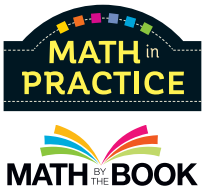
Planning for Summer School

Math in Practice and *Math by the Book*

The blend of* Math in Practice *and* Math by the Book *provides everything you need for an effective summer school program. And we believe your teachers will become even better teachers of mathematics after using these resources! Now that's a win-win!



An effective summer school program is tailored to the needs of students. Generic programs do not do that. So how do we tailor our own K–5 summer programs without it being labor-intensive and confusing? In this document, you will find a template for planning your summer school program, along with a correlation of resources from ***Math in Practice*** and ***Math by the Book.*** We have identified the most-widely addressed standards for summer school programs, those that focus on K–5 standards related to numbers and operations. For each math standard, we have identified:

- the ***Math in Practice*** module that contains a wealth of hands-on lessons, word problems, discussion prompts, and interactive practice tasks that address those specific math skills.
- a suggestion of foundational skills that may need to be revisited if students are having difficulty with the highlighted skill, as well as where these lessons appear in ***Math in Practice***.
- some highly engaging literature-based lessons from ***Math by the Book*** that focus on the teaching and practice of the specific math skill.

Guided by this template, you can plan your summer school program and easily design sessions that are tailored to the needs of your students and program structure (time, class size…).

Why use *Math in Practice* as your central resource?

Math in Practice provides students with additional exposure to their grade-level skills through engaging tasks, taught with strong instructional practices (e.g., deep questioning, hands-on and visual support, contextual problems, lots of math talk).

- ***Math in Practice*** is not a generic summer school curriculum. It is a resource that is organized into modules to allow you to select lessons that fit the needs of your students to create an effective experience for your students.
- The resource provides a wealth of interactive and hands-on lessons that challenge students to explore and make sense of the mathematics, which is exactly how we want them to spend their time in our summer programs.
- Problem-solving tasks are integrated into every module, so students are consistently practicing their problem-solving skills.
- Each module begins with an *About the Math* section that offers a quick summary of the math skills for that particular math topic. This focuses teachers on what students

need to know and be able to do at that specific grade level. This is particularly helpful if your summer school teachers are teaching at a different grade level than usual or if you have paraprofessionals or other educators teaching sessions.

What if students are struggling with grade-level skills because they are lacking some foundational skills?

- In each module in ***Math in Practice***, you will find a brief progression chart at the end of the *About the Math* section. This allows teachers to see what students should know and be able to do related to the specific math skill and what they did last year to prepare for the current year.
- Throughout the following guide, you will notice that we share ideas for revisiting foundational skills from a previous year or from a previous lesson in the same grade level. In each case, we share exactly which grade level book and module contains lessons for revisiting that foundational skill.

What other resources will make your summer school program engaging, as well as meaningful?

- An effective summer school program is built on tasks that motivate, engage, and excite students, while teaching them critical math concepts. Stories are a great way to provide that excitement and engagement!
- For each highlighted standard at each grade level, we identified the chapters in ***Math by the Book*** that make these math skills come to life for your students. By reading the story and exploring the math skill through the story context, you are providing a unique and highly-motivating experience that enhances your students' summer school experience.
- The ***Math by the Book*** chapters each focus on a specific skill that is taught through a carefully-selected story. The lessons are explorations and investigations and are easy for your teachers to implement. The online resources provide everything they need.
- Your students (and teachers) will love learning math through these stories!

Getting Started

1. **Review the standards by grade level to identify the standards you will focus on during your summer program.**
2. **The guide indicates which modules in *Math in Practice* and which chapters in *Math by the Book* contain hands-on and interactive tasks that focus specifically on those skills.**
3. **Select the tasks you'd like to use and get started!**

Kindergarten

Counting and Cardinality

STANDARDS: **Know number names and the count sequence.**
Count to tell the number of objects in a group.

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 1: Counting and Cardinality, Numbers 1–5	**Chapter 1:** *Five Speckled Frogs* (exploring numbers 1–5)
Module 2: Counting and Cardinality, Numbers 0–10	**Chapter 2:** *Ten Pigs: An Epic Math Adventure* (number concepts and counting to 10)
Module 3: Counting and Cardinality and Place Value, Numbers 0–20, pages 53–60, 71–79	**Chapter 3:** *Grandma's Purse* (counting collections)
Module 4: Counting Numbers	**Chapter 4:** *Flower Garden* (exploring zero)
	Chapter 6: *Toasty Toes: Counting by Tens* (counting by tens)
	Chapter 7: *Five Little Monkeys Play Hide and Seek* (counting to 100)

STANDARDS: **Compare numbers.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 5: Comparing Numbers 1–10	**Chapter 8:** *Goodbye Autumn, Hello Winter* (comparing quantities)

Operations and Algebraic Thinking

STANDARDS: **Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 7: Understanding Addition	**Chapter 12:** *Little Quack* (exploring addition)
Module 8: Understanding Subtraction	**Chapter 13:** *10 Gulab Jamuns: Counting with an Indian Sweet Treat* (exploring subtraction)
Module 9: Understanding Math Facts	**Chapter 14:** *One More Dino on the Floor* (understanding +1)

> ***Focusing on foundational skills:*** If needed, revisit **Module 6** to re-examine decomposition as *putting together* or *taking apart*.

Number and Operations in Base Ten

STANDARDS: **Work with numbers 11–19 to gain foundations for place value.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 3: Counting and Cardinality and Place Value, Numbers 0–20, pages 60–69, 71–79	**Chapter 9:** *Grandma's Tiny House* (understanding numbers 11–20, foundations of place value)

> ***Focusing on foundational skills:*** If needed, revisit **Module 3** to review counting and cardinality with numbers to 20.

Grade 1

Operations and Algebraic Thinking

STANDARDS: **Represent and solve problems involving addition and subtraction.**

Understand and apply properties of operations and the relationship between addition and subtraction.

This includes exploring the addition and subtraction structures of *putting together, adding to, taking from, taking apart,* and *comparing* using acting out, models, drawings, and equations; exploring unknowns in different positions.

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 1: Exploring Addition Word Problems with Sums to 20	**Chapter 1:** *Apple Picking Day* (problem solving with addition and subtraction)
Module 2: Connecting Subtraction and Addition to Solve Word Problems	**Chapter 2:** *Saturday* (exploring addition and subtraction with unknowns in different positions)

> ***Focusing on foundational skills:*** If needed, revisit simpler problems in the Kindergarten ***Math in Practice***, Grade K, **Module 7**: Understanding Addition and Grade K, **Module 8:** Understanding Subtraction.

STANDARDS: **Add and subtract within 20.**

Work with addition and subtraction equations.

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 3: Building Understanding and Fluency with Basic Math Facts (+/-1, +/-0)	**Chapter 3:** *Baby Goes to Market* (exploring subtracting 1)
Module 4: Building Understanding and Fluency with Basic Math Facts (+/-2)	**Chapter 4:** *Thanking the Moon: Celebrating the Mid-Autumn Moon Festival* (exploring +/- 10)
Module 5: Building Understanding and Fluency with Basic Math Facts (+/-10)	**Chapter 5:** *David's Drawings* (exploring adding 2 and the commutative property)
Module 6: Building Understanding and Fluency with Basic Math Facts (Doubles)	**Chapter 6:** *The Two Mutch Sisters* (exploring doubles)
Module 7: Building Understanding and Fluency with Basic Math Facts (Making Ten)	**Chapter 7:** *Monster Math Picnic* (number pairs that make 10)
	Chapter 9: *I Love Saturdays y domingos* (finding the sums of three addends and exploring the associative property)

Number and Operations in Base Ten

STANDARDS: **Extend the counting sequence.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 8: Counting and Understanding Place Value, pp. 166–173	**Chapter 11:** *The Wolf's Chicken Stew* (counting to 120)

> ***Focusing on foundational skills:*** If needed, revisit counting to 100, Grade K, **Module 4**.

STANDARDS: **Understand place value.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 8: Counting and Understanding Place Value, pp. 173–189	**Chapter 10:** *Monster Math* (exploring place value with 2-digit numbers)

> ***Focusing on foundational skills:*** If needed, revisit teen numbers as "10 and some more" in Kindergarten, **Module 3**, pages 60–69, 71–79.

STANDARDS: **Use place-value strategies to compare numbers.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 8: Counting and Understanding Place Value, pp. 189-195	**Chapter 13:** *Too Many Mangos* (comparing 2-digit numbers)

> ***Focusing on foundational skills:*** If needed, revisit place value concepts in Grade 1, **Module 8**, pp. 173–189.

STANDARDS: **Use place value understanding and properties of operations to add and subtract.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 9: Exploring Addition and Subtraction with a 2-Digit Number	**Chapter 12:** *Miss Nelson Has a Field Day* (adding a single-digit number to a 2-digit number) **Chapter 14:** *Pete the Cat: Snow Daze* (subtracting multiples of ten)

> ***Focusing on foundational skills:*** If needed, revisit place-value concepts in Grade 1, **Module 8**, pp. 173–189.

STANDARDS: **Measure lengths indirectly and by iterating length units.**

Math in Practice **Modules**	Supplemental from ***Math by the Book***
Module 10: Measuring Lengths with Indirect Comparisons	**Chapter 17:** *Hide and Snake* (measuring length with non-standard units)

> ***Focusing on foundational skills:*** If needed, revisit comparing numbers in Grade 1, **Module 8**.

Grade 2

Operations and Algebraic Thinking

STANDARDS: **Represent and solve problems involving addition and subtraction.**

This includes exploring the addition and subtraction structures of *putting together, adding to, taking from, taking apart,* and *comparing* using acting out, models, drawings, and equations; exploring unknowns in different positions; solving 2-step problems.

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 1: Exploring Problem Solving	**Chapter 1:** *Hot Day on Abbott Avenue* (introducing two-step problems)

> ***Focusing on foundational skills:*** If needed, revisit Grade 1, **Modules 1** and **2** for lessons developing a basic understanding of addition and subtraction situations.

STANDARDS: **Add and subtract within 20.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 2: Building Understanding and Fluency of Basic Math Facts	**Chapter 2:** *Dinner at the Panda Palace* (fluency with near-doubles and using-ten facts)

> ***Focusing on foundational skills:*** If needed, revisit foundational math facts in Grade 1, **Modules 3–7**.

STANDARDS: **Work with equal groups of objects to gain foundations for multiplication.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 3: Building Foundations for Multiplication	**Chapter 3:** *Even Steven and Odd Todd* (understanding odd and even numbers) **Chapter 4:** *Parade* (exploring repeated addition with arrays)

Number and Operations in Base Ten

STANDARDS: **Understand place value.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 4: Understanding Place Value	**Chapter 5:** *Max's Words* (place value with 3-digit numbers)

> ***Focusing on foundational skills:*** If needed, revisit 2-digit place value in Grade 1, **Module 8**, pp. 173–189.

STANDARDS: **Use place value understanding and properties of operations to add and subtract.**

Math in Practice **Modules**	Supplemental from ***Math by the Book***
Module 6: Understanding Multidigit Addition (2-digit)	**Chapter 7:** *Jingle Dancer* (adding 2-digit numbers)
Module 7: Understanding Multidigit Subtraction (2-digit)	**Chapter 8:** *Too Many Toys* (subtracting 2-digit numbers without regrouping)
Module 8: Extending Understanding of Multidigit Addition (3-digit)	**Chapter 9:** *A Bike Like Sergio's* (subtracting 2-digit numbers with regrouping)
Module 9: Extending Understanding of Multidigit Subtraction (3-digit)	**Chapter 10:** *Too Many Pumpkins* (adding 3-digit numbers with regrouping)

> ***Focusing on foundational skills:*** If needed, revisit Grade 1, **Module 9**: Exploring Addition and Subtraction with a 2-Digit Number.

Measurement

STANDARDS: **Measure and estimate lengths in standard units. Relate addition and subtraction to length.**

This standard is included because of its strong connection to numbers and operations.

Math in Practice **Modules**	Supplemental from ***Math by the Book***
Module 10: Understanding Length Measurement	**Chapter 13:** *Anna Carries Water* (exploring customary units for length)
	Chapter 14: *Giraffe Problems* (exploring metric units for length)

> ***Focusing on foundational skills:*** If needed, revisit measurement with non-standard units in Grade 1, **Module 17**.

Grade 3

Operations and Algebraic Thinking

STANDARDS: **Represent and solve problems involving multiplication and division.**
Understand properties of multiplication and the relationship between multiplication and division.

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 1: Understanding Multiplication and Division	**Chapter 3:** *Mango, Abuela, and Me* (understanding multiplication)
Module 2: Understanding Properties of Multiplication and Division	**Chapter 4:** *Around Our Way on Neighbors' Day* (understanding division)

> ***Focusing on foundational skills:*** If needed, revisit arrays with repeated addition from Grade 2, **Module 3**.

STANDARDS: **Multiply and divide within 100.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 3: Fluently Multiplying and Dividing	**Chapter 5:** *Two of Everything* (multiplying by 2 and the commutative property)
	Chapter 6: *One is a Snail, Ten is a Crab* (multiplying by 10 and the commutative property)
	Chapter 7: *The Hanukkah Bear* (multiplying and dividing by 5)
	Chapter 8: *The Have a Good Day Cafe* (multiplying by 6 and the distributive property)

STANDARDS: **Solve problems involving the four operations.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 4: Solving One- and Two-Step Problems with All Four Operations	**Chapter 1:** *Night at the Fair* (solving 2-step problems)

> ***Focusing on foundational skills:*** If needed, revisit addition/subtraction problems from Grade 2, **Module 1**.

Number and Operations in Base Ten

STANDARDS: **Use place value understanding and properties of operations to perform multi-digit arithmetic.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 6: Fluently Adding Within 1,000	**Chapter 10:** *Saffron Ice Cream* (adding 3-digit numbers with regrouping)
Module 7: Fluently Subtracting Within 1,000	**Chapter 11:** *George Crum and the Saratoga Chip* (subtracting 3-digit numbers with regrouping)
Focusing on foundational skills: If needed, revisit addition/subtraction with multi-digit numbers from Grade 2, **Modules 6–9**.	**Chapter 12:** *Dragons Love Tacos* (multiplying a one-digit number by a multiple of 10)

Number and Operations—Fractions

STANDARDS: **Develop understanding of fractions as numbers.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 8: Understanding Fractions and Fraction Notation	**Chapter 13:** *Full House: An Invitation to Fractions* (understanding fractions and fraction notation)
Module 9: Exploring Fraction Equivalence	**Chapter 14:** *Pizza Mouse* (comparing fractions)
Module 10: Comparing Fractions	
Focusing on foundational skills: If needed, revisit partitioning circles and rectangles from Grade 2, **Module 15**.	

Measurement

The following standards are included because of their strong connection to numbers and operations.

STANDARDS: **Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 11: Exploring Time	**Chapter 18:** *Bilal Cooks Daal* (exploring elapsed time)
Module 12: Exploring Mass and Volume	
Focusing on foundational skills: If needed, revisit telling time in Grade 2, **Module 11**.	

STANDARDS: **Understand concepts of area and relate area to multiplication and to addition.**

***Math in Practice* Modules**	**Supplemental from *Math by the Book***
Module 14: Understanding the Concept of Area	**Chapter 16:** *The Raft* (understanding area)

> ***Focusing on foundational skills:*** If needed, revisit area models of multiplication in Grade 3, **Module 1**, pp. 24–27.

Grade 4

Operations and Algebraic Thinking

STANDARDS: **Use the four operations with whole numbers to solve problems.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 1: Understanding and Solving Problems with Multiplicative Comparison	**Chapter 2:** *Togo* (solving problems about time and distance)
Module 15: Solving Complex Problems	

> ***Focusing on foundational skills:*** Revisit Grade 3, **Module 4**: Solving One- and Two-Step Problems with All Four Operations.

STANDARDS: **Gain familiarity with factors and multiples, including prime and composite numbers.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 2: Exploring Factors, Multiples, and Prime Numbers	**Chapter 3:** *Bean Thirteen* (exploring prime numbers)

> ***Focusing on foundational skills:*** If needed, revisit an understanding of multiplication and division through Grade 3, **Module 1**.

Number and Operations in Base Ten

STANDARDS: **Generalize place value understanding for multidigit whole numbers.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 3: Understanding the Place Value System	**Chapter 4:** *How Much, How Many, How Far, How Heavy, How Long, How Tall is 1,000?* (exploring place value)

> ***Focusing on foundational skills:*** If needed, revisit place value through rounding tasks in Grade 3, **Module 5** or through addition/subtraction tasks in Grade 3, **Modules 6** and **7**.

STANDARDS: **Use place value understanding and properties of operations to perform multi-digit arithmetic.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 4: Fluently Adding and Subtracting Multidigit Numbers	**Chapter 5:** *In the Land of Milk and Honey* (adding and subtracting multidigit numbers)
Module 5: Using Place Value to Perform Multidigit Multiplication	**Chapter 6:** *Wangari's Trees of Peace: A True Story from Africa* (multiplying multidigit numbers with arrays and area models)
Module 6: Using Place Value to Perform Multidigit Division	**Chapter 7:** *A Gift for Amma: Market Day in India* (multiplying multidigit numbers using a partial products strategy)
	Chapter 9: *The House That Jane Built: A Story about Jane Addams* (exploring division with remainders)

> ***Focusing on foundational skills:*** If needed, revisit place value strategies for multidigit addition and subtraction in Grade 3, **Modules 6** and **7**.

Number and Operations—Fractions

STANDARDS: **Extend understanding of fraction equivalence and ordering.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 7: Exploring Equivalence and Ordering of Fractions	**Chapter 10:** *Auntie Yang's Great Soybean Picnic* (understanding and generating equivalent fractions)
Focusing on foundational skills: If needed, revisit fraction equivalence in Grade 3, **Module 9**.	**Chapter 11:** *Sweet Potato Pie* (comparing and ordering fractions)

STANDARDS: **Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 8: Adding and Subtracting Fractions with Like Denominators	**Chapter 12:** *Enemy Pie* (adding and subtracting fractions with like denominators)
Module 9: Multiplying Fractions by Whole Numbers	**Chapter 13:** *Jalapeño Bagels* (multiplying a whole number by a fraction)
Focusing on foundational skills: If needed, revisit basic fraction understanding in Grade 3, **Modules 8–10**.	

STANDARDS: **Understand decimal notation for fractions, and compare decimal fractions.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 10: Understanding Decimal Notation for Fractions	**Chapter 14:** *Wilma Unlimited: How Wilma Rudolph Became the World's Fastest Woman* (comparing decimals and persevering while solving problems)
Focusing on foundational skills: If needed, revisit equivalent fractions in Grade 3, **Module 9** and comparing fractions in Grade 3, **Module 10**.	

Grade 5

Operations and Algebraic Thinking

STANDARDS: **Write and interpret numerical expressions.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 2: Writing and Interpreting Numerical Expressions	**Chapter 3:** *My Papi has a Motorcycle* (exploring expressions, equations, and order of operations)

Number and Operations in Base Ten

STANDARDS: **Understand the place value system.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 1: Understanding Place Value	**Chapter 1:** *Each Kindness* (understanding powers of ten)
	Chapter 4: *Home: A Journey Through America* (exploring place value and comparing numbers)
	Chapter 5: *How Much is a Million?* (exploring place value to millions)
	Chapter 8: *Roberto Clemente: Pride of the Pittsburgh Pirates* (comparing decimals to thousandths)

> ***Focusing on foundational skills:*** If needed, revisit place value with whole numbers in Grade 4, **Module 3**, pp. 46–65 or revisit place value with decimals in Grade 4, **Module 10**, pp. 205–217.

STANDARDS: **Perform operations with multi-digit whole numbers and with decimals to hundredths.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 3: Multiplying with Multidigit Whole Numbers	**Chapter 6:** *Pop's Bridge* (multiplying with multidigit numbers)
Module 4: Dividing with Multidigit Whole Numbers	**Chapter 7:** *No Small Potatoes: Junius G. Groves and His Kingdom in Kansas* (dividing multi-digit numbers)
Module 5: Adding and Subtracting Decimals	**Chapter 9:** *If the World Were a Village: A Book About the World's People* (adding and subtracting decimals using place value strategies)
Module 6: Multiplying and Dividing Decimals	**Chapter 10:** *Tia Isa Wants a Car* (solving problems with addition and subtraction of decimals)
	Chapter 11: *The Bagel King* (multiplying a decimal by a whole number)

> ***Focusing on foundational skills:*** If needed, revisit multidigit computations in Grade 4, **Module 4** (Fluently Adding and Subtracting Multidigit Numbers), **Module 5** (Using Place Value to Perform Multidigit Multiplication) or **Module 6** (Using Place Value to Perform Multidigit Division).

Number and Operations—Fractions

STANDARDS: **Use equivalent fractions as a strategy to add and subtract fractions.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 7: Adding and Subtracting Fractions with Unlike Denominators	**Chapter 12:** *Ed Emberley's Picture Pie* (adding fractions with unlike denominators)

> ***Focusing on foundational skills:*** If needed, revisit adding and subtracting fractions with like denominators in Grade 4, **Module 8** or revisit generating equivalent fractions in Grade 4, **Module 7**, pp. 133–143.

STANDARDS: **Apply and extend previous understandings of multiplication and division to multiply and divide fractions.**

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 9: Multiplying Fractions by Fractions and Whole Numbers	**Chapter 13:** *Grandpa Cacao: A Tale of Chocolate from Farm to Family* (multiplying fractions)
Module 10: Dividing Whole Numbers and Unit Fractions	**Chapter 14:** *Born and Bred in the Great Depression* (dividing unit fractions by whole numbers and whole numbers by unit fractions)

> ***Focusing on foundational skills:*** If needed, revisit multiplying fractions by whole numbers in Grade 4, **Module 9**.

Measurement

STANDARDS: **Understand concepts of volume and relate volume to multiplication and to addition.**
This standard is included because of its strong connection to numbers and operations.

Math in Practice **Modules**	**Supplemental from *Math by the Book***
Module 13: Exploring Volume	**Chapter 20:** *The Crayon Man: The True Story of the Invention of Crayola Crayons* (exploring volume)

> ***Focusing on foundational skills:*** If needed, revisit the concept of area in Grade 4, **Module 12**, pp. 250–252 or Grade 3, **Module 14**.