Launch or Reinforce Summer Learning with Math by the Book
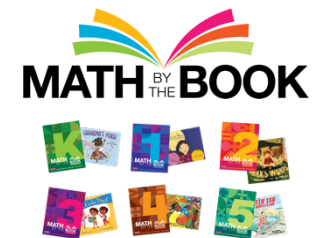
Research shows that students benefit from high-quality summer and extended learning opportunities. Finding the right mix of engaging, effective resources to support these programs can be challenging.

Reinforce math concepts through children's literature

Math by the Book is a supplemental resource that presents critical math skills and concepts through the context of great children's literature. It's a perfect way to reteach or reinforce important math ideas because the context of the story helps learning stick in ways that worksheets and memorization don't.

Every grade-level book includes 20 chapters, each focusing on a specific math topic in one of the following areas:

Counting and Cardinality	Numbers and Operations in Base Ten	Numbers and Operations – Fractions
Geometry	Measurement and Data	Operations and Algebraic Thinking

A flexible resource for your summer learning needs

Start by selecting a math goal for your students, then look for related chapters from Math by the Book in the included charts. Whichever chapter you choose, you'll find a menu of lessons, tasks, and activities to support instruction—all tied to the context of an engaging story.

The flexibility of Math by the Book means it can help launch learning, review it, or even function as a primary summer resource. Extension activities offer further practice and differentiation options depending on the support your students need within your summer school program. Downloadable resources are included to simplify lesson planning and preparation.

Here is one example of how Math by the Book can support a four-week summer learning program:

SAMPLE Summer Learning Calendar – For students needing additional support with subtraction			
Week 1	**Week 2**	**Week 3**	**Week 4**
Subtracting two-digit numbers without regrouping *Math by the Book: Second Grade*, Chapter 8	**Subtracting two-digit numbers with regrouping** *Math by the Book: Second Grade*, Chapter 9	**Subtracting three-digit numbers with regrouping** *Math by the Book: Third Grade*, Chapter 11	**Adding and subtracting multidigit numbers** *Math by the Book: Fourth* Grade, Chapter 5
DAY 1: Read *Too Many Toys* by David Shannon and teach the Investigate lesson ("Giving Away Toys")	**DAY 1:** Read *A Bike Like Sergio's* by Maribeth Boelts and teach the Investigate lesson ("$50 to Spend")	**DAY 1:** Read *George Crum and the Saratoga Chip* by Gaylia Taylor and teach the Investigate lesson ("Calorie Count")	**DAY 1:** Read *In the Land of Milk and Honey* by Joyce Carol Thomas and teach the first Explore lesson ("Train or Car")
DAY 2: Teach the Explore lesson ("Toys on a Number Line")	**DAY 2:** Teach the Explore lesson ("Comparing Prices")	**DAY 2:** Teach the Explore lesson ("Crowds of Diners")	**DAY 2:** Teach the second Explore lesson ("Boxes of Tomatoes")
DAY 3: Practice via "Solve" and "Talk and Write" activities; students play "Rollings Toys Subtraction" game when done.	**DAY 3:** Practice via "Solve" and "Talk and Write" activities; students play "Shopping Spree" game when done.	**DAY 3:** Practice via "Solve" and "Talk and Write" activities and play "Winning Chips" game when done.	**DAY 3:** Practice via "Solve" and "Talk and Write" activities; students work on the Extend activity ("My Dream Trip") when done.
DAY 4: Number talk with the Enrich question, then try the Extend activity ("Too Many Problems"). Play "Rolling Toys Subtraction" again.	**DAY 4:** Do the Extend activity as a class ("Class Store"). Play "Shopping Spree" again.	**DAY 4:** Number talk with the first Solve problem, then try the Extend activity. Play "Winning Chips" again.	**DAY 4:** Finish "My Dream Trip" activity. Play "Dueling Differences" with a partner when done.

NUMBERS AND OPERATIONS IN BASE TEN / COUNTING AND CARDINALITY

Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade
Exploring numbers 1-5 (Chapter 1)	Exploring place value with two-digit numbers (Chapter 10)	Place value with three-digit numbers (Chapter 5)	Exploring estimation and rounding (Chapter 9)	Exploring place value (Chapter 4)	Exploring place value and comparing numbers (Chapter 4)
Number concepts and counting to 10 (Chapter 2)	Counting to 120 (Chapter 11)	Estimation (Chapter 6)	Adding three-digit numbers with regrouping (Chapter 10)	Adding and subtracting multidigit numbers (Chapter 5)	Exploring place value to millions (Chapter 5)
Counting collections (Chapter 3)	Adding a single-digit number to a two-digit number (Chapter 12)	Adding two-digit numbers (Chapter 7)	Subtracting three-digit numbers with regrouping (Chapter 11)	Multiplying multidigit numbers with arrays and area models (Chapter 6)	Multiplying with multidigit numbers (Chapter 6)
Exploring zero (Chapter 4)	Comparing two-digit numbers (Chapter 13)	Subtracting two-digit numbers without regrouping (Chapter 8)	Multiplying a one-digit number by a multiple of 10 (Chapter 12)	Multiplying multidigit numbers using a partial products strategy (Chapter 7)	Dividing with multidigit numbers (Chapter 7)
Counting backward (Chapter 5)	Subtracting multiples of 10 (Chapter 14)	Subtracting two-digit numbers with regrouping (Chapter 9)		Doubling multidigit numbers and exploring patterns (Chapter 8)	Comparing decimals to thousandths (Chapter 8)
Counting by tens (Chapter 6)		Adding three-digit numbers with regrouping (Chapter 10)		Exploring division with remainders (Chapter 9)	Adding and subtracting decimals using place-value strategies (Chapter 9)
Counting to 100 (Chapter 7)					Solving problems with addition and subtraction of decimals (Chapter 10)
Comparing quantities (Chapter 8)					Multiplying a decimal by a whole number (Chapter 11)
Understanding numbers 11-20 (Chapter 9)					

NUMBERS AND OPERATIONS – FRACTIONS

Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade
Fractions are not addressed in Math by the Book: Kindergarten	*Fractions are not addressed in Math by the Book: First Grade*	*Fractions are not addressed in Math by the Book: Second Grade*	Understanding fractions and fraction notation (Chapter 13)	Understanding and generating equivalent fractions (Chapter 10)	Adding fractions with unlike denominators (Chapter 12)
			Comparing fractions (Chapter 14)	Comparing and ordering fractions (Chapter 11)	Multiplying fractions (Chapter 13)
				Adding and subtracting fractions with like denominators (Chapter 12)	Dividing fractions by whole numbers (Chapter 14)
				Multiplying a whole number by a fraction (Chapter 13)	
				Comparing decimals and persevering while solving problems (Chapter 14)	

GEOMETRY

Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade
Using positional words (Chapter 15) Naming and describing shapes (Chapter 16) Comparing and composing shapes (Chapter 17) Exploring three-dimensional shapes (Chapter 18)	Names and attributes of two-dimensional shapes (Chapter 15) Partitioning shapes into halves and fourths (Chapter 16)	Describing shapes and attributes (Chapter 11) Partitioning shapes into halves, thirds, and fourths (Chapter 12)	Characteristics of shapes (quadrilaterals) (Chapter 15)	Exploring lines, angles, and shapes (Chapter 15) Understanding symmetry (Chapter 16)	Exploring attributes of shapes (Chapter 15) Classifying and exploring hierarchies of two-dimensional shapes (Chapter 16)

MEASUREMENT AND DATA

Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade
Sorting and classifying (Chapter 19) Exploring measurable attributes (length) (Chapter 20)	Measuring length with nonstandard units (Chapter 17) Surveys and data (Chapter 18) Telling time to the hour (Chapter 19) Identifying, sorting, and counting coins (Chapter 20)	Exploring customary units for length (Chapter 13) Exploring metric units for length (Chapter 14) Counting coins (Chapter 15) Solving problems about money (Chapter 16) Telling time with a.m. and p.m. (Chapter 17) Line plots (Chapter 18) Picture graphs (Chapter 19) Bar graphs (Chapter 20)	Understanding area (Chapter 16) Understanding perimeter (Chapter 17)	Solving problems with measurement conversions (Chapter 17) Finding the area and perimeter of complex figures (Chapter 18) Determining elapsed time (Chapter 19) Creating and analyzing line plots (Chapter 20)	Understanding coordinate grids (Chapter 17) Creating and analyzing line plots (Chapter 18) Exploring measurement comparisons and conversions (Chapter 19) Exploring volume (Chapter 20)

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OPERATIONS AND ALGEBRAIC THINKING

Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade
Decomposing numbers to 10 (Chapter 10)	**Problem solving with addition and subtraction** (Chapter 1)	**Introducing two-step problems** (Chapter 1)	**Solving two-step problems** (Chapter 1)	**Understanding and solving problems with multiplicative comparison** (Chapter 1)	**Understanding powers of ten** (Chapter 1)
Decomposing 10 (Chapter 11)	**Exploring addition and subtraction with unknowns in different positions** (Chapter 2)	**Fluency with near-doubles and using-ten facts** (Chapter 2)	**Perseverance and solving complex problems** (Chapter 2)	**Solving problems about time and distance** (Chapter 2)	**Solving multistep problems** (Chapter 2)
Exploring addition (Chapter 12)	**Exploring subtracting 1** (Chapter 3)	**Understanding odd and even numbers** (Chapter 3)	**Understanding multiplication** (Chapter 3)	**Exploring prime numbers** (Chapter 3)	**Exploring expressions, equations, and order of operations** (Chapter 3)
Exploring subtraction (Chapter 13)	**Exploring adding and subtracting 10** (Chapter 4)	**Exploring repeated addition with arrays** (Chapter 4)	**Understanding division** (Chapter 4)		
Understanding +1 (Chapter 14)	**Exploring adding 2 and the commutative property** (Chapter 5)	**Place value with three-digit numbers** (Chapter 5)	**Multiplying by 2** (Chapter 5)		
	Exploring doubles (Chapter 6)	**Estimation** (Chapter 6)	**Multiplying by 10 and the commutative property** (Chapter 6)		
	Number pairs that make 10 (Chapter 7)	**Adding two-digit numbers** (Chapter 7)	**Multiplying and dividing by 5** (Chapter 7)		
	Mental addition strategies (Chapter 8)	**Subtracting two-digit numbers without regrouping** (Chapter 8)	**Multiplying by 6 and the distributive property** (Chapter 8)		
	Finding the sum of three addends and exploring the associative property (Chapter 9)	**Subtracting two-digit numbers with regrouping** (Chapter 9)			
		Adding three-digit numbers with regrouping (Chapter 10)			

Math in Practice: Another Summer Support You Can Count On

Looking to go deeper with your math content knowledge and instructional repertoire? Math in Practice is perfect companion to Math by the Book. This K-5 resource offers standards-based content and coaching support. Its practical and flexible design makes it a good match for any curriculum or program you're using. Each grade level set includes content coaching, lesson starters, formative assessment suggestions, and small group activities. And for teachers who have less experience with a range of grade-level content, Math in Practice will feel like having an instructional specialist at their fingertips. Learn more a download a sample at MathInPractice.com.