

# GO Math! Scope and Sequence

This document contains a high-level scope and sequence for the GO Math! program intended to give teachers an overview of where instructional time will be spent across the year through use of GO Math!. It provides a suggested sequence of instruction and assessments, including where NYCDOE Periodic Assessments can be used to gauge students' understanding of concepts and skills taught at benchmark moments throughout the year. Based on the Common Core Standards, Go Math! is divided into critical areas that offer a focused and coherent study of the key concepts and skills for each grade.

For each critical area, you will see the following:

- **Essential Ideas:** The key topics of the unit; chapters and lessons are built around achieving understanding and mastery of these topics.
- **Standards:** The standards listed show the main standards covered throughout the Critical Area. Instruction is focused on achieving a thorough knowledge of these standards.
- **Mathematical Practices:** While all practices are integrated into each Critical Area, the practices listed are ones that receive particular emphasis.
- **Essential Questions:** The essential question for each chapter is listed, showing the goal of each chapter.
- **Assessment Opportunities:** This listing highlights the assessments that ensure teachers can gauge student success on mastering the standards covered in the Critical Area.

Grade 4: Suggested Sequence for the <i>GO Math!</i> program	Suggested Amount of Time (in days)
Critical Area 1: Place Value and Operations with Whole Numbers	53 days
<i>NYCDOE Fall Benchmark Assessment</i>	
Critical Area 2: Fractions and Decimals	38 days
Critical Area 3: Geometry, Measurement, and Data	36 days
<i>NYCDOE Spring Benchmark Assessment</i>	
<i>State Examination<sup>1</sup></i>	

<sup>1</sup> The *GO Math!* program is paced to ensure that all pre-test and post-test standards are completely and fully covered prior to testing. As the transition to the PARCC assessments progresses, schools may choose to make decisions around the pacing of units that address post-test concepts prior to the state examination in consideration of the state's testing program guidance (see <http://www.p12.nysed.gov/assessment/math/math-ei.html>).

**Critical Area 1: Place Value and Operations with Whole Numbers** Chapters 1–5

53 Days (Instructional Days: 43; Assessment Days: 10)

**Critical Area 2: Fractions and Decimals** Chapters 6–9

38 Days (Instructional Days: 30; Assessment Days: 8)

**Focus or Main CC Standards**

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

**4.OA.3** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

**Generalize place value understanding for multi-digit whole numbers.**

**4.NBT.1** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.

**4.NBT.2** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using  $>$ ,  $=$ , and  $<$  symbols to record the results of comparisons.

**4.NBT.3** Use place value understanding to round multi-digit whole numbers to any place.

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

**4.NBT.5** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

**4.NBT.6** Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Also 4.OA.1, 4.OA.2, 4.OA.4, 4.OA.5, 4.N BT.4

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

**4.NF.1** Explain why a fraction  $a/b$  is equivalent to a fraction  $(n \times a)/(n \times b)$  by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

**4.NF.2** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as  $1/2$ . Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols  $>$ ,  $=$ , or  $<$ , and justify the conclusions, e.g., by using a visual fraction model.

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

**4.NF.4** Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

**4.NF.4.a.** Understand a fraction  $a/b$  as a multiple of  $1/b$ .

**4.NF.4.b.** Understand a multiple of  $a/b$  as a multiple of  $1/b$ , and use this understanding to multiply a fraction by a whole number.

**4.NF.4.c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.

Also 4.NF.3, 4.NF.5, 4.NF.6, 4.NF.7, 4.MD.2

**Highlighted Mathematical Practices**

- MP.4** Model with mathematics.
- MP.5** Use appropriate tools strategically.
- MP.7** Look for and make use of structure.

- MP.1** Make sense of problems and persevere in solving them.
- MP.2** Reason abstractly and quantitatively.
- MP.5** Use appropriate tools strategically.

**Essential Questions**

- How can you use place value to compare, add, subtract, and estimate with whole numbers? (Chapter 1)
- What strategies can you use to multiply by 1-digit numbers? (Chapter 2)
- What strategies can you use to multiply by 2-digit numbers? (Chapter 3)
- How can you divide by 1-digit numbers? (Chapter 4)
- How can you find factors and multiples, and how can you generate and describe number patterns? (Chapter 5)

- What strategies can you use to compare fractions and write equivalent fractions? (Chapter 6)
- How do you add or subtract fractions that have the same denominator? (Chapter 7)
- How do you multiply fractions by whole numbers? (Chapter 8)
- How can you record decimal notation for fractions and compare decimal fractions? (Chapter 9)

**Assessment Opportunities**

Show What You Know  
Mid-Chapter Checkpoint  
Chapter Review/Test  
Chapter Test  
Chapter Performance Task  
Critical Area Performance Task

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**NYCDOE Fall Benchmark Assessment**

**Critical Area 3: Geometry, Measurement, and Data**  
Chapters 10–13

36 Days (Instructional Days: 28; Assessment Days: 8)

**Focus or Main CC Standards** **Draw and identify lines and angles, and classify shapes by properties of their lines and angles.**

- 4.G.1** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
- 4.G.2** Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
- 4.G.3** Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

Also 4.OA.5, 4.MD.1, 4.MD.2, 4.MD.3, 4.MD.4, 4.MD.5, 4.MD.6, 4.MD.7

**Highlighted Mathematical Practices** **MP.1** Make sense of problems and persevere in solving them.  
**MP.2** Reason abstractly and quantitatively.  
**MP.6** Attend to precision.

- Essential Questions**
- How can you draw and identify lines and angles, and how can you classify shapes? (Chapter 10)
  - How can you measure angles and solve problems involving angle measures? (Chapter 11)
  - How can you use relative sizes of measurements to solve problems and to generate measurement tables that show a relationship? (Chapter 12)
  - How can you use formulas for perimeter and area to solve problems? (Chapter 13)

**Assessment Opportunities** Show What You Know  
Mid-Chapter Checkpoint  
Chapter Review/Test  
Chapter Test  
Chapter Performance Task  
Critical Area Performance Task

**NYCDOE Spring Benchmark Assessment**  
**State Examination**