

New York City Department of Education

Scope and Sequence Sample– Grade 2

2012-13 School Year

Overview

This document was created after closely examining the Common Core Learning Standards (CCLS) and the previous New York State Standards. It provides a high-level CCLS-aligned scope and sequence for Mathematics that also takes into account the differences in and transition from the New York State Standards. The scope and sequence is aligned to the Common Core and demonstrates a focus on the major work of the grade¹, which the [State has indicated](#) will be the focus of next year’s 3-8 State exams. This scope and sequence represents one way that a school may choose to organize and teach the full range of the standards before the state test. It is not based on any additional information about the changes in next year’s tests. This document contains the following components:

- **Year-long Overview:** A one-page view of the year that shows the:
 - **Unit Summary:** The number of suggested units across the year and the amount of instructional time spent on each unit. The instructional time is represented as pre-State test and post-State test.
 - **Omitted Concepts:** Concepts that are no longer taught at this grade-level according to the CCLS.
 - **Bridge Guidance:** Concepts that would have been taught in earlier grades, according to the Common Core, but were not part of the New York State Standards. They should be considered and woven into units during transition years since the concepts were not previously addressed/addressed fully in the New York State Standards. We ask that you consider the needs of your students when deciding if it is necessary to teach these concepts.
- **High-level Unit Overviews:** Overviews of each unit that include the:
 - **Unit Description:** A narrative description of the concepts the unit is intended to cover and the amount of instructional time suggested.
 - **Standards:** The group of related standards that should be taught within the unit. The standards within units are **not** intentionally sequenced. Schools should use the high-level unit overviews and compare them to current curricula to teach a unit that fully represents the standards addressed.

How to Use:

To use this document, teacher teams could:

- Review the year-long and unit overviews to assess whether the scope and sequence makes sense for their school.
- Use the high-level unit overviews and resources available at the school and forthcoming from the State to teach a sequence of instruction that fully addresses the standards represented.

¹ For a listing of content emphases by cluster, refer to <http://engageny.org/resource/math-content-emphases>. For additional guidance—including key advances by grade, opportunities for in-depth focus, connections between content and practice standards, etc.—refer to http://www.parcconline.org/sites/parcc/files/PARCC%20MCF%20for%20Mathematics_Fall%202011%20Release.pdf. With questions or feedback on this document, please email commoncorefellows@schools.nyc.gov.

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Grade 2 Year-Long Overview:

This table shows an overview of all units that should be taught across the year and the recommended instructional time for each unit¹.

Grade 2: Suggested Distribution of Units in Instructional Days	Time	# of weeks
Unit 1: Fluency with Addition & Subtraction of Numbers to 20 with Word Problems to 100	15%	6 weeks
Unit 2: Adding and Subtracting Length, Weight, and Capacity Measurements	10%	4 weeks
Unit 3: Place Value, Comparison, Addition, and Subtraction of Numbers to 1,000	35%	12 weeks
Unit 4: Definition of Multiplication	16%	6 weeks
Unit 5: Comparison, Addition and Subtraction with Length and Money	10%	3 weeks
Unit 6: Identify Angles, Faces, and Vertices of Shapes and Fractions	14%	5 weeks

Omitted Concepts:

- Gather and record data using tallies
- Describe and extend increasing or decreasing sequences

Bridge Concepts

- Understand subtraction as an unknown addend problem.
- Use place value understanding to add within 100.
- Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
- Compare two two-digit numbers based on meaning of the tens and ones digits, recording the results of comparisons with the symbols $<$, $>$, and $=$.

¹ Unit overviews and suggested instructional time are based on *Common Core Curriculum Maps in Mathematics: Overview of Kindergarten-Grade 4 Units* developed by Common Core, Inc.

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Unit 1: Fluency with Addition and Subtraction of Numbers to 20 with Word Problems to 100 – (6 Weeks)

DESCRIPTION: Students will extend their understanding of the base-ten system including ideas of counting in fives, tens and multiples of hundreds, tens, and ones, as well as number relationships involving these units. Students will also begin to represent whole numbers as lengths from 0 on a number line diagram. They will also use their understanding of addition to add and subtract within 100. The Mathematical Practices should be evident throughout instruction and connected to the content addressed in this unit. Students should engage in mathematical tasks that provide an opportunity to connect content and practices.

Standards

The standards listed below are **not** intentionally sequenced and should **not** simply be taught consecutively. Strong units weave these standards together in a thoughtful and coherent way. Schools and teacher teams can use this document to compare their current curriculum to and choose high leverage moments to enhance instruction.

2.OA.2 Fluently add & subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.

2.MD.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ... & represent whole-number sums & differences within 100² on a number line diagram.

2.NBT.1a. 100 can be thought of as a bundle of 10 tens - called a "hundred."³

2.NBT.2 Count within 1000: skip-count by 5s, 10s & 100s.⁴⁵

2.OA.1 Use addition & subtraction strategies within 100 to solve one & two⁶-step word problems involving situations of adding to, taking from, putting together, taking apart, & comparing, with unknowns *in all positions*,⁷ e.g., by using drawings & equations with a symbol for the unknown number to represent the problem.

Bridge Guidance:

Standards

1.OA.4 Understand subtraction as an unknown-addend problem. For example subtract $10 - 8$ by finding the number that makes 10 when added to 8.

1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens & ones. Understand the following as special cases:

- a. 10 can be thought of as a bundle of ten ones – called a ten.

The numbers from 11 to 19 are composed of a ten & one, two, three, four, five, six, seven, eight or nine ones.

² 2.MD.6 In Unit 1 the focus is primarily on numbers to 20 on a number line diagram.

³ 2.NBT.1a In Unit 1 the focus is primarily on numbers to 20. The balance of the standard is taught primarily in Unit 3.

⁴ 2.NBT.2 In Unit 1 the focus is primarily on counting through 120 & skip counting by 5s, & 10s. The balance of the standard is taught in Unit 3.

⁵ 2.OA.1 In Unit 1 problem solving strategies are largely within parameters of Grade 1 NBT: 4-6.

⁶ 2.OA.1 In Unit 1 problem solving focuses primarily on one step problems. 2 step problems are taught primarily in Unit 3.

⁷ 2.OA.1 IN Unit 1, story problems focus primarily on the positions of result & change unknown.

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Unit 2: Adding and Subtracting Length, Weight, and Capacity Measurements

- (4 Weeks)

DESCRIPTION: Students will recognize the need for standard units of measure. They will also learn to use standard units of measurements and measurement tools. The Mathematical Practices should be evident throughout instruction and connected to the content addressed in this unit. Students should engage in mathematical tasks that provide an opportunity to connect content and practices.

Standards

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2.MD.10 Draw a picture graph & a bar graph (with single unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart & compare problems using information presented in bar graph.

2.MD.1 Measure the length of an object by selecting & using appropriate tools such as rulers, yardsticks, meter sticks & measuring tapes.

2.MD.2 Measure the length of an object twice, using length units of different lengths for the two measurements, describe how the two measurements relate to the size of the unit chosen.

2.MD.3 Estimate lengths using units of inches, feet, centimeters & meters.

2.MD.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ... & *represent whole-number sums & differences within 100 on a number line diagram.*⁸ 1.OA.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = ?$, $6 + 6 = ?$.

1.NBT.1 Count to 120, starting at any number less than 120. In this range, read & write numerals & represent a number of objects with a written numeral.

⁸ 2.MD.6 In Unit 2, addition & subtraction strategies are largely with the parameters of Grade 1 NBT:4-6

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Unit 3: Place Value, Comparison, Addition, and Subtraction of Numbers to 1,000 – (12 Weeks)

DESCRIPTION: Students continue to extend their understanding of the base-ten system as they work to understand multi-digit numbers (up to 100) written in base-ten notation. They will recognize that the digits in each place represent amounts of thousands, hundreds, tens, or ones. Students will use their understanding of place value and the properties of operations to develop, discuss, and use efficient, accurate and generalized methods to compute sums and differences of whole numbers in base-ten notation. The Mathematical Practices should be evident throughout instruction and connected to the content addressed in this unit. Students should engage in mathematical tasks that provide an opportunity to connect content and practices.

Standards

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2.NBT.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens & ones: e.g., 706 equals 7 hundreds, 0 tens & 6 ones. Understand the following as special cases:

- 100 can be thought of as a bundle of 10 tens - called a "hundred."
- The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two three, four five six, seven, eight or nine hundreds (& 0 tens & 0 ones).

2.NBT.2 Count within 1000: skip-count by 5s, 10s & 100s.

2.NBT.3 Read & write numbers to 1000 using base-ten numerals, number names, & expanded form.

2.NBT.4 Compare 2 three-digit numbers based on meanings of the hundreds, tens & ones digits, using $>$, $+$, & $<$ to record the results of comparisons.

2.NBT.8 Mentally add 10 or 100 to a given number 100-900, & mentally subtract 10 -100 from a given number 100-900.

2.NBT.5. Fluently add & subtract within 100 using strategies based on place value, properties of operations, &/or the relationship between addition & subtraction.

2.NBT.6 Add up to four two-digit numbers using strategies based on place value & properties of operations.

2.NBT.7 Add & subtract within 1000, using concrete models or drawings & strategies based on place value, properties of operations, &/or the relationship between addition & subtraction: relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds & hundreds, tens & tens, ones & ones; & sometimes it is necessary to compose or decompose tens or hundreds.

2.NBT.9 Explain why addition & subtraction strategies work, using place value & the properties of operations.

2.OA.1 Use addition & subtraction strategies within 100 to solve one & two step word problems involving situations of adding to, taking from, putting together, taking apart, & comparing, with unknowns in all positions, e.g., by using drawings & equations with a symbol for the unknown number to represent the problem.

Bridge Guidance:

Standards

1.NBT.3 Compare two two-digit numbers based on meanings of the tens & ones digits, recording the results of comparisons with the symbols $>$, $=$, & $<$.⁹

⁹ 1.NBT.3 Comparison of numbers is focused primarily on numbers to 40. In Unit 6, the set of numbers to 100 is the focus.

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1.NBT.4 Add within 100, including adding a two digit number & a one digit number, & adding a two-digit number & a multiple of 10, using concrete models or drawings & strategies based on place value, properties of operations, &/or the relationship between addition & subtraction: relate the strategy to a written method & explain the reasoning used. Understand that in adding two digit numbers, one adds tens & tens, ones & ones: & sometimes it is necessary to compose a ten.

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Unit 4: Definition of Multiplication – (6 Weeks)

DESCRIPTION: Students compose and decompose shapes with a new focus on examining sides and angles. Students will learn to determine whether a group of objects has an odd or even number of members. The Mathematical Practices should be evident throughout instruction and connected to the content addressed in this unit. Students should engage in mathematical tasks that provide an opportunity to connect content and practices.

Standards

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2.G.2 Partition a rectangle into rows & columns of same size squares & count to find the total number of them.

2.OA.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s: write an equation to express an even number as a sum of two equal addends.

2.OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows & up to 5 columns: write an equation to express the total as a sum of equal addends.

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Unit 5: Comparison, Addition and Subtraction with Length and Money – (3 Weeks)

DESCRIPTION: Students will relate their understanding of addition and subtraction to length. They will also work with time and money. The Mathematical Practices should be evident throughout instruction and connected to the content addressed in this unit. Students should engage in mathematical tasks that provide an opportunity to connect content and practices.

Standards

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2.MD.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ... & represent whole-number sums & differences within 100 on a number line diagram.

2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

2.MD.5 Use addition & subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) & equations with a symbol for the unknown number to represent the problems.

2.MD.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

2.MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, & pennies, using \$ & cents symbols appropriately. Example: If you have 2 dimes & 3 pennies, how many cents do you have?

2.MD.10 Draw a picture graph and a bar graph (with single unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

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Unit 6: Identify Angles, Faces, and Vertices of Shapes and Fractions - (5 Weeks)

DESCRIPTION: Students describe and analyze shapes by examining their sides and angles. They reason with shapes and their attributes. The Mathematical Practices should be evident throughout instruction and connected to the content addressed in this unit. Students should engage in mathematical tasks that provide an opportunity to connect content and practices.

Standards

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2.G.1 Recognize & draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, & cubes.

2.G.3 Partition circles & rectangles into two, three or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., & describe the whole as 2 halves, 3 thirds, 4 fourths. Recognize that equal shares of identical wholes need not have the same shape.

2.MD.7 Tell & write time from analog & digital clocks to the nearest five minutes, using a.m. & p.m.

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