Mathematics (Grade 3)

Course Description:

The curriculum for this course is developed from the Common Core State Standards for Mathematics. In this course, instructional time will focus on four critical areas: (1) developing understanding of multiplication and division within 100, (2) developing understanding of fractions (especially unit fractions, which have a numerator of 1), (3) developing understanding of rectangular arrays and of area, and (4) describing and analyzing two-dimensional shapes.

Mastery Standards:

Operations and Algebraic Thinking 3.OA

Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.*
CCSS.MATH.CONTENT.3.OA.A.1

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, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.*
CCSS.MATH.CONTENT.3.OA.A.2

Use multiplication and division within 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.
CCSS.MATH.CONTENT.3.OA.A.3

Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 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.
CCSS.MATH.CONTENT.3.OA.C.7

Number and Operations in Base Ten 3.NBT

Use place value understanding to round whole numbers to the nearest 10 or 100.
CCSS.MATH.CONTENT.3.NBT.A.1

Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
CCSS.MATH.CONTENT.3.NBT.A.2

Number and Operations- Fractions 3.NF

Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*.
CCSS.MATH.CONTENT.3.NF.A.1

Measurement and Data 3.MD

Tell and write time to the nearest minute and measure 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.
CCSS.MATH.CONTENT.3.MD.A.1

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. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*
CCSS.MATH.CONTENT.3.MD.B.3

Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
CCSS.MATH.CONTENT.3.MD.D.8

Geometry 3.G

Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part ¼ of the area of the shape.

Unit	Description of Unit and Learning Targets
Unit Title: Operations and Algebraic Thinking Essential Questions: ● What basic strategies can be used to solve multiplication and division problems?	Students will develop an understanding of the meanings of multiplication and division of whole numbers using equal-sized groups, arrays, and area models. Multiplication is finding an unknown product, and division is finding an unknown factor in these situations. By applying properties of operations and using increasingly-sophisticated strategies, students learn the relationship between multiplication and division. Learning Targets: ● I can understand that the basic concept of multiplication can be represented as __ x __. ● I can understand that that basic concept of division can be represented as ___ / ___. ● I can use strategies to solve word problems using multiplication and division with a symbol for the unknown number. ● I can fluently multiply basic facts. ● I know fluently divide basic facts.
Unit Title: Number and Operations in Base Ten Essential Questions: ● Why and when would we round a number? ● How does place value support addition and subtraction?	Students will use place value understanding and properties of operations to estimate and perform multi-digit calculations. Learning Targets: ● I can round whole numbers to the nearest 10 or 100. ● I can efficiently add and subtract within 1,000.
Unit Title: Number and Operations--Fractions Essential Questions: ● How can fractions show part of a whole or set?	Students will develop an understanding of fractions, beginning with unit fractions. Students will use fractions along with visual fraction models to represent parts of a whole. They understand that the size of a fractional part is relative to the size of the whole. Students are able to use fractions to represent numbers equal to, less than, and greater than one. Learning Targets: ● I can name and represent fractions.

Unit Title: Measurement and Data <u>Essential Questions:</u> ● Why do we represent and interpret data?	Students will recognize area as an attribute of two-dimensional regions. They measure area of a shape by finding the total number of same-size units required to cover the shape without gaps or overlaps. Students understand that rectangular arrays can be decomposed into identical rows or columns. Students connect area to multiplication. <u>Learning Targets:</u> ● I can tell time to the nearest minute. ● I can calculate elapsed time. ● I can draw and interpret two-step problems using scaled graphs. ● I can find the perimeter of a shape.
Unit Title: Geometry <u>Essential Questions:</u> ● How can equal areas of parts of a shape be expressed.	Students will describe, analyze, and compare properties of two-dimensional shapes. They compare and classify shapes by their sides and angles, and connect these with definitions of shapes. Students relate their fraction work to geometry by expressing the area of part of a shape as a unit fraction of the whole. <u>Learning Targets:</u> ● I can partition shapes into equal parts.