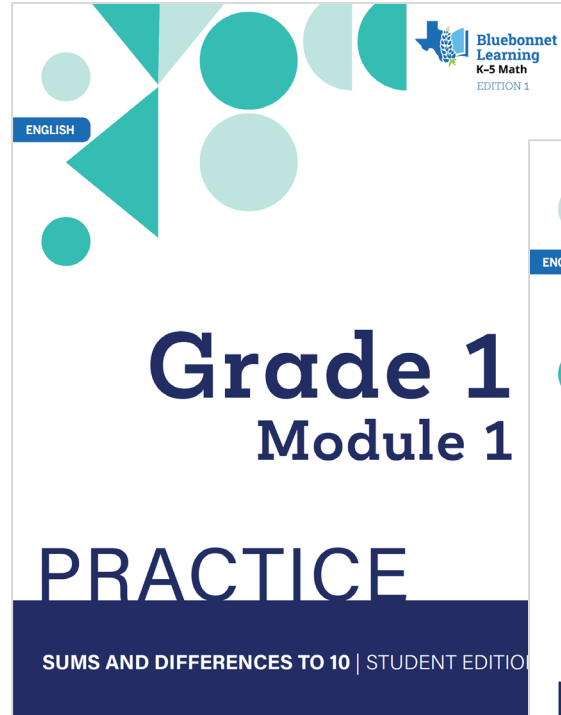
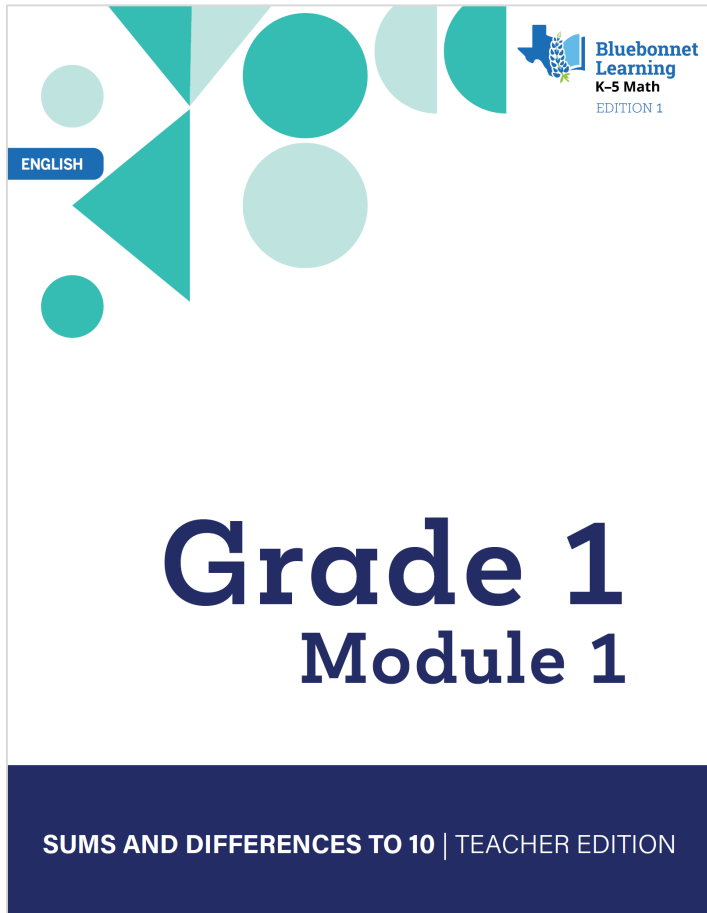
Lesson Component	Purpose	Approx. Time
<b>Fluency Practice</b>	Maintenance: stay sharp on previously learned skills  Preparation: targeted practice for the current lesson  Anticipation: skills that ensure students are ready for the in-depth work of upcoming lessons	10 minutes
<b>Application Problems</b>	Apply conceptual understanding to make sense of and persevere through new problems	5 minutes
<b>Concept Development</b>	Major portion of instruction, includes time for <b>Problem Set</b> , an opportunity for independent practice  (Problem Sets are intentionally crafted from simple to complex, and teachers should adjust the Problem Set based on the needs of their students)	20-30 minutes
<b>Student Debrief</b>	Student reflect on the lesson and analyze new learning through the 3-minute <b>Exit Ticket</b>	

**Lesson 5**  
Objective: Recognize that equal parts of an identical rectangle can have different shapes.

**Suggested Lesson Structure**

■ Fluency Practice	(10 minutes)
■ Application Problem	(5 minutes)
■ Concept Development	(35 minutes)
■ Student Debrief	(10 minutes)
<b>Total Time</b>	<b>(60 minutes)</b>





## Grade 1 Module 1

### SUMS AND DIFFERENCES TO 10 | TEACHER EDITION

BLUEBONNET LEARNING K-5 MATH    Module Overview    1 • 1

### Grade 1 • Module 1 Sums and Differences to 10

**OVERVIEW**

In this first module of Grade 1, students make significant progress towards fluency with addition and subtraction of numbers to 10 (1.3D) as they are presented with opportunities intended to advance them from counting all to counting on, which leads many students then to decomposing and composing addends and total amounts.

Topic A continues the work of developing this ability with all the numbers within 10 in joining situations (1.3B, 1.5D) with a special focus on the numbers 6, 7, 8, and 9, since recognizing how much a number needs to make 10 is simpler for most students. Students decompose numbers into two sets, or conceptually subitize (1.2A), in Lessons 1 and 2, and record their decompositions as number bonds.

T: How many dots do you see?  
S: 8.  
T: What two parts do you see?  
S: I see 5 and 3.  
T: Did you need to count all the dots?  
S: No! I could see the top row was a full five, so I just said 6, 7, 8.

In Lesson 3, students see and describe 1 more as + 1. They use the structure of its cardinality (1.2A), just as the student speaking in the above vignette to which they can add one, or count on by one, without recounting. All students to solve addition problems by counting on rather than counting.

Topic B continues the process of having the students compose and decompose. They describe joining situations (pictured to the right) with number bonds and count on from the first part to totals of 6, 7, 8, 9, and 10 (1.3B, 1.3D, 1.5D). As they represent all the partners of a number, they reflect and see the decompositions, "Look at all these ways to make 8. I can see connections between them."

Through dialogue, they engage in self-invitation by the joining situation and the invited by the number bonds. Expressions model both the stories and the bonds, the decompositions (1.3B, 1.5D).

The work with story problems in Topic to real-world situations. Students advance change unknown problems such as:

## Module Overview

BLUEBONNET LEARNING K-5 MATH    Module Overview    1 • 1

### Terminology

A Spanish cognate is included when the term has a similar meaning and spelling in English. Not every term in this module has a Spanish cognate.

**New or Recently Introduced Terms**

- Addend:** one of the numbers being added  

$$\begin{array}{r} \text{addends} \\ 2 + 1 \\ \hline \end{array} \quad \begin{array}{r} \text{addends} \\ 8 = 3 + 3 + 2 \\ \hline \end{array}$$
- Count on:** count up from one part to the total
- Doubles (Dobles):** an addition number sentence or expression with the same number added twice
- Doubles plus 1:** an addition number sentence or expression with the same number added twice and one more added  

$$\begin{array}{r} \text{doubles} \\ 2 + 2 = \square \\ 3 + 3 = \square \\ 4 + 4 = \square \end{array} \quad \begin{array}{r} \text{doubles} \\ 2 + 3 = \square \\ 3 + 4 = \square \\ 4 + 5 = \square \end{array}$$
- Expression (Expresión):** a number sentence without an equal sign  

$$2 + 1$$

$$5 - 3$$

## Terminology

BLUEBONNET LEARNING K-5 MATH    Module Overview    1 • 1

Topic	TEKS	Student Misconception	How to Bridge to a Better Understanding
Topics C and H	1.3B 1.5D	Students scan word problems for numbers and key words to determine which operation to use (e.g., "More means add. I find the numbers in the story problem and add them together").	Notice how concrete and pictorial models are used to represent a story problem.  Make the connection between the models and the story in the problem even clearer.  For example, you can ask the following: <ul style="list-style-type: none"> <li>What does the 4 tell us about in the story? The 2? The 6?</li> <li>What are we looking for? A part or a total?</li> <li>What is happening in this story? What symbol can we use to show what is happening?</li> </ul>
Topic D	1.3D	Students rely on counting all (e.g., "I have to count from 1").	Make 5-group cards and/or at centers.  To support counting on, have Partner A show a numeral. Have Partner B show a number of dots and count on to find the total (e.g., "Silili, 7, 8, 9")

## Misconceptions

BLUEBONNET LEARNING K-5 MATH    Lesson 1    1 • 1

### Lesson 1

**Objective:** Analyze and describe embedded numbers (to 10) using 5-groups and number bonds.

**Suggested Lesson Structure**

- Fluency Practice (16 minutes)
- Application Problem (7 minutes)
- Concept Development (30 minutes)
- Student Debrief (7 minutes)
- Total Time (60 minutes)**

**Fluency Practice (16 minutes)**

- Math Fingers Flash 1.2A (3 minutes)
- Sprint: Count Dots 1.2A (13 minutes)

**Math Fingers Flash (3 minutes)**

Note: Visually recognizing (perceptually subitizing) sets of objects particularly fingers, allows students to move toward seeing two sets of objects together (conceptually subitizing), thus preparing them for the fluency objective of Grade 1.

Teacher flashes fingers the Math Way for numbers 0–10. When using a document camera, teacher begins by raising the left pinky and ends with the right pinky as shown above. When facing the students, teacher's raised fingers should begin with the right pinky and end with the left pinky as seen below. At all times, students see fingers move from left to right.

T: I'm going to hold up some fingers the Math Way and then hide them. Look carefully and say the number you saw when I snap.  
 T: (Flash 3 fingers for 2–3 seconds and then hide them.) Ready (snap).  
 S: 3.  
 Repeat process for numbers within 5.  
 T: (Flash 7 fingers.) Ready (snap).

**NOTES ON FLUENCY PRACTICE:**

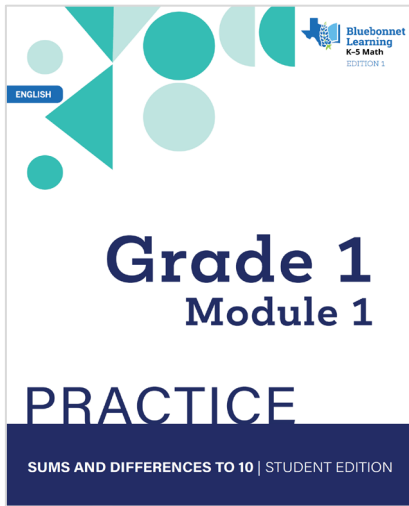
Think of Fluency Practice as having three goals:

- Maintenance (staying sharp on previously learned skills).
- Preparation (targeted practice for the current lesson).
- Anticipation (skills that ensure that students are ready for the in-depth work of upcoming lessons).

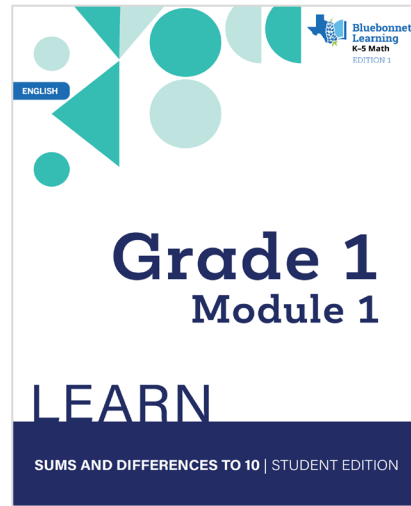
Example of anticipatory fluency: Students must be secure in counting to 10 long before they can be expected to decompose 10.

## Detailed Lessons

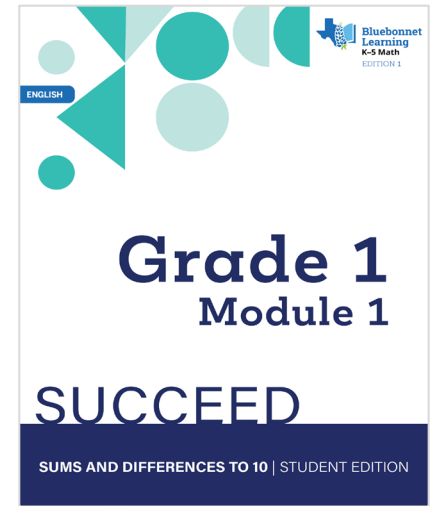
# Bluebonnet Learning K–5 Math (3/3)



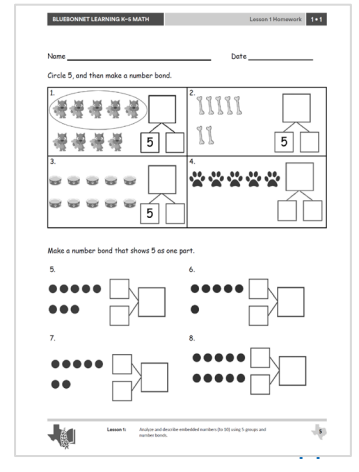
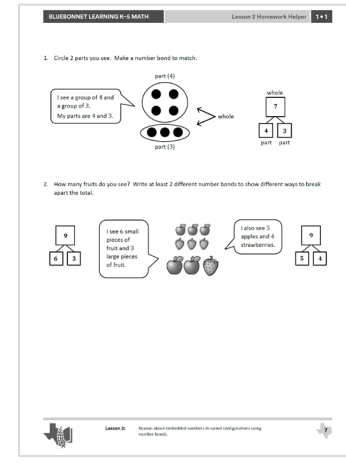
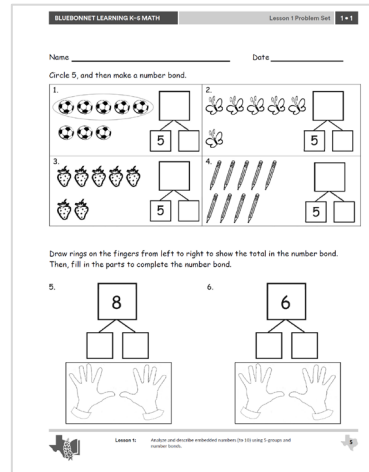
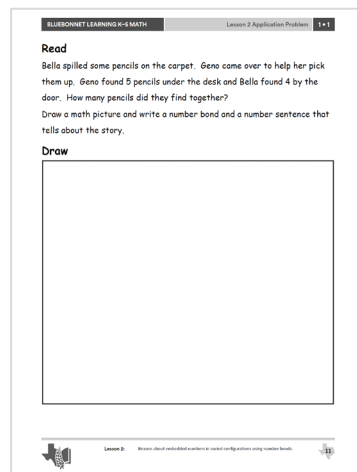
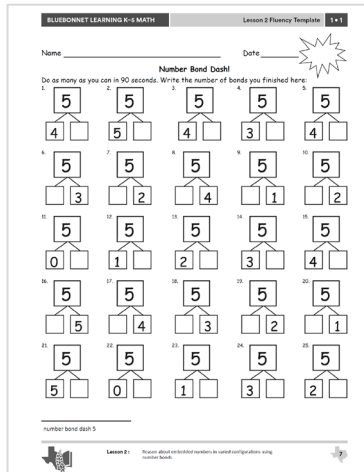
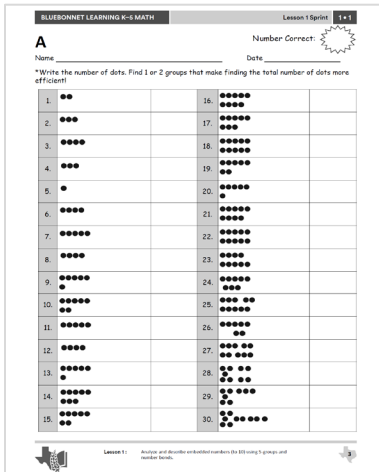
**Fluency Practice**



**Problem Solving and Problem Sets**



**Homework and Practice**



# K-5 Math Lesson Structure | Fluency

ENGLISH

Bluebonnet Learning  
K-5 Math  
EDITION 1

# Grade 2 Module 1

SUMS AND DIFFERENCES TO 100  
TEACHER EDITION

Suggested Lesson Structure

OER K-5 MATH

## Lesson 4

Objective: Make a ten to add within 20.

### Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(8 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
<b>Total Time</b>	<b>(60 minutes)</b>

### Fluency Practice (12 minutes)

- Draw Tens and Ones 2.2A (3 minutes)
- Make Ten 1.3D (3 minutes)
- Make the Next Ten Within 100 2.4B (4 minutes)
- Take Out One 2.4A (2 minutes)

#### Draw Tens and Ones (3 minutes)

Materials: (T) Linking cubes with ten-sticks and extra cubes, place value chart (S) Personal white board

Note: This fluency activity reviews place value as students analyze two representations of two-digit numbers.

T: Draw the number I show with quick tens and ones.  
T: (Show 2 linking cube ten-sticks and 4 ones.)  
S: (Draw as pictured to the right.)  
T: Show me your boards. Tell me the number.  
S: 24.  
T: Draw the number I show with quick tens and ones.  
T: (Write the number 42 on the place value chart.)  
S: (Draw as pictured to the right.)  
T: Tell me the number.  
S: 42.

For the next minute, represent 18 and 81, 37 and 73, 29 and 92, alternating between showing the smaller number of each pair with cubes and the larger number with the place value chart.

OER Lesson 4: Make a ten to add within 20. 57

Fluency Practice



# K–5 Math Lesson Structure | Application Problem

Bluebonnet Learning  
K-5 Math  
EDITION 1

ENGLISH

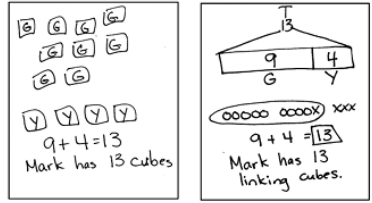
# Grade 2 Module 1

SUMS AND DIFFERENCES TO 100  
TEACHER EDITION

OER K-5 MATH Lesson 4 2 • 1

**Take Out One (2 minutes)**  
Materials: (S) Personal white board  
Note: In the lesson, students add 9 and 6 by adding 9 and 1 and 5. They “take out 1” from 5. This fluency activity prepares them to take 1 out of a variety of numbers and say how many are left.  
T: Let’s take out 1 from each number. I say 5. You write the number bond and say the two parts, 1 and 4.  
T: 5.  
S: (Draw number bond.) 1 and 4.  
Continue with the following possible sequence: 3, 10, 4, 7, 9, 8, and 6.

**Application Problem (8 minutes)**  
Mark had a stick of 9 green linking cubes. His friend gave him 4 yellow linking cubes. How many linking cubes does Mark have now?



Note: This *add to result unknown* problem’s strip diagram can be compared to that of Lesson 3 when a part was subtracted.

**Concept Development (30 minutes)**  
Materials: (S) Personal white board  
**Part 1: Making ten from an addend of 9, 8, or 7.**  
Note: In Grade 1, students used ten-sticks and quick ten drawings extensively when making ten. Now in Grade 2, the objective is to work at the numerical level as soon as possible.  
T: (Write  $9 + 4$  on the board.)  
T: Let’s draw to solve  $9 + 4$  using circles and Xs.


**NOTES ON MULTIPLE MEANS OF REPRESENTATION:**  
“Mark’s Linking Cubes” bridges into today’s Concept Development of making a ten to add. Rather than teach the make ten strategy during the Application Problem, notice what strategies students are independently using and integrate these observations into the Concept Development. During the Student Debrief, consider coming back to the Application Problem, and invite students to apply today’s learning to show another way to solve the problem.

**NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**  
If time or precision is a factor, create templates of pre-drawn circles to model addends of 9, 8, and 7. Then, students can attend to drawing Xs to complete the ten and model the remainder of the problem.

OER 59

Application Problem

# K–5 Math Lesson Structure | Concept Development and Problem Set



Bluebonnet Learning  
K-5 Math  
EDITION 1

ENGLISH

## Grade 2 Module 1

SUMS AND DIFFERENCES TO 100  
TEACHER EDITION

OER K-5 MATH Lesson 4 2 • 1

T: (Quickly draw and count aloud 9 circles in a 5-group column as seen in the first image.)

T: How many Xs will we add?

S: 4 Xs.

T: (Using the X symbol, complete the ten and draw the other 3 Xs to the right as seen in the second image.)

T: Did we make a ten?

S: Yes!

T: Our  $9 + 4$  is now a ten-plus fact. What fact can you see in the drawing?

S:  $10 + 3 = 13$ .

T:  $10 + 3$  equals?

S: 13.

T: So,  $9 + 4$  equals?

S: 13. (Write the solution.)

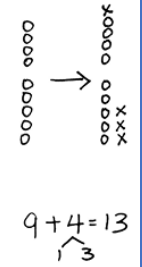
T: What did we take out of 4 so that we could make 10?

S: 1.

T: (Draw the number bond under 4 as shown to the right.)

T: (Write  $9 + 5$ .)

T: Solve using a number bond. (If students want or need to draw, allow them to.)



Continue with the following possible sequence:  $9 + 6$ ,  $9 + 7$ ,  $8 + 9$ ,  $8 + 3$ ,  $8 + 4$ ,  $8 + 7$ , and  $7 + 5$ . Have students explain their work to a partner.

**Part 2: Observing patterns.**

T: Look at our list of problems where one part, or addend, is 9. Tell your partner what you notice about adding to 9.

S: You get 1 out! → The answer is 10 and 1 less than the other addend.

T: Look at the problems with 8 as an addend. Tell your partner what you notice.

S: You get 2 out! → You always take 2 out of the other addend.

T: How is solving  $9 + 4$  and  $8 + 4$  different?

S: We used 2 to make 10 when we added to 8 and 1 to make 10 when we added to 9. → We used a different number bond.

**Problem Set (10 minutes)**

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. Some problems do not specify a method for solving. This is an intentional reduction of scaffolding that invokes 2.1.C, Use Appropriate Tools Strategically. Students should solve these problems using the RDW approach used for Application Problems.

**NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**

Emergent bilingual students benefit from speaking with their peers at key points in the lesson before their classmates are asked for responses. An opportunity to turn and talk to a partner to discuss their understanding of *making a ten* gives them a chance to practice their words and express their thinking, encouraging them to participate more fully in class discussions.

60 Lesson 4: Make a ten to add within 20.

Concept Development and Problem Set

# K–5 Math Lesson Structure | Student Debrief and Exit Ticket

ENGLISH

Bluebonnet Learning  
K-5 Math  
EDITION 1

# Grade 2 Module 1

SUMS AND DIFFERENCES TO 100  
TEACHER EDITION

OER K–5 MATH Lesson 4 2 • 1

### Student Debrief (10 minutes)

**Lesson Objective:** Make a ten to add within 20.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Let's look at Problems 11–14. How are the problems the same and different?
- Do you notice a pattern that will help you memorize your 9-plus facts? What other patterns do you notice?
- Explain the strategy we reviewed today. Can you think of another problem that the *make ten* strategy will help us solve?
- Can you figure out the math goal of today's lesson? What name would you give this lesson?

### Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

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

Solve.

1. $9 + 2 = 12$ $\begin{array}{r} 9 \\ + 2 \\ \hline \end{array}$	2. $9 + 5 = 14$ $\begin{array}{r} 9 \\ + 5 \\ \hline \end{array}$
3. $8 + 4 = 12$ $\begin{array}{r} 8 \\ + 4 \\ \hline \end{array}$	4. $8 + 7 = 15$ $\begin{array}{r} 8 \\ + 7 \\ \hline \end{array}$
5. $7 + 2 = 9$ $\begin{array}{r} 7 \\ + 2 \\ \hline \end{array}$	6. $7 + 6 = 13$ $\begin{array}{r} 7 \\ + 6 \\ \hline \end{array}$
7. $8 + 3 = 11$ $\begin{array}{r} 8 \\ + 3 \\ \hline \end{array}$	8. $9 + 8 = 17$ $\begin{array}{r} 9 \\ + 8 \\ \hline \end{array}$

Solve.

9. $10 + \underline{2} = 12$	10. $10 + \underline{3} = 13$
$9 + \underline{3} = 12$	$9 + \underline{4} = 13$
11. $10 + \underline{4} = 14$	12. $10 + \underline{6} = 16$
$8 + \underline{6} = 14$	$7 + \underline{9} = 16$

13. Lise has 2 blue beads and 9 purple beads. How many beads does Lise have all?  
 $\begin{array}{r} 9 \\ + 2 \\ \hline \end{array} = 11$   
Lise has 11 beads all.

14. Ben had 8 pencils and bought 5 more. How many pencils does Ben have all together?  
 $\begin{array}{r} 8 \\ + 5 \\ \hline \end{array} = 13$   
Ben has 13 pencils all together.

OER Lesson 4: Make a ten to add within 20. 61

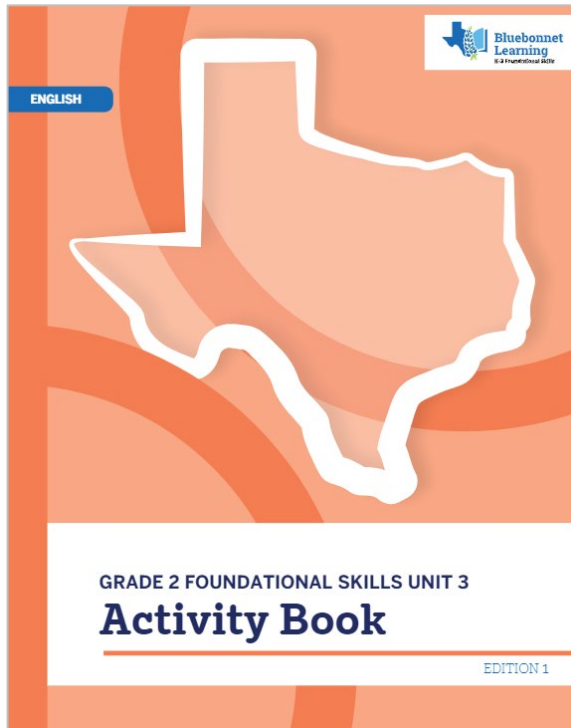
Student Debrief  
and Exit Ticket

# Bluebonnet Learning Secondary Mathematics

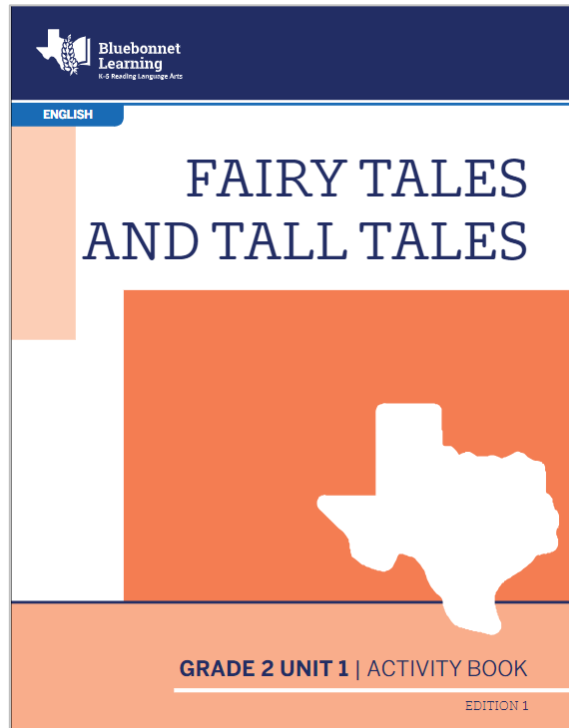
# Bluebonnet Learning Instructional Materials

## Reading Language Arts (RLA)

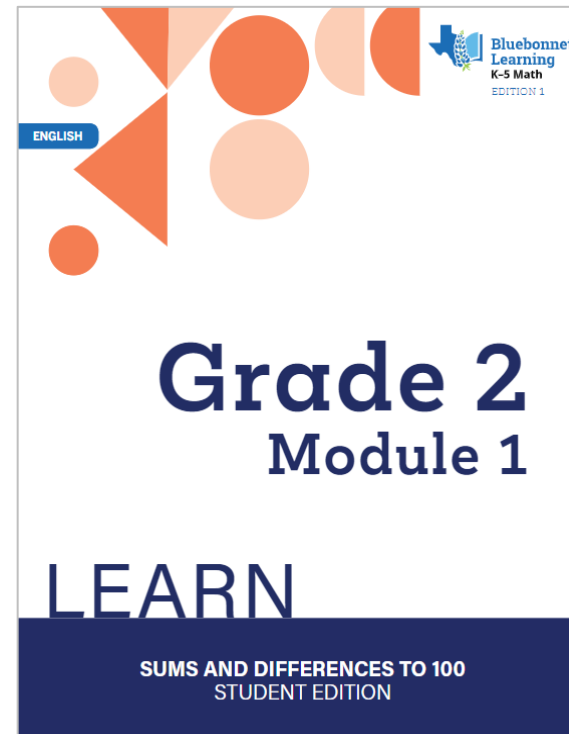
## Mathematics



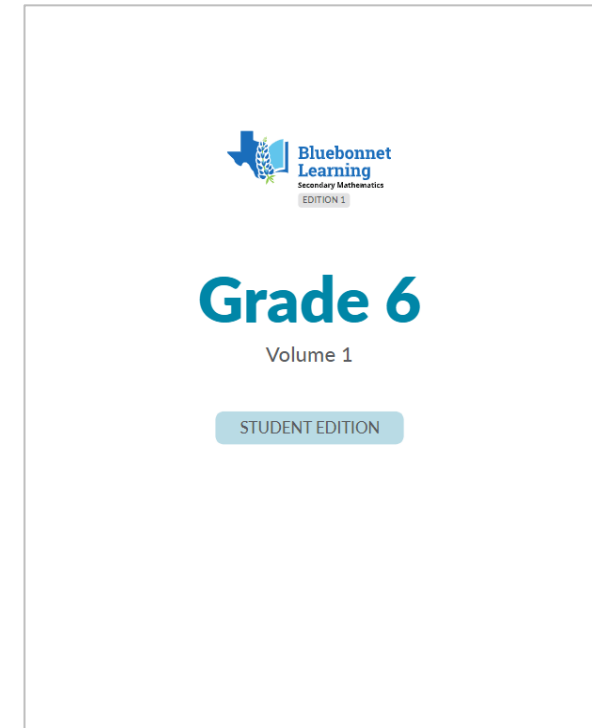
K-3 Foundational Skills



K-5 RLA Knowledge



K-5 Math

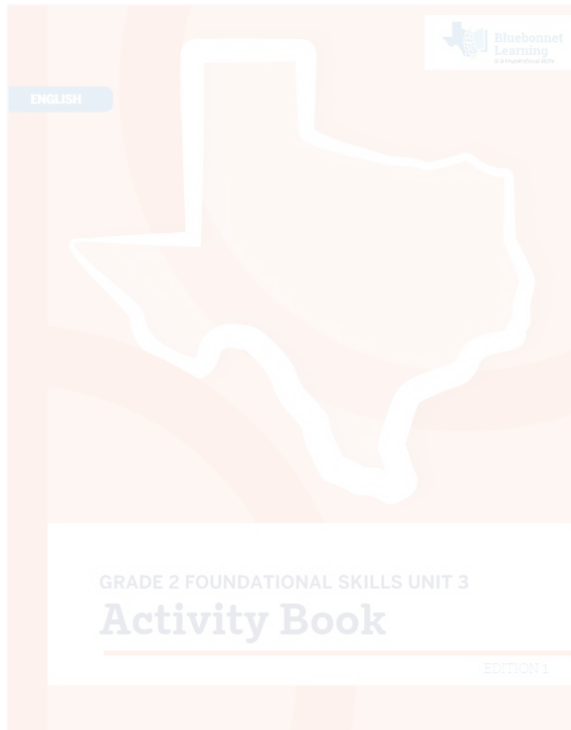


Secondary Mathematics

# Bluebonnet Learning Instructional Materials

## Reading Language Arts (RLA)

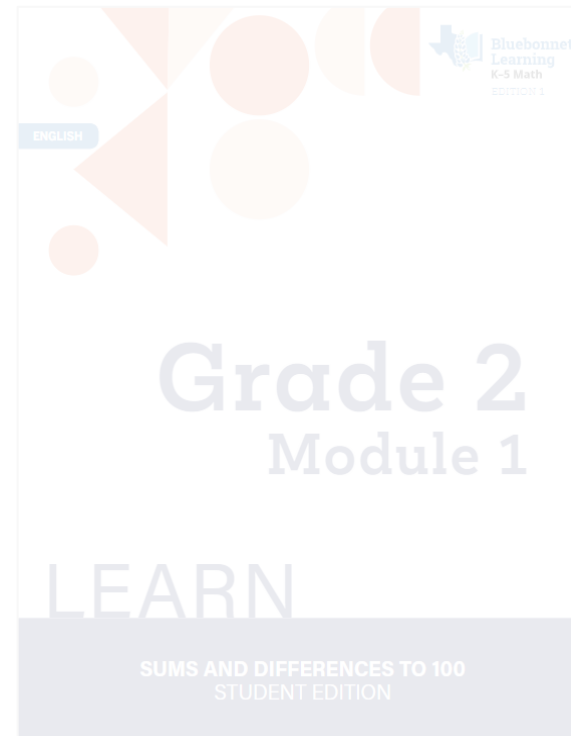
## Mathematics



K-3 Foundational Skills



K-5 RLA Knowledge



K-5 Math



Secondary Mathematics

# Bluebonnet Learning Secondary Math | Course-Level Documents

## GRADE 6: YEAR-AT-A-GLANCE

150-Day Pacing

TEKS Process Standards are embedded in every module: 6.1A, 6.1B, 6.1C, 6.1D, 6.1E, 6.1F, 6.1G			
1 DAY PACING = 45-MINUTE SESSION			
Module	Topic	Pacing	TEKS*
1 Composing and Decomposing	1: Factors and Multiples	12	6.2D, 6.2E, 6.3A, 6.3B, 6.3E, 6.4F, 6.5C, 6.7A, 6.7D, 6.8D
	2: Shapes and Solids	9	6.8A, 6.8B, 6.8C, 6.8D
	3: Decimals	5	6.2C, 6.2D, 6.3E, 6.8D
		<b>26</b>	
2 Relating Quantities	1: Ratios and Rates	18	6.4A, 6.4B, 6.4C, 6.4D, 6.4E, 6.5A, 6.5C, 6.6C
	2: Percents	8	6.2C, 6.2D, 6.3E, 6.4E, 6.4F, 6.4G, 6.5B, 6.5C
	3: Unit Rates and Conversions	10	6.4B, 6.4D, 6.4H, 6.5A
		<b>36</b>	
3 Moving Beyond Positive Quantities	1: Signed Numbers and the Four Quadrants	9	6.2A, 6.2B, 6.2C, 6.2D, 6.11A
	2: Operating with Integers	13	6.3C, 6.3D
		<b>22</b>	
4 Determining Unknown Quantities	1: Expressions	12	6.3D, 6.7A, 6.7B, 6.7C, 6.7D
	2: Equations and Inequalities	17	6.3D, 6.7B, 6.7D, 6.8C, 6.8D, 6.9A, 6.9B, 6.9C, 6.10A, 6.10B
	3: Graphing Quantitative Relationships	11	6.5A, 6.6A, 6.6B, 6.6C, 6.11A
	4: Financial Literacy: Accounts, Credit, and Careers	8	6.14A, 6.14B, 6.14C, 6.14D, 6.14E, 6.14F, 6.14G, 6.14H
		<b>48</b>	
5 Describing Variability of Quantities	1: The Statistical Process	10	6.12A, 6.12B, 6.12D, 6.13A, 6.13B
	2: Numerical Summaries of Data	8	6.12A, 6.12B, 6.12C, 6.12D, 6.13A
		<b>17</b>	
<b>Total Days: 150</b>			

\*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

Year-at-a-Glance

## GRADE 6: SCOPE & SEQUENCE

150-Day Pacing

### 1 Composing and Decomposing

Module Pacing: 26 Days

#### TOPIC 1: Factors and Multiples

TEKS Mathematical Process Standards: 6.1A, 6.1B, 6.1C, 6.1D, 6.1E, 6.1F, 6.1G, 6.1H, 6.1I, 6.1J, 6.1K, 6.1L, 6.1M, 6.1N, 6.1O, 6.1P, 6.1Q, 6.1R, 6.1S, 6.1T, 6.1U, 6.1V, 6.1W, 6.1X, 6.1Y, 6.1Z

ELPS: 1.A, 1.C, 1.E, 1.G, 1.H, 2.C, 2.D, 2.I, 3.B, 3.D, 3.E, 3.F, 3.G, 3.H, 3.I, 3.J, 3.K, 3.L, 3.M, 3.N, 3.O, 3.P, 3.Q, 3.R, 3.S, 3.T, 3.U, 3.V, 3.W, 3.X, 3.Y, 3.Z

Lesson Lesson Title Lesson Summary

Lesson	Lesson Title	Lesson Summary
1	Introduction to the Problem-Solving Model and Learning Resources	Students reflect on learning a new variety of ways they learn. The problem-solving model, TEKS mathematical process standards, the Academic Glossary help students solve a problem-solving activity. Students and summarize the problem-solving process, not content. Students will refer to the Academic Glossary, Problem-Solving Model Graphic Organizer, Problem-Questions to Ask, and TEKS Math Standards, which are located in the Guide. These materials should always be available to students throughout the course.
2	Writing Equivalent Expressions Using the Distributive Property	Students divide area models in 1/2 to see that the sum of the areas of 4 regions equals the area of the whole. Then rewrite the product of two factors as the sum of two or more terms. Formalization of the distributive property.
3	Identifying Common Factors and Common Multiples	Students construct rectangles with and note their dimensions to factor factors. They create prime factorizations to determine the greatest common factor and least common multiple (LCM) of two numbers. Students examine the rows and columns of an area model to identify multiples and they describe the relationship between product, GCF, and LCM.
4	Dividing a Whole into Fractional Parts	Students create strip diagrams for $\frac{1}{2}$ , $\frac{1}{3}$ , and $\frac{1}{6}$ . They identify equivalent fractions by aligning the strip diagrams and then complete a graphic organizer to represent all the equivalent fractions by the strip diagrams. Students compare numerator and denominator of equal multiples of the original unit fraction.

## GRADE 6: SCOPE & SEQUENCE

150-Day Pacing

Lesson	Lesson Title	Lesson Summary	Essential Ideas	TEKS*	Pacing*
4	Benchmark Fractions	Students translate their understanding of strip diagrams to number lines. They use the benchmark fractions $0, \frac{1}{2}$ , and 1 to estimate the value of fractions, write fractions that are close to these benchmarks, and estimate sums. Students solve a problem which involves comparing fractions that represent shaded parts of figures.	<ul style="list-style-type: none"> <li>Benchmark fractions are common fractions used to estimate the value of fractions such as <math>0, \frac{1}{2}</math>, and 1.</li> <li>A fraction is close to 0 when the numerator is very small compared to the denominator.</li> <li>A fraction is close to <math>\frac{1}{2}</math> when the numerator is about half the size of the denominator.</li> <li>A fraction is close to 1 when the numerator is very close in size to the denominator.</li> </ul>	6.2D, 6.4F	1
5	Multiplying Fractions	Students review the area model for multiplication and apply it to multiplying mixed numbers. They analyze two methods for multiplying mixed numbers and then use these methods to answer questions in the context of a real-world scenario.	<ul style="list-style-type: none"> <li>Area models can be used to illustrate the multiplication of two fractions, which is essentially the same as taking a part of a part.</li> <li>An area model representing the multiplication of two mixed numbers can be tiled with fractional unit squares to express the product as a fraction greater than 1.</li> <li>The product of two fractions represented by an area model is the same as the product of the fractions calculated using the standard algorithm.</li> <li>Area models and fact families can be used to illustrate the quotients of fractions.</li> <li>The reciprocal or multiplicative inverse of a number <math>\frac{a}{b}</math> is the number <math>\frac{b}{a}</math>, where <math>a</math> and <math>b</math> are nonzero numbers.</li> <li>To calculate the quotient of two fractions, multiply the dividend by the reciprocal of the divisor.</li> <li>There are other algorithms to divide fractions, such as dividing across in special cases and using complex fractions as a form of 1.</li> </ul>	6.3B, 6.3E	1
6	Fraction by Fraction Division	Students connect multiplication to division by writing fraction fact families for area models. They then use strip diagrams and number line models to investigate the division of fractions by fractions. Students use these models to develop an algorithm for rewriting division sentences as multiplication sentences. They apply the algorithm to solve problems involving fractions and mixed numbers.	<ul style="list-style-type: none"> <li>The product of two fractions represented by an area model is the same as the product of the fractions calculated using the standard algorithm.</li> <li>Area models and fact families can be used to illustrate the quotients of fractions.</li> <li>The reciprocal or multiplicative inverse of a number <math>\frac{a}{b}</math> is the number <math>\frac{b}{a}</math>, where <math>a</math> and <math>b</math> are nonzero numbers.</li> <li>To calculate the quotient of two fractions, multiply the dividend by the reciprocal of the divisor.</li> <li>There are other algorithms to divide fractions, such as dividing across in special cases and using complex fractions as a form of 1.</li> </ul>	6.2E, 6.3A, 6.3E	2

End of Topic Assessment  
 Learning Individually with Skills Practice  
 Schedule these days strategically throughout the topic to support student learning.  
 \*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

#### TOPIC 2: Shapes and Solids

TEKS Mathematical Process Standards: 6.1B, 6.1C, 6.1D, 6.1E, 6.1F, 6.1G

ELPS: 1.A, 1.C, 1.E, 1.F, 2.C, 2.E, 2.I, 3.B, 3.C, 4.C, 4.F, 5.B, 5.F

1 DAY PACING = 45-MINUTE SESSION					
Topic Pacing: 9 Days					
Lesson	Lesson Title	Lesson Summary	Essential Ideas	TEKS*	Pacing*
1	Constructing Triangles Given Sides	Students use patty paper, pasta, and construction tools to explore the information required to create one triangle, unique triangles, or multiple triangles when given two or three possible side lengths. They learn that an infinite number of triangles can be made from only two side lengths. They also learn that unique triangles are formed when provided with three segments that are sufficiently long in relation to each other. Students should note that when all the measures of a triangle are the same as another triangle, even though they are in different orientations, the provided information creates a unique triangle. Students then summarize their knowledge of the conditions that form 0, 1, or multiple triangles.	<ul style="list-style-type: none"> <li>Constructing a triangle given the length of two sides does not result in the construction of a unique triangle.</li> <li>Constructing a triangle given the length of three segments, such that the sum of two segment lengths is greater than the third length, results in the construction of a unique triangle.</li> </ul>	6.8A	1

\*Bold TEKS = Readiness Standard; Bold Pacing = Reduced Number of Days

Scope & Sequence

## GRADE 6 STANDARDS OVERVIEW

TEKS covered at the lesson level are shown in **course color**. Additional TEKS covered in Skills Practice are shown in black.

	Number and Operations	Proportionality	Expressions, Equations, and Relationships	Measurement and Data	Personal Financial Literacy
MODULE 1: Composing and Decomposing	TOPIC 1: Factors and Multiples	6.2D, 6.3E, 6.3A, 6.3B, 6.3E	6.4F, 6.5C, (E)6.4F	6.7A, 6.7D, 6.8D	(P)6.7A, (E)6.7A, (P)6.7D, (E)6.7D
	TOPIC 2: Shapes and Solids	6.3A, 6.3E		6.8A, 6.8B, 6.8C, 6.8D	6.7A, 6.7D, (E)6.8A, (E)6.8C, (E)6.8D
	TOPIC 3: Decimals	6.2C, 6.2D, 6.3E	(E)6.2D	6.8D	6.7D, 6.8C, (E)6.8D
MODULE 2: Relating Quantities	TOPIC 1: Ratios and Rates	6.2E, (P)6.3E, 6.4A, 6.4B, 6.4C, 6.4D, 6.4E, 6.5A, 6.5C	(E)6.4B, (E)6.4E, (E)6.5A	6.6C, 6.6C, 6.8D	(E)6.6C, 6.8D
	TOPIC 2: Percents	6.2C, 6.2D, 6.3E	6.4E, 6.4F, 6.4G, 6.5B, 6.5C	6.4B, (E)6.4F, 6.5A, (E)6.5B, (E)6.5C	
	TOPIC 3: Unit Rates and Conversions	6.3D, (P)6.3E, 6.3A, 6.4D, 6.5A	6.4B, 6.4H, (E)6.5A, 6.5B, (E)6.5B	6.7D, 6.8D	

Bold TEKS = Readiness Standard (P) = Prerequisite for TEKS (E) = Extension of TEKS

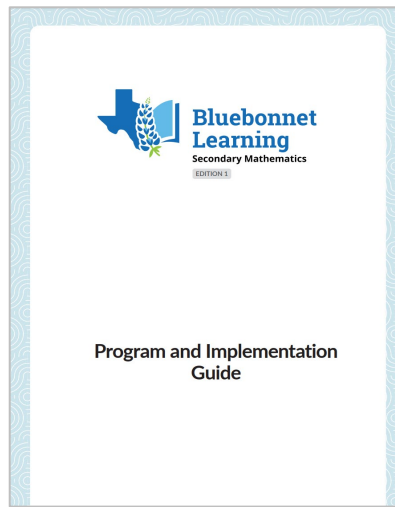
Standards Overview







# Bluebonnet Learning Secondary Mathematics | Program and Implementation Guide



The **Program and Implementation Guide (P&IG)** provides a high-level overview of the Bluebonnet Learning Secondary Mathematics Program.

Please note that this is a **new asset** that was not part of the CER Version 3 materials.

Also included and revised at the Program-Level:

- Content Organization Document (**new**)
- Teacher Module and Topic Internalization Protocol
- Coach Module and Topic Internalization Protocol
- Teacher Lesson Internalization Protocol
- Coach Lesson Internalization Protocol
- Teacher Student Work Analysis Protocol
- Coach Student Work Analysis Protocol
- Coach Observation Tool

### CONTENT ORGANIZATION

The program is thoughtfully and thoughtfully designed to ensure students build the foundation they'll need to experience ongoing growth in mathematics. The arc of the mathematics develops coherently, building understanding by linking concepts together through a logically sequenced and connected scope and sequence, so students can learn mathematics more deeply and apply what they have learned to more complex problems in the future.

Seeing Connections: Connections are shown visually within and between courses in the instructional materials, with icons. Topics will be written and across grades. This key on page 3 shows represents. The provided Module rationales for each of the sequence of Modules and Topics and high concepts learned throughout the course.

GRADE 6	MODULE 1 Comparing and Describing	MODULE 2 Finding Quotients	MODULE 3 Factors and Multiples
TOPIC 1	TOPIC 1 Ratios	TOPIC 1 Fractions	TOPIC 1 Simplifying Fractions
TOPIC 2	TOPIC 2 Decimals	TOPIC 2 Decimals	TOPIC 2 Decimals

### Teacher Lesson Internalization Protocol

**PREWORK**

Read the Module Overview and highlight, annotate, or record your thoughts on the progression of content in the module.

**Purpose**

The Teacher Module and Topic Internalization Protocol provides a step-by-step process for understanding each module and topic prior to teaching, including what students will learn, how teachers will assess student learning, and the high-level arc of learning. By starting with modules and topic internalization, teachers can understand how each lesson fits into the big picture prior to using the Teacher Lesson Internalization Protocol. Returning to this protocol at the beginning of each new topic within a module help ensure teachers of the connections and coherence between the topics in the module.

**STEP 1 Understand the big picture.**

**USE THE MODULE AND TOPIC OVERVIEW**

Review the Module Overview and annotations created as part of the prework. Read the Topic Overview. Identify how the module utilizes the concrete-representational-abstract (CRA) progression to build student learning from lesson to lesson. Identify new key terms and symbols. Use the copier and the How can you use cognates to support EB students? section in the Topic Overview to start planning supports for emergent bilingual students.

**USE THE SCOPE AND SEQUENCE AND TOPIC PACING GUIDE**

Identify how many days are needed for both Learning Together and Learning Individually experiences. Remember that Learning Individually days should be scheduled strategically throughout the topic to support student learning based on formative assessment data.

**REFLECT**

Why is this topic important? How does it connect to prior topics, if applicable?

### Teacher | Student Work Analysis Protocol

**PREWORK**

Read the Lesson Overview and big ideas from internalizing the topic.

**Purpose of Prework**

The Teacher Lesson Internalization Protocol provides a framework for understanding each lesson prior to teaching, including what students will learn, how students are assessed, and how teachers learners to meet the age of the instructional material. Internalization, teachers deepen the understanding their Teacher Module and Topic Internalization Protocol.

**STEP 1 Understand the lesson purpose**

**Use the Facilitation Notes and Topic Overview**

Read the Lesson Overview, Texas Essential Knowledge and Skills (TEKS) Mathematical Process Standards, English Language Standards (ELPS), and Essential Ideas. Highlight and/or understand. Determine the knowledge and skills, and result of this learning experience. Consider both the Learning Individually experiences.

**STEP 2 Understand the sequence and p of activities.**

**Use the Facilitation Notes**

Read the Facilitation Notes, including the Lesson Objectives to understand how the lesson unfolds and identify and days (spacing) for each lesson as well as the time (spacing) Highlight, annotate, and/or record your understanding.

**STEP 1 Discuss the task, related text, and standards.**

1. Examine the task by considering the questions below.

**ESSENTIAL QUESTIONS**

- What are students being asked to do and understand in this task?
- What knowledge and vocabulary do students need to access this task?
- Which standards are being assessed through this task? Is the student expected to show proficiency for the entire standard, or are other aspects of it taught in the current module/topic, or later in the year?
- For strategy-based tasks, including word problems, what will be challenging about this task for students? Where will they likely struggle?

### OBSERVATION TOOL

The Observation Tool is a resource for coaches to document specific look-for while observing teachers' instruction and implementation of high-quality instructional materials (HQIM). This is not an evaluation tool.

Teacher	Date	Grade	Module	Topic	Lesson

**Before the Classroom Visit**

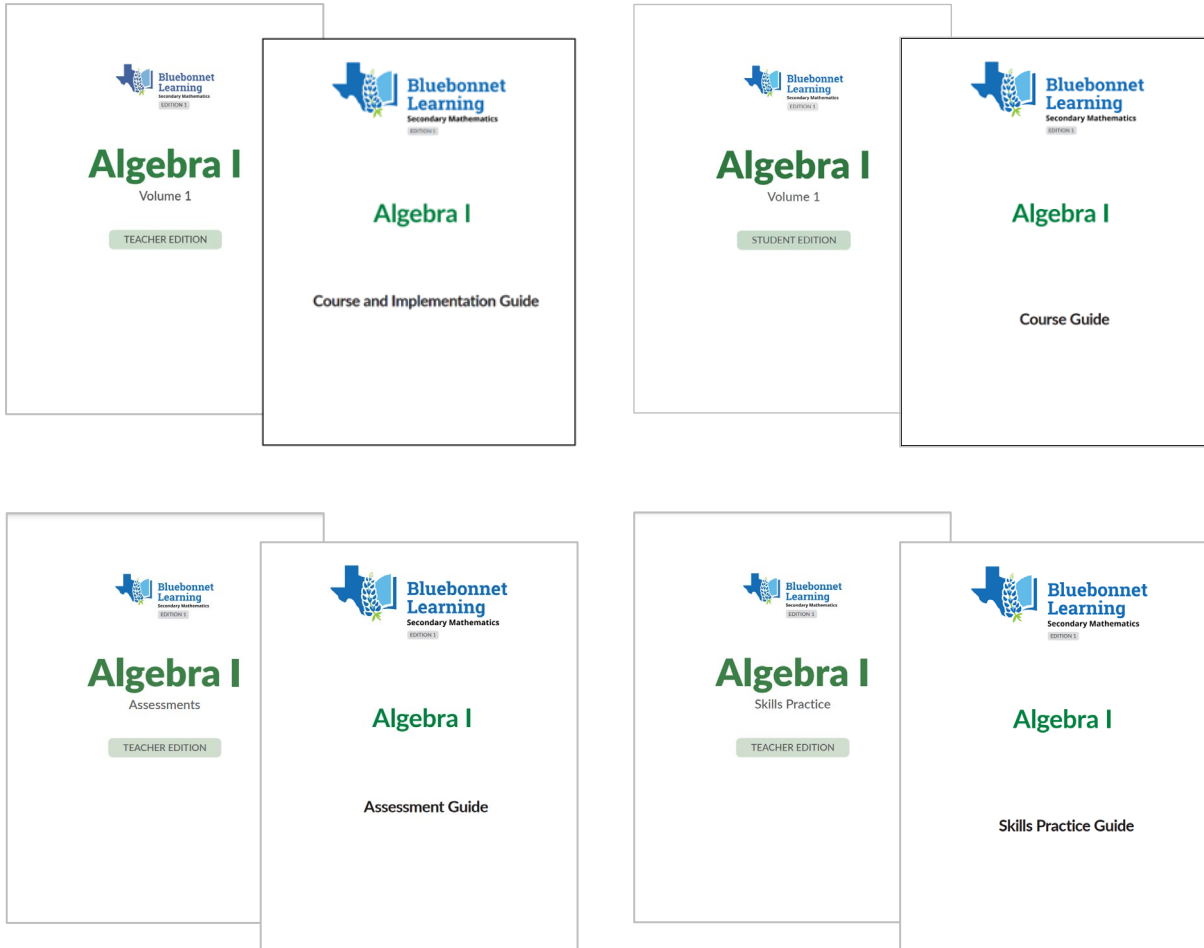
Review the lesson for purpose, specific instructional materials, and suggested pacing of activities.

Evidence of teacher internalization of Module, Topic, and Lesson exists.	Y	N
Teacher uses appropriate module within the scope and sequence.	<input type="radio"/>	<input type="radio"/>
Teacher stays within +/- 5 instructional days of suggested pacing guide.	<input type="radio"/>	<input type="radio"/>
Lesson meets minimum number of minutes for core instruction.	<input type="radio"/>	<input type="radio"/>

**Notes/Time**

Key: Y for Yes, observed; fully implemented; N/No, not present

# Bluebonnet Learning Secondary Mathematics | Course Guides



Each Guide provides the teacher and/or student with an overview of the materials.

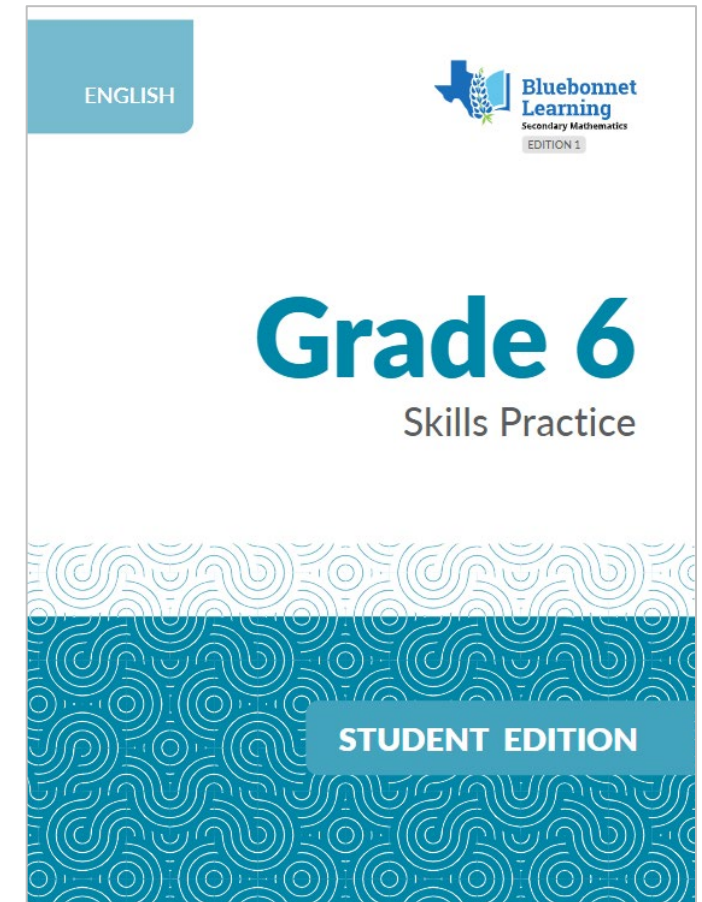
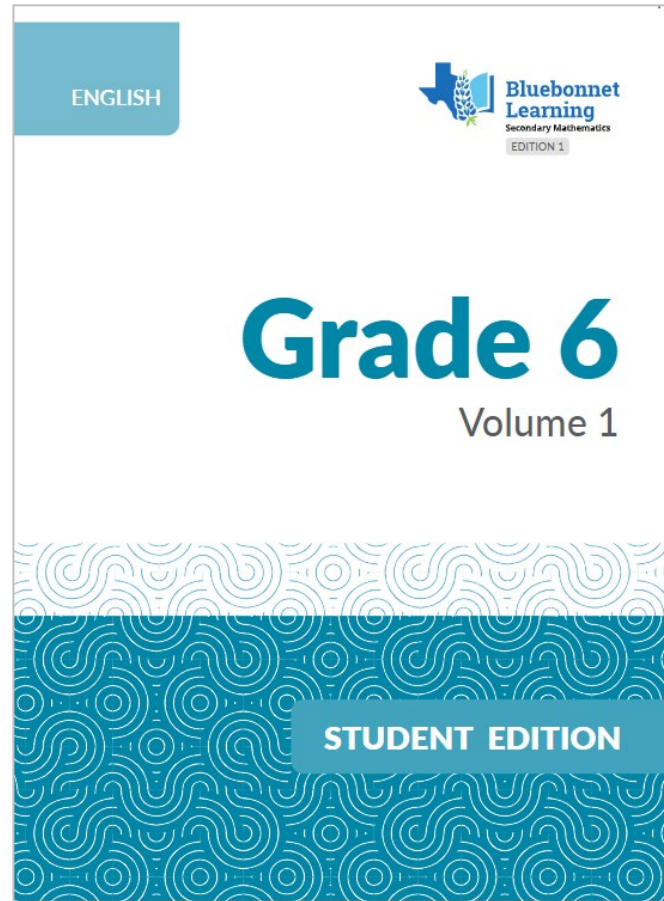
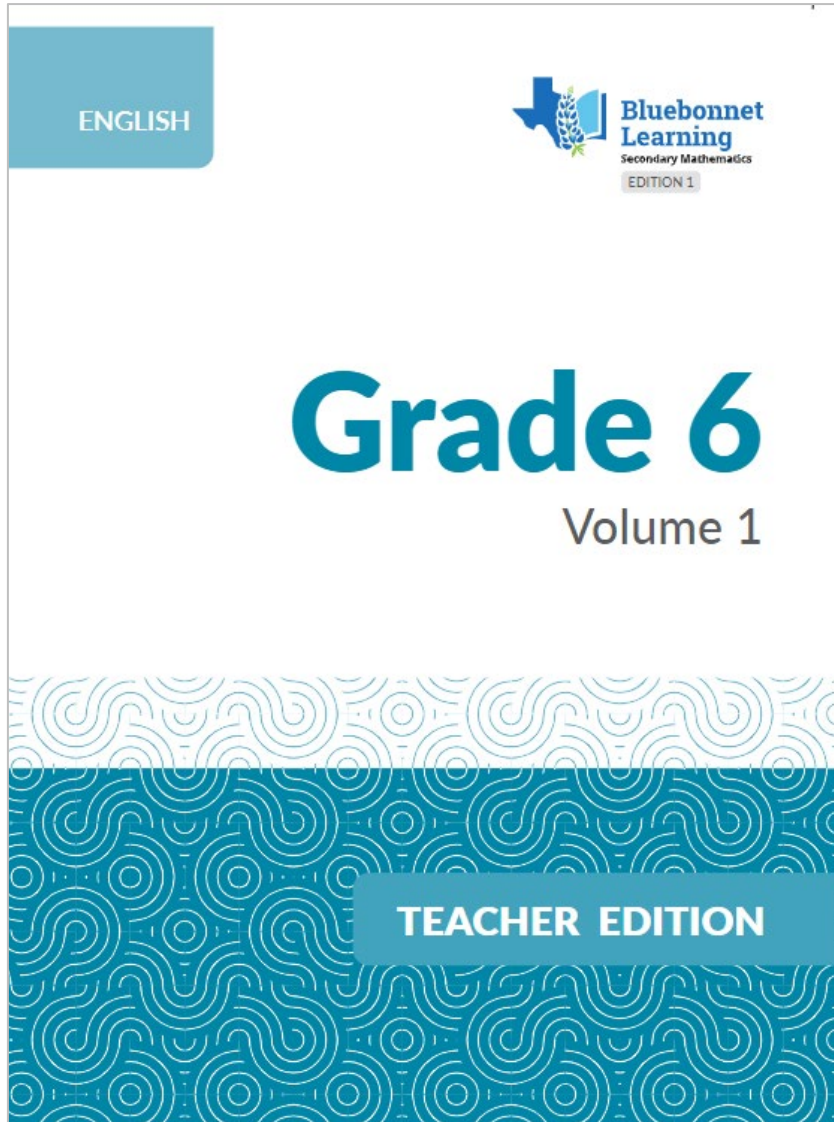
ALGEBRA I	
<b>Welcome to the Course Guide for Secondary Mathematics, Algebra I</b>	
Instructional Design . . . . .	FM-6
Lesson Structure . . . . .	FM-9
Research-Based Strategies . . . . .	FM-15
The Crew . . . . .	FM-17
TEKS Mathematical Process Standards . . . . .	FM-18
Understanding the Problem-Solving Model . . . . .	FM-21
The Problem-Solving Model Graphic Organizer . . . . .	FM-22
Academic Glossary . . . . .	FM-23
What is Productive Struggle? . . . . .	FM-25
Resources for Students and Families . . . . .	FM-26
Course Table of Contents . . . . .	FM-31

ALGEBRA I	
<b>Welcome to the Skills Practice Guide for Secondary Mathematics, Algebra I</b>	
Skills Practice Overview . . . . .	FM-6
Structure and Alignment . . . . .	FM-7
Best Practices for Implementation of Skills Practice on	
Learning Individually Days . . . . .	FM-11
Preparing for Learning Individually with Skills Practice . . . . .	FM-12
You Might Be Wondering . . . . .	FM-13
Skills Practice Outline . . . . .	FM-14

The Course and Implementation Guide, Course Guide, and Skills Practice Guide have each been updated for English Edition 1.

# Bluebonnet Learning Secondary Math (1/3)





ENGLISH

# Grade 6

## Volume 1

## TEACHER EDITION

### TOPIC 1 OVERVIEW

## Factors and Multiples

**How are the key concepts of *Factors and Multiples* organized?**  
 Students begin the topic with an introductory lesson on problem solving. They will use this model throughout the course when solving problems. Students then extend their knowledge of area and numbers to compose and decompose areas that represent numeric expressions. They decompose numbers into factors and apply the distributive property to compute products efficiently. Students use the distributive property to express the sum of two numbers as a product of two factors. They then use their knowledge of factors to determine the greatest common factors and least common multiples.

Students continue to engage in reasoning as they create and use physical models to represent and compare fractions as well as to determine equivalent fractions. They begin moving from concrete models to abstract thinking when they connect strip diagrams to number lines to represent and compare fractions. Students reason about the relative size of a fraction by comparing it to a benchmark fraction and investigating the relationship between the numerator and denominator. Students then consider how to decompose area models that represent fraction multiplication. They relate multiplication and division before investigating strategies for dividing fractions. Learning multiple division strategies and using visual models focuses students on reasoning and conceptual understanding as they increase fluency with dividing fractions.

### Math Representation

The model shows  $\frac{3}{4} + \frac{1}{4}$ .

The division expression asks, "How many  $\frac{1}{8}$ s are in  $\frac{3}{4}$ ?"

Although algorithms for fraction in this topic, students may not achieve this topic. Fluency requires time to develop fluency with fraction operations.

## 1

### Writing Equivalent Expressions Using the Distributive Property

#### LESSON OVERVIEW

Students divide area models in different ways to see that the sum of the areas of the smaller regions equals the area of the whole model. They then rewrite the product of two factors as a factor times the sum of two or more terms, leading to the formalization of the distributive property.

##### GRADE 6 TEKS

###### Mathematical Process Standards

(1) **The student uses mathematical processes to acquire and demonstrate mathematical understanding.**  
 The student is expected to:

- **6.1A** apply mathematics to problems arising in everyday life, society, and the workplace.
- **6.1C** select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.
- **6.1D** communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.

###### Expressions, Equations, and Relationships

(7) **The student applies mathematical process standards to develop concepts of expressions and equations.**  
 The student is expected to:

- **6.7D** generate equivalent expressions using the properties of operations, inverse, identity, commutative, associative, and distributive properties.
- **(8) The student applies mathematical process standards to use geometry to represent relationships and solve problems.**  
 The student is expected to:
- **6.8D** determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and sub-area of right rectangular prisms where dimensions are positive rational numbers.

##### MATERIALS

None

##### ELPS

(1) **Learning Strategies**  
 The student is expected to:

- (2) internalize new facts and academic language by using and reaching it in meaningful ways in speaking and writing activities that build concept and language awareness.
- (3) **Speaking**  
 The student is expected to:
- (8) extend and hearing and writing for identifying by reading on or supported language need.
- (9) social using context to infer language prof.

#### ESSENTIAL IDEAS

- The area of a rectangle is the product of its length and width.
- You can illustrate the distributive property using an area model of a rectangle with side lengths  $a$  and  $(b + c)$ .
- The distributive property states that for any numbers  $a$ ,  $b$ , and  $c$ ,  $a(b + c) = ab + ac$ .
- You can rewrite equivalent expressions using properties.

## Topic Overview

MODULE 1, TOPIC 1 PACING GUIDE
165-Day Pacing

1 DAY PACING = 45-MINUTE SESSION

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: 6.7D Introduction to the Problem-Solving Model and Lesson Resources GETTING STARTED ACTIVITY 1 TALK THE TALK	TEKS: 6.7D, 6.8D <b>LESSON 1</b> Writing Equivalent Expressions Using the Distributive Property GETTING STARTED ACTIVITY 1 TALK THE TALK	TEKS: 6.7A, 6.8D <b>LESSON 2</b> Identifying Common Factors and Common Multiples GETTING STARTED ACTIVITY 1 ACTIVITY 2	<b>LESSON 2</b> continued ACTIVITY 3 ACTIVITY 4 TALK THE TALK	<b>LEARNING INDIVIDUALLY</b> Skills Practice This is a suggested placement. Move based on student data and
TEKS: 6.8E, 6.8C <b>LESSON 3</b> Dividing a Whole into Fractional Parts GETTING STARTED ACTIVITY 1 TALK THE TALK	TEKS: 6.8D, 6.8F <b>LESSON 4</b> Benchmark Fractions GETTING STARTED ACTIVITY 1 ACTIVITY 2 TALK THE TALK	TEKS: 6.8B, 6.8E <b>LESSON 5</b> Multiplying Fractions GETTING STARTED ACTIVITY 1	<b>LESSON 5</b> continued ACTIVITY 2 TALK THE TALK	<b>LEARNING INDIVIDUALLY</b> Skills Practice This is a suggested placement. Move based on student data and individual needs.
TEKS: 6.2E, 6.3A, 6.3E <b>LESSON 6</b> Fraction by Fraction Division GETTING STARTED TALK THE TALK	<b>LESSON 6</b> continued	<b>LESSON 6</b> continued	<b>LEARNING INDIVIDUALLY</b>	<b>END OF TOPIC</b>

## Pacing Guide

### Lesson 1 Assignment

#### Write

Explain the distributive property in terms of composing and decomposing numbers.

#### Remember

There are many ways to rewrite equivalent expressions using properties. The distributive property of multiplication over addition states that for any numbers  $a$ ,  $b$ , and  $c$ ,  $a(b + c) = ab + ac$ .

#### Write

Sample explanation: When you have a rectangle that is composed of two smaller rectangles, the area of the rectangle is equal to the sum of the two smaller rectangles,  $a \cdot (b + c) = a \cdot b + a \cdot c$ , where  $a$  and  $b$  are the dimensions of one rectangle and  $a$  and  $c$  are the dimensions of the other rectangle.

#### Practice

Decompose each rectangle into two or three smaller rectangles to demonstrate the distributive property. Then, write each area in the form  $a(b + c) = ab + ac$ .

Sample answers:

1.

$3000 + 22 = 300 + 66$

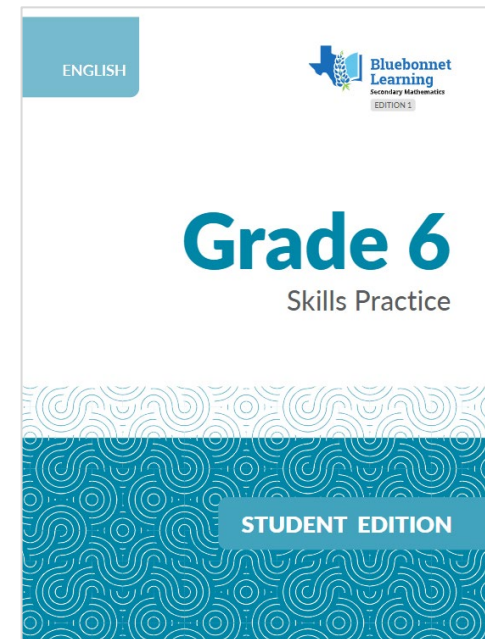
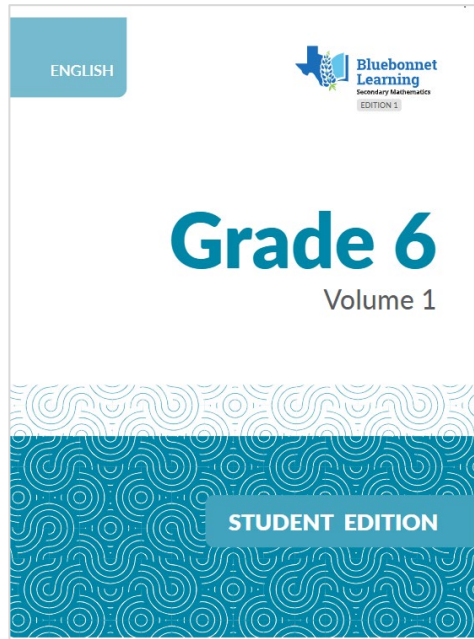
2.

$6120 + 28 = 720 + 12$

3.

$6200 + 40 = 1200 + 24$

## Student Responses



## Worked Examples

**WORKED EXAMPLE**  
Use a factor tree to write the prime factorization for 30.  
 1. Begin with the number 30.  
 2. Pick any whole number factor pair of 30, other than 1 and 30.  
 3. Draw a branch from 30 to each factor, 2 and 15.  
 4. Since one of the factors is not prime, you are not finished.  
 5. Use branches to write a factor pair for 15.  
 6. Because 2, 3, and 5 are all primes, this factor tree is complete.

**Ask Yourself...**  
 • What is the main idea?  
 • How would this work if I changed the numbers?  
 • How I used these strategies better?

**THINKER UP**  
 When you're a Thinker Up:  
 • Take your time to read through the work.  
 • Think about the connections between steps.

**THINKER DOWN**  
 When you're a Thinker Down:  
 • Take your time to read through the correct solution.  
 • Think about what error each made.

GRADE 6 COURSE GUIDE

## Family Guides

Resources for Students and Families

**Course Family Guide**  
 The Course Family Guide provides you and your family with an overview of the course design. The guide details the resources available to support your learning, such as the Math Glossary, the Topic Family Guide, the Topic Self-Reflection, and the Topic Summaries.  
 The purpose of the Course Family Guide is to foster your learning in the classroom to your learning at home. The goal is for you and your family to understand the concepts and skills learned in the classroom so that you can review, discuss, and solidify the understanding of these key concepts together.

**Engaging with Grade-Level Content**  
 Grade 6 Mathematics resources include:

GRADE 6 COURSE GUIDE

## Lessons

### 1 Writing Equivalent Expressions Using the Distributive Property

**OBJECTIVES**

- Write, read, and evaluate equivalent numeric expressions.
- Identify the adjacent side lengths of a rectangle as factors of the area value.
- Identify parts of an expression, such as the product and the factors.
- Write equivalent numeric expressions for the area of a rectangle by decomposing one side length into the sum of two or more numbers.
- Apply the distributive property to rewrite the product of two factors.

**NEW KEY TERMS**

- numeric expression
- equation
- distributive property

**How can taking apart numbers help you to express number sentences in different ways?**

MODULE 1 • TOPIC 1 • LESSON 1

## Application

### Lesson 1 Assignment

**Write**  
 Explain the distributive property in terms of composing and decomposing numbers.

**Remember**  
 There are many ways to rewrite equivalent expressions using properties. The distributive property of multiplication over addition states that for any numbers  $a$ ,  $b$ , and  $c$ :  
 $a(b + c) = ab + ac$

**Practice**  
 Decompose each rectangle into two or three smaller rectangles to demonstrate the distributive property. Then, write each area in the form  $ab + cd = ab + cd$ .

MODULE 1 • TOPIC 1 • LESSON 1 ASSIGNMENT

## Topic Practice

Skills Practice TOPIC 1: Factors and Multiples

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

### I. Writing Equivalent Expressions Using the Distributive Property

**Topic Practice**

A. Complete each equation to represent the model.

1.  $7 \cdot (4 + 3) = 7 \cdot \underline{\quad} + 7 \cdot \underline{\quad} = \underline{\quad} + \underline{\quad} = 98$

2.  $8 \cdot (5 + 4) = 8 \cdot \underline{\quad} + 8 \cdot \underline{\quad} = \underline{\quad} + \underline{\quad} = 120$

3.  $(\underline{\quad} + 2) \cdot 3 = \underline{\quad} \cdot 3 + 2 \cdot 3 = \underline{\quad} + 6 = 33$

4.  $(\underline{\quad} + 8) \cdot 4 = \underline{\quad} \cdot 4 + 8 \cdot 4 = \underline{\quad} + 48 = 140$

MODULE 1 • TOPIC 1 • SKILLS PRACTICE

## Spaced Practice

**Spaced Practice**  
 Calculate the area of each rectangle.

1. Width = 5 feet  
Length =  $\frac{1}{2}$  feet

2. Width = 10 feet  
Length =  $\frac{1}{2}$  feet

3. Width = 15 inches  
Length =  $\frac{1}{2}$  inch

4. Width = 20 inches  
Length =  $\frac{1}{2}$  inch

MODULE 1 • TOPIC 1 • SKILLS PRACTICE



## Learning Together

On **learning together** days, you spend time facilitating active learning so that students build their mathematical understanding and confidence in sharing ideas, listening to one another, and learning together.



## Learning Individually

On **learning individually** days, you spend time on targeted instruction to meet the needs of each student. Skills Practice offers students the opportunity to engage with problems aligned to each lesson's essential ideas. It also provides opportunities for interleaved practice, which encourages students to flexibly move between individual skills, enhancing connections between concepts to promote long-term learning.

# Bluebonnet Learning Secondary Math: Three Phases of the Instructional Approach

1

## Engage

**Activate student thinking by tapping into prior knowledge and real-world experience.**

Provide an introduction that generates curiosity and plants the seeds for deeper learning.

2

## Develop

**Build a deep understanding of mathematics through a variety of activities.**

Students encounter real-world problems, sorting activities, Worked Examples, and peer work analysis—in an environment where collaboration, conversations, and questioning are routine practices.

3

## Demonstrate

**Reflect on and evaluate what was learned.**

Ongoing formative assessment underlies the entire learning experiences, driving real-time adjustments, next steps, insights, and measurements.

## 1

# Engage

Activate student thinking by tapping into prior knowledge and real-world experience.

Provide an introduction that generates curiosity and plants the seeds for deeper learning.

**Connecting Content and Practice**

# 1

## Writing Equivalent Expressions Using the Distributive Property

**LESSON STRUCTURE**  
Each lesson of the course has the same structure. This consistency allows both you and your students to internalize the lesson progression. Key features of each lesson are noted.

**1 Objectives**  
Objectives are stated for each lesson to help you take ownership of the objectives.

**2 Essential Question**  
Each lesson begins with a statement connecting what you have learned with a question to ponder. Return to this question at the end of this lesson to gauge your understanding.

**3 New Key Terms**  
The new key terms for each lesson are identified to help you connect your everyday and mathematical language.

**1 OBJECTIVES**

- Write, read, and evaluate equivalent numeric expressions.
- Identify the adjacent side lengths of a rectangle as factors of the area value.
- Identify parts of an expression, such as the product and the factors.
- Write equivalent numeric expressions for the area of a rectangle by decomposing one side length into the sum of two or more numbers.
- Apply the distributive property to rewrite the product of two factors.

**2** You know how to add, subtract, multiply, and divide numbers using different strategies. Taking apart numbers before you perform a mathematical operation can highlight important information or make calculations easier.  
How can taking apart numbers help you to express number sentences in different ways?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**3 NEW KEY TERMS**

- numeric expression
- equation
- distributive property

MODULE 1 • TOPIC 1 • LESSON 1

**Engage**  
**Establishing Mathematical Goals to Focus Learning**  
Create a classroom climate of collaboration and establish the learning process as a partnership between you and students.  
Communicate continuously with students about the objectives of the lesson to encourage self-monitoring of their learning.

FM-16 GRADE 6 COURSE AND IMPLEMENTATION GUIDE

**4 Getting Started**

**Break It Down to Build It Up**

**Ask Yourself ...**  
How can you use the area of rectangles in everyday life?

Sofia is building a rectangular walkway up to her house. The width of the walkway is 5 feet, and the length is 27 feet. She needs to calculate the area of the walkway to determine the amount of materials needed to build it.

- Mark and label two different ways you could divide an area model to determine the area of the walkway.

- Determine the areas of each of the subdivided parts of your models.
- What is the total area of the walkway?

**4 Getting Started**

Each lesson begins with a Getting Started. When working on the Getting Started, use what you know about the world, what you have learned previously, or your intuition. The goal is just to get you thinking and ready for what's to come.

**Activating Student Thinking**

Your students enter each class with varying degrees of experience and mathematical success. The focus of the Getting Started is to tap into prior knowledge and real-world experiences, to generate curiosity, and to plant seeds for deeper learning. Pay particular attention to the strategies students use, for these strategies reveal underlying thought processes and present opportunities for connections as students proceed through the lesson.

MODULE 1 • TOPIC 1 • LESSON 1

GRADE 6 COURSE AND IMPLEMENTATION GUIDE FM-17



2

## Develop

**Build a deep understanding of mathematics through a variety of activities.**

Students encounter real-world problems, sorting activities, Worked Examples, and peer work analysis—in an environment where collaboration, conversations, and questioning are routine practices.

### ACTIVITY 2.1 Prime Factors

DEVELOP

#### Facilitation Notes

In this activity, students create factor trees to write prime factorizations; they use exponents to express repeated factors.

Have a student read the introduction aloud. Discuss the Worked Example as a class.

#### QUESTION TO SUPPORT DISCOURSE

Gathering	• What is meant by prime factorization?
-----------	---

Have students work with a partner or in small groups to complete Questions 1 through 3. Share responses as a class.

#### AS STUDENTS WORK, LOOK FOR

Confusion between listing all factors and writing the prime factorization of two numbers.

#### DIFFERENTIATION STRATEGIES

##### Access for All

- To help students see when their factor trees are complete, have them circle the prime factors at each branch's end.

#### Optimizing Learning

This differentiation strategy optimizes access to tools and assistive technology.

#### Just in Time Support

##### Materials Needed: Calculator

- To help students get started making a factor tree, show them how to use the calculator and the concept of remainders to determine whether a number is a factor of another number.

#### QUESTIONS TO SUPPORT DISCOURSE

Probing	• What is another factor pair you can use to start your factor tree?
Reflecting and justifying	• How can you check that your prime factorization is correct?

Have a student read the text and definitions about exponents aloud. Discuss as a class. Have students work with a partner or in groups to complete Questions 4 and 5. Share responses as a class.

#### QUESTION TO SUPPORT DISCOURSE

Probing	• What is the benefit of using powers?
---------	--

#### Summary

You can use a factor tree to write the prime factorization of a number. You can use exponential notation to express a factor that is listed more than once.

### 5 Activities

You are going to build a deep understanding of mathematics through a variety of activities in an environment where collaboration and conversations are important and expected.

You will learn how to solve new problems, but you will also learn why those strategies work and how they are connected to other strategies you already know.

#### Remember

- It's not just about answer-getting. The process is important.
- Making mistakes is a critical part of learning, so take risks.
- There is often more than one way to solve a problem.

Activities may include real-world problems, sorting activities, Worked Examples, or analyzing sample student work.

Be prepared to share your solutions and methods with your classmates.

### 5 ACTIVITY 2.1 Prime Factors

You just determined the factors for a given number as well as the common factors that two numbers share.

In this activity, you will learn to determine the prime factors of a given number.

A factor tree is a way to organize the prime factors of a number. Choose any factor pair to get started.

#### WORKED EXAMPLE

Use a factor tree to write the prime factorization for 30.

- Begin with the number 30.
- Pick any whole number factor pair of 30, other than 1 and 30.
- Draw a branch from 30 to each factor, 2 and 15.
- Since one of the factors is not prime, you are not finished.
- Use branches to write a factor pair for 15.
- Because 2, 3, and 5 are all prime, this factor tree is complete.



When you express any whole number as a product of primes, and nothing, you are determining the prime factorization of that number.



1. Use the factor tree to write the prime factorization of 30.

The factor tree in the Worked Example is not the only factor tree you can create for 30.

2. How many different factor trees are there for 30?

18 MODULE 1 • TOPIC 1 • LESSON 2

#### Develop

##### Aligning Teaching to Learning

Students learn when they are actively engaged in a task: reasoning about the math, writing their solutions, justifying their strategies, and sharing their knowledge with peers.

Support productive struggle by allowing students time to engage with and persevere through the mathematics.

Support student-to-student discourse as well as whole-class conversations that elicit and use evidence of student thinking.

FM-18 GRADE 6 COURSE AND IMPLEMENTATION GUIDE

## 3

# Demonstrate

Reflect on and evaluate what was learned.

Ongoing formative assessment underlies the entire learning experiences, driving real-time adjustments, next steps, insights, and measurements.

### 6 Talk the Talk

#### The Floor Is Yours

You can apply the distributive property to solve real-world problems. Consider the situation.

Diego is setting up the gym floor for an after-school program. He wants to include a rectangular area for playing volleyball and another for dodgeball. He also wants to have an area for kids who like to play board games or just sit and read. The gym floor is already 50 feet by 84 feet, or 4200 square feet.

- Create a diagram to show how you would split up the gym floor. Represent your diagram using the distributive property and write an explanation for the areas assigned to each activity.

Sample answer:



$$\begin{aligned} 50(40 + 34 + 10) &= 50 \cdot 40 + 50 \cdot 34 + 50 \cdot 10 \\ &= 2000 + 1700 + 500 \\ &= 4200 \end{aligned}$$

I divided the length of the gym into three parts to create three areas of different sizes for each activity.

- I made the area for playing volleyball the largest, 50 feet by 40 feet.
- I made the area for playing dodgeball, 50 feet by 34 feet, close to the same size as the volleyball area but a bit smaller.
- I made the smallest area of the gym, 50 feet by 10 feet, for playing board games or reading since those are activities that require less movement.

### 6 Talk the Talk

Talk the Talk gives you an opportunity to reflect on the main ideas of the lesson.

- Be honest with yourself.
- Ask questions to clarify anything you don't understand.

Show what you know!

Don't forget to revisit the question posed on the lesson opening page to gauge your understanding.

### Demonstrate

#### Ongoing Formative Assessment Drives Instruction

For students to take responsibility for their own learning, they need to be encouraged to self-assess. Students can use the Talk the Talk to monitor their own progress toward demonstrating proficiency of the objectives.

Listen and review their answers and explanations and provide feedback to help them improve their understanding.

As you plan the next lesson, consider the connections you can make to build off the strengths or fill any gaps identified from this formative assessment.

## Lesson 1 Assignment

### ASSIGNMENT

An intentionally designed assignment follows each lesson. The assignment is an additional component that is useful for Tier 1 instruction.

### 7 Write

Reflect on your work and clarify your thinking.

### 8 Remember

Take note of the key concepts from the lesson.

### 9 Practice

Use the concepts learned in the lesson to solve problems.

There is one assignment per lesson. Lessons often span multiple days. Be thoughtful about which portion of the assignment students can complete based on that day's progress.

Use the assignment as homework throughout or after a lesson, as additional practice before students leave class, or as a review tool before assessments.

### 7 Write

Explain the distributive property in terms of composing and decomposing numbers.

### Remember 8

There are many ways to rewrite equivalent expressions using properties. The distributive property of multiplication over addition states that for any numbers  $a$ ,  $b$ , and  $c$ ,  $a(b + c) = ab + ac$ .

### 9 Practice

Decompose each rectangle into two or three smaller rectangles to demonstrate the distributive property. Then, write each area in the form  $a(b + c) = ab + ac$ .

Sample answers:

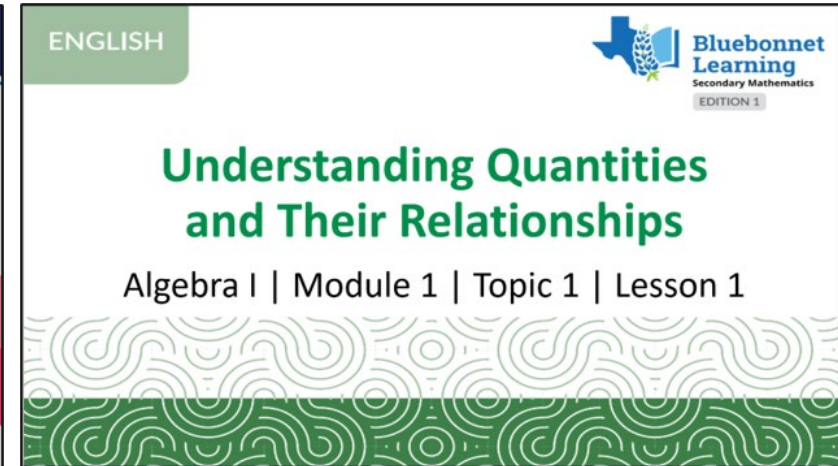
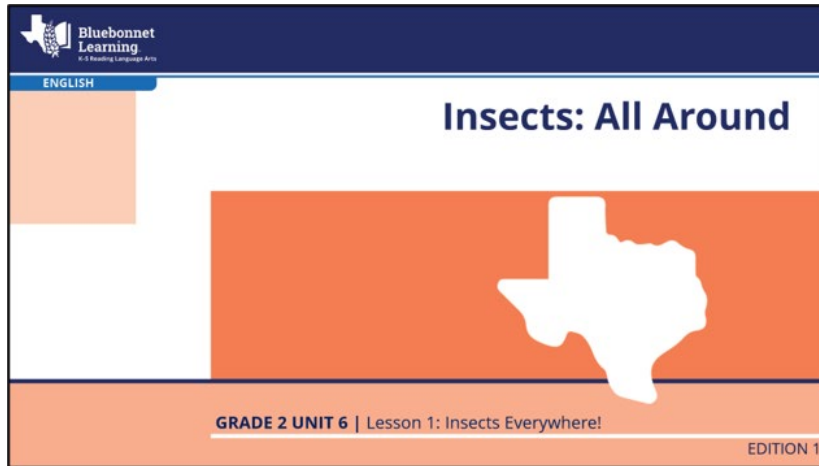
- $$3(100 + 22) = 300 + 66$$
- $$6(120 + 2) = 720 + 12$$
- $$6(200 + 40 + 4) = 1200 + 240 + 24$$



# Bluebonnet Learning Implementation Resources

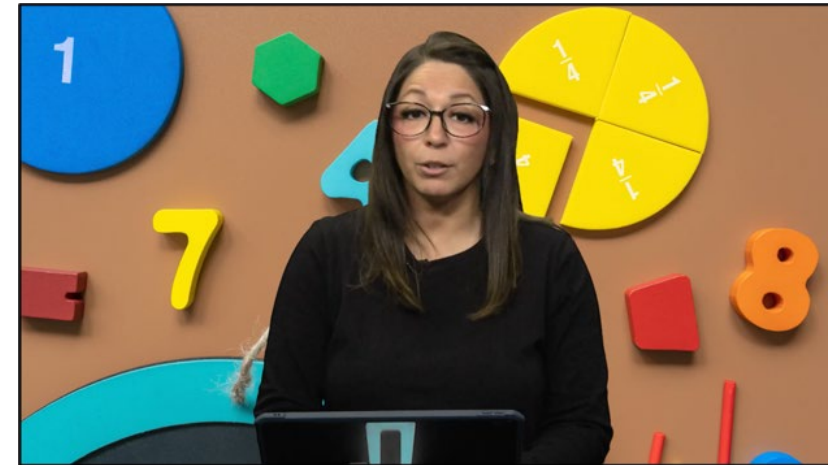
# Lesson-Level Projectables/Slide Decks

- Available for all SBOE-approved Bluebonnet Learning instructional materials from IMRA 2024
- Follows lesson structure of approved instructional materials
- Downloadable and fully editable



# Math Content Support Videos

- Uses lesson script to demonstrate the math, including pauses for student engagement
- Builds teacher/leader content knowledge
- Available for Kindergarten – Algebra I



## Module 4


### Lesson 2

MULTIPLICATION AND DIVISION OF FRACTIONS

Draw a PICTORIAL MODEL.

$$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} =$$

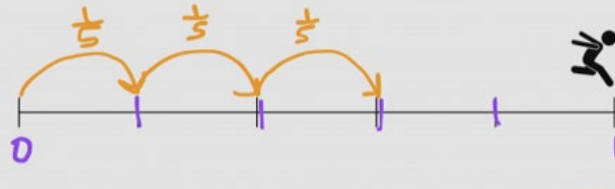
$6 \times \frac{1}{3} =$



FIND A HEARTY NICHOLE AND SHARE YOUR SOLUTION STRATEGY

Draw a PICTORIAL MODEL, WRITE AN EQUATION, AND FIND THE SOLUTION.

MARY SKIPS  $\frac{1}{5}$  OF A MILE THREE TIMES IN ONE WEEK. HOW MUCH OF A MILE DID MARY SKIP THAT WEEK?



NEXT

# Implementation Podcasts



## Bluebonnet Learning™

PODCAST

- 15–20-minute conversational podcast episodes
- One per unit/module, focused on unit and lesson/text overviews
- Prep for unit internalization for leaders and teachers
- Build leader/teacher background knowledge



# Leadership Unit Snapshots

- Unit and lesson overviews for district and campus leadership
- Includes unit summaries, lesson summaries, Texas Essential Knowledge and Skills (TEKS), lesson “look-fors”, and assessment summaries
- Supports leadership adoption, classroom and PLC walkthroughs, and coaching
- Build leader/teacher background knowledge

## Module Snapshot | Grade 2



### Module 1: Sums and Differences to 100

Students develop fluency as they add and subtract numbers up to 100 using place value understanding, properties of operations, and the relationship between addition and subtraction. Students use their knowledge of decomposition to practice and apply basic facts. Students contextualize addition and subtraction as they apply strategies to solve word problems using the Read–Draw–Write (RDW) process.

Module Length: 9 Days

Instructional Lessons: 8 Days

Assessments: 1 Day

#### Topics

- Topic A: Foundations for Fluency with Sums and Differences Within 100 (Lessons 1–2)
- Topic B: Initiating Fluency with Addition and Subtraction Within 100 (Lessons 3–8)

#### Learning Outcomes

- Review and build upon familiar skills from Kindergarten and Grade 1 such as breaking apart a total, identifying partners to 10, and adding ten plus facts
- Use number bonds to make a ten when adding numbers up to 100 and take from ten when subtracting numbers up to 100 to make simpler problems

TEKS Instructed

TEKS: 2.4A, 2.4B, 2.4C, 2.7C

TEKS MPS: 2.1C, 2.1F

TEKS Assessed

TEKS: 2.4A, 2.4B, 2.7C

ELPS

ELPS: 1.B, 1.C, 1.E, 1.F, 1.G, 2.C, 2.E, 2.I, 3.E, 3.G, 4.D, 4.G, 5.A, 5.B

#### End-of-Module Assessment

- End-of-Module Assessment: constructed-response

### Lesson 3: Add and Subtract Like Units

Standards	Lesson Focus
TEKS: 2.4A, 2.4B TEKS MPS: 2.1F ELPS: 2.1C, 2.1F, 2.1G, 2.2E, 2.2I, 2.3E, 2.3F, 2.3G, 2.4D, 2.4G, 2.5A, 2.5B	<ul style="list-style-type: none"> <li>• Knowledge: numbers can be decomposed; like units can be added/subtracted</li> <li>• Skills: using number bonds to decompose two-digit numbers; using simpler problems to solve; adding/subtracting like units (ones/tens)</li> <li>• Terminology: break apart, decompose, like units, ones, tens</li> <li>• Tools and Representations: number bond, quick tens and ones</li> </ul>

Segment	Teacher Look-Fors	Student Look-Fors	Observers Can Ask Students . . .
Fluency Practice 15 minutes Independent, whole group	<ul style="list-style-type: none"> <li>□ Facilitating fluency activities (e.g., Sprint: Related Facts)</li> </ul>	<ul style="list-style-type: none"> <li>□ Actively participating in fluency activities</li> <li>□ Accurately solving related facts problems in Sprint: Related Facts</li> </ul>	
Concept Development 20 minutes Whole group	<ul style="list-style-type: none"> <li>□ Facilitating a discussion of patterns from the sprint</li> <li>□ Using pictorial representations to demonstrate using simpler problems to add and subtract within 100</li> <li>□ Using number bonds to break apart two-digit numbers to add/subtract like units within 100</li> </ul> <p><b>Differentiation:</b> inviting students to draw quick tens as needed, then encouraging them to visualize quick tens instead of drawing them</p>	<ul style="list-style-type: none"> <li>□ Identifying patterns from the Sprint</li> <li>□ Talking with a partner to compare problems (e.g., 54+2 and 54+20, 73-20 and 73-2)</li> <li>□ Explaining the simpler problem that helped them solve the problem</li> <li>□ Identifying if they are adding or subtracting tens or ones</li> </ul>	<ul style="list-style-type: none"> <li>□ What did you notice about today's Sprint? (the same ones were added together, but the tens changed)</li> <li>□ What simpler problem can you use to solve 51 and 20? (5 + 2 = 7 → 5 tens + 2 tens = 7 tens → 50 + 20 = 70 → 70 + 1 = 71)</li> <li>□ What simpler problem helped you solve the problem? (answers vary)</li> <li>□ Are you adding or subtracting tens or ones? (answers vary)</li> </ul>
Application Problem 5 minutes Independent, whole group	<ul style="list-style-type: none"> <li>□ Encouraging all students to solve using the Read-Draw-Write (RDW) process</li> <li>□ Circulating and monitoring student problem solving for applicable representations (quick tens and ones, strip diagrams)</li> </ul> <p><b>Differentiation:</b> sharing two different solution strategies from different students</p>	<ul style="list-style-type: none"> <li>□ Completing the Application Problem using Read-Draw-Write</li> </ul>	<ul style="list-style-type: none"> <li>□ How did you solve this problem? What did you do first? What did you do next? (answers vary)</li> <li>□ How did you represent the situation with a drawing? (answers vary)</li> <li>□ How does your number sentence match your drawing? (answers vary)</li> </ul>
Problem Set 10 minutes Independent	<ul style="list-style-type: none"> <li>□ Identifying “must do” and “could do” questions</li> <li>□ Monitoring student progress</li> </ul> <p><b>Differentiation:</b> assigning different start problems</p>	<ul style="list-style-type: none"> <li>□ Independently completing the Problem Set</li> <li>□ Engaging in productive struggle</li> </ul>	<ul style="list-style-type: none"> <li>□ What can you tell me about your thinking on this problem? (answers vary)</li> </ul>
Student Debrief 10 minutes Whole group, independent	<ul style="list-style-type: none"> <li>□ Prompting students to discuss adding and subtracting like units</li> <li>□ Expanding on student responses and addressing misconceptions as needed</li> </ul>	<ul style="list-style-type: none"> <li>□ Comparing Problem Set answers with a partner</li> <li>□ Actively participating in the Student Debrief</li> <li>□ Independently completing the Exit Ticket</li> </ul>	

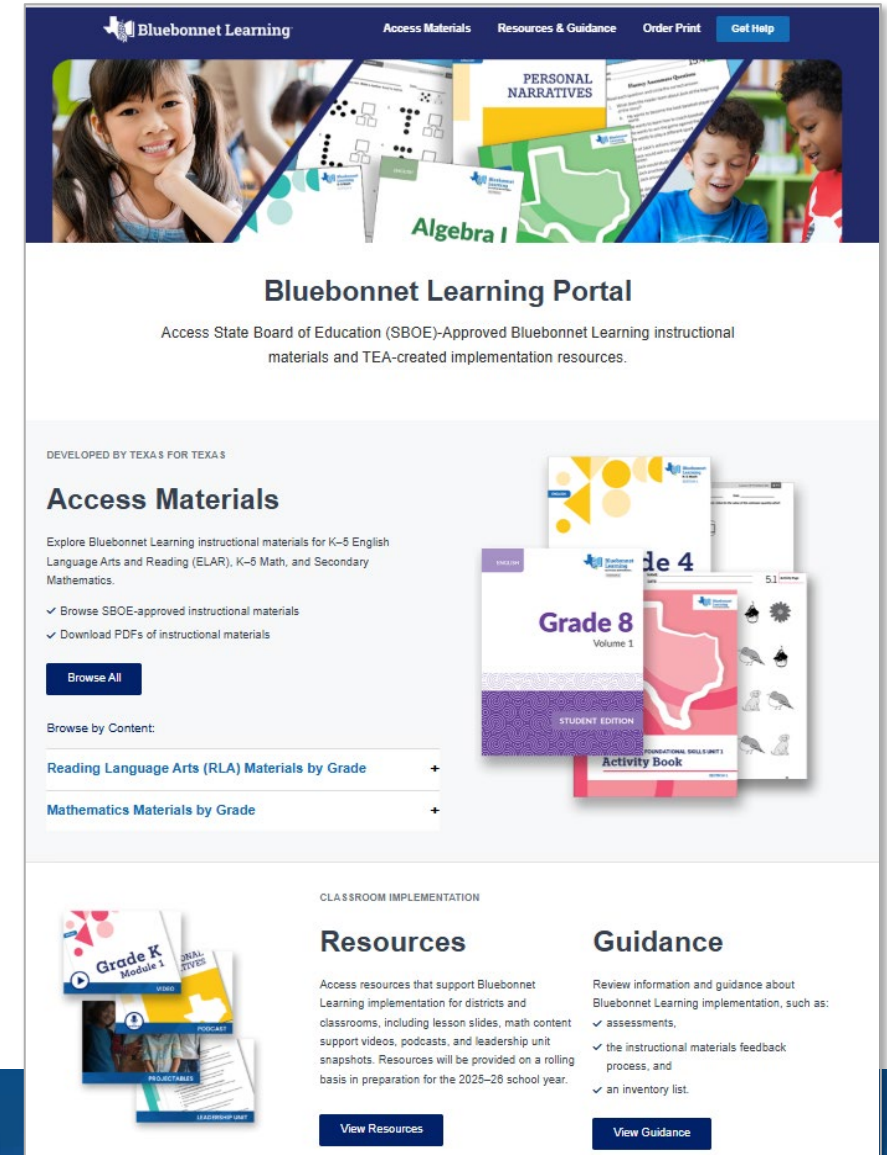
Module Snapshot (v1) | Grade 2

Module Snapshot (v1) | Grade 2, Module 1: Sums and Differences to 100

# Bluebonnet Learning Portal (Bluebonnet.TEA.Texas.gov)

The **Bluebonnet Learning Portal** provides digital access to all Bluebonnet Learning instructional materials for K–3 Foundational Skills, K–5 Reading Language Arts, K–5 Math, and Secondary Mathematics (Grades 6–8, Algebra I), as well as implementation supports and Bluebonnet Learning pilot programs.

The Portal allows **open access to all Bluebonnet Learning instructional materials**, for any Texan, with no login necessary.



The screenshot shows the Bluebonnet Learning Portal website. At the top, there is a navigation bar with the Bluebonnet Learning logo and links for Access Materials, Resources & Guidance, Order Print, and Get Help. Below the navigation bar is a hero image featuring a young girl and a young boy, with text overlays for 'PERSONAL NARRATIVES' and 'Algebra I'. The main heading is 'Bluebonnet Learning Portal' with a sub-heading: 'Access State Board of Education (SBOE)-Approved Bluebonnet Learning instructional materials and TEA-created implementation resources.' Below this, it states 'DEVELOPED BY TEXAS FOR TEXAS'. The 'Access Materials' section includes a description: 'Explore Bluebonnet Learning instructional materials for K–5 English Language Arts and Reading (ELAR), K–5 Math, and Secondary Mathematics.' It lists two features: 'Browse SBOE-approved instructional materials' and 'Download PDFs of instructional materials'. There is a 'Browse All' button and a 'Browse by Content:' section with expandable menus for 'Reading Language Arts (RLA) Materials by Grade' and 'Mathematics Materials by Grade'. To the right, there are images of instructional materials, including 'Grade 8 Volume 1' and 'Grade 4' materials. The 'CLASSROOM IMPLEMENTATION' section is divided into 'Resources' and 'Guidance'. The 'Resources' section includes a description: 'Access resources that support Bluebonnet Learning implementation for districts and classrooms, including lesson slides, math content support videos, podcasts, and leadership unit snapshots. Resources will be provided on a rolling basis in preparation for the 2025–26 school year.' It has a 'View Resources' button. The 'Guidance' section includes a description: 'Review information and guidance about Bluebonnet Learning implementation, such as: assessments, the instructional materials feedback process, and an inventory list.' It has a 'View Guidance' button. At the bottom left, there is a small image of 'Grade K Module 1' materials.