Bluebonnet Learning Math Deep Dive

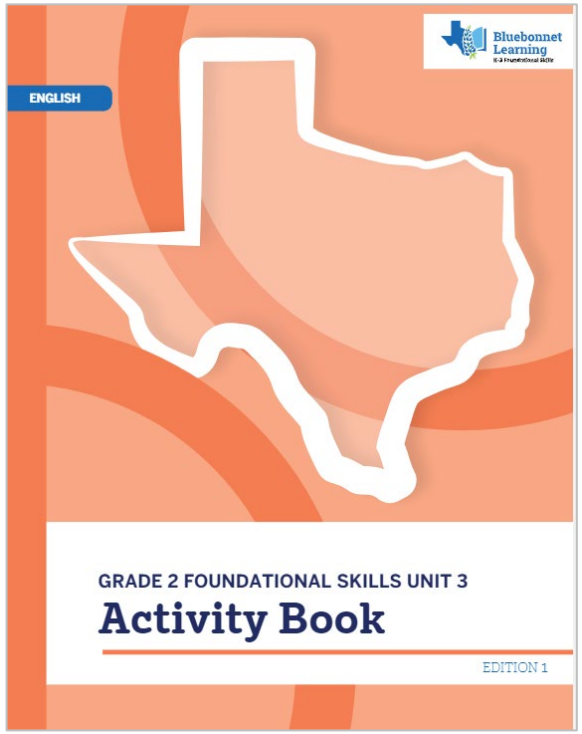
Aligned to the TEKS and ELPS with Student Learning Research

Materials Not Aligned with Research	Materials Designed Based on Research
Stand-alone scope and sequence and modules	Strategic and **coherent modules and lessons sequenced** to build upon learning within modules and across grades
Isolated practice of skills by standard, at **one point** in the year	**Concentrates time and effort** on going deep on the **most important** topics for the grade level
Prioritize **procedural skill and fluency** at expense of strong Tier 1 instruction	Balances **conceptual understanding**, **procedural skill** and **fluency**, and **application**
Below grade-level tasks grounded in remediation	All students working on **grade-level tasks**
Problems requiring **one word or numerical answer** without justification	Provides **multiple opportunities for practice, discussion, representation,** and **writing**

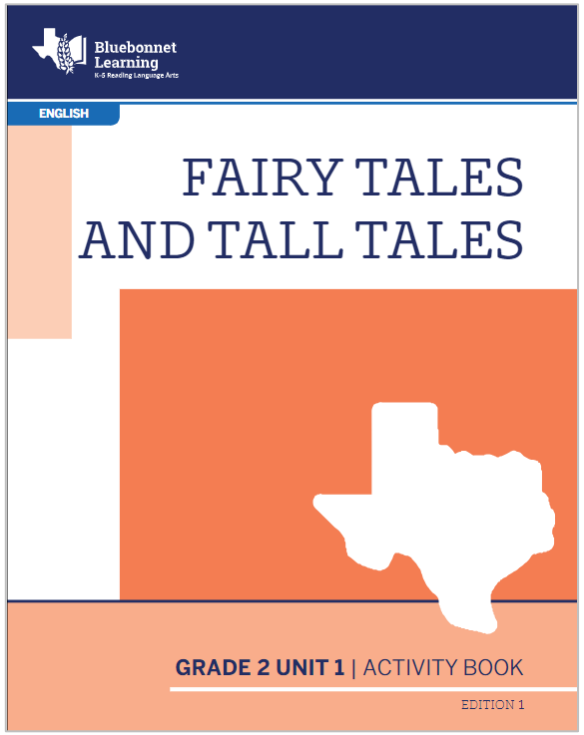
Bluebonnet Learning
K–5 Math

Bluebonnet Learning Instructional Materials

Reading Language Arts (RLA)

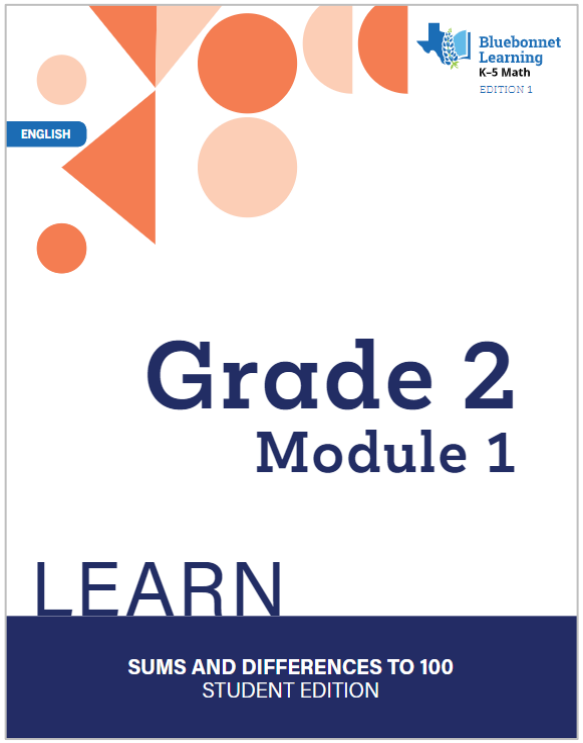


K–3 Foundational Skills

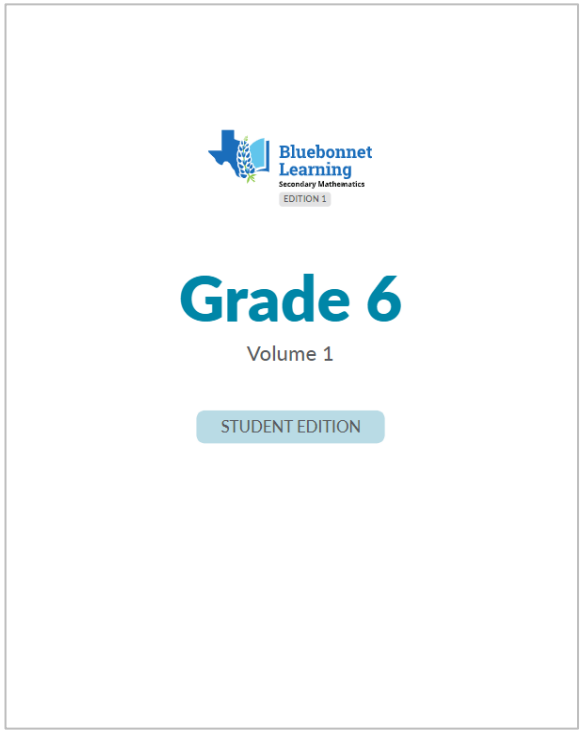


K–5 RLA Knowledge

Mathematics



K–5 Math



Secondary Mathematics

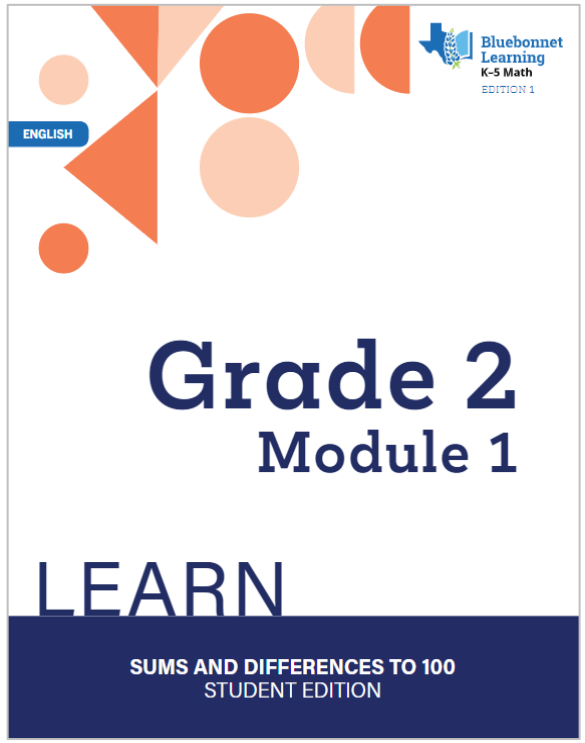
Bluebonnet Learning Instructional Materials

Reading Language Arts (RLA)

K–3 Foundational Skills

K–5 RLA Knowledge

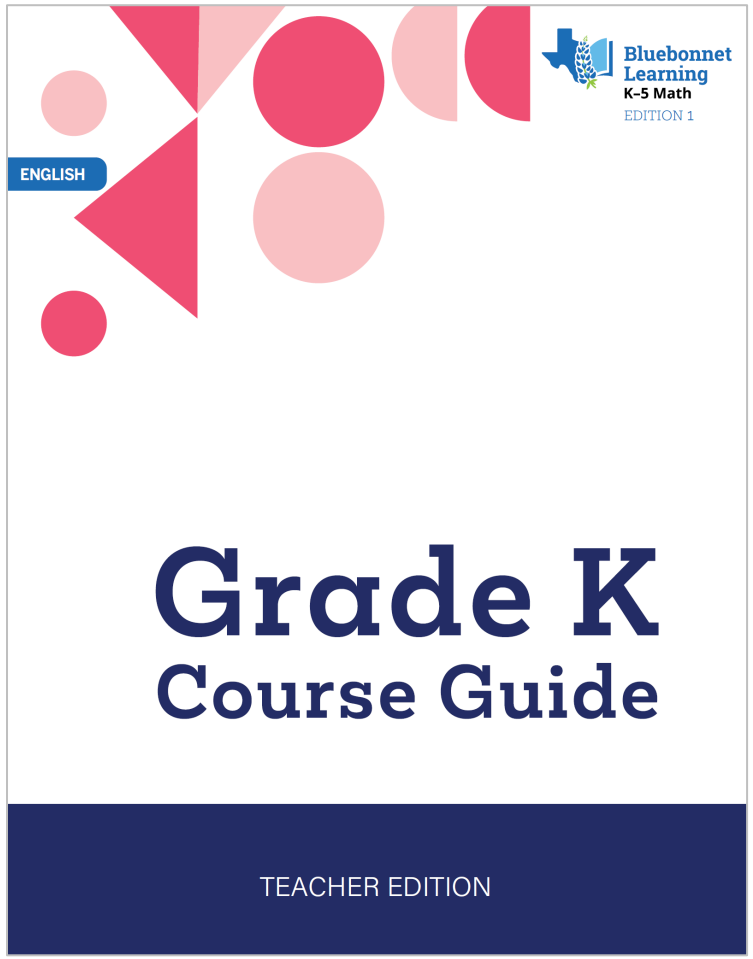
Mathematics



K–5 Math

Secondary Mathematics

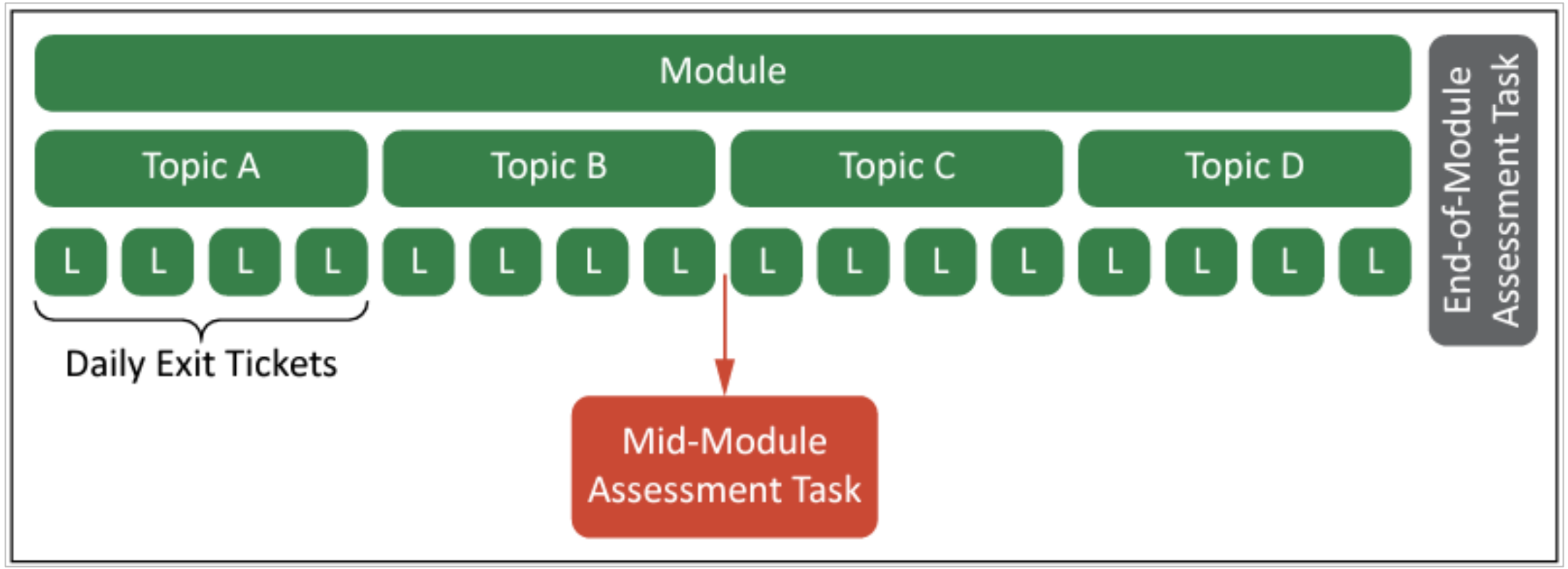
Bluebonnet Learning K–5 Math Progression of Mathematical Concepts



	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)	2nd QUARTER
2nd TRIMESTER	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)		
	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)	3rd 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)	M5: Fraction Equivalence, Ordering, and Operations (35 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)	M6: Introduction to Decimals and Financial Literacy (22 days)	M5: Addition and Multiplication with Volume and Area (23 days)	4th QUARTER
	M6: Analyzing, Comparing, and Composing Shapes (6 days)	M6: Place Value, Comparison, Understanding Income with Addition and Subtraction to 100 (35 days)	M8: Time, Shapes, and Fractions as Equal Parts of Shapes (19 days)	M7: Geometry and Measurement Word Problems (23 days)	M7: Exploring Measurement with Multiplication and Data (17 days)	M6: Problem Solving with the Coordinate Plane and Data (38 days)	

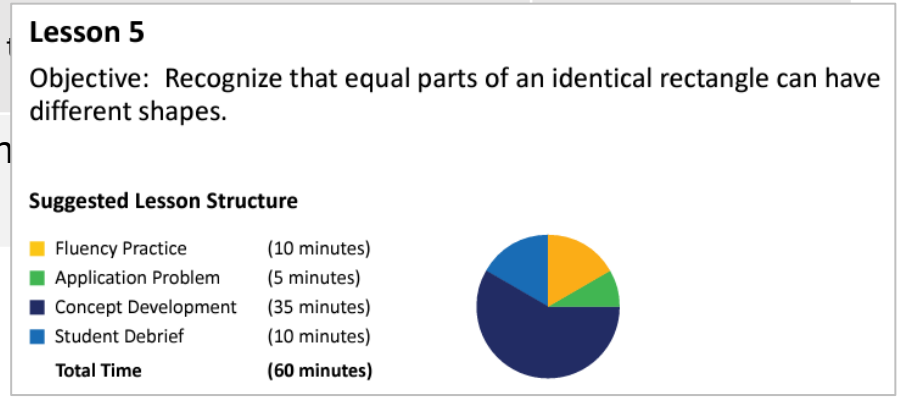
Key:			
Number	Geometry	Number and Geometry, Measurement	Fractions

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

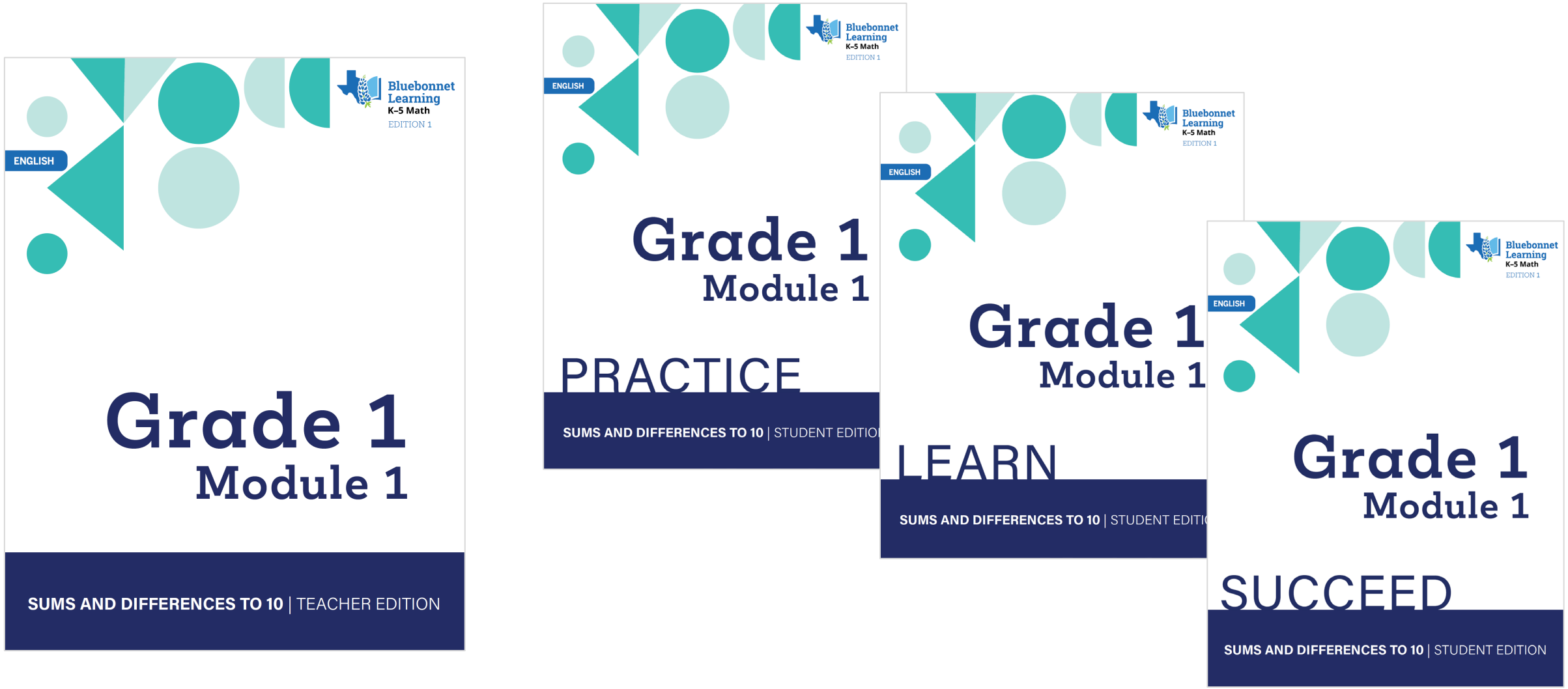


Bluebonnet Learning K–5 Math Lesson Structure

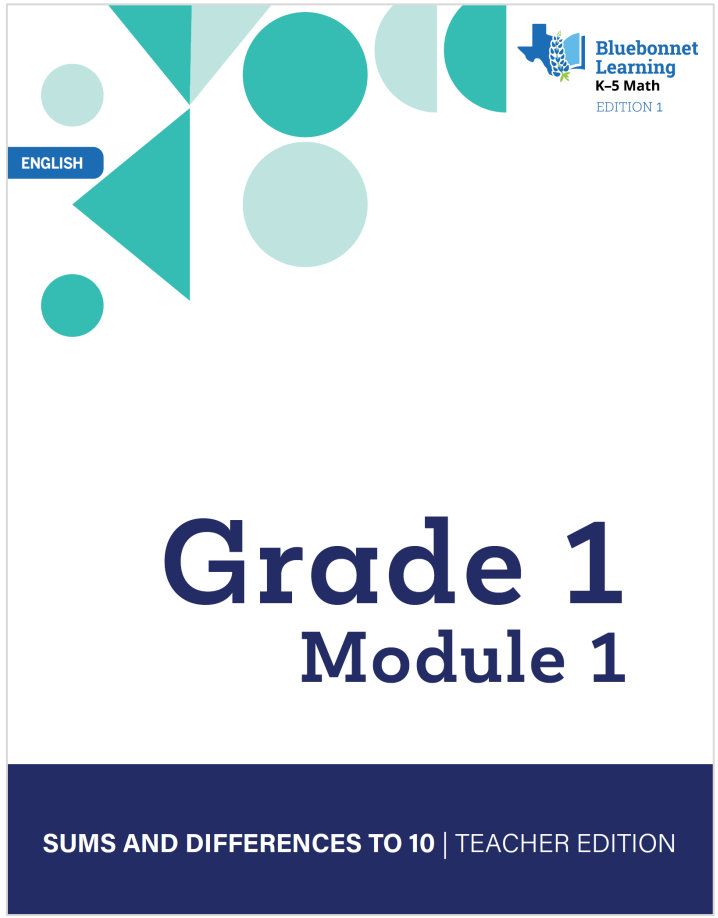
Lesson Component	Purpose	Approx. Time
Fluency Practice	Maintenance: stay sharp on previously learned skills Preparation: targeted practice for the current lesson Anticipation: skills that ensure students are ready for the in-depth work of upcoming lessons	10 minutes
Application Problems	Apply conceptual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

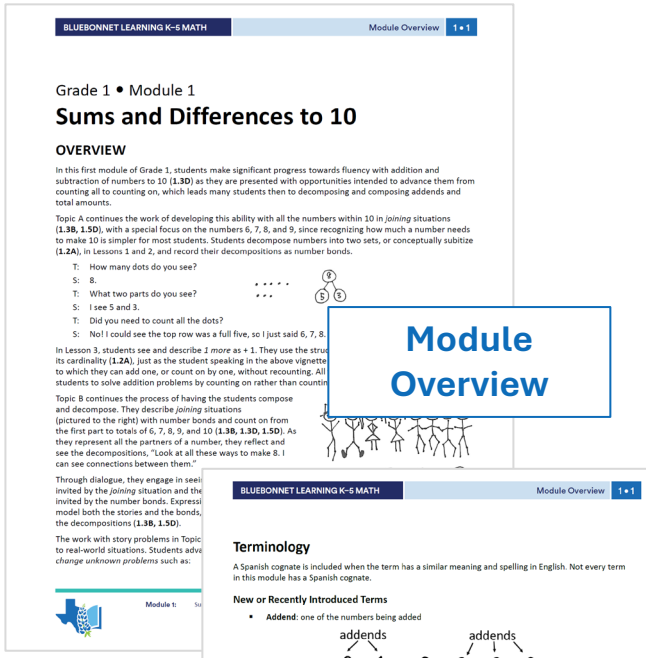


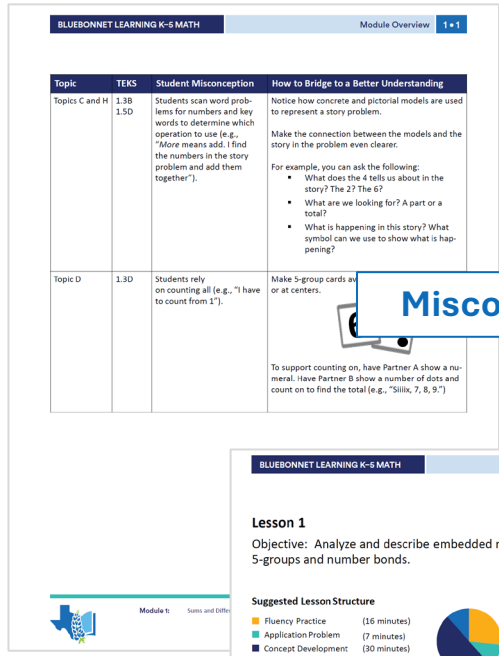
Bluebonnet Learning K–5 Math (1/3)

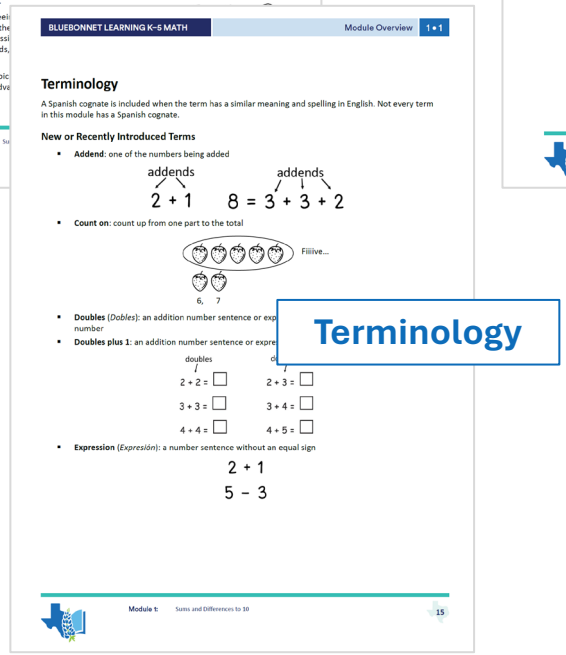


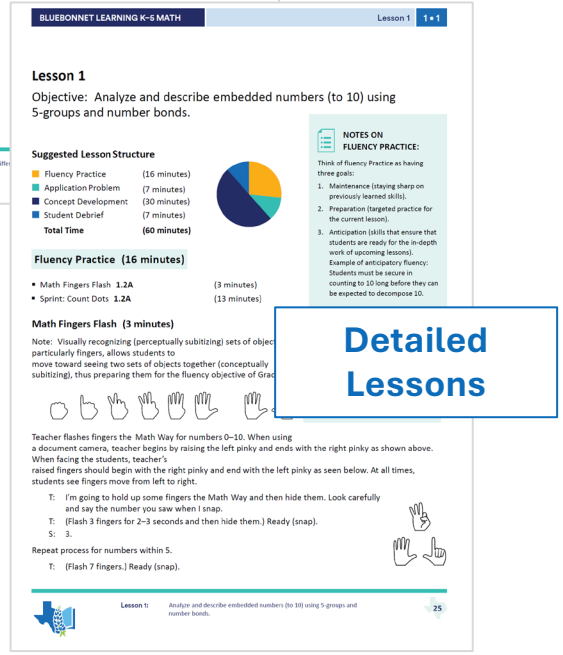
Bluebonnet Learning K–5 Math (2/3)



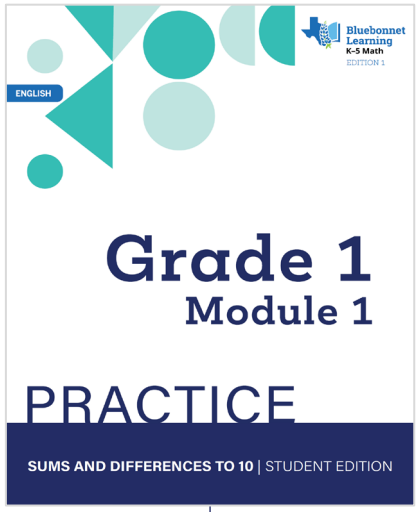




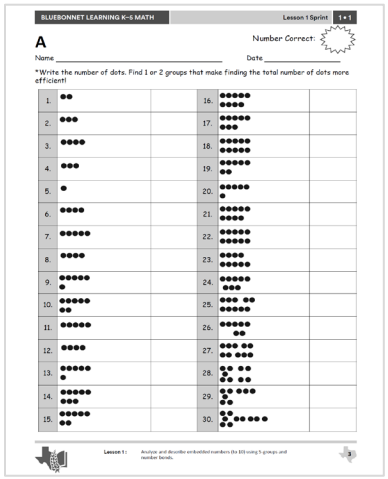


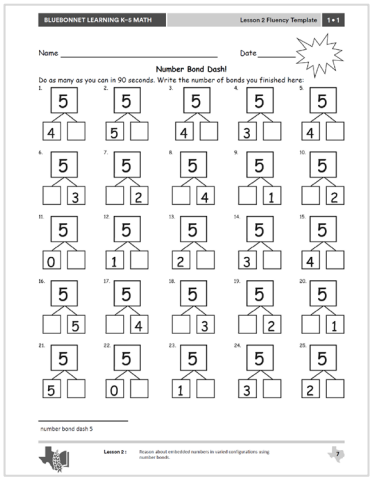


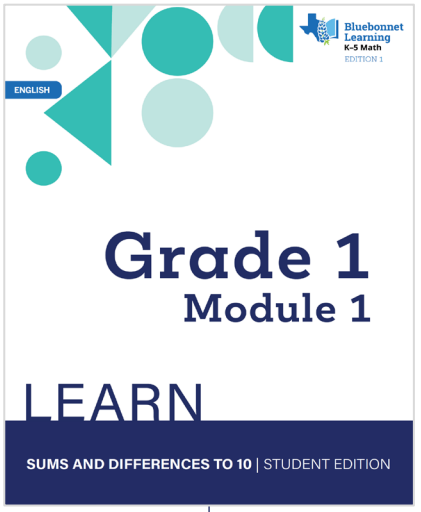
Bluebonnet Learning K–5 Math (3/3)



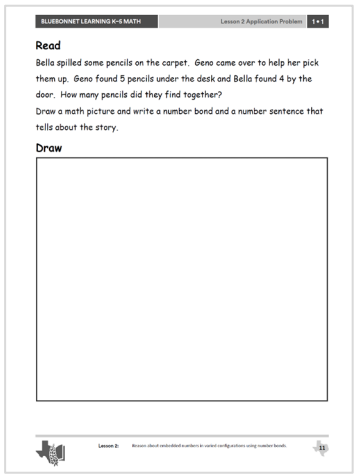
Fluency Practice

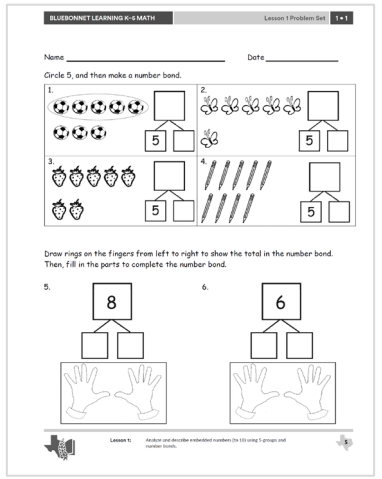


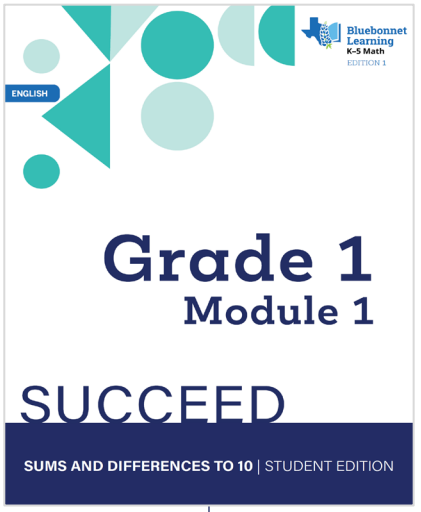




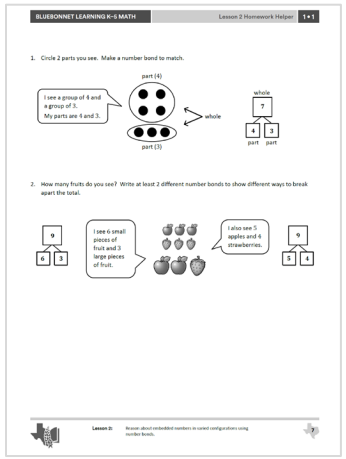
Problem Solving and Problem Sets

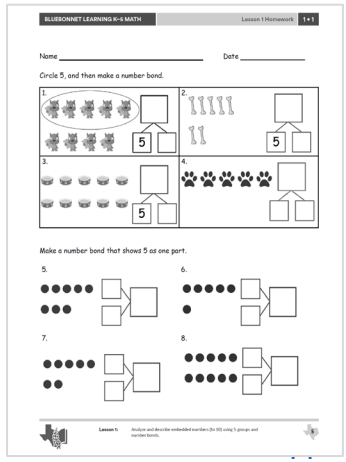




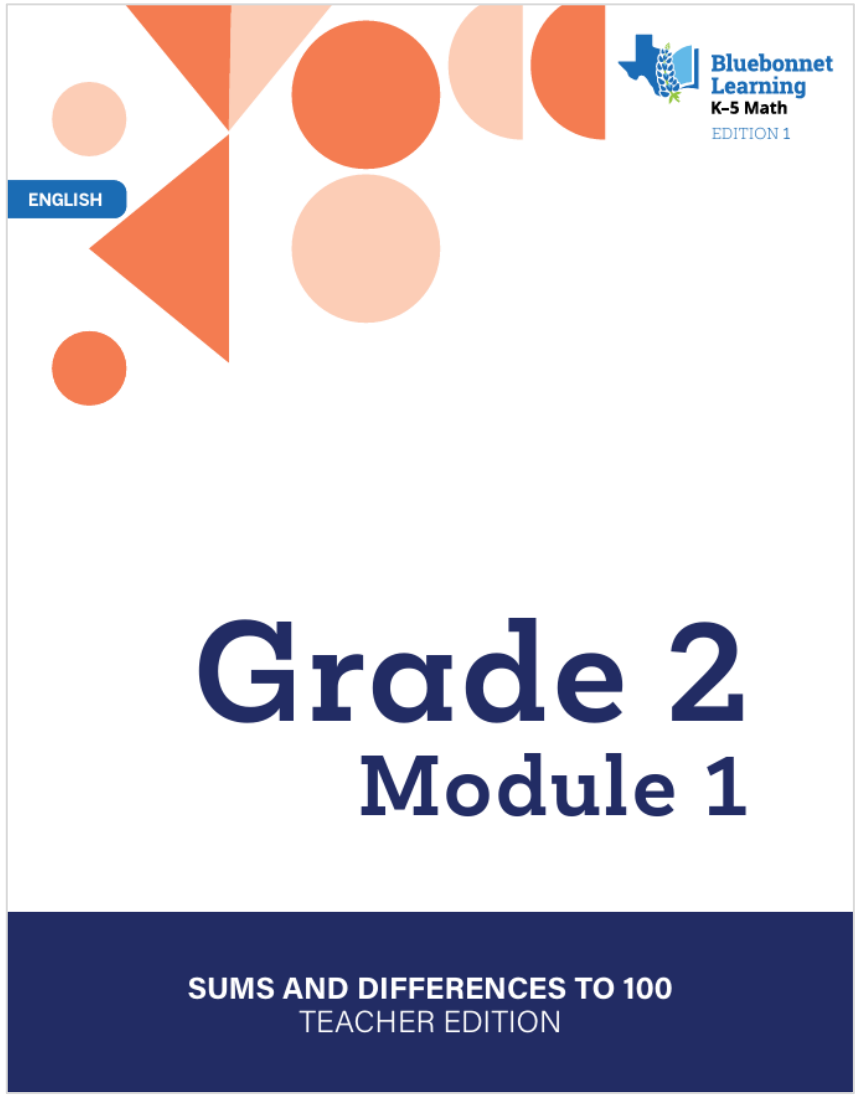


Homework and Practice

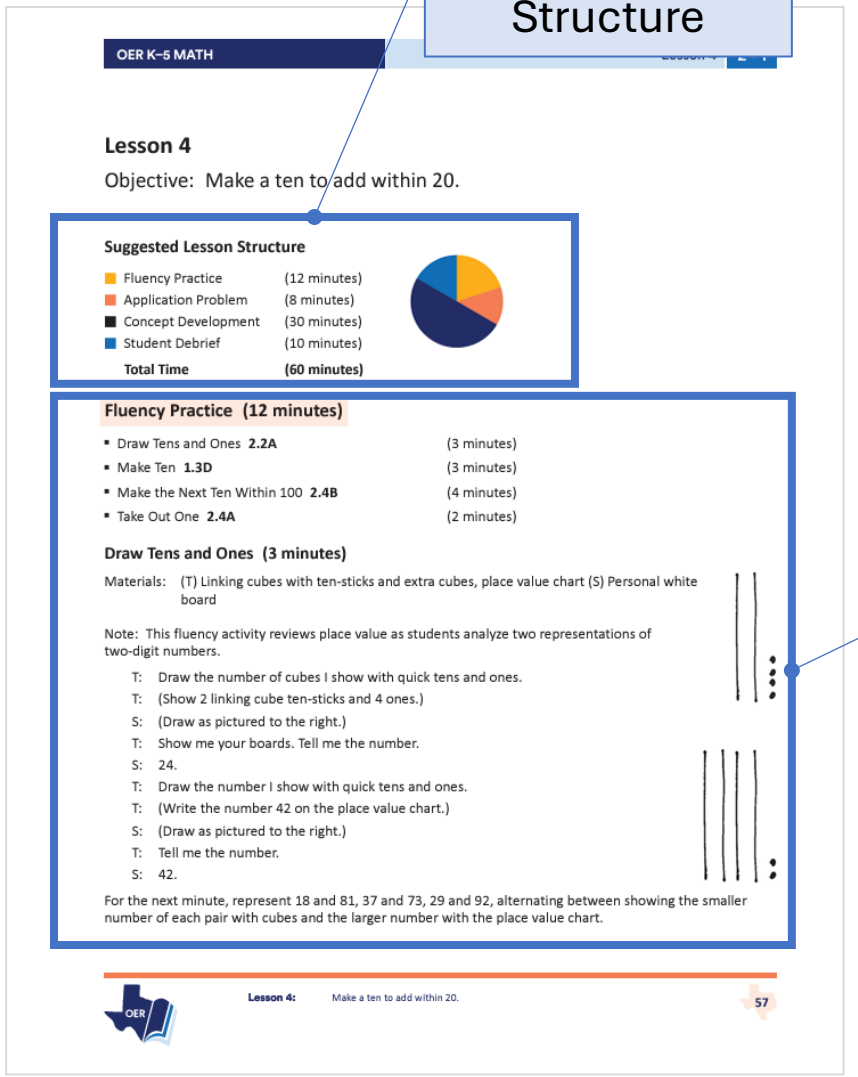




K–5 Math Lesson Structure | Fluency



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)
Total Time	**(60 minutes)**

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.

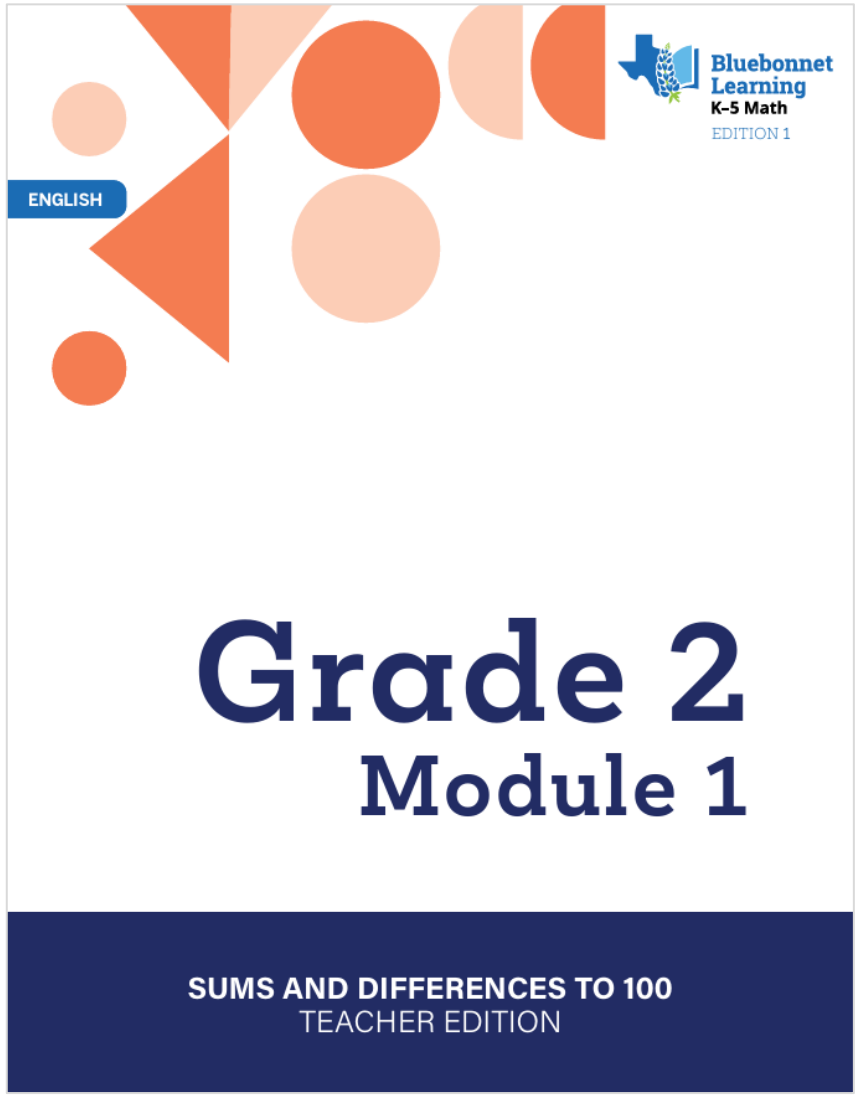
T: Draw the number of cubes I show with quick tens and ones.
T: (Show 2 linking cube ten-sticks and 4 ones.)
S: (Draw as pictured to the right.)
T: Show me your boards. Tell me the number.
S: 24.
T: Draw the number I show with quick tens and ones.
T: (Write the number 42 on the place value chart.)
S: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

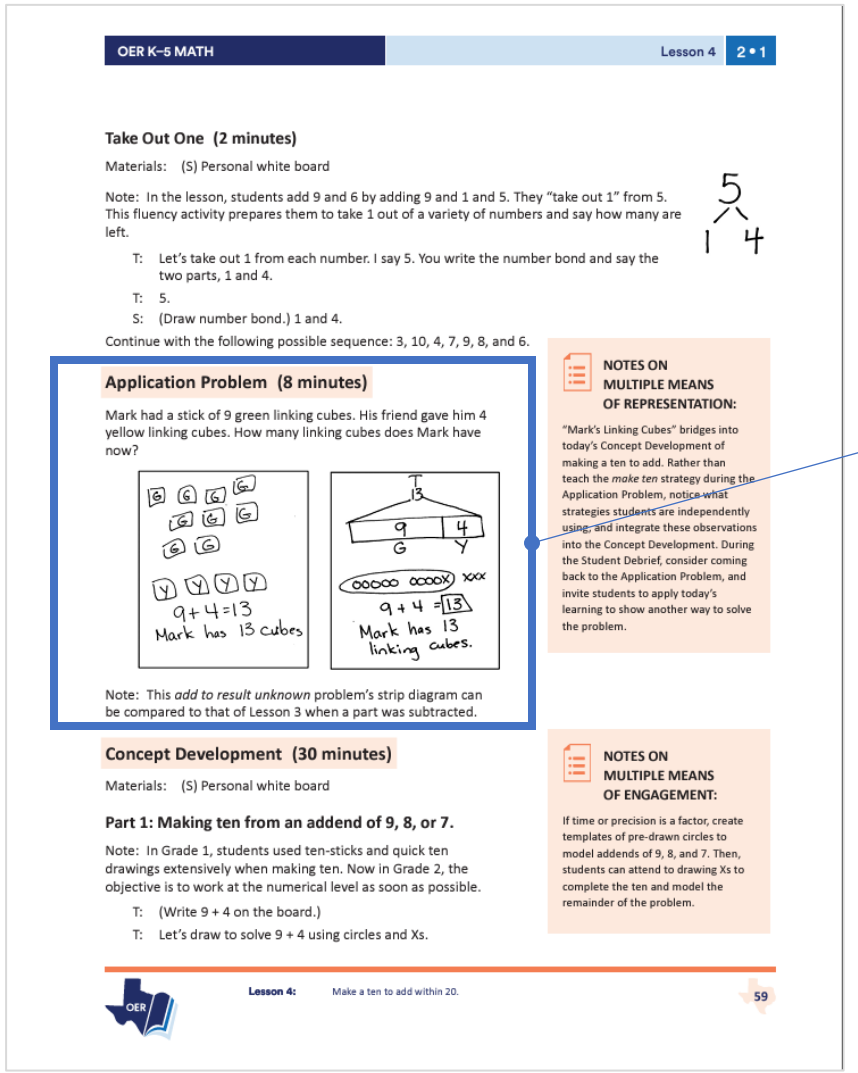
For the next minute, represent 18 and 81, 37 and 73, 29 and 92, alternating between showing the smaller number of each pair with cubes and the larger number with the place value chart.

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

Fluency Practice

K–5 Math Lesson Structure | Application Problem





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?

9 + 4 = 13
Mark has 13 cubes

9 + 4 = 13
Mark has 13 linking cubes.

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

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.

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.

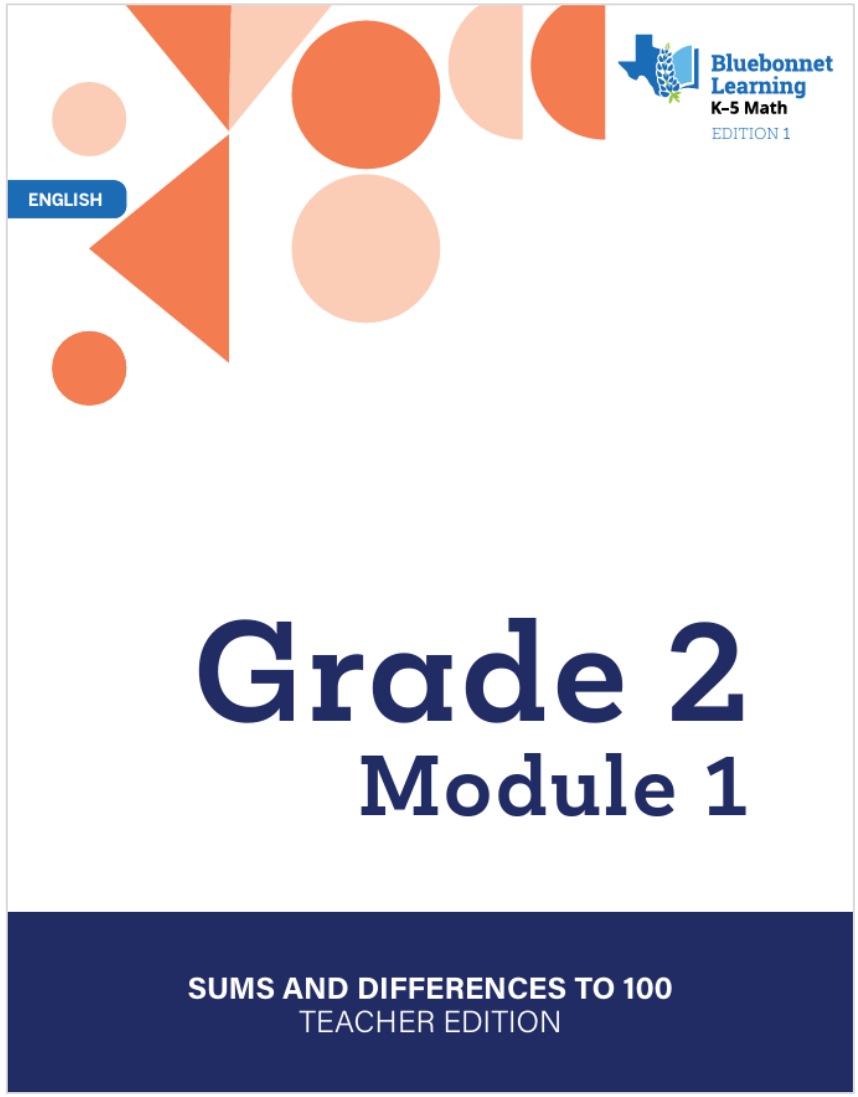
T: (Write 9 + 4 on the board.)
T: Let's draw to solve 9 + 4 using circles and Xs.

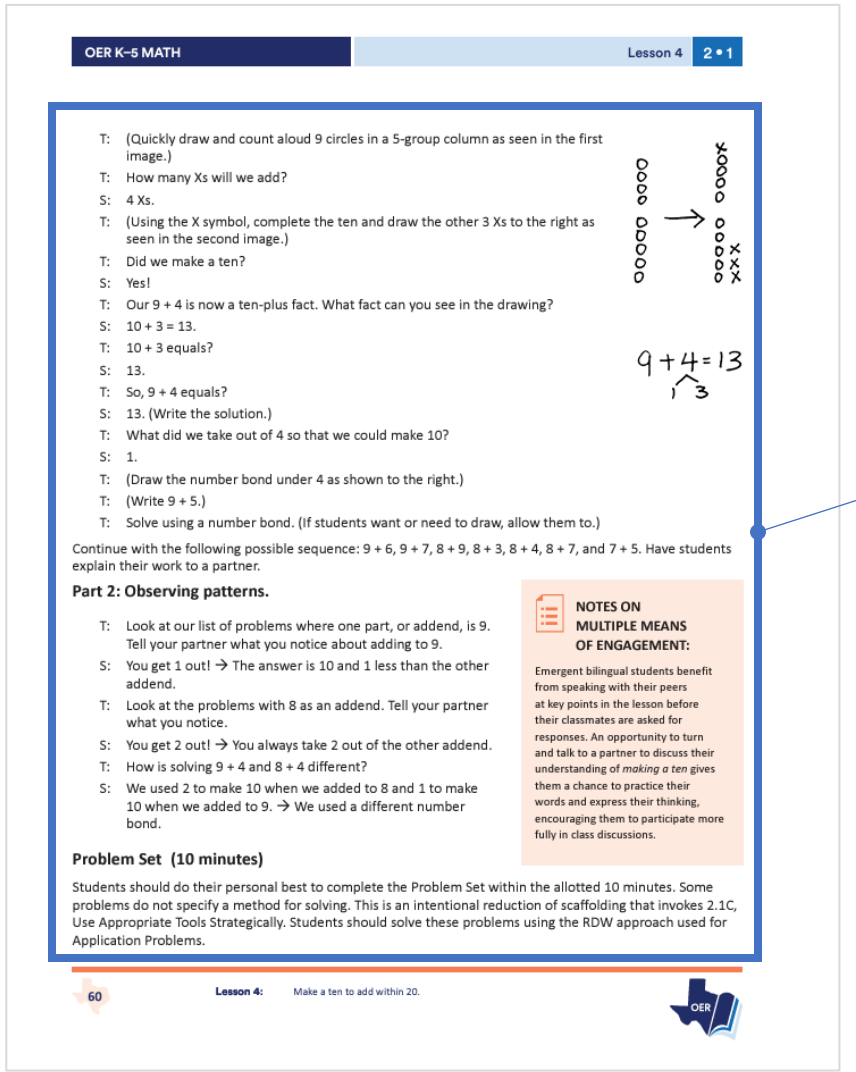
NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

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.

Application Problem

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





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.

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.

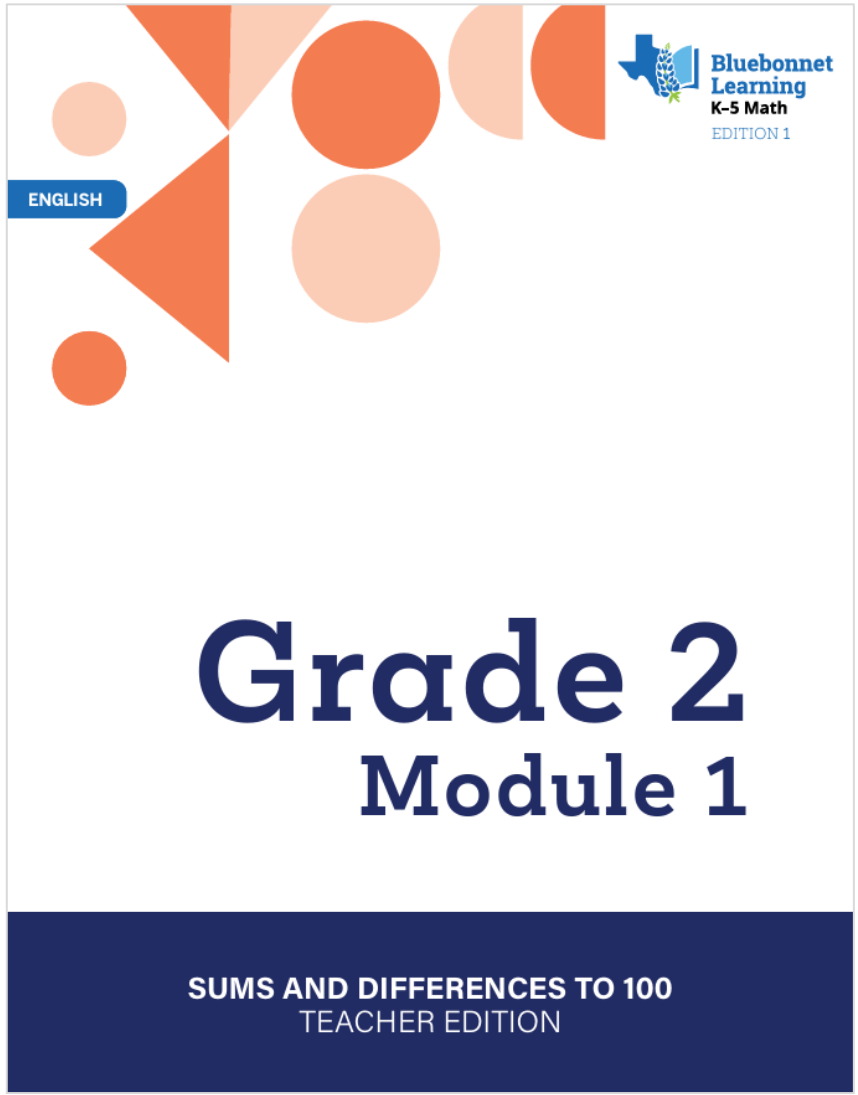
Problem Set (10 minutes)

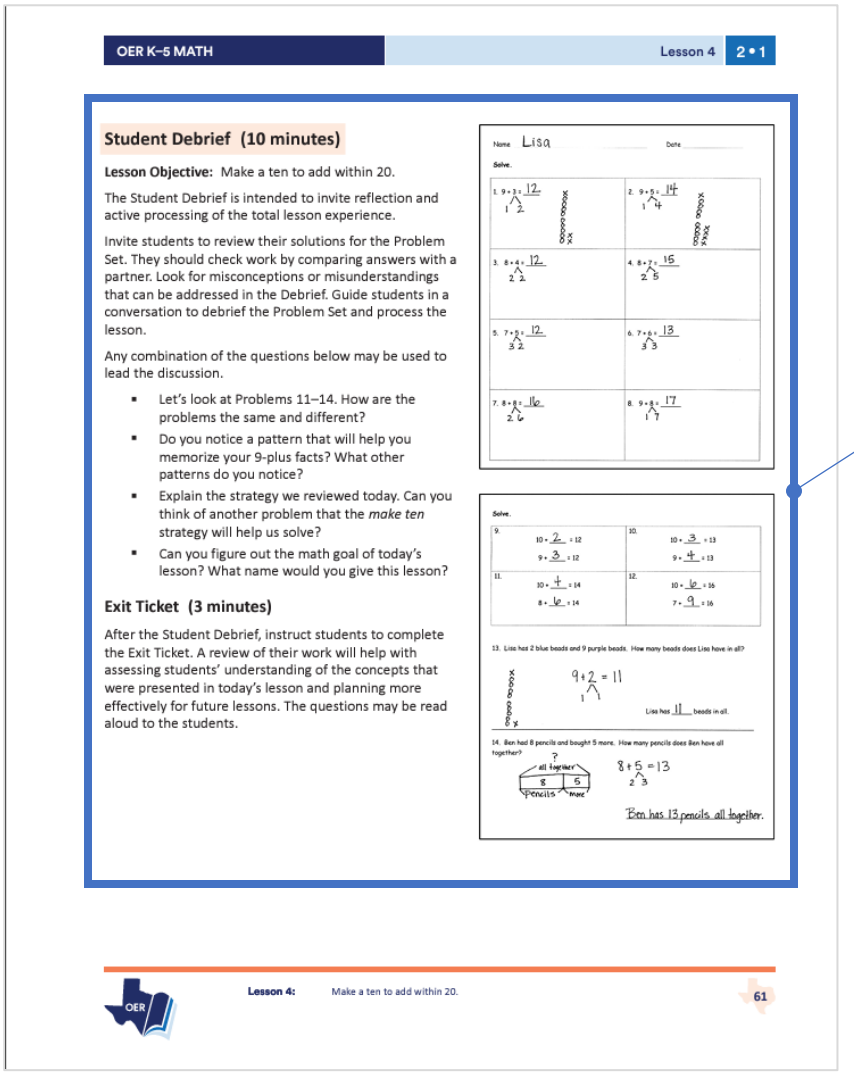
Students should do their personal best to complete the Problem Set within the allotted 10 minutes. Some problems do not specify a method for solving. This is an intentional reduction of scaffolding that invokes 2.1C, Use Appropriate Tools Strategically. Students should solve these problems using the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

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



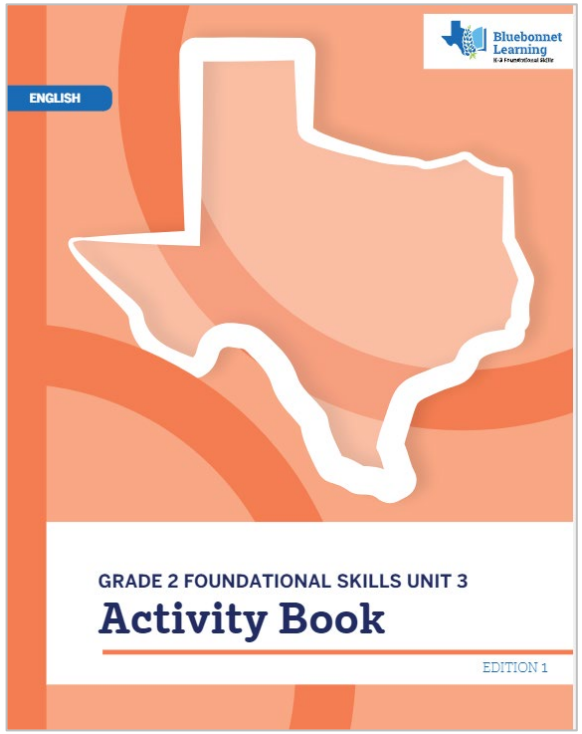


Student Debrief and Exit Ticket

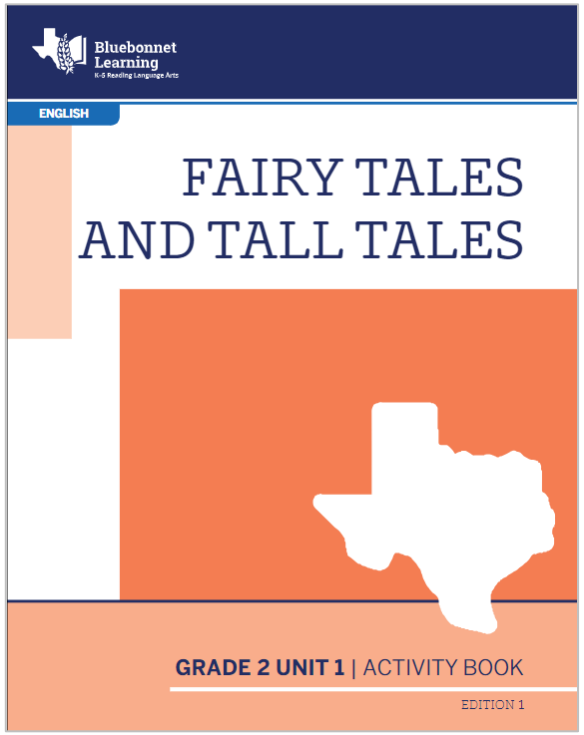
Bluebonnet Learning
Secondary Mathematics

Bluebonnet Learning Instructional Materials

Reading Language Arts (RLA)

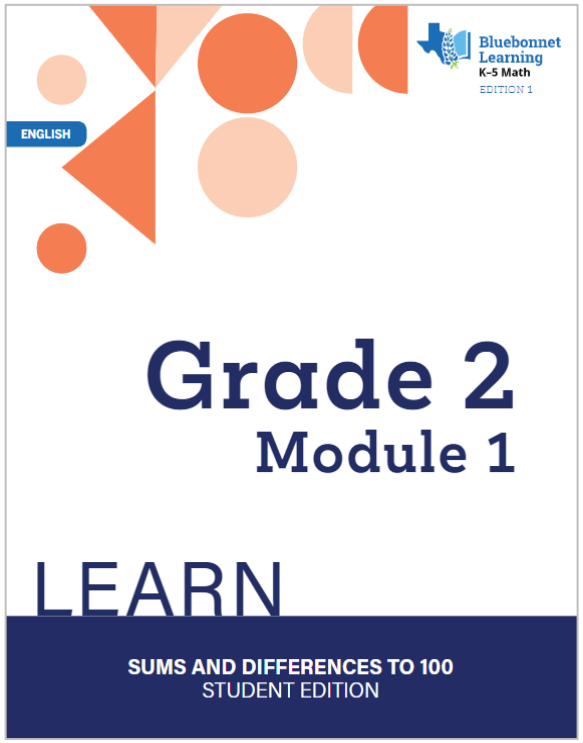


K–3 Foundational Skills

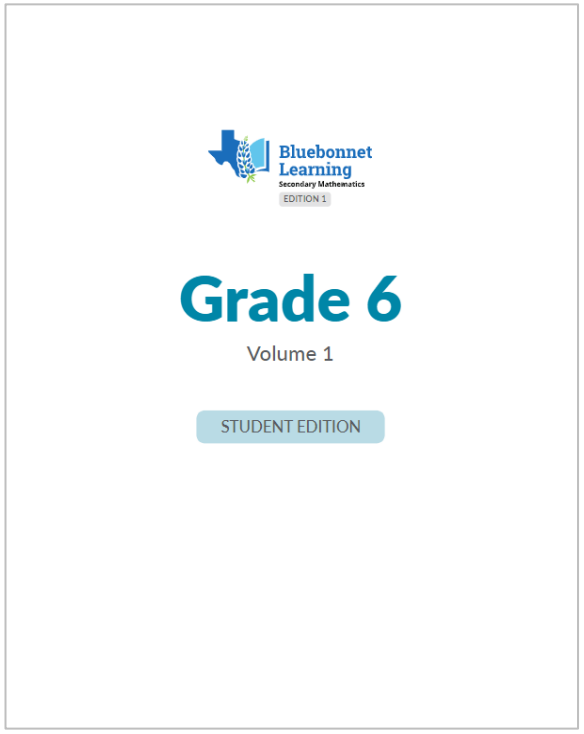


K–5 RLA Knowledge

Mathematics



K–5 Math



Secondary Mathematics

Bluebonnet Learning Instructional Materials

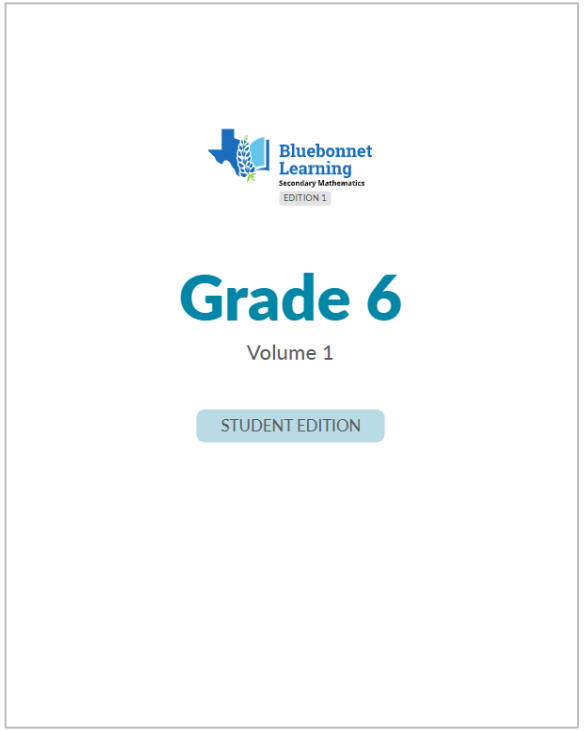
Reading Language Arts (RLA)

K–3 Foundational Skills

K–5 RLA Knowledge

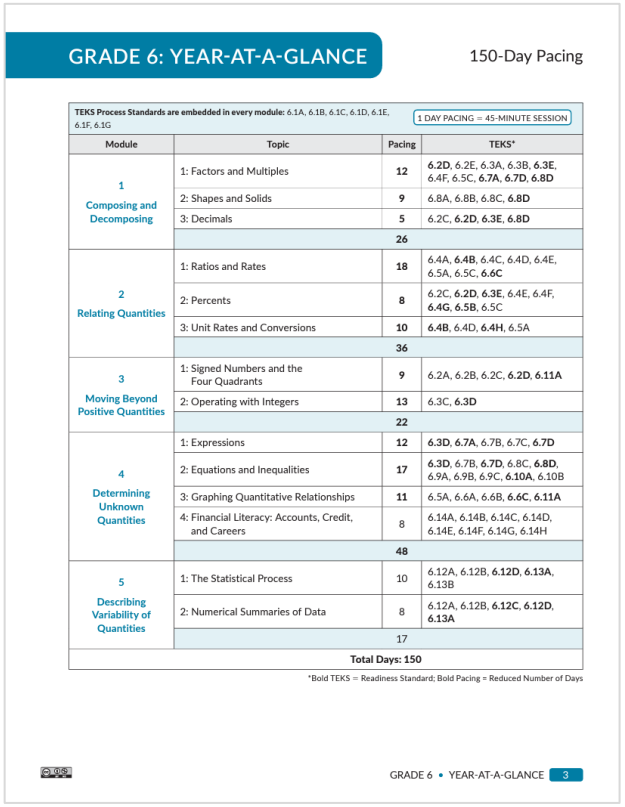
Mathematics

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

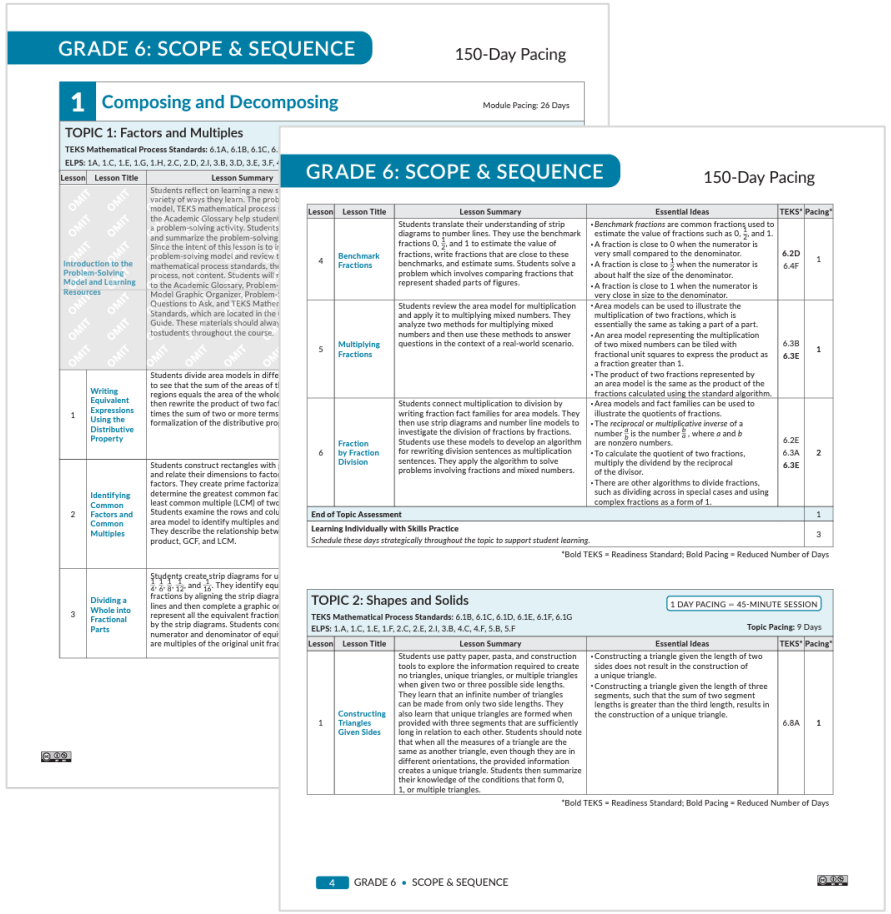
1 DAY PACING = 45-MINUTE SESSION

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**
		26	
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
		36	
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**
		22	
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
		48	
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**
		17	
Total Days: 150			

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

GRADE 6 • YEAR-AT-A-GLANCE 3

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.

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, -

Lesson	Lesson Title	Lesson Summary
	Introduction to the Problem-Solving Model and Learning Resources	Students reflect on learning a new variety of ways they learn. The proc model, TEKS mathematical process the Academic Glossary help studen a problem-solving activity. Students and summarize the problem-solving Since the intent of this lesson is to problem-solving model and review mathematical process standards, th process, not content. Students will to the Academic Glossary, Problem Model Graphic Organizer, Problem Questions to Ask, and TEKS Mathe Standards, which are located in the Guide. These materials should alway tostudents throughout the course.
1	Writing Equivalent Expressions Using the Distributive Property	Students divide area models in diffe to see that the sum of the areas of t regions equals the area of the whole then rewrite the product of two fac times the sum of two or more terms formalization of the distributive pro
2	Identifying Common Factors and Common Multiples	Students construct rectangles with and relate their dimensions to facto factors. They create prime factoriza determine the greatest common fac least common multiple (LCM) of two Students examine the rows and colu area model to identify multiples and They describe the relationship betw product, GCF, and LCM.
3	Dividing a Whole into Fractional Parts	Students create strip diagrams for u $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{8}$, $\frac{1}{12}$, and $\frac{1}{16}$. They identify equ fractions by aligning the strip diagra lines and then complete a graphic or represent all the equivalent fraction by the strip diagrams. Students conc numerator and denominator of equi are multiples of the original unit frac

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.	• *Benchmark fractions* are common fractions used to estimate the value of fractions such as 0, $\frac{1}{2}$, and 1. • A fraction is close to 0 when the numerator is very small compared to the denominator. • A fraction is close to $\frac{1}{2}$ when the numerator is about half the size of the denominator. • A fraction is close to 1 when the numerator is very close in size to the denominator.	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.	• Area models can be used to illustrate the multiplication of two fractions, which is essentially the same as taking a part of a part. • 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. • The product of two fractions represented by an area model is the same as the product of the fractions calculated using the standard algorithm.	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.	• Area models and fact families can be used to illustrate the quotients of fractions. • The *reciprocal* or *multiplicative inverse* of a number $\frac{a}{b}$ is the number $\frac{b}{a}$, where a and b are nonzero numbers. • To calculate the quotient of two fractions, multiply the dividend by the reciprocal of the divisor. • There are other algorithms to divide fractions, such as dividing across in special cases and using complex fractions as a form of 1.	6.2E 6.3A **6.3E**	2
End of Topic Assessment					1
Learning Individually with Skills Practice		*Schedule these days strategically throughout the topic to support student learning.*			3

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

TOPIC 2: Shapes and Solids

1 DAY PACING = 45-MINUTE SESSION

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, 4.C, 4.F, 5.B, 5.F

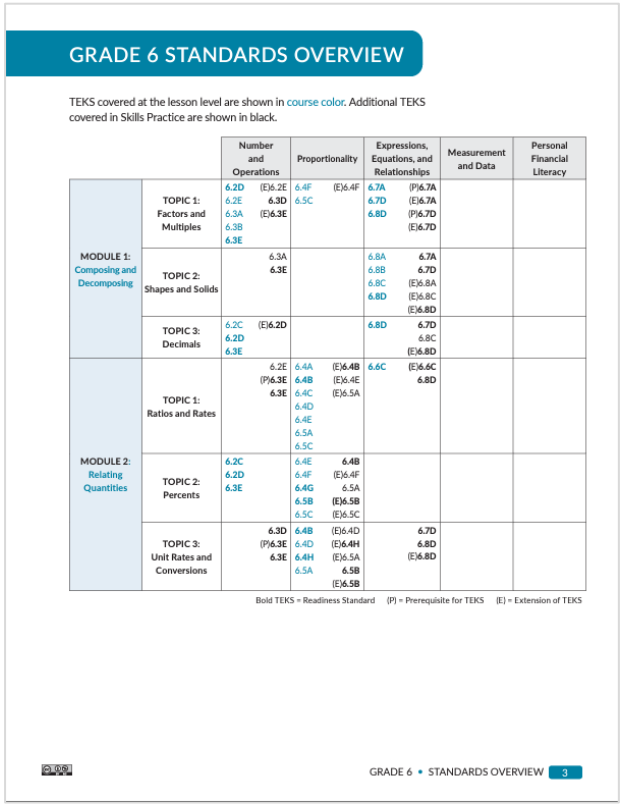
Topic Pacing: 9 Days

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 no triangles, 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.	• Constructing a triangle given the length of two sides does not result in the construction of a unique triangle. • 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.	6.8A	1

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

4 GRADE 6 • SCOPE & SEQUENCE

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** (E)6.2E 6.2E **6.3D** 6.3A (E)**6.3E** 6.3B **6.3E**	6.4F (E)6.4F 6.5C	**6.7A** (P)**6.7A** **6.7D** (E)6.7A **6.8D** (P)**6.7D** (E)**6.7D**		
	TOPIC 2: Shapes and Solids	6.3A **6.3E**		6.8A **6.7A** 6.8B **6.7D** 6.8C (E)6.8A **6.8D** (E)6.8C (E)**6.8D**		
	TOPIC 3: Decimals	6.2C (E)**6.2D** **6.2D** **6.3E**		**6.8D** **6.7D** 6.8C (E)**6.8D**		
MODULE 2: Relating Quantities	TOPIC 1: Ratios and Rates	6.2E (P)**6.3E** **6.3E**	6.4A (E)**6.4B** **6.4B** (E)6.4E 6.4C (E)6.5A 6.4D 6.4E 6.5A 6.5C	**6.6C** (E)**6.6C** **6.8D**		
	TOPIC 2: Percents	**6.2C** **6.2D** **6.3E**	6.4E **6.4B** 6.4F (E)6.4F **6.4G** 6.5A **6.5B** (E)**6.5B** 6.5C (E)6.5C			
	TOPIC 3: Unit Rates and Conversions	**6.3D** 6.4B (E)6.4D (P)**6.3E** 6.4D (E)**6.4H** **6.3E** **6.4H** (E)6.5A 6.5A **6.5B** (E)**6.5B**		**6.7D** **6.8D** (E)**6.8D**		

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

GRADE 6 • STANDARDS OVERVIEW 3

Standards Overview

Bluebonnet Learning Secondary Math | Module and Topic Pacing Guides

MODULE 1, TOPIC 1 PACING GUIDE — 150-Day Pacing

1 Composing and Decomposing

TOPIC 1: Factors and Multiples

1 DAY PACING = 45-MINUTE SESSION

TEKS Mathematical Process Standards: 6.1A, 6.1B, 6.1C, 6.1D, 6.1E, 6.1F, 6.1G
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, 4.C, 4.E, 4.F, 4.G, 4.H

Topic Pacing: 12 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing*
OMIT	Introduction to the Problem-Solving Model and Learning Resources	Students reflect on learning a new skill and the variety of ways they learn. The problem-solving model, TEKS mathematical process standards, and the Academic Glossary help students complete a problem-solving activity. Students reflect on and summarize the problem-solving process. Since the intent of this lesson is to introduce the problem-solving model and review the TEKS mathematical process standards, the focus is on process not content. Students will need access to the Academic Glossary, Problem-Solving Model Graphic Organizer, Problem-Solving Questions to Ask, and TEKS mathematical process standards which are located in the Course Guide. These materials should always be available to students throughout the course. **Materials Needed:** (located in the Course Guide) Academic Glossary, Problem-Solving Model Graphic Organizer, Problem-Solving Model Questions to Ask, TEKS Mathematical Process Standards	**6.7D**	**0**
1	Writing Equivalent Expressions Using the Distributive Property	Students use the distributive property to decompose and compose numerical expressions to create equivalent representations. **Materials needed:** None	**6.7D** **6.8D**	1
2	Identifying Common Factors and Common Multiples	Students use prime factorization and tables to organize factors and multiples and are introduced to least common multiple (LCM) and greatest common factor (GCF). **Materials needed:** Scissors	**6.7A** **6.7D** **6.8D**	2
3	Dividing a Whole into Fractional Parts	Students create strip diagrams for unit fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{6}$, $\frac{1}{8}$, $\frac{1}{12}$, and $\frac{1}{16}$. They identify equivalent fractions by aligning the strip diagrams on the fold lines, and then complete a graphic organizer to represent all the equivalent fractions represented by the strip diagrams. Students conclude that the numerator and denominator of equivalent fractions are multiples of the original unit fractions. **Materials needed:** Strip Diagrams (at the end of the lesson), Scissors	6.4F 6.5C	1

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

MODULE 1, TOPIC 1 PACING GUIDE — 150-Day Pacing

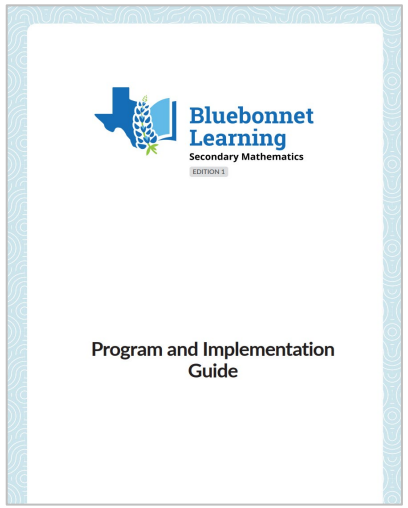
1 DAY PACING = 45-MINUTE SESSION

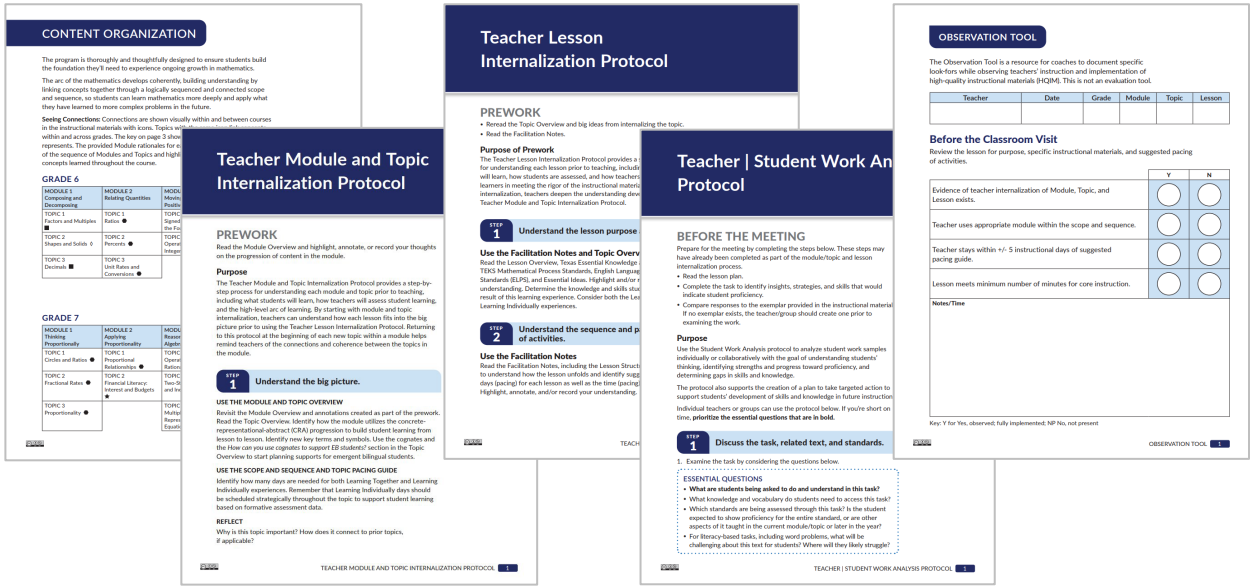
✪ *This activity highlights a key term or concept that is essential to the learning goals of the lesson.*

Day 1	Day 2	Day 3	Day 4	Day 5
TEKS: **6.7D**, **6.8D**	TEKS: **6.7A**, **6.8D**			TEKS: 6.4F, 6.5C
LESSON 1 Writing Equivalent Expressions Using the Distributive Property GETTING STARTED ✪ ACTIVITY 1 ✪ TALK THE TALK	**LESSON 2** Identifying Common Factors and Common Multiples GETTING STARTED ACTIVITY 1 ✪ ACTIVITY 2 ✪	**LESSON 2** continued ACTIVITY 3 ✪ ACTIVITY 4 ✪ TALK THE TALK	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 3** Dividing a Whole into Fractional Parts GETTING STARTED ✪ ACTIVITY 1 ✪ TALK THE TALK ✪
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
TEKS: **6.2D**, 6.4F	TEKS: 6.3B, **6.3E**		TEKS: 6.2E, 6.3A, **6.3E**	
LESSON 4 Benchmark Fractions GETTING STARTED ✪ ACTIVITY 1 ✪ ACTIVITY 2 ✪ TALK THE TALK ✪	**LESSON 5** Multiplying Fractions GETTING STARTED ACTIVITY 1 ✪ ACTIVITY 2 ✪ TALK THE TALK ✪	**LEARNING INDIVIDUALLY** Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**LESSON 6** Fraction by Fraction Division GETTING STARTED ✪ ACTIVITY 1 ✪ ACTIVITY 2 ✪	**LESSON 6** continued ACTIVITY 3 ✪ ACTIVITY 4 TALK THE TALK
Day 11	**Day 12**			
LEARNING INDIVIDUALLY Skills Practice *This is a suggested placement. Move based on student data and individual needs.*	**END OF TOPIC ASSESSMENT**			

*Bold TEKS = Readiness Standard

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.

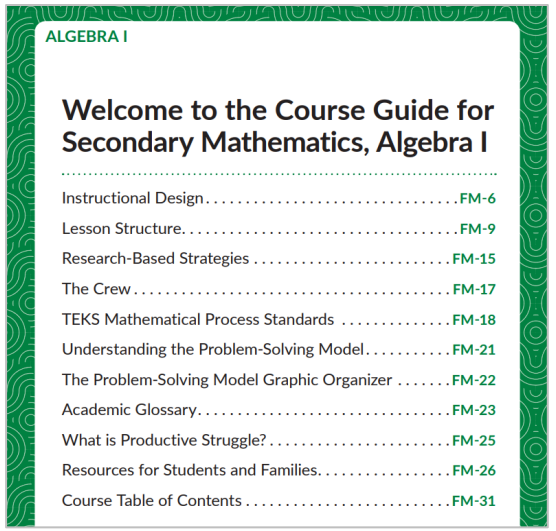
Please note that this is a **new asset** that was not part of the CER Version 3 materials.

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

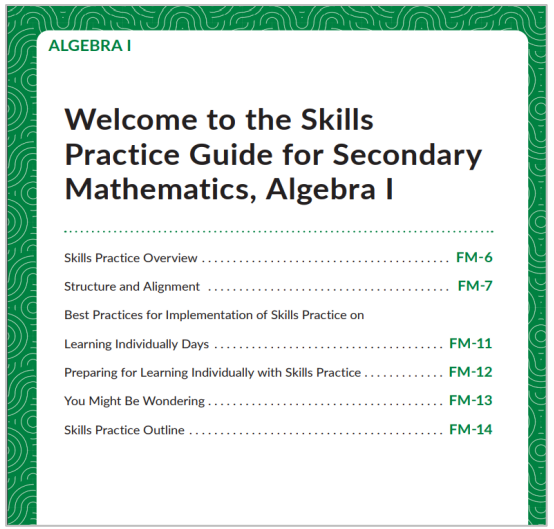
Bluebonnet Learning Secondary Mathematics | Course Guides

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



ALGEBRA I

Welcome to the Course Guide for Secondary Mathematics, Algebra I

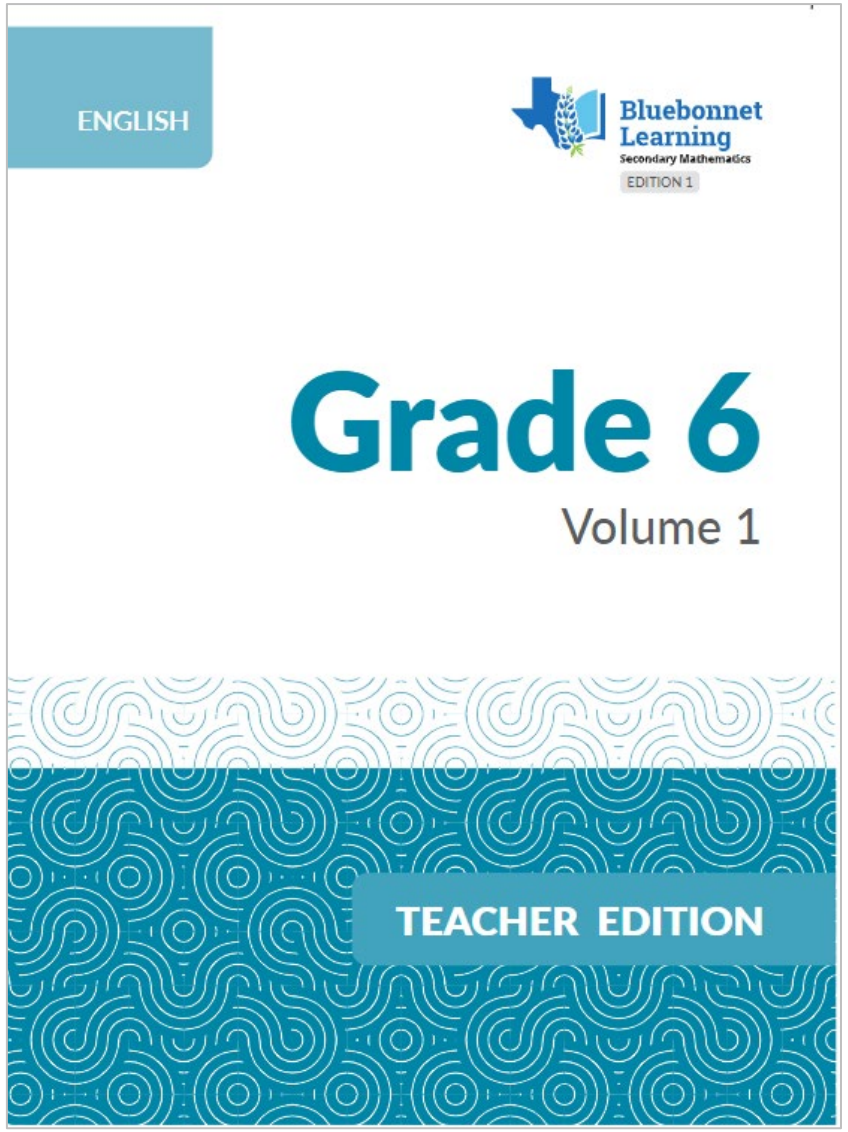


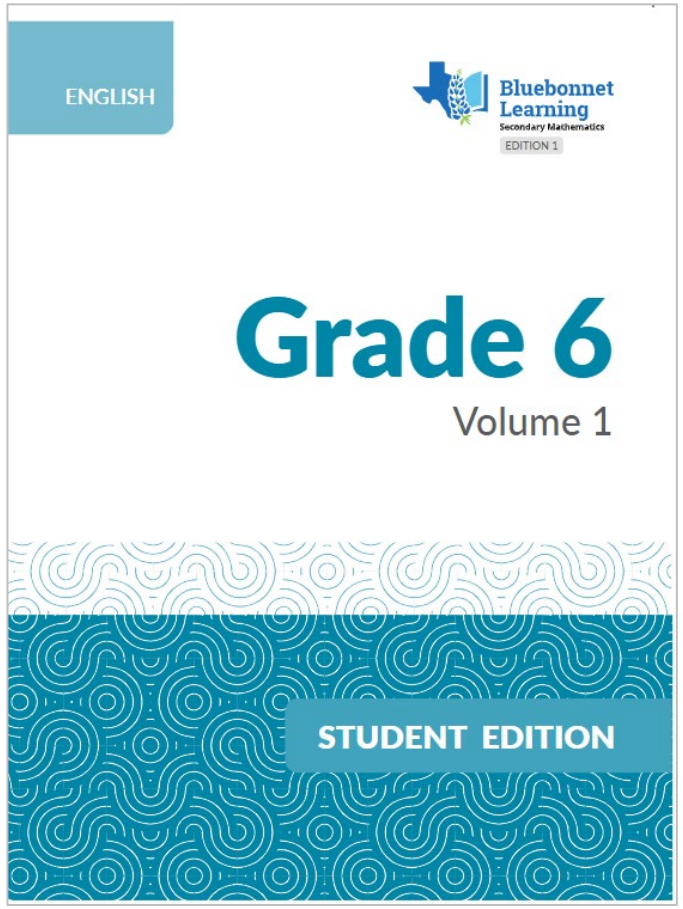
ALGEBRA I

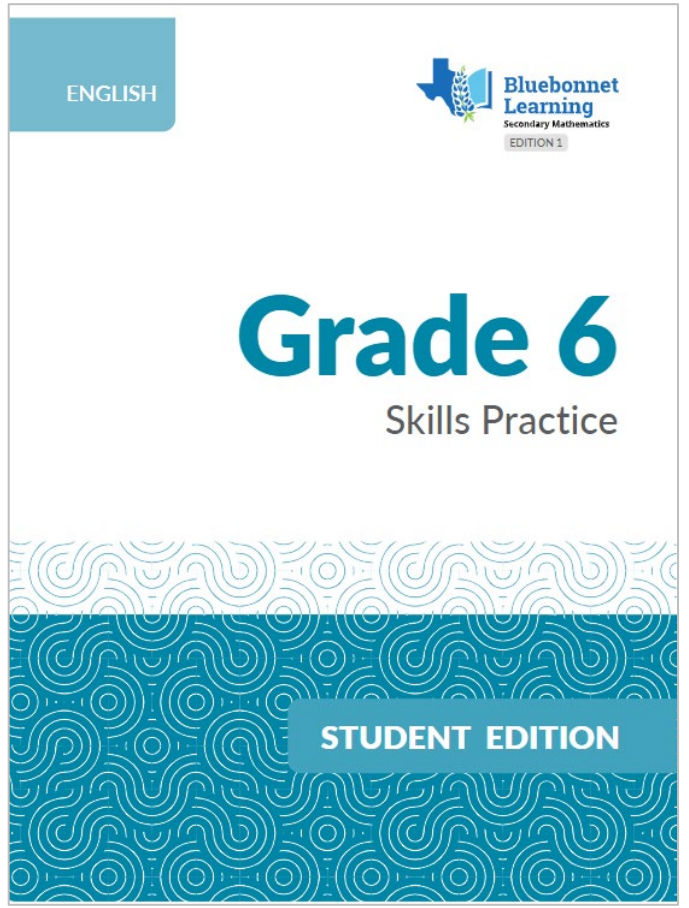
Welcome to the Skills Practice Guide for Secondary Mathematics, Algebra I

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

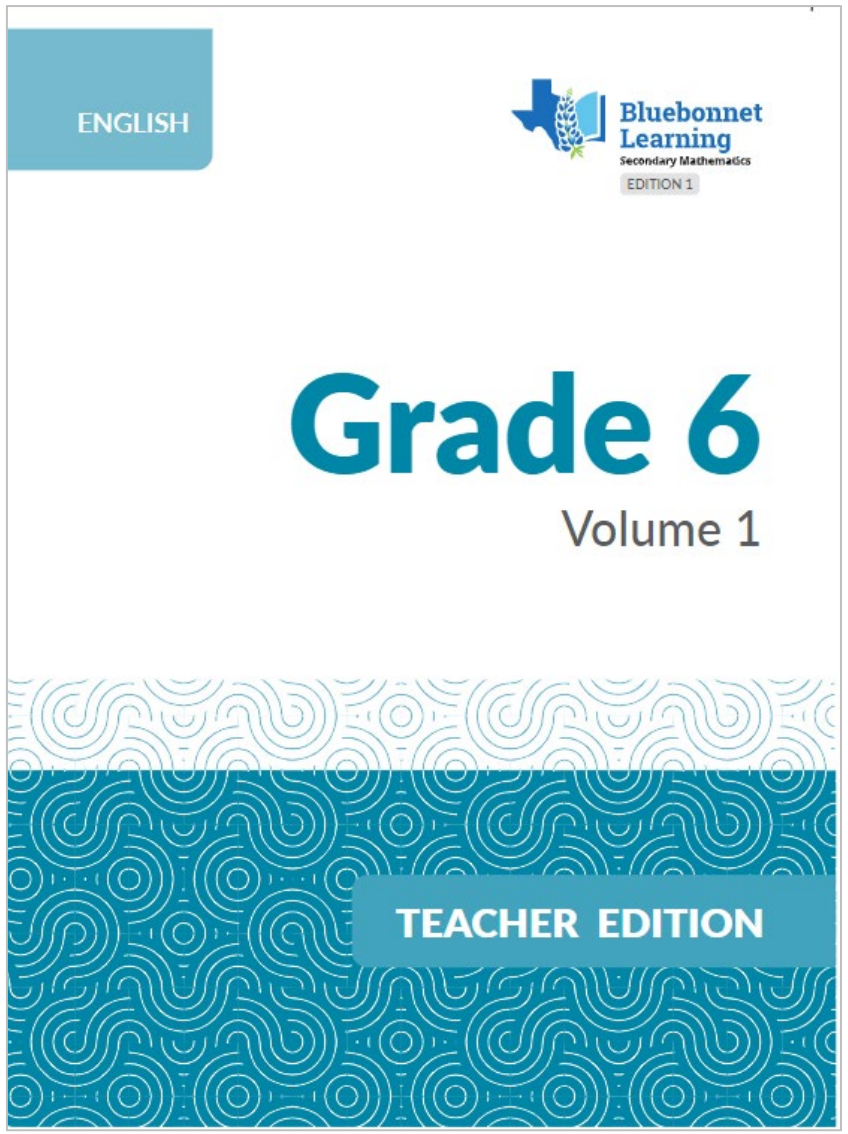
Bluebonnet Learning Secondary Math (1/3)

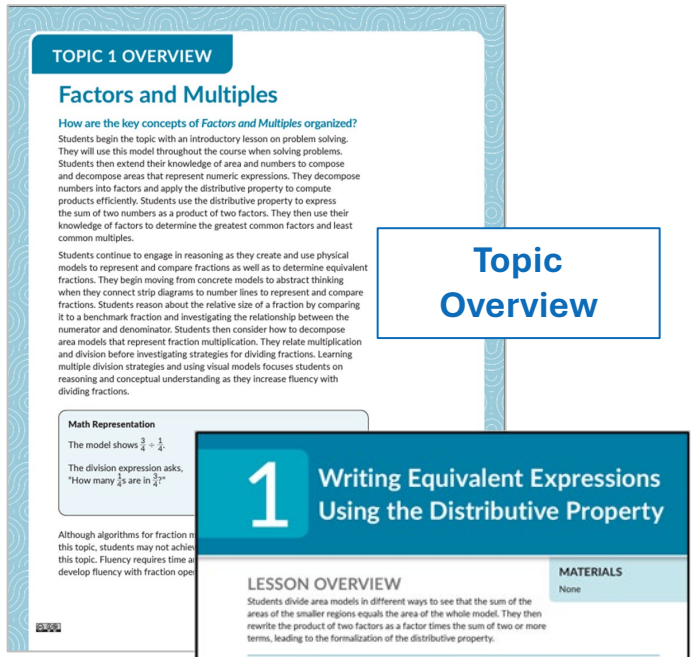




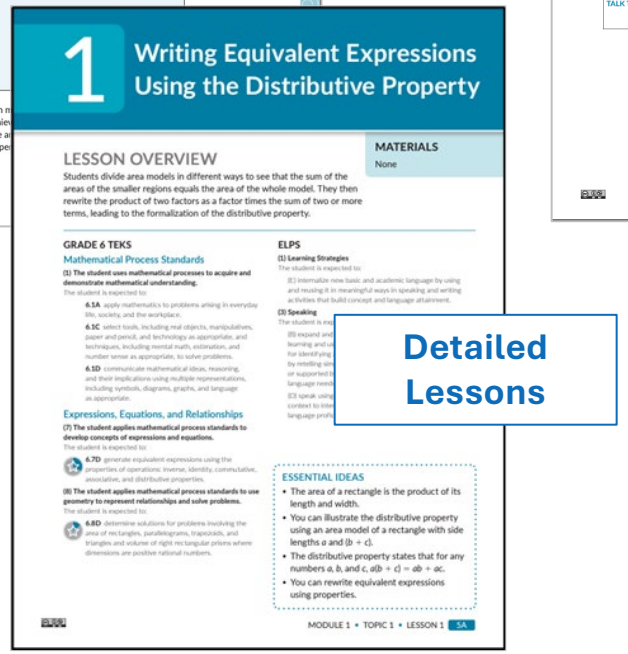


Bluebonnet Learning Secondary Math (2/3)

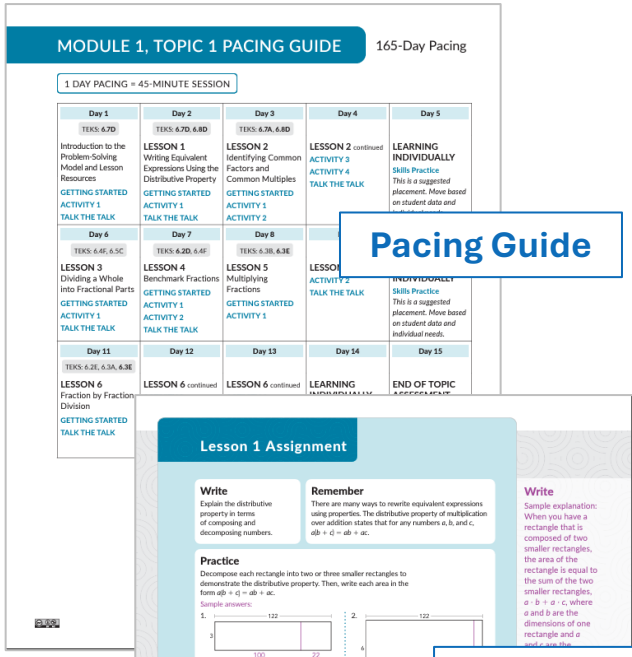




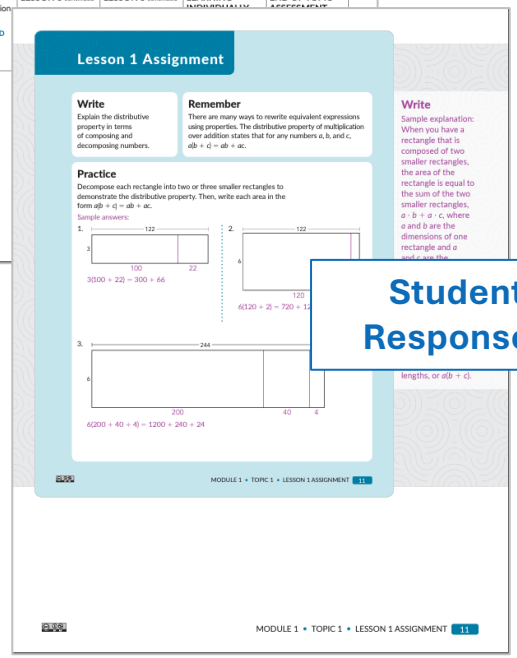
Topic Overview



Detailed Lessons

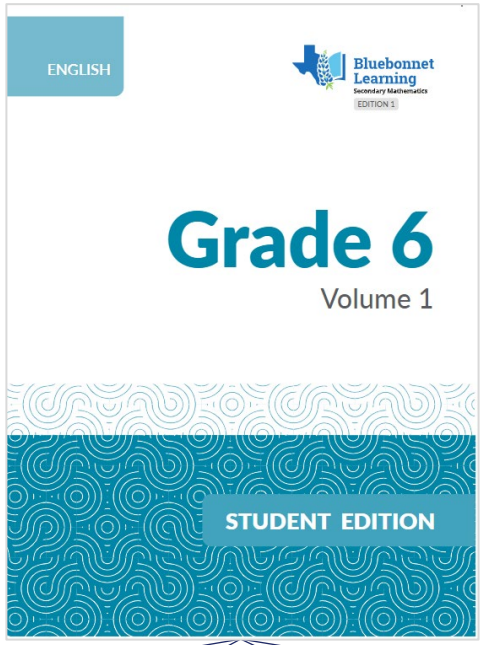


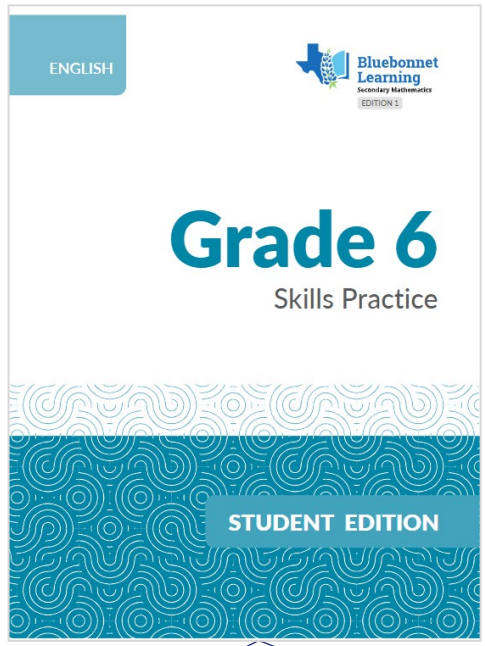
Pacing Guide



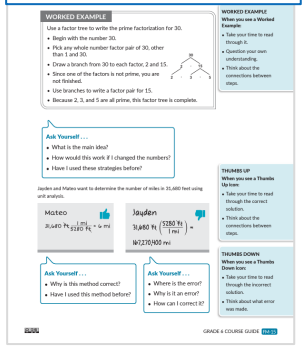
Student Responses

Bluebonnet Learning Secondary Math (3/3)

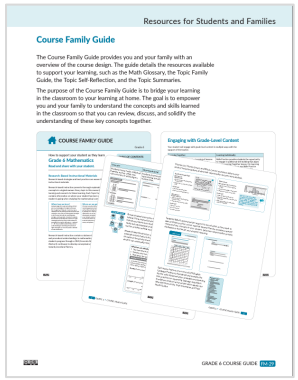




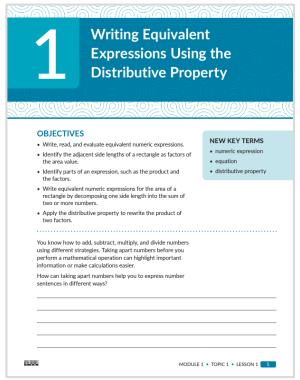
Worked Examples



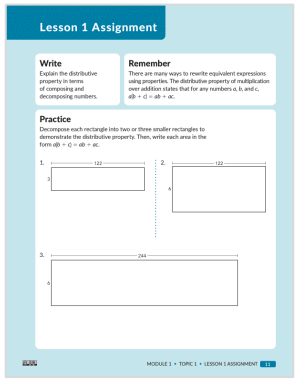
Family Guides



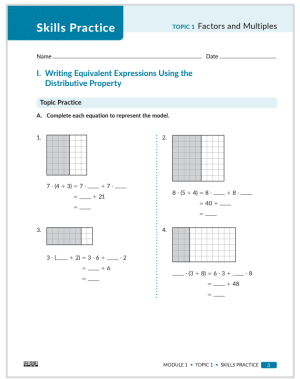
Lessons



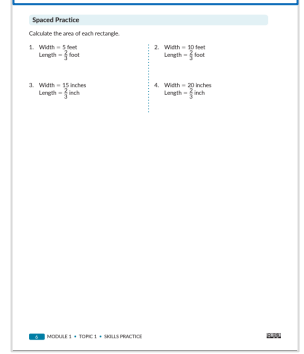
Application



Topic Practice



Spaced Practice



Bluebonnet Learning Secondary Math | Learning Together and Individually

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 and 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.

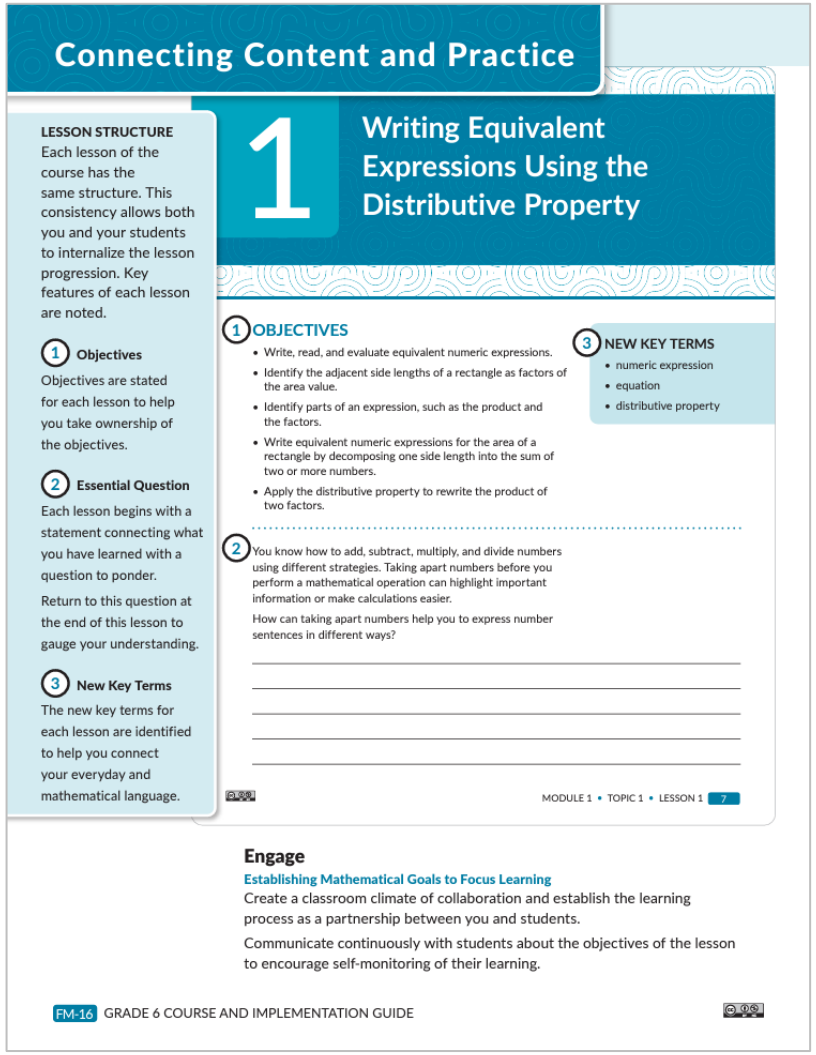
Bluebonnet Learning Secondary Math Phase 1: Engage

1

Engage

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

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



Connecting Content and Practice

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 Writing Equivalent Expressions Using the Distributive Property

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.

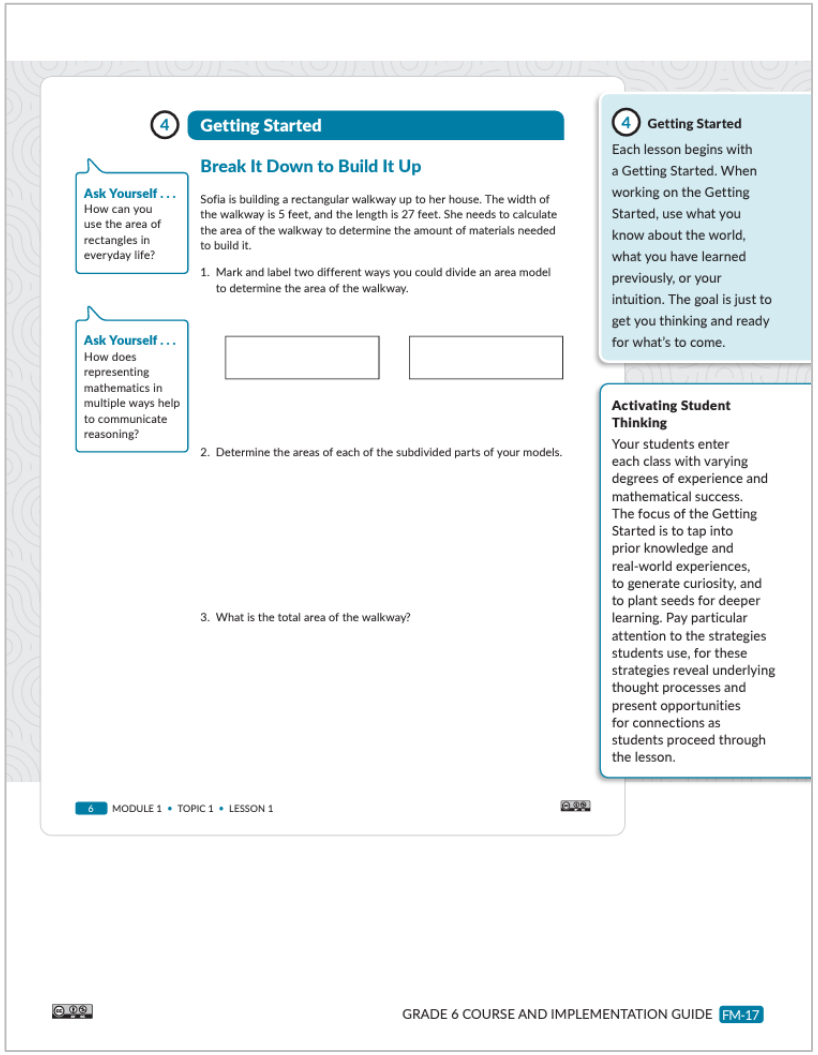
3 NEW KEY TERMS
- numeric expression
- equation
- distributive property

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?

MODULE 1 • TOPIC 1 • LESSON 1 7

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.

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

Ask Yourself . . .
How does representing mathematics in multiple ways help to communicate reasoning?

2. Determine the areas of each of the subdivided parts of your models.

3. What is the total area of the walkway?

6 MODULE 1 • TOPIC 1 • LESSON 1

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.

GRADE 6 COURSE AND IMPLEMENTATION GUIDE FM-17

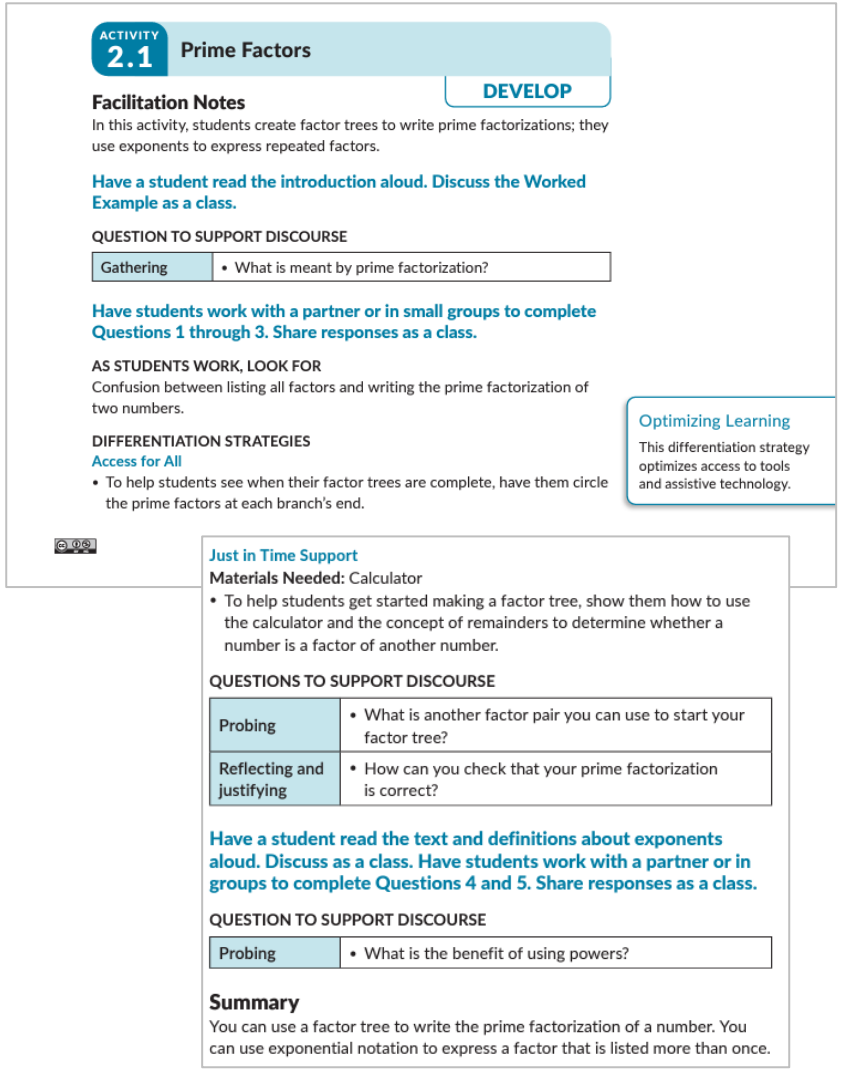
Bluebonnet Learning Secondary Math Phase 2: Develop

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?

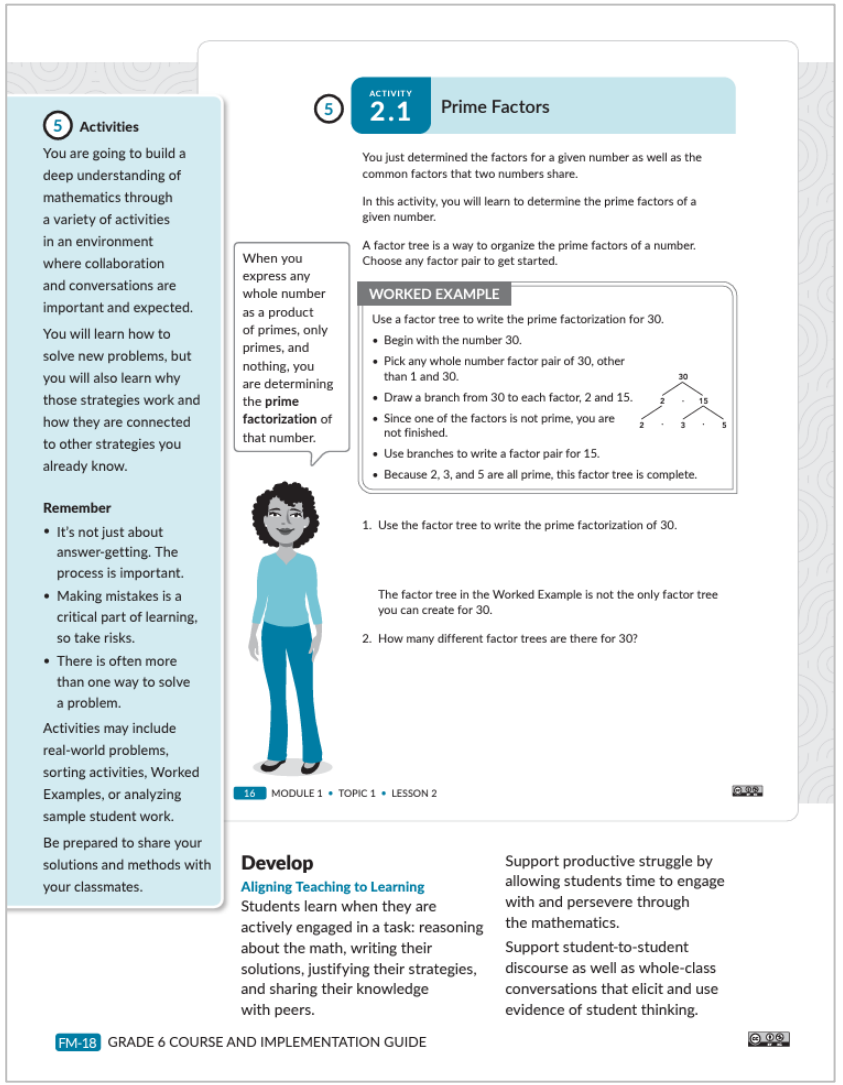
Have a student read the text and definitions about exponents aloud. Discuss as a class. Have students work with a partner or in groups to complete Questions 4 and 5. Share responses as a class.

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.

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

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.

30 = 2 · 15; 15 = 3 · 5

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?

16 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

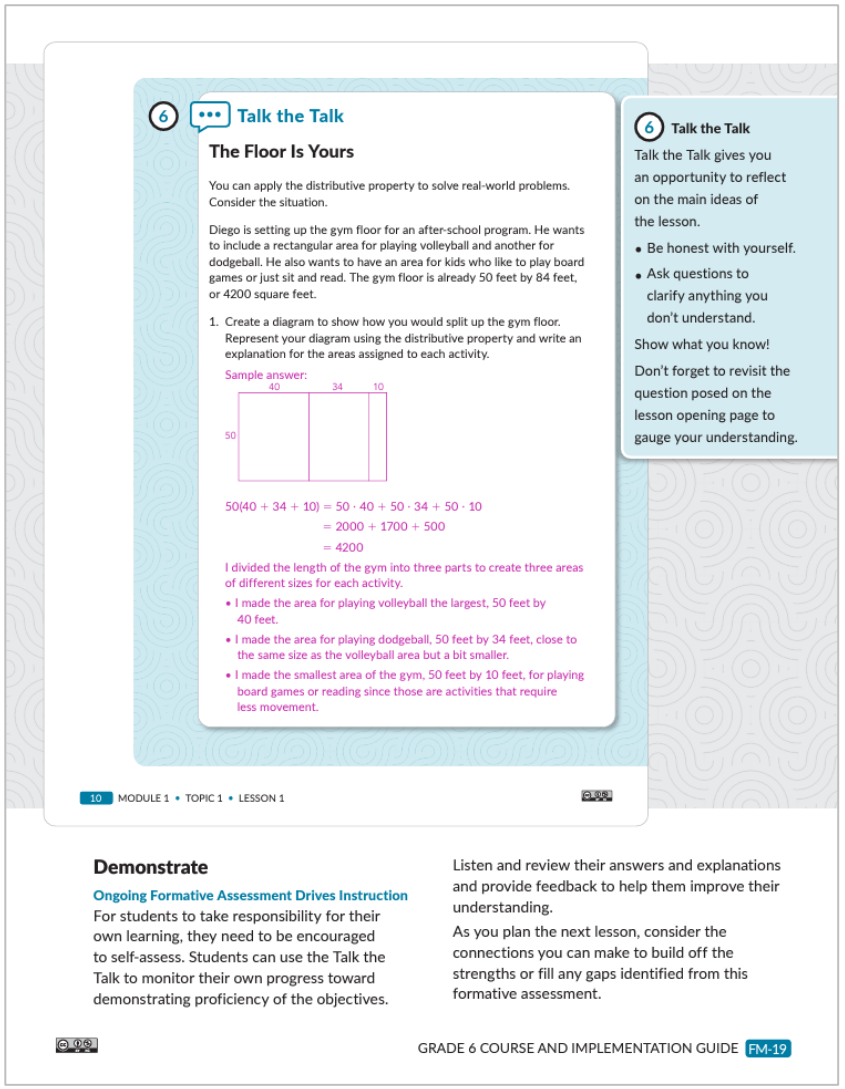
Bluebonnet Learning Secondary Math Phase 3: Demonstrate

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.

1. 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:

$50(40 + 34 + 10) = 50 \cdot 40 + 50 \cdot 34 + 50 \cdot 10$
$= 2000 + 1700 + 500$
$= 4200$

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.

10 MODULE 1 • TOPIC 1 • LESSON 1

Demonstrate

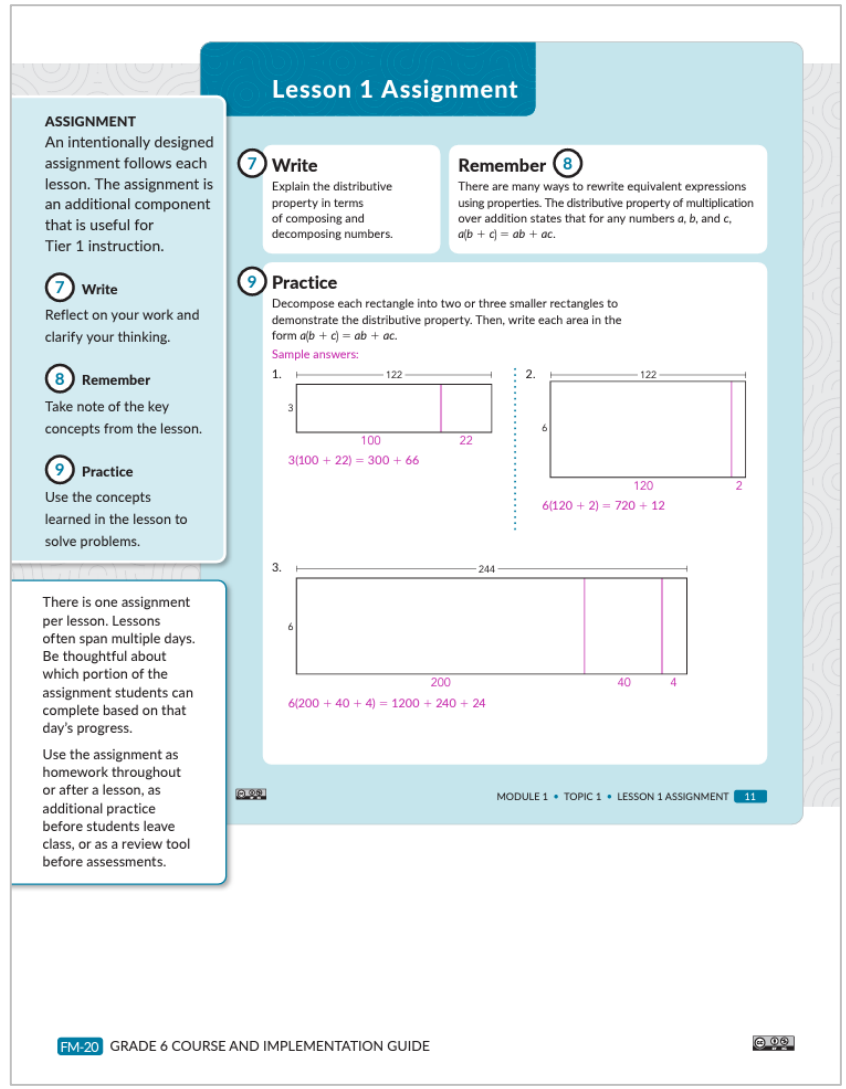
Ongoing Formative Assessment Drives Instruction

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.

GRADE 6 COURSE AND IMPLEMENTATION GUIDE FM-19



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:

1.

$3(100 + 22) = 300 + 66$

2.

$6(120 + 2) = 720 + 12$

3.

$6(200 + 40 + 4) = 1200 + 240 + 24$

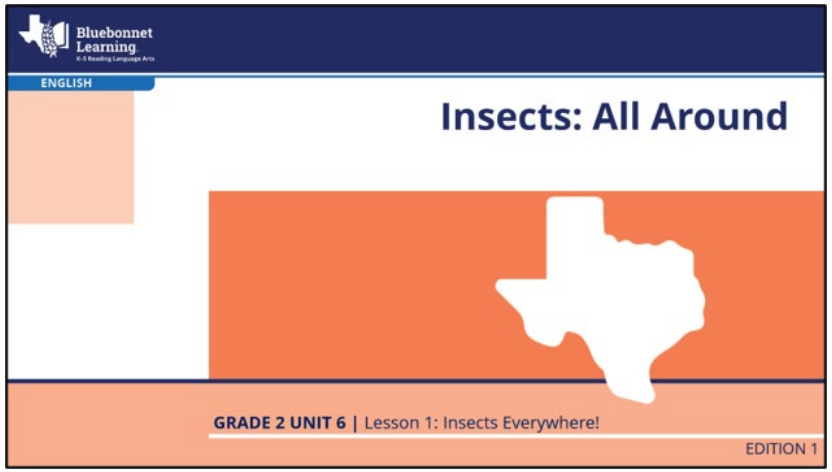
MODULE 1 • TOPIC 1 • LESSON 1 ASSIGNMENT 11

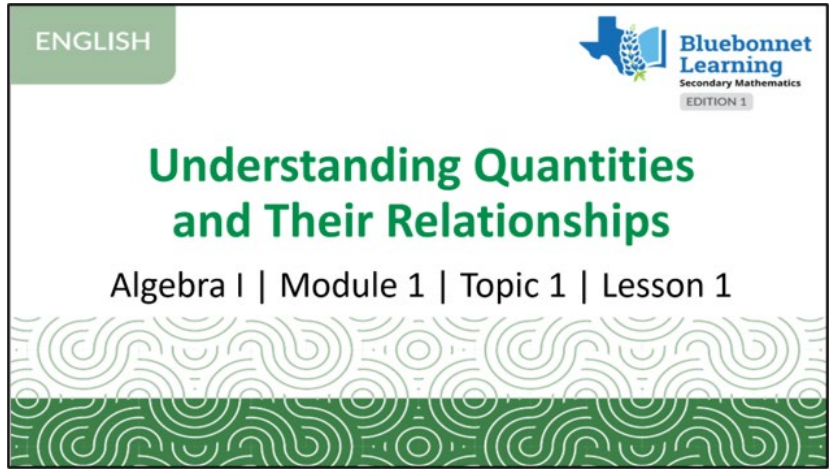
FM-20 GRADE 6 COURSE AND IMPLEMENTATION GUIDE

Bluebonnet Learning Implementation Resources

Lesson-Level Projectables/Slide Decks

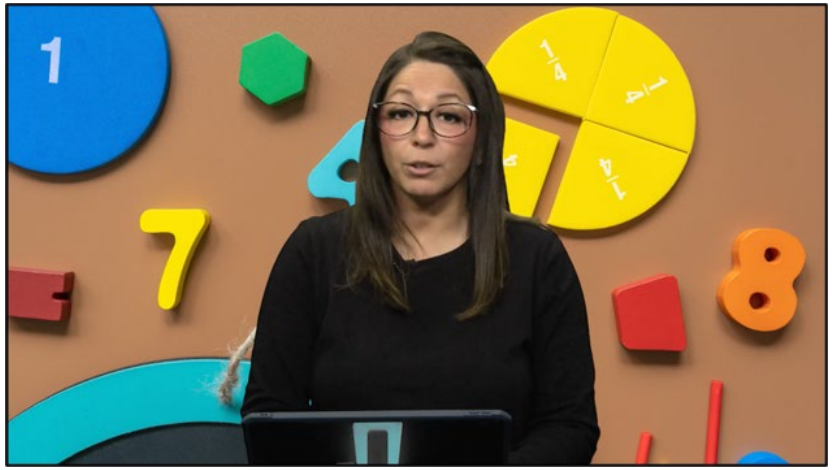
- Available for all SBOE-approved Bluebonnet Learning instructional materials from IMRA 2024
- Follows lesson structure of approved instructional materials
- Downloadable and fully editable

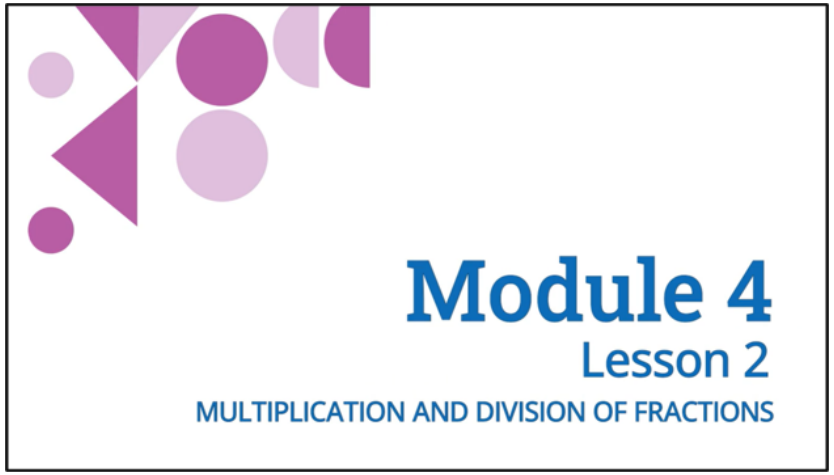


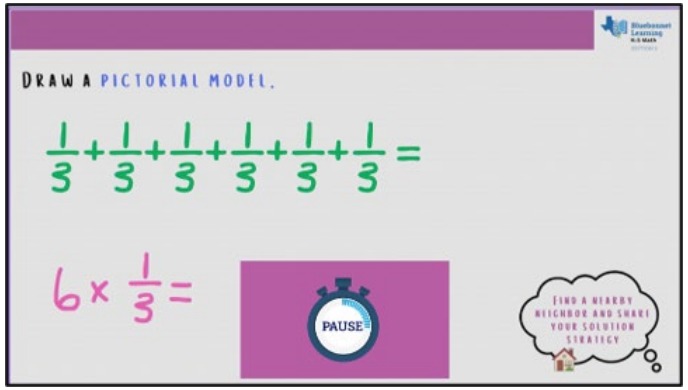


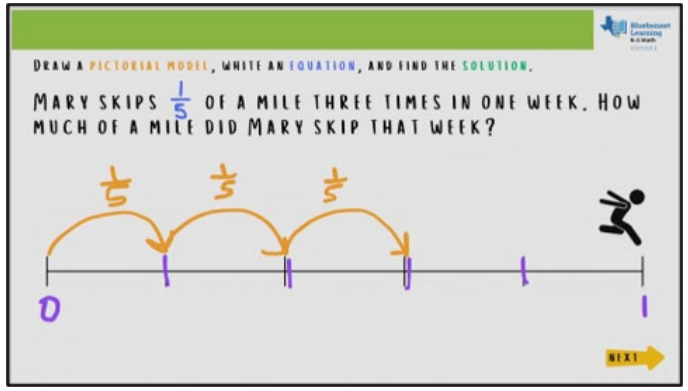
Math Content Support Videos

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









Implementation Podcasts

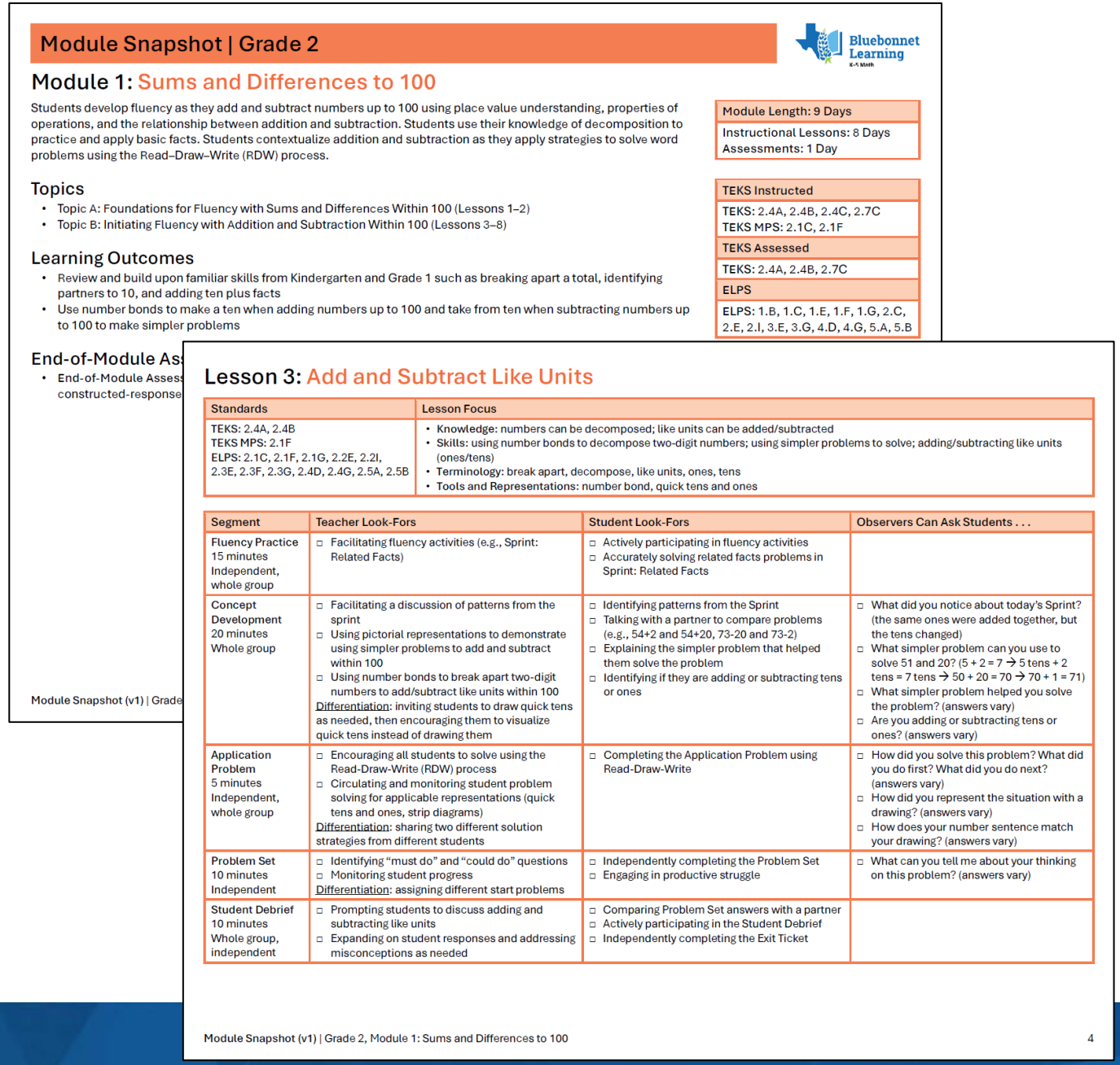
Bluebonnet Learning™

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

Bluebonnet Learning

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)

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

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

End-of-Module Ass

- End-of-Module Assess
  constructed-response

Module Snapshot (v1) | Grade

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	• Knowledge: numbers can be decomposed; like units can be added/subtracted • Skills: using number bonds to decompose two-digit numbers; using simpler problems to solve; adding/subtracting like units (ones/tens) • Terminology: break apart, decompose, like units, ones, tens • Tools and Representations: number bond, quick tens and ones

Segment	Teacher Look-Fors	Student Look-Fors	Observers Can Ask Students . . .
Fluency Practice 15 minutes Independent, whole group	▫ Facilitating fluency activities (e.g., Sprint: Related Facts)	▫ Actively participating in fluency activities ▫ Accurately solving related facts problems in Sprint: Related Facts	
Concept Development 20 minutes Whole group	▫ Facilitating a discussion of patterns from the sprint ▫ Using pictorial representations to demonstrate using simpler problems to add and subtract within 100 ▫ Using number bonds to break apart two-digit numbers to add/subtract like units within 100 Differentiation: inviting students to draw quick tens as needed, then encouraging them to visualize quick tens instead of drawing them	▫ Identifying patterns from the Sprint ▫ Talking with a partner to compare problems (e.g., 54+2 and 54+20, 73-20 and 73-2) ▫ Explaining the simpler problem that helped them solve the problem ▫ Identifying if they are adding or subtracting tens or ones	▫ What did you notice about today’s Sprint? (the same ones were added together, but the tens changed) ▫ 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) ▫ What simpler problem helped you solve the problem? (answers vary) ▫ Are you adding or subtracting tens or ones? (answers vary)
Application Problem 5 minutes Independent, whole group	▫ Encouraging all students to solve using the Read-Draw-Write (RDW) process ▫ Circulating and monitoring student problem solving for applicable representations (quick tens and ones, strip diagrams) Differentiation: sharing two different solution strategies from different students	▫ Completing the Application Problem using Read-Draw-Write	▫ How did you solve this problem? What did you do first? What did you do next? (answers vary) ▫ How did you represent the situation with a drawing? (answers vary) ▫ How does your number sentence match your drawing? (answers vary)
Problem Set 10 minutes Independent	▫ Identifying “must do” and “could do” questions ▫ Monitoring student progress Differentiation: assigning different start problems	▫ Independently completing the Problem Set ▫ Engaging in productive struggle	▫ What can you tell me about your thinking on this problem? (answers vary)
Student Debrief 10 minutes Whole group, independent	▫ Prompting students to discuss adding and subtracting like units ▫ Expanding on student responses and addressing misconceptions as needed	▫ Comparing Problem Set answers with a partner ▫ Actively participating in the Student Debrief ▫ Independently completing the Exit Ticket	

Module Snapshot (v1) | Grade 2, Module 1: Sums and Differences to 100 4

Texas Education Agency

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.