# Gwinnett County Public Schools Mathematics: Grade 3 – Instructional Calendar 2020-2021

{ = standards taught concurrently

**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.

## 1st 9 weeks: Units 1-2

### Unit 1: Base Ten (3 weeks)

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

**10.NBT.1** use place value understanding to round whole numbers to the nearest 10 or 100

**11.NBT.2** add and subtract fluently within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction

### Unit 2: Multiplication and Division Relationships (6 weeks)

**Represent and solve problems involving multiplication and division.**

**1.OA.1** interpret products of whole numbers [e.g., interpret 5 x 7 as the total number of objects in 5 groups of 7 objects each (e.g., describe a context in which a total number of objects can be expressed as 5 x 7)]

**2.OA.2** interpret whole-number quotients of whole numbers (e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares; how many are in each group?), or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each; how many groups can you make? (e.g., describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8)

**3.OA.3** apply multiplication and division within 100 (products or dividends 0 - 100) to solve word problems in situations involving equal groups, arrays and measurement quantities (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem)

**4.OA.4** determine the unknown whole number in a multiplication or division equation relating three whole numbers using the inverse relationship of multiplication and division (e.g., determine the unknown number that makes the equation true in each of the equations 8 x ? = 48; 5 = ■ ÷ 3, 6 x 6 = ▲)

**12.NBT.3** multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 x 80, 5 x 60) using strategies based on place value and properties of operations.

**Represent and interpret data.**

**24.MD.3** draw a scaled picture graph and a scaled bar graph to represent a data set with several categories; solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs (e.g., draw a bar graph in which each square in the bar graph might represent 5 pets)

## 2nd 9 weeks: Units 3-4

### Unit 3: Multiplication and Division Properties (2 weeks)

**Understand properties of multiplication and the relationship between multiplication and division.**

**5.OA.5** apply commutative, associative, and distributive properties as strategies to multiply and divide (e.g., If 6 x 4 = 24 is known, then 4 x 6 = 24 is also known (commutative property of multiplication); 3 x 5 x 2 can be found by 3 x 5 = 15, then 15 x 2 = 30, or by 5 x 2 = 10, then 3 x 10 = 30 (associative property of multiplication), knowing that 8 x 5 = 40 and 8 x 2 = 16, then one can find 8 x 7 as 8 x (5 + 2) = (8 x 5) + (8 x 2) = 40 + 16 = 56 (distributive property))

**6.OA.6** understand division as an unknown-factor problem (e.g., find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8)

**Multiply and divide within 100**

**7.OA.7** fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 x 5 = 40, one knows 40 ÷ 5 = 8, or properties of operations). By the end of grade 3, know from memory all products of two one-digit numbers.

### Unit 4: Addition and Multiplication Patterns (7 weeks)

**Solve problems involving the four operations, and identify and explain patterns in arithmetic**

**8.OA.8** solve two-step word problems using the four operations. 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. This standard is limited to problems posed with whole numbers and having whole number answers; students should perform operations in appropriate order according to the context of the problem

**9.OA.9** identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations (e.g., observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends)

## Unit 4: Addition and Multiplication Patterns (7 weeks)-continued

**Geometric measurement: understand concepts of area and relate area to multiplication and to addition.**

**26.MD.5** recognize area as an attribute of plane figures and understand concepts of area measurement.

**27.MD.5_a.** use words, pictures and/or numbers to show that "unit square" is a square with a side length of 1 unit, has an area of one square unit, and can be used to measure area of plane figures.

**28.MD.5_b.** demonstrate that a plane figure which can be covered without gaps or overlaps by "n" unit squares is said to have an area of "n" square units.

**29.MD.6** measure areas by counting unit squares (e.g., square cm, square m, square in, square ft, and improvised units)

**30.MD.7** relate area to the operations of multiplication and addition.

**31.MD.7_a.** find the area of a rectangle with whole-number side lengths by tiling it and show that the area is the same as would be found by multiplying the side lengths.

**32.MD.7_b.** multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems and represent whole-number products as rectangular areas in mathematical reasoning.

**33.MD.7_c.** use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a x b and a x c; use area models to represent the distributive property in mathematical reasoning.

**Represent and interpret data.**

**24.MD.3** draw a scaled picture graph and a scaled bar graph to represent a data set with several categories; solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs (e.g., draw a bar graph in which each square in the bar graph might represent 5 pets)

## 3rd 9 weeks: Units 5-6

## Unit 5: Geometry (2 weeks)

**Reason with shapes and their attributes**

**35.G.1** understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

**36.G.2** partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole (e.g., partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape)

**Represent and interpret data.**

**24.MD.3** draw a scaled picture graph and a scaled bar graph to represent a data set with several categories; solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs (e.g., draw a bar graph in which each square in the bar graph might represent 5 pets)

## Unit 6: Fractions (7 weeks)

**Develop understanding of fractions as numbers.**

**13.NF.1** understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts (unit fraction); understand a fraction a/b as the quantity formed by a parts of size 1/b. For example, 3/4 means there are three 1/4 parts, so 3/4 = 1/4+1/4+1/4

**14.NF.2** recognize a fraction as a number on the number line; represent fractions on a number line diagram

**15.NF.2_a** represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into "b" equal parts; recognize that each part has size 1/b. Recognize that a unit fraction 1/b is located 1/b whole unit from 0 on the number line

**16.NF.2_b** represent a non-unit fraction a/b on a number line diagram by marking off "a" lengths 1/b (unit fractions) from 0 and recognize that the resulting interval has size a/b and that its endpoint locates the non-unit fraction a/b on the number line

**17.NF.3** explain equivalence of fractions through reasoning with visual fraction models. Compare fractions by reasoning about their size

**18.NF.3_a** recognize two fractions as equivalent (equal) if they are the same size or the same point on a number line

**19.NF.3_b** recognize and generate simple equivalent fractions with denominators of 2, 3, 4, 6, and 8. (e.g., 1/2 = 2/4, 4/6 = 2/3); explain why the fractions are equivalent by using a visual fraction model

**20.NF.3_c** express whole numbers as fractions and recognize fractions that are equivalent to whole numbers (e.g., express 3 in the form 3 = 6/2 (3 wholes is equal to six halves); recognize that 3/1 = 3; locate 4/4 and 1 at the same point of a number line diagram)

**21.NF.3_d** compare two fractions with the same numerator or the same denominator by reasoning about their size; recognize that comparisons are valid only when the two fractions refer to the same whole and record the results of comparisons with the symbols >, =, or <, and justify the conclusions (e.g., by using a visual fraction model)

## 4th 9 weeks: Unit 7

### Unit 7: Measurement (9 weeks)

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

**22.MD.1** tell and write time to the nearest minute and measure elapsed time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes (e.g., by representing the problem on a number line diagram, drawing a pictorial representation of a clock face. etc.)

**23.MD.2** measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units (e.g., by using drawings such as a beaker with a measurement scale, to represent the problem)

**34.MD.8** solve real world and mathematical problems involving the perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeters and different areas or the same areas with different perimeters

**24.MD.3** draw a scaled picture graph and a scaled bar graph to represent a data set with several categories; solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs (e.g., draw a bar graph in which each square in the bar graph might represent 5 pets)

**25.MD.4** generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units - whole numbers, halves, or quarters