DISTRICT OF COLUMBIA PUBLIC SCHOOLS

SY14-15 Grade 1 Math Scope and Sequence

Summary of the Year

In Grade 1, instructional time should focus on four critical areas: (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes.

Year-at-a-Glance

Instructional Window 1

- Unit 1.1: Understanding Place Value
- Unit 1.2: Using Understanding of Place Value to Add and Subtract

Instructional Window 2

- Unit 2.1: Strategies for Solving Addition and Subtraction Problems

Instructional Window 3

- Unit 3.1: Measurement
- Unit 3.2: Understanding Equations

Instructional Window 4

- Unit 4.1: Telling and Writing Time
- Unit 4.2: Representing and Interpreting Data

Instructional Window 5

- Unit 5.1: Composing and Drawing Shapes
- Unit 5.2: Equal Shares of Shapes

Fluency and/or Culminating Standards

- **1.OA.6** Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

Grade 1 Overview

OPERATIONS AND ALGEBRAIC THINKING

- ▪ Represent and solve problems involving addition and subtraction.
- ▪ Understand and apply properties of operations and the relationship between addition and subtraction.
- ▪ Add and subtract within 20.
- ▪ Work with addition and subtraction equations.

NUMBER AND OPERATIONS IN BASE TEN

- ▪ Extend the counting sequence.
- ▪ Understand place value.
- ▪ Use place value understanding and properties of operations to add and subtract.

MEASUREMENT AND DATA

- ▪ Measure lengths indirectly and by iterating length units.
- ○ Tell and write time.
- □ Represent and interpret data.

GEOMETRY

- ○ Reason with shapes and their attributes.

KEY: ▪ Major Clusters | □ Supporting Clusters | ○ Additional Clusters

STANDARDS FOR MATHEMATICAL PRACTICE:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

First Instructional Window	Instructional Units	Common Core State Standards for Mathematical Content
August 25 – October 9	**1.1 Understanding Place Value**	*Suggested mathematics class BOY starters: Establish class routines. Administer a diagnostic assessment. (5 days)* **Extend the counting sequence** **1.NBT.1** Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. **Understand place value** **1.NBT.2** Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: **A.** 10 can be thought of as a bundle of ten ones — called a "ten." **B.** The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. **C.** The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). **1.NBT.3** Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.
	1.2 Using Understanding of Place Value to Add and Subtract	**Use place value understanding and properties of operations to add and subtract** **1.NBT.4** Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. **1.NBT.5** Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. **1.NBT.6** Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. **Understand and apply properties of operations and the relationship between addition and subtraction** **1.OA.3** Apply properties of operations as strategies to add and subtract.[2] *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make*

		a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.) **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.*
Second Instructional Window	**Instructional Units**	**Standards**
October 14 – December 12	**2.1 Strategies for Solving Addition and Subtraction Problems**	**Represent and solve problems involving addition and subtraction** **1.OA.1** Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. **1.OA.2** Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. **Add and subtract within 20.** **1.OA.5** Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). ***Fluency Standard:** **1.OA.6** Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). **Fluency standard is first introduced in Unit 1.2. Since adding and subtracting within 20 and with fluency within 10 is critical skill for Grade 1, students will build on these concepts throughout the year, working towards fluency by the end of the year. Educators should provide multiple opportunities for practice throughout the course of Grade 1.*

Third Instructional Window	Instructional Units	Standards
December 15 – February 12	**3.1 Measurement**	**Measure lengths indirectly and by iterating length units** **1.MD.1** Order three objects by length; compare the lengths of two objects indirectly by using a third object. **1.MD.2** Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps*. **Understand place value** **1.NBT.3** Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. *(Note: as it relates to the measurement of length units only.)* **Represent and solve problems involving addition and subtraction** **1.OA.1** Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. *(Note: as it relates to the measurement of length units only.)*
	3.2 Understanding Equations	**Work with addition and subtraction equations** **1.OA.7** Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2. **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 = _ – 3, 6 + 6 = _*.
Fourth Instructional Window	**Instructional Units**	**Standards**
February 17 - April 10	**4.1 Telling and Writing Time**	**Tell and write time** **1.MD.3** Tell and write time in hours and half-hours using analog and digital clocks.

	4.2 Representing and Interpreting Data	**Represent and interpret data** **1.MD.4** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. (*Note: these word problems should relate to the graphical data that drives this unit.)*
Fifth Instructional Window	**Instructional Units**	**Standards**
April 20 – June 17	**5.1 Composing and Drawing Shapes**	**Reason with shapes and their attributes** **1.G.1** Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes. **1.G.2** Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. (Students do not need to learn formal names such as “right rectangular prism.”)
	5.2 Equal Shares of Shapes	**Reason with shapes and their attributes** **1.G.3** Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.