

SCOPE AND SEQUENCE

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Kindergarten

The big ideas in kindergarten include: representing and comparing whole numbers, initially with sets of objects; understanding and applying addition and subtraction; and describing shapes and space. More time in kindergarten is devoted to number than to other topics.

The mathematical work for kindergarten is partitioned into 8 units:

1. Math in Our World
2. Numbers 1–10
3. Flat Shapes
4. Understanding Addition and Subtraction
5. Composing and Decomposing Numbers to 10
6. Numbers within 20
7. Solid Shapes
8. Wrapping It All Up

Unit 1: Math in Our World

Approximate Days: 20

Short description:

- Explore and use math tools
- Share mathematical ideas with a partner
- Recognize and name groups of up to 5 objects and images without counting
- Say the count sequence to 10
- Answer "are there enough" questions.
- Match groups with the same number of images.
- Count groups of up to 10 objects

Standards Addressed:

K.CC.A.1, K.CC.B, K.CC.B.4, K.CC.B.4.a

Unit 2: Numbers 1–10

Approximate Days: 25

Short description:

- Count and compare up to 10 objects and images and know the number remains the same regardless of the order in which the objects are counted.
- Understand the relationship between number and quantity.
- Associate/connect quantities with spoken number words and written numerals.
- Write numbers 1-10.
- Compare numbers 1-10.

Standards Addressed:

K.CC.A.1, K.CC.A.3, K.CC.B.4, K.CC.B.4.a, K.CC.B.4.b, K.CC.B.4.c, K.CC.B.5, K.CC.C.6, K.CC.C.7

Unit 3: Flat Shapes

Approximate Days: 15

Short description:

- Identify measurable attributes of an object.
- Identify objects with more or less of a given attribute (length, weight and capacity).
- Put simple 2-dimensional shapes together to form larger shapes.
- Recognize and describe two-dimensional shapes in the environment.
- Use informal language to describe how shapes are alike and different.

Standards Addressed:

K.MD.A.1, K.MD.A.2, K.MD.B.3, K.G.A.1, K.G.A.2, K.B.B.4, K.G.B.5, K.G.B.6

Unit 4: Understanding Addition & Subtraction

Approximate Days: 20

Short description:

- Understand addition as putting together and adding to.
- Understand subtraction as taking apart and taking from.
- Represent and solve Add To/Take From, Result Unknown and Put Together, Result Unknown story problems within 10.
- Relate expressions to story problems.
- Understand 0 as

Standards Addressed:

K.OA.A.1, K.OA.A.2, K.OA.A.5, K.CC.B.4.c, K.CC.B.5

Unit 5: Composing & Decomposing Numbers to 10

Approximate Days: 15

Short description:

- Compose and decompose numbers up to 9 in more than one way.
- For any number from 1 to 9, find the number that makes 10 when added to the given number.
- Solve addition and subtraction word problems

Standards Addressed:

K.OA.A.2, K.OA.A.3, K.OA.4, K.OA.A.5 *

Unit 6: Numbers within 20

Approximate Days: 20

Short description:

- Count groups of up to 20 objects and images.
- Count out a number of objects up to 20
- Understand numbers 11-19 as 10 ones and some more ones
- Represent counts with a written number.
- Count to 100 by 1.

Standards Addressed:

K.CC.A.2, K.CC.A.3, K.CC.B.4.a, K.CC.B.4.b, K.CC.B.5, K.NBT.A.1, K.OA.A.1

Unit 7: Solid Shapes

Approximate Days: 15

Short description:

- Compose shapes from smaller shapes.
- Describe and compare three-dimensional shapes.
- Count to 100 by 10.

Standards Addressed:

K.G.A.1, K.G.A.2, K.G.A.3, K.G.B.4, K.G.B.5, K.G.B.6, K.MD.B.3

Unit 8: Wrapping It Up

Approximate Days: 20

Short description:

- Fluently add and subtract numbers within 5.
- Apply strategies to solve addition and subtraction word problems and compose and decompose numbers within 10.

Standards Addressed:

K.CC.A.1, K.OA.A.2, K.OA.A.3, K.OA.A.4, K.OA.A.5

Grade 1

The big ideas in grade 1 include: developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; developing understanding of whole-number relationships and place value, including grouping in tens and ones; developing understanding of linear measurement and measuring lengths as iterating length units; and reasoning about attributes of, and composing and decomposing geometric shapes.

In this course blueprint, the mathematical work for grade 1 is partitioned into 8 units:

1. Adding, Subtracting, and Working with Data
2. Addition and Subtraction Story Problems
3. Adding and Subtracting within 20
4. Numbers to 100
5. Adding within 100 and Subtracting Multiples of 10
6. Measuring Length
7. Geometry and Time
8. Wrapping It Up

Unit 1: Adding, Subtracting, and Working with Data

Approximate Days: 15

Short description:

- Build toward fluency by adding and subtracting within 10, in a way that makes sense to them.
- Represent data and interpret representations of data.

Standards Addressed:

1.MD.C.4, 1.OA.A.1, 1.OA.C.5, 1.OA.C.6

Unit 2: Addition and Subtraction Story Problems

Approximate Days: 20

Short description:

- Solve Add To/Take From, Result Unknown and Compare, Difference Unknown problems
- Solve Put Together/Take Apart problems with unknowns in all positions.
- Relate addition and subtraction
- Understand the meaning of the equal sign .
- Write equations to represent problems.
- Find the value that makes an equation true.

Standards Addressed:

1.OA.A.1, 1.OA.B.3, 1.OA.B.4, 1.OA.C, 1.OA.D.7, 1.OA.D.8

Unit 3: Adding and Subtracting within 20

Approximate Days: 25

Short description:

- Solve Add To/Take From problems with unknowns in all positions
- Understand 10 ones as a ten and the numbers 11 to 19 as a ten and some ones.
- Find the value of an addition expression where one addend is 10
- Add within 20, including 3 addends.
- Subtract within 20.

Standards Addressed:

1.OA.A.2, 1.OA.B.3, 1.OA.B.4, 1.OA.A.C.5, 1.OA.C.6, 1.OA.D.7, 1.OA.D.8, 1.NBT.B.2.a, 1.NBT.B.2.b

Unit 4: Numbers to 100

Approximate Days: 20

Short description:

- Understand that the two digits of a two-digit number represent amounts of tens and ones.
- Represent numbers up to 99
- Compare two two-digit numbers based on the values of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.
- Compose and decompose 2-digit numbers in different ways

Standards Addressed:

1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.2.c, 1.NBT.B.3, 1.NBT.C.5

Unit 5: Adding within 100 and Subtracting Multiples of 10

Approximate Days: 20

Short description:

- Use place value understanding to add and subtract multiples of 10.
- Add 1- and 2-digit numbers to 2-digit numbers when the sum of the ones digit is 9 or less.
- Add 1- and 2-digit numbers to 2-digit numbers when the sum of the ones digit is more than 9.
- Use equations to represent addition strategies.

Standards Addressed:

1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6, 1.OA.C.5*, 1.OA.C.6*

Unit 6: Measuring Length

Approximate Days: 20

Short description:

- Order a set of three objects by length by lining up objects by their end points.

- Compare lengths of objects using indirect comparison
- Lay standard units end-to-end with no gaps or overlaps and count units to measure length.
- Solve Compare problems with unknowns in all positions.
- Count groups of up to 120 objects and write a number to represent them

Standards Addressed:

1.MD.A.1, 1.MD.A.2, 1.MD.B.3, 1.NBT.A.1, 1.OA.A1

Unit 7: Geometry and Time

Approximate Days: 20

Short description:

- Build and draw shapes to possess defining attributes.
- Compose shapes to create composite shapes.
- Partition circles and rectangles into two and four equal shares, describe the shares with words
- Tell and write time in hours and half-hours

Standards Addressed:

1.MD.B.3, 1.G.A.1, 1.G.A.2, 1.G.A.3, 1.MD.C.4*

Unit 8: Wrapping It Up

Approximate Days: 10

Short description:

- Fluently add and subtract within 10 using mental strategies.
- Add within 100 and subtract within 20 using concrete models or drawings and strategies based on place value, properties of operations, or the relationship between addition and subtraction.
- Measure lengths, and organize, represent, and interpret these measurements with three categories, and ask and answer questions about this data.

Standards Addressed:

1.OA.A.1, 1.OA.A.2, 1.OA.A.3, 1.OA.C.6, 1.OA.D.8, 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6, 1.MD.A.2, 1.MD.C.4

Grade 2

The big ideas in grade 2 include: extending understanding of the base-ten number system, building fluency with addition and subtraction, using standard units of measure, and describing and analyzing shapes.

In this course blueprint, the mathematical work for grade 2 is partitioned into 8 units:

1. Adding and Subtracting with Data
2. Subtracting within 100
3. Measuring Length
4. Representing Addition and Subtraction on the Number Line
5. Working with Numbers to 1,000 and Understanding Money
6. Geometry and Measuring Time
7. Many Ways to Add and Subtract
8. Working with Equal Groups
9. Wrapping It Up

Unit 1: Adding and Subtracting with Data

Approximate Days: 20

Short description:

- Build toward fluency with adding within 100.
- Build toward fluency with subtracting within 20.
- Interpret picture and bar graphs.
- Represent data using picture and bar graphs.
- Solve one- and two-step problems using addition and subtraction within 20.

Standards Addressed:

2.OA.A.1, 2.OA.B.2, 2.NBT.5, 2.MD.D.10

Unit 2: Subtracting within 100

Approximate Days: 15

Short description:

- Subtract within 100 using strategies based on place value, including decomposing a ten, and the properties of operations.

Standards Addressed:

2.NBT.B.5, 2.NBT.B.6

Unit 3: Measuring Length	Approximate Days: 20
<p>Short description:</p> <ul style="list-style-type: none"> • Measure and estimate lengths in standard units. • Fluently add and subtract within 100 • Represent numerical data on line plots. • Represent and solve 2-step story problems <p>Standards Addressed: 2.MD.A.1, 2.MD.A.2, 2.MD.A.3, 2.MD.A.4, 2.OA.A.1, 2.MD.B.5, 2.NBT.B.5, 2.MD.D.9</p>	
Unit 4: Representing Addition and Subtraction on the Number Line	Approximate Days: 20
<p>Short description</p> <ul style="list-style-type: none"> • Understand the structure of the number line • Locate numbers on the number line in relation to 0. • Represent addition and subtraction on the number line. • Use addition and subtraction within 100 to solve 1- and 2-step word problems. <p>Standards Addressed: 2.MD.B.5, 2.MD.B.6, 2.OA.A.1</p>	
Unit 5: Working with Numbers to 1,000	Approximate Days: 20
<p>Short description:</p> <ul style="list-style-type: none"> • Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones. • Read and write numbers to 1,000 using base-ten numerals, number names, and expanded form. • Compare 2 three-digit numbers. <p>Standards Addressed: 2.NBT.A.1, 2.NBT.A.1.a, 2.NBT.A.1.b, 2.NBT.A.2, 2.NBT.A.3, 2.NBT.A.4, 2.NBT.B.8</p>	
Unit 6: Geometry and Measuring Time and Money	Approximate Days: 20
<p>Short description</p> <ul style="list-style-type: none"> • Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. • Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. • Partition rectangles and circles into halves, thirds, and fourths and name the shares. • Recognize two-halves, three-thirds and four-fourths as one whole. 	

- Understand that equal shares do not need to be the same shape.
- Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
- Find the value of a group of bills and coins.
- Use addition and subtraction within 100 to solve two-step word problems

Standards Addressed:

2.G.A.1, 2.G.A.3, 2.MD.C.7, 2.MD.C.8, 2.OA.A.1

Unit 7: Many Ways to Add and Subtract

Approximate Days: 20

Short description:

- Add and subtract within 1,000 by applying understanding of place value and the relationship between operations.
- Explain why addition and subtraction strategies work, using place value and the properties of operations.

Standards Addressed:

2.NBT.B.7, 2.NT.B.8, 2.NBT.B.9

Unit 8: Working with Equal Groups

Approximate Days: 15

Short description:

- Determine whether a group of objects (up to 20) has an odd or even number of members,
- Write an equation to express an even number as a sum of two equal addends.
- Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns
- Write an equation to express the total as a sum of equal addends.
- Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

Standards Addressed:

2.OA.C.3, 2.OA.C.4, 2.NBT.2, 2.G.A.2

Unit 9: Wrapping It Up

Approximate Days: 10

Short description:

- Fluently add and subtract within 20 using mental strategies.
- Fluently add and subtract within 100 using strategies based on place value, properties of operations, or the relationship between addition and subtraction.
- Use addition and subtraction within 100 to solve word problems of all situation types with

unknowns in all positions.

Standards Addressed:

2.OA.2, 2.NBT.5, 2.NBT.6, 2.NBT.7, 2.NBT.8, 2.NBT.9

Grade 3

The big ideas in grade 3 include: developing understanding of multiplication and division and strategies for multiplication and division within 100; developing understanding of fractions, especially unit fractions (fractions with numerator 1); developing understanding of the structure of rectangular arrays and of area; and describing and analyzing two-dimensional shapes.

In this course blueprint, the mathematical work for grade 3 is partitioned into 8 units:

1. Introducing Multiplication
2. What is Area?
3. Wrapping Up 1,000
4. Relating Multiplication to Division
5. Fractions as Numbers
6. Measuring Length, Time, Liquid Volume, and Mass
7. Polygons and Perimeter
8. Wrapping It Up

Unit 1: Introducing Multiplication

Approximate Days: 20

Short description:

- Draw scaled picture graphs and bar graphs to represent a data set.
- Learn the meaning of multiplication.
- Represent multiplication using equal groups drawings, arrays, expressions, and equations with a symbol for the unknown.
- Use multiplication within 100 to solve word problems in situations involving equal groups and arrays.
- Determine the unknown whole number in a multiplication equation relating three whole numbers.
- Understand, and use, the commutative property of multiplication.

Standards Addressed:

3.OA.A.1, 3.OA.A.3, 3.OA.A.4, 3.OA.B.5, 3.MD.B.3

Unit 2: What is Area?

Approximate Days: 20

Short description:

- Understand the concept of area.
- Learn that square units are used to measure area and count unit squares to measure area.
- Relate area to the operations of addition and multiplication.
- Represent multiplication using area diagrams, expressions, and equations with a symbol for the

unknown.

- Use addition and multiplication to find the area of rectangles and rectilinear figures.

Standards Addressed:

3.OA.8 *, 3.MD.C.5, 3.MD.C.5.a, 3.MD.C.5.b, 3.MD.C.6, 3.MD.C.7, 3.MD.C.7.a, 3.MD.C.7.b, 3.MD.C.7.c *, 3.MD.C.7.d

Unit 3: Wrapping Up 1,000

Approximate Days: 20

Short description:

- Add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, or the relationship between addition and subtraction.
- Use place value understanding to round whole numbers to the nearest 10 or 100.
- Use multiplication, addition, and subtraction to solve multi-step problems.
- Learn the meaning of perimeter.
- Solve real-world and mathematical problems involving perimeters of polygons.

Standards Addressed:

3.OA.C.7 *, 3.OA.D.8, 3.OA.D.9, 3.NBT.A.1, 3.NBT.A.2, 3.G.A.2

Unit 4: Relating Multiplication to Division

Approximate Days: 20

Short description:

- Learn the meaning of division as it relates to multiplication.
- Represent multiplication and division using equal groups drawings, arrays, area diagrams, number line diagrams, expressions, and equations with a symbol for the unknown.
- Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.
- Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
- Understand, and use, the properties of multiplication.
- Multiply one-digit whole numbers by multiples of 10 in the range 10–90.

Standards Addressed:

3.OA.A.2, 3.OA.A.3, 3.OA.A.4, 3.OA.B.5, 3.OA.B.6, 3.OA.C.7, 3.OA.D.8, 3.OA.D.9, 3.NBT.A.3, 3.MD.C.7.c, 3.MD.D.8 *

Unit 5: Fractions as Numbers

Approximate Days: 20

Short description:

- Represent unit fractions and fractions using area diagrams.
- Develop understanding of fractions, specifically unit fractions as numbers on a number line.
- Represent unit fractions and fractions on a number line.

- Understand fractions as being composed of unit fractions.
- Explain equivalence of fractions in special cases.
- Compare fractions by reasoning about their size.
- Record the results of comparisons with the symbols $>$, $=$, or $<$.

Standards Addressed:

3.NF.A.1, 3.NF.A.2, 3.NF.A.2.a, 3.NF.A.2.b, 3.NF.A.3, 3.NF.A.3.a, 3.NF.A.3.b, 3.NF.A.3.c, 3.NF.A.3.d

Unit 6: Measuring Length, Time, Liquid Volume, and Mass

Approximate Days: 15

Short description:

- Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.
- Show measurement data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.
- Tell and write time to the nearest minute.
- Represent word problems involving addition and subtraction of time intervals in minutes on a number line diagram.
- Estimate and measure units of liquid volumes and mass.
- Represent one-step word problems involving addition, subtraction, multiplication, and division on a number line diagram.
- Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units.

Standards Addressed:

3.OA.A.1, 3.OA.A.3, 3.MD.A.1, 3.MD.A.2, 3.MD.B.4

Unit 7: Polygons and Perimeter

Approximate Days: 15

Short description:

- Reason about shapes, categorize, and subcategorize according to their attributes.
- Solve real-world and mathematical problems involving area and perimeter.

Standards Addressed:

3.OA.D.8 *, 3.NBT.A.2 *, 3.MD.D.8, 3.G.A.1

Unit 8: Wrapping It Up

Approximate Days: 20

Short description:

- Identify arithmetic patterns (including patterns in the addition table or multiplication table).
- Explain arithmetic patterns using properties of operations.

- Fluently multiply and divide within 100.
- Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, or the relationship between addition and subtraction.
- Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.
- Represent problems involving equal groups, arrays, and measurement quantities using drawings and equations with a symbol for the unknown number.
- Solve two-step word problems using the four operations.
- Represent two-step word problems using equations with a letter standing for the unknown quantity.
- Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Standards Addressed:

3.OA.A.3, 3.OA.C.7, 3.OA.D.8, 3.OA.D.9, 3.NBT.A.1, 3.NBT.A.2

Grade 4

The big ideas in grade 4 include: developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

In this course blueprint, the mathematical work for grade 4 is partitioned into 8 units:

1. Factors and Multiples
2. Fraction Equivalence and Comparison
3. Fraction Operations
4. Large Numbers and Decimal Fractions
5. Multiplicative Comparison and Measurement
6. Whole Number Multiplication and Division
7. Angles and Angle Measurement
8. Area, Perimeter and Classifying Shapes
9. Wrapping It Up

Unit 1: Factors and Multiples

Approximate Days: 10

Short description:

Students apply understanding of multiplication and area to work with factors and multiples.

- Explain what it means to be a factor or a multiple of a whole number.
- Determine if a number is prime or composite.
- Apply multiplication fluency within 100 to find rectangles with given side lengths or a given area.
- Apply multiplication fluency within 100 and the relationship between multiplication and division to find factor pairs and multiples.

Standards Addressed:

4.OA.B.4

Unit 2: Fraction Equivalence and Comparison

Approximate Days: 15

Short description:

Students use visual representations or a numerical process to generate and reason about equivalent fractions, and compare and order fractions with the following denominators: 2, 3, 4, 5, 6, 8, 10, 12, and 100.

- Make sense of fractions with denominators 2, 3, 4, 5, 6, 8, 10 and 12 through physical representations and diagrams.
- Reason about the location of fractions on the number line.
- Use visual representations to reason about fraction equivalence, including using benchmarks such as $\frac{1}{2}$ and 1.
- Generate equivalent fractions with the following denominators: 2, 3, 4, 5, 6, 8, 10, 12, and 100.
- Use visual representations or a numerical process to reason about fraction comparison.

Standards Addressed:

4.NF.A.1, 4.NF.A.2

Unit 3: Fraction Operations

Approximate Days: 20

Short description:

Students learn that a fraction $\frac{a}{b}$ is a multiple of $\frac{1}{b}$ and later generalize that $n \times \frac{a}{b} = \frac{(n \times a)}{b}$. They then add and subtract fractions and mixed numbers with like denominators, and use their understanding of equivalence to add tenths and hundredths. Students also use measurement data to create line plots in fractions of a unit ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$) and solve problems by analyzing line plots.

- Represent and explain that a fraction $\frac{a}{b}$ is a multiple of $\frac{1}{b}$.
- Generalize that $n \times \frac{a}{b} = \frac{(n \times a)}{b}$
- Use various strategies to add and subtract fractions and mixed numbers with like denominators.
- Solve situations that involve adding and subtracting fractions and mixed numbers.
- Use understanding of equivalence to add tenths and hundredths.
- Create and analyze line plots to display measurement data in fractions of a unit ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$)
- Solve problems involving addition and subtraction of fractions using measurement data presented in line plots.

Standards Addressed:

4.NF.A.1 *, 4.NF.A.2 *, 4.NF.B.3, 4.NF.B.3.a, 4.NF.B.3.b, 4.NF.B.3.c, 4.NF.B.3.d, 4.NF.B.4, 4.NF.B.4.a, 4.NF.B.4.b, 4.NF.B.4.c, 4.MD.A.2 *, 4.MD.B.4

Unit 4: Place Value and Decimals

Approximate Days: 25

Short description:

Students learn that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. They use this understanding of place value to round, compare, order, add, and subtract multi-digit whole numbers within 1 million. Students also learn to use decimal notation for fractions with denominators of 10 and 100, and use their understanding of fraction

equivalence to combine, compare, and order tenths and hundredths written in decimal and fraction forms.

- Represent, read, and write multi-digit whole numbers through within 1 million.
- Use multiplication and division equations to show that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
- Use place value understanding to round, compare and order multi-digit whole numbers within 1 million.
- Use place value understanding and the standard algorithm to add and subtract multi-digit whole numbers.
- Use decimal notation for fractions with denominators of 10 or 100 and represent decimals on grids and number lines.
- Use understanding of fraction equivalence to compare, order decimals, and to combine combine tenths and hundredths.

Standards Addressed:

4.NBT.A.1, 4.NBT.A.2, 4.NBT.A.3, 4.NF.C.5, 4.NF.C.6, 4.NF.C.7

Unit 5: Multiplicative Comparison and Measurement

Approximate Days: 20

Short description:

Students interpret, represent, and solve multiplicative comparison situations using cubes, drawings, diagrams, and equations, and use this thinking to convert units of measure within a given system from larger to smaller units. Students also generate number patterns that follow a given rule, and identify apparent features of a number pattern that are not explicit in the rule itself.

- Represent multiplicative comparison situations with cubes, drawings, diagrams, and equations.
- Multiply or divide to solve one and two-step problems involving multiplicative comparison.
- Understand the relative sizes of kilometers, meters and centimeters, liters and milliliters, kilograms and grams, and pounds and ounces.
- Convert units of measure from larger units to smaller units within a given system of measurement.
- Solve multi-step problems involving multiplicative comparison and measurement.
- Generate a number pattern that follows a given rule.
- Identify apparent features of a number pattern that were not explicit in the rule itself.

Standards Addressed:

4.OA.A.1, 4.OA.A.2, 4.OA.A.3, 4.OA.C.5, 4.NBT.A.1, 4.NBT.B.5, 4.MD.A.1, 4.MD.A.2

Unit 6: Whole Number Multiplication and Division

Approximate Days: 20

Short description:

Students use strategies based on place value and the properties of operations to multiply and divide multi-digit whole numbers. They use the four operations to solve problems that involve multi-digit whole numbers, assess the reasonableness of responses, and interpret the result and remainder of division in situations.

- Multiply a whole number of up to four digits by a one-digit whole number, and two two-digit numbers using strategies based on place value and the properties of operations.
- Use the four operations to solve problems.
- Use a partial quotients algorithm to divide multi-digit numbers of up to four digits by one-digit divisors, resulting in numbers with or without a remainder.
- Represent and solve division problems and interpret the result and remainder.
- Use the four operations to solve problems that involve multi-digit whole numbers and assess the reasonableness of responses.

Standards Addressed:

4.OA.A.3, 4.NBT.B.5, 4.NBT.B.6

Unit 7: Angles and Angle Measurement

Approximate Days: 15

Short description:

Students learn to draw and identify points, lines, rays, segments, parallel and intersecting lines in geometric drawings. They also learn about the characteristics of angles and they use a protractor to measure angles and draw angles of given measurements. Students also identify acute, obtuse, right, and straight angles in two-dimensional figures.

- Draw and identify points, lines, rays, segments, parallel and intersecting lines in geometric drawings.
- Recognize that angles are formed wherever two rays share a common endpoint and identify angles in two-dimensional figures.
- Recognize that angles can be measured in degrees, and can be found using addition and subtraction
- Use a protractor to measure and draw angles, and recognize that perpendicular lines meet or cross at a right angle.
- Draw and identify acute, obtuse, right, and straight angles in two-dimensional figures.
- Write equations to represent angle relationships and reason about and find unknown measurements.

Standards Addressed:

4.MD.B.4, 4.MD.C.5, 4.MD.C.6, 4.MD.C.7

Unit 8: Properties of Two-dimensional Shapes

Approximate Days: 10

Short description:

Students classify triangles and parallelograms based on the properties of their side lengths and angles, and learn about line of symmetry in two-dimensional figures. They use their understanding of these attributes to solve problems, including problems involving perimeter and area.

- Sort and classify triangles (including right triangles), parallelograms, rectangles, rhombuses, and squares based on the properties of their side lengths and angles.
- Identify and draw lines of symmetry in two-dimensional figures.
- Solve problems using the known properties and attributes of two-dimensional shapes including angle measurement, side lengths, symmetry, perimeter and area.

Standards Addressed:

4.G.A.1, 4.G.A.2, 4.G.A.3, 4.MD.A.3

Unit 9: Wrapping It Up

Approximate Days: 10

Short description:

Students consolidate and solidify their understanding of various concepts and skills on major work of the grade. They also continue to work toward fluency goals of the grade.

- Fluently add and subtract multi-digit whole numbers using the standard algorithm.
- Multiply or divide to solve word problems involving multiplicative comparison.
- Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted.
- Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- Solve word problems involving addition, subtraction, and multiplication of fractions and mixed numbers.

Standards Addressed:

4.NF.A.1, 4.NF.A.2, 4.NF.B.3, 4.NF.B.4, 4.OA.A.2, 4.OA.A.3, 4.NBT.B.4, 4.NBT.B.5, 4.NBT.B.6

Grade 5

The big ideas in grade 5 include: developing fluency with addition and subtraction of fractions, developing understanding of multiplication and division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions), extending division to two-digit divisors, developing understanding of operations with decimals to hundredths, developing fluency with whole number and decimal operations, and developing understanding of volume.

The mathematical work for grade 5 is broken into 8 units:

1. Finding Volume
2. Fractions as Division and Fraction Multiplication
3. Fraction Multiplication and Division
4. Whole Number Multiplication and Division
5. Place Value Patterns and Decimal Operations
6. More Fraction Operations
7. Coordinate Grid and Shapes
8. Wrapping It Up

Unit 1: Finding Volume

Approximate Days: 15

Short description:

Students find the volume of right rectangular prisms and solid figures composed of two non-overlapping right rectangular prisms.

- Describe volume as the space taken up by a three dimensional object.
- Measure the volume of a rectangular prism by finding the number of unit cubes needed to fill it.
- Use the layered structure in a rectangular prism to find volume.
- Describe the calculations from the previous section as length x width x height or (area of base) x height.
- Find volume using length x width x height or (area of base) x height.
- Find the volume of a figure composed of rectangular prisms.

Standards Addressed:

5.OA.A.1 *, 5.OA.A.2 *, 5.MD.C.3, 5.MD.C.4, 5.MD.C.5

Unit 2: Understand Fractions and Fraction Multiplication

Approximate Days: 15

Short description:

Students develop an understanding of fractions as the division of the numerator by the denominator,

or $a \div b = \frac{a}{b}$. Through problem solving and concepts of area, they then interpret multiplication of a whole number by a fraction in the following ways: $\frac{a}{b} \times q = \frac{a \times q}{b}$, $\frac{a}{b} \times q = a \times (\frac{1}{b} \times q)$, and $\frac{a}{b} \times q = a \times (q \div b)$

- Interpret a fraction as the division of the numerator by the denominator.
- Solve problems involving division of whole numbers leading to answers in the form of mixed numbers and fractions to develop an understanding of $a \div b = \frac{a}{b}$.
- Interpret multiplication of a whole number by a fraction as dividing the whole number by the denominator of the fraction, and multiplying the whole number by the numerator.
- Solve problems involving multiplication of fractions.
- Use area understanding to represent the multiplication of a whole number by a fraction and to find the area of a rectangle when one side length is a fraction and the other side length is a whole number.
- Solve problems involving the multiplication of a whole number by a fraction by using numerical methods.

Standards Addressed:

5.NF.B.3, 5.NF.B.4, 5.NF.B.6

Unit 3: Fraction Multiplication and Division

Approximate Days: 25

Short description:

Students use area concepts to represent and solve problems involving the multiplication of two fractions, and generalize that $\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$. They then multiply whole numbers and mixed numbers using the properties of operations and use reasoning strategies for whole-number division to divide a whole number by a unit fraction and a unit fraction by a whole number.

- Represent the multiplication of a fraction by a fraction using area diagrams, and write multiplication expressions to represent a shaded area with dimensions that are fractions.
- Generalize and apply $\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$ to multiply fractions.
- Use estimation and the properties of operations to reason about the product of a whole number and a mixed number.
- Interpret write and solve “how many in each group” and “how many groups” situations to divide a whole number by a unit fraction and a unit fraction by a whole number.
- Solve problems involving fraction multiplication and division.

Standards Addressed:

5.NF.B.4, 5.NF.B.5, 5.NF.B.6, 5.NF.B.7, 5.NF.B.7

Unit 4: Whole Number Multiplication and Division

Approximate Days: 25

Short description:

Students use place value understanding and the properties of operations to multiply and divide multi-digit numbers. They use the standard algorithm to multiply multi-digit whole numbers, and partial quotients algorithms to divide whole numbers up to four digits by two digits. They then solve problems involving volume, where students multiply and divide by large numbers.

- Multiply multi-digit numbers, using strategies based on place value and the properties of operations, including the standard algorithm.
- Use the relationship between multiplication, division, and place value understanding to estimate quotients and divide whole numbers up to four digits by two digits.
- Solve problems involving volume and the multiplication and division of multi-digit whole numbers.

Standards Addressed:

5.NBT.B.5, 5.NBT.B.6, 5.MD.C.5

Unit 5: Place Value Patterns and Decimal Operations

Approximate Days: 25

Short description:

Students read, write and represent decimals to the thousandths place in standard and expanded forms. They recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left. They use this place value understanding to round, compare, order, add, subtract, multiply, and divide decimals. They also use whole-number exponents to denote powers of 10 and explain patterns in the number of zeros and placement of the decimal point when a decimal is multiplied or divided by a power of 10.

- Read, write, and represent decimals to the thousandths place, including in expanded form.
- Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.
- Compare, round and order decimals through the thousandths place based on the value of the digits in each place.
- Use strategies based on place value to add and subtract decimals to the hundredths.
- Multiply and divide decimals with products and quotients resulting in the hundredths using place value reasoning and properties of operations.
- Use whole-number exponents to denote powers of 10 and explain patterns in the number of zeros and placement of the decimal point when a decimal is multiplied or divided by a power of 10.
- Multiply and divide decimals with products and quotients resulting in the hundredths using place value reasoning and properties of operations.
- Use whole-number exponents to denote powers of 10 and explain patterns in the number of

zeros and placement of the decimal point when a decimal is multiplied or divided by a power of 10.

Standards Addressed:

5.NBT.A.1, 5.NBT.A.2, 5.NBT.A.3, 5.NBT.A.4, 5.NBT.B.7

Unit 6: More Fraction Operations

Approximate Days: 15

Short description:

Students convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step problems. They then add and subtract fractions with unlike denominators, and make line plots to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$), and solve problems involving fractions operation. They also compare the size of a product to the size of one factor on the basis of the size of the other factor, and make generalizations about multiplying a whole number by a fraction greater than, less than and equal to 1.

- Convert metric lengths from a larger unit to a smaller unit and from a smaller unit to a larger unit within a given measurement system and use these conversions in solving multi-step, real world problems.
- Add and subtract fractions with unlike denominators by producing an equivalent sum or difference of fractions with like denominators.
- Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$) and use the information presented in line plots to solve problems involving fraction operations.
- Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.
- Make generalizations about multiplying a whole number by a fraction greater than, less than and equal to 1.

Standards Addressed:

5.NF.A.1, 5.NF.A.2, 5.NF.B.5, 5.MD.A.1, 5.MD.B.2

Unit 7: Coordinate Grid and Classifying Shapes

Approximate Days: 15

Short description:

Students plot coordinate pairs on a coordinate grid and classify triangles and quadrilaterals in a hierarchy based on properties of side length and angle measure. They generate, identify, and graph relationships between corresponding terms in two numeric patterns, given two rules, and represent and interpret real world and mathematical problems on a coordinate grid.

- Plot coordinate pairs on a coordinate grid.

- Classify triangles and quadrilaterals in a hierarchy based on properties of side length and angle measure.
- Generate, identify, and graph relationships between corresponding terms in two patterns, given a rule.
- Represent and interpret real world and mathematical problems on a coordinate grid.

Standards Addressed:

5.G.A.1, 5.G.A.2, 5.G.B.3, 5.G.B.4

Unit 8: Wrapping It Up

Approximate Days: 15

Short description:

Students consolidate and solidify their understanding of various concepts and skills on major work of the grade. They also continue to work toward fluency goals of the grade.

- Fluently add, subtract, multiply, and divide to solve problems involving whole numbers, fractions, and decimals.
- Apply volume concepts to solve problems.
- Interpret, write and evaluate numerical expressions with grouping symbols.

Standards Addressed:

5.OA.A.1, 5.OA.A.2, 5.NBT.B.5, 5.NBT.B.6, 5.NBT.B.7, 5.MD.C.3, 5.MD.C.4, 5.MD.C.5, 5.NF.A.2, 5.NF.B.3, 5.NF.B.4