

MATHEMATICS: PRE-KINDERGARTEN

Unit	Topics & Skills
Unit 1: Match and Sort	<p>Lesson 1</p> <ul style="list-style-type: none">• Match two (isolated) objects that belong to the same set <p>Lesson 2</p> <ul style="list-style-type: none">• Match two objects (in a composite picture) that belong to the same set <p>Lesson 3</p> <ul style="list-style-type: none">• Match two objects of the same color <p>Lesson 4</p> <ul style="list-style-type: none">• Match two objects that have the same pattern <p>Lesson 5</p> <ul style="list-style-type: none">• Say if two or more objects look identical by looking at attributes <p>Lesson 6</p> <ul style="list-style-type: none">• Match two objects by function and say how they are used together <p>Lesson 7</p> <ul style="list-style-type: none">• Identify objects that do not belong to a particular group <p>Lesson 8/Lesson 9</p> <ul style="list-style-type: none">• Sort and classify objects by attribute• Review/Assess
Unit 2: Numbers to 5	<p>Lesson 1</p> <ul style="list-style-type: none">• Count up to three and recognize the numbers 1, 2 and 3 <p>Lesson 2</p> <ul style="list-style-type: none">• Count up to four and recognize the number 4 <p>Lesson 3</p> <ul style="list-style-type: none">• Count up to five and recognize the number 5. <p>Lesson 4</p> <ul style="list-style-type: none">• Given a set of objects in concrete forms, students will be able to arrange them in different ways. <p>Lesson 5</p> <ul style="list-style-type: none">• Read a picture graph.• Count and record the number of objects in each set using a picture graph <p>Lesson 6</p> <ul style="list-style-type: none">• Count and record the number of objects in each set using a picture graph <p>Lesson 7</p> <ul style="list-style-type: none">• Tell the number of objects in a small set without counting• Understand that a set has the same number of objects regardless of its arrangement <p>Lesson 8</p> <ul style="list-style-type: none">• Represent the number 1 in writing

	<p>Lesson 9</p> <ul style="list-style-type: none"> • Represent the number 2 in writing <p>Lesson 10</p> <ul style="list-style-type: none"> • Represent the number 3 in writing <p>Lesson 11</p> <ul style="list-style-type: none"> • Represent the number 4 in writing <p>Lesson 12</p> <ul style="list-style-type: none"> • Represent the number 5 in writing <p>Lesson 13</p> <ul style="list-style-type: none"> • Count up to five and write the numbers 1-5 <p>Lesson 14</p> <ul style="list-style-type: none"> • Count up to 5 • Read a picture graph <p>Review/Assess</p>
Unit 3: Numbers to 10	<p>Lesson 1</p> <ul style="list-style-type: none"> • Count up to 8 and recognize numbers 6, 7 and 8 <p>Lesson 2</p> <ul style="list-style-type: none"> • Represent the number 6 in writing <p>Lesson 3</p> <ul style="list-style-type: none"> • Represent the number 7 in writing <p>Lesson 4</p> <ul style="list-style-type: none"> • Represent the number 8 in writing <p>Lesson 5</p> <ul style="list-style-type: none"> • Count up to eight • Read a picture graph <p>Lesson 6</p> <ul style="list-style-type: none"> • Count up to eight and represent the numbers 1 to 8 in writing <p>Lesson 7</p> <ul style="list-style-type: none"> • Count up to ten and recognize the numbers 9 and 10 <p>Lesson 8</p> <ul style="list-style-type: none"> • Represent the number 9 in writing <p>Lesson 9</p> <ul style="list-style-type: none"> • Represent the number 10 in writing <p>Lesson 10 & 11</p> <ul style="list-style-type: none"> • Observe that the number 0 refers to an empty set • Represent the number 0 in writing <p>Lesson 12</p> <ul style="list-style-type: none"> • Show the corresponding sets described by giving numbers • Represent the number 0 in writing <p>Review/Assess</p>
Unit 4: Shapes	<p>Lesson 1</p> <ul style="list-style-type: none"> • Match and sort circles, squares and triangles given in concrete and pictorial forms

	<p>Lesson 2</p> <ul style="list-style-type: none"> • Identify circles <p>Lesson 3</p> <ul style="list-style-type: none"> • Identify rectangles <p>Lesson 4</p> <ul style="list-style-type: none"> • Identify squares and distinguish squares from rectangles. <p>Lesson 5</p> <ul style="list-style-type: none"> • Identify triangles and form squares with triangles <p>Lesson 6</p> <ul style="list-style-type: none"> • Identify circles, rectangles, squares and triangles in a picture <p>Lesson 7</p> <ul style="list-style-type: none"> • Match and sort cubes, cones, and spheres both in concrete and pictorial forms <p>Lesson 8 & 9</p> <ul style="list-style-type: none"> • Identify circles <p>Lesson 10</p> <ul style="list-style-type: none"> • Identify rectangular solids <p>Lesson 11</p> <ul style="list-style-type: none"> • Identify spheres <p>Lesson 12</p> <ul style="list-style-type: none"> • Observe and describe the different shapes that make up the faces of solids <p>Review/Assess</p>
Unit 5: Patterns	<p>Lesson 1</p> <ul style="list-style-type: none"> • Identify, describe, and extend simple patterns by referring to their colors <p>Lesson 2</p> <ul style="list-style-type: none"> • Identify, describe, and extend simple patterns by referring to their shapes <p>Lesson 3</p> <ul style="list-style-type: none"> • Identify, describe, and extend simple patterns by referring to their sizes <p>Review/Assess</p>
Unit 6: Length and Size	<p>Lesson 1</p> <ul style="list-style-type: none"> • Measure the length of objects using objects (e.g. sneaker) and say how long it is <p>Lesson 2</p> <ul style="list-style-type: none"> • Measure the height of objects and say how tall each object is <p>Lesson 3</p> <ul style="list-style-type: none"> • Measure the length and height of objects <p>Lesson 4</p> <ul style="list-style-type: none"> • Compare the length of two objects with different lengths and say which is short/long and which is shorter/longer <p>Lesson 5</p>

	<ul style="list-style-type: none"> • Compare the length of objects and say which is the shortest or longest <p>Lesson 6</p> <ul style="list-style-type: none"> • Compare the height of two objects and say which is shorter or taller <p>Lesson 7</p> <ul style="list-style-type: none"> • Compare the height of objects and say which is the shortest or tallest, and why <p>Lesson 8</p> <ul style="list-style-type: none"> • Compare the size of two objects, and say which is small or big, and which is smaller or bigger. <p>Lesson 9</p> <ul style="list-style-type: none"> • Compare the size of two objects, and say which is small or big, and which is bigger. <p>Lesson 10</p> <ul style="list-style-type: none"> • Compare the size of three objects and say which is the smallest or biggest. <p>Review/Assess</p>
Unit 7: Weight	<p>Lesson 1</p> <ul style="list-style-type: none"> • Compare the weight of two objects and say which is heavier or lighter <p>Lesson 2</p> <ul style="list-style-type: none"> • Compare the weight of two objects and say which is heavier/lighter than the other
Unit 8: Addition and Subtraction Stories	<p>Lesson 1, 2 & 3</p> <ul style="list-style-type: none"> • Explore concept of addition by using objects, fingers, and practical situations <p>Lesson 4, 5 & 6</p> <ul style="list-style-type: none"> • Explore concept of subtraction by using objects, fingers, and practical situations

Scope and Sequence: Kindergarten Math

Unit Title & Timeframe	Unit Topics & Goals
September: 2 weeks Matching and Sorting	<ul style="list-style-type: none"> • Match objects that belong with the same set, color, pattern, type, shape, and function • Identify objects that do not belong to a particular group • Sort and classify objects by attribute
September: 2 weeks Number sense to 5	<ul style="list-style-type: none"> • Recognize numerals 1-5 • Count upward and backward within 5 • Write numerals 1-5 • Understand the relationship between numbers and quantities to 5 • Connect counting to cardinality 1-5
October: 2 weeks Number sense to 10	<ul style="list-style-type: none"> • Recognize numerals 0-10 • Count upward and backward within 10 • Write numerals 0-10 • Understand the relationship between numbers and quantities to 10 • Connect counting to cardinality 0-10 • Observe that the number zero refers to an empty set
October: 2 weeks Ordinal/Cardinal	<ul style="list-style-type: none"> • Order numbers 1-10 • Order numbers 10-1 • Count and recite numbers 1-10 in order • Count and recite numbers 10-1 in order • Observe that numbers increase from 1-10 (1 more) • Observe that numbers decrease 10-1 (1 less)
November: 1 weeks 2D Shapes	<ul style="list-style-type: none"> • Identify 2 Dimensional shapes: circles, rectangles, triangles, squares, hexagons • Match and sort in concrete and pictorial forms • Identify the item that does not belong based on shape • Identify the attributes: number of sides and corners • Describe shapes and their location using positional words (<i>put the square above the duck</i>)

<p>November: 2 weeks</p> <p>3D Shapes</p>	<ul style="list-style-type: none"> ● Identify 3 Dimensional shapes/solid shapes: cone, sphere, cylinder, cube, rectangular prism ● Match and sort in concrete and pictorial forms ● Identify the item that does not belong based on shape ● Identify the attributes: flat, face, corner, point, rolls, stacks ● Describe the shape and their location using positional words (<i>put the cube below the duck</i>) ● Identify what 2D shapes make up the 3D shape (i.e. a rectangular prism has 2 squares and 4 rectangles)
<p>November: 1 week</p> <p>Patterning</p>	<ul style="list-style-type: none"> ● Identify, describe, and extend simple patterns by color, shape, size and orientation ● AB – AB - AB ● AAB – AAB ● AA-BB-AA-BB ● ABC- ABC- ABC
<p>December: 2 weeks</p> <p>Measurement (size/weight)</p>	<ul style="list-style-type: none"> ● Compare length of two objects using vocabulary: shorter, longer, shortest, longest, short, long, small, big, smaller, bigger, smallest, biggest ● Compare the weight of two objects and see which is heavy, light, heavier, lighter, heaviest, lightest
<p>December: 1 week</p> <p>Counting Strategies</p>	<ul style="list-style-type: none"> ● Implement counting strategies when counting: i.e. 1:1 correspondence, count and pull away, count and cross out
<p>January: 2 week</p> <p>Comparing Sets and Comparing Numbers</p>	<ul style="list-style-type: none"> ● Identify which group has more than, fewer than, or the same quantity ● Identify which group is greater than, less than, or equal to the number of objects in another group
<p>January: 2 weeks</p> <p>Number to 20</p>	<ul style="list-style-type: none"> ● Rote count from 1-20 and down from 20-1 in order ● Identify written numerals 11-20 ● Write numbers 11-20
<p>February: 2 weeks</p> <p>Base 10</p>	<ul style="list-style-type: none"> ● Represent the numbers from 11-20 in groups of tens and ones ● Identify that teen numbers begin with a 1 representing the tens place ● Recognize that teen numbers are made of a group of ten and extra ones

<p>February: 1 week</p> <p>Numbers to 100</p>	<ul style="list-style-type: none"> • Daily count from the first day of school to the 100th day of school • 100th day centers: fine motor 100 frame, build with 100 LEGOS, count by 10 bracelets, 100th day literature, 100th day class books, Dreambox, 100th day homework project and t-shirts
<p>March: 2 weeks</p> <p>Number Bonds 1-5</p>	<ul style="list-style-type: none"> • Understand number bonds as part-part-whole using pictures (pictorial), manipulatives (concrete), numbers (abstract) • Compose number bonds within 5 • Demonstrate different ways to make the sum within 5 using a number bond • “Look and Talk” at a picture and compose a math story using number bonds
<p>March: 2 weeks</p> <p>Number Bonds 1-10</p>	<ul style="list-style-type: none"> • Understand number bonds as part-part-whole using pictures (pictorial), manipulatives (concrete), numbers (abstract) • Compose number bonds within 10 • Demonstrate different ways to make the sum within 10 using a number bond • “Look and Talk” at a picture and compose a math story using number bonds
<p>April: 2 weeks</p> <p>Addition to 5</p>	<ul style="list-style-type: none"> • Understand that addition is <i>putting together</i> and <i>adding to</i> • Fluently add within 5 • Solve addition word problems • Represent addition using objects, sounds, mental images, fingers, drawings (quick math sketch), acting out situations, verbal explanations, or equations • Understanding symbols in the equation: + =
<p>April: 1 week</p> <p>Addition to 10</p>	<ul style="list-style-type: none"> • Understand that addition is <i>putting together</i> and <i>adding to</i> • Fluently add within 10 • Solve addition word problems • Represent addition using objects, sounds, mental images, fingers, drawings (quick math sketch), acting out situations, verbal explanations, or equations • Understanding symbols in the equation: + =
<p>May: 2 weeks</p> <p>Subtraction within 5</p>	<ul style="list-style-type: none"> • Understand that subtraction is <i>taking apart</i> and <i>taking from</i> • Fluently subtract within 5 • Solve subtraction word problems • Represent subtraction using objects, sounds, mental images, fingers, drawings (quick math sketch), acting out situations,

	<p>verbal explanations, or equations</p> <ul style="list-style-type: none"> • Understanding symbols in the equation: - =
<p>May: 1 week</p> <p>Subtraction within 10</p>	<ul style="list-style-type: none"> • Understand that subtraction is <i>taking apart</i> and <i>taking from</i> • Fluently subtract within 10 • Solve subtraction word problems • Represent subtraction using objects, sounds, mental images, fingers, drawings (quick math sketch), acting out situations, verbal explanations, or equations • Understanding symbols in the equation: - =
<p>May/June: 4 weeks</p> <p>Addition and Subtraction review</p>	<ul style="list-style-type: none"> • Review addition and subtraction vocabulary: put together, adding to, part-part-whole, take apart • Review + and = symbols • Solving story problems with addition and subtraction • Fluently add and subtract within 1-10

MATHEMATICS: GRADE 1

Unit Title & Timeframe	Unit Topics & Goals
Unit 1 Numbers 0-10 4 days	COUNTING Review: Counting, numerals, number words Review: More and less, compare Review: Number Order
Unit 2 Number Bonds 6 days	MAKING NUMBER STORIES Number stories Number Bonds for 2, 3, 4, 5, and 6 Number Bonds for 7, 8, 9, and 10 Missing part Number bonds for 10
Unit 3 Addition Within 10 8 days	MAKING ADDITION STORIES The meaning of addition Addition equations METHODS OF ADDITION Number bonds and addition Addition Count on to add More addition facts Fact practice, true statement Review
Unit 4 Subtraction Within 10 10 days	MAKING SUBTRACTION STORIES The meaning of subtraction Subtraction equation METHODS OF SUBTRACTION Number bonds and subtraction Additions and subtraction Missing part Count back to subtract Count on to subtract Word problems Fact practice, true statement

<p>Unit 5 Ordinal Numbers</p> <p>3 days</p>	<p>NAMING POSITION Naming position Position problems Review</p>
<p>Unit 6 Numbers to 20</p> <p>11 days</p>	<p>COUNTING AND COMPARING Count to 20 Number order Compare numbers</p> <p>ADDITION AND SUBTRACTION Add by making ten Add single digits Add within 20 Subtract ones Subtract from a ten Count on or count back Addition and subtraction within 20 Review</p>
<p>Unit 7 Shapes</p> <p>6 days</p>	<p>COMMON SHAPES Common shapes Closed shapes, corners and sides, flat surfaces Sort shapes Identify patterns based on shapes Combine shapes and solids Review</p>
<p>Unit 8 Length</p> <p>3 days</p>	<p>COMPARING LENGTHS Compare lengths</p> <p>MEASURING LENGTH Estimate and measure length Review</p>

<p>Unit 9 Comparing Numbers</p> <p>4 days</p>	<p>COMPARING NUMBERS Review: Comparing numbers</p> <p>COMPARISON BY SUBTRACTION Compare two sets by subtraction Word problems Review</p>
<p>Unit 10 Graphs</p> <p>3 days</p>	<p>GRAPHS Picture graphs Bar graph Review</p>
<p>Unit 11 Numbers to 40</p> <p>16 days</p>	<p>COUNTING Count to 40 by making groups of tens Number bonds for tens and ones Number order</p> <p>TENS AND ONES 2-digit numbers as tens and ones Count on or count back 1 or 10</p> <p>COMPARING NUMBERS Compare numbers</p> <p>ADDITION AND SUBTRACTION Add or subtract a 1-digit number, no renaming Add or subtract ones or tens Add or subtract 1, 2, or 3 Make the next ten Add using addition facts Subtract ones from tens Subtract from a ten Subtract by renaming Word problems</p> <p>ADDING THREE NUMBERS Add three numbers Review</p>

<p>Unit 12 Multiplication</p> <p>5 days</p>	<p>ADDING EQUAL GROUPS Put the same number in each group Make groups with the same number</p> <p>MAKING MULTIPLICATION STORIES Write multiplication equations</p> <p>MULTIPLICATION WITHIN 40 Multiply within 40 Review</p>
<p>Unit 13 Division</p> <p>3 days</p>	<p>SHARING AND GROUPING Divide by sharing Divide by grouping Review</p>
<p>Unit 14 Halves and Fourths</p> <p>2 days</p>	<p>HALVES AND FOURTHS Recognizing halves and fourths Review</p>
<p>Unit 15 Time</p> <p>4 days</p>	<p>TIME Tell time to the hour Tell time to the half-hour</p> <p>ESTIMATING TIME Estimate time Review</p>
<p>Unit 16 Numbers to 120</p> <p>18 days</p>	<p>TENS AND ONES Tens Tens and ones Number words</p> <p>COUNT PAST 100 Count to 120</p> <p>ESTIMATION Estimate quantities</p> <p>ORDER OF NUMBERS Number order</p>

	<p>Count on or count back by 1 or 10 Count on or count back by ones or tens</p> <p>COMPARING NUMBERS Compare numbers</p> <p>ADDITION WITHIN 100 Add ones, no renaming Add ones, with renaming Add tens Add 2-digit numbers</p> <p>SUBTRACT WITHIN 100 Subtract ones, no renaming Subtract ones, with renaming Subtract tens Subtract 2-digit numbers Review</p>
<p>Unit 17 Money</p> <p>6 days</p>	<p>BILLS AND COINS Recognize the value of some coins and bills Count coins Count bills Compare sets of money</p> <p>SHOPPING Word problems Review</p>

MATHEMATICS: GRADE 2

UNIT / TIMEFRAME	TOPICS & SKILLS
<i>Numbers to 1,000</i>	<ul style="list-style-type: none">• Looking Back• Counting within 1,000• Comparing Numbers
<i>Addition and Subtraction</i>	<ul style="list-style-type: none">• Looking Back• Addition without Renaming• Subtraction without Renaming• Addition with Renaming• subtraction with Renaming
<i>Length</i>	<ul style="list-style-type: none">• Measuring Length• Measuring Length in Meters• Measuring Length in Centimeters• Other Units of Length
<i>Multiplication and Division</i>	<ul style="list-style-type: none">• Multiplication• Division
<i>Multiplication Tables of 2 and 3</i>	<ul style="list-style-type: none">• Multiplication Table of 2• Multiplication Table of 3• Dividing by 2• Dividing by 3• Remainders
<i>Addition and Subtraction</i>	<ul style="list-style-type: none">• Finding the Missing Number• Methods for Mental Addition• Methods for Mental Subtraction
<i>Multiplication and Division</i>	<ul style="list-style-type: none">• Multiplying and Dividing by 4• Multiplying and Dividing by 5• Multiplying and Dividing by 10

<i>Money</i>	<ul style="list-style-type: none">• Dollars and Cents• Adding Money• Subtracting Money
<i>Fractions</i>	<ul style="list-style-type: none">• Halves and Quarters• Writing Fractions
<i>Time</i>	<ul style="list-style-type: none">• Telling Time After the Hour• Telling Time Before the Hour
<i>Tables and Graphs</i>	<ul style="list-style-type: none">• Picture Graphs• Bar Graphs• Line Plots
<i>Geometry</i>	<ul style="list-style-type: none">• Flat and Curved Surfaces• Composite Figures• Angles and Shapes

MATHEMATICS: GRADE 3

Unit Title & Timeframe	Unit Topics & Goals
<p><u>Unit 1:</u></p> <p>Thousands, Hundreds, Tens, and Ones</p> <p>Place Values</p> <p>Compare Numbers within 10,000</p> <p>Number Patterns</p> <p>Rounding Numbers</p>	<p style="text-align: center;">Numbers to 10,000</p> <ul style="list-style-type: none"> ● relate 4 digit numbers to 1000, 100, 10, 1 ● read and write 4 digit numbers ● relate each digit in a 4-digit number to its place value ● relate the value of each digit in a 4-digit number to its place. ● compare and order numbers within 10,000. ● compare and order 4-digit numbers. ● add 1,10, 100, or 1,000 to a number within 10,000. ● subtract 1, 10, 100, 1,000. from a number within 10,000. ● recognize number patterns that involve counting by 1's,10's,100's, 1000's ● estimate the location of numbers on a number line ● round numbers to the nearest ten, hundred, and thousand
<p><u>Unit 2:</u></p> <p>Mental Calculation Addition and Subtraction</p> <p>Sum and Differences</p> <p>Word Problems</p> <p>Adding Ones, Tens, Hundreds, and Thousands</p>	<p style="text-align: center;">Addition and Subtraction</p> <ul style="list-style-type: none"> ● review mental math strategies for adding 1 and 2 digit #'s ● review mental math strategies for subtracting 1 and 2 and 3 digit numbers. ● review mental math strategies for subtracting from 100 and 1,000. ● understand the terms sum and difference. ● represent mathematical statements with pictorial models. ● draw part-whole models to represent mathematical statements. ● draw comparison models to represent the difference between 2 numbers ● solve problems involving numeric equations or inequalities. ● use models to solve one-step word problems ● use models to solve word problems with two steps. ● add tens, hundreds, or thousands mentally. ● add 4 -digit numbers ● solve word problems.

<p>Subtracting Ones, Tens, Hundreds, and Thousands.</p> <p>Two-Step Word Problems</p>	<ul style="list-style-type: none"> ● subtract tens, hundreds, or thousands mentally ● subtract 4-digit numbers ● solve word problems <ul style="list-style-type: none"> ● solve two-step word problems.
<p><u>Unit 3:</u></p> <p>Multiplication and Division</p> <p>Word Problems</p> <p>Multiplying Ones, Tens, and Hundreds</p> <p>Quotient and Remainder</p> <p>Dividing Hundreds, Tens, and Ones</p> <p><u>Chapter 4:</u></p> <p>Multiplying and Dividing by 6</p>	<p style="text-align: center;">Multiplication and Division</p> <ul style="list-style-type: none"> ● review multiplication as repeated addition ● practice multiplication facts for 2,3,4,5, and 10 ● use rectangular arrays to illustrate multiplication. ● multiply a number by zero ● use the distributive property and a multiplication strategy ● review division concepts and use an array to illustrate division problems ● divide a number by 1 and zero ● solve simple word problems involving multiplication and division by using a part-whole model. <ul style="list-style-type: none"> ● solve one-step word problems using bar models for multiplication and division. ● solve two-step word problems using bar models. <ul style="list-style-type: none"> ● multiply ones, tens and hundreds by a 1-digit, 2-digit and 3-digit numbers ● solve word problems and estimate the product. <ul style="list-style-type: none"> ● learn the term quotient and remainder ● divide a 2-digit number by 2 ● review odd and even numbers. ● divide a number within 100 by 3,4, or 5 ● solve word problems <ul style="list-style-type: none"> ● divide a number within 1,000 by 2, 3, 4, or 5 ● estimate the answers to division problems ● solve word problems. <p style="text-align: center;">Multiplication Tables of 6, 7, 8, and 9</p>

<p>Multiplying and Dividing by 7</p> <p>Multiplying and Dividing by 8</p> <p>Multiplying and Dividing by 9</p>	<ul style="list-style-type: none"> ● multiply 2-digit numbers by 2, 3, 4, or 5 mentally ● learn and practice multiplication facts for 6 ● learn and practice division facts for 6 ● multiply and divide a number within 1,000 by 6 ● solve word problems involving multiplication/division <ul style="list-style-type: none"> ● learn and practice multiplication facts for 7 ● learn and practice division facts for 7 ● multiply and divide a number within 1,000 by 7 ● solve word problems involving multiplication/division <ul style="list-style-type: none"> ● learn and practice multiplication facts for 8 ● learn and practice division facts for 8 ● multiply and divide a number within 1,000 by 8 ● solve word problems involving multiplication/division <ul style="list-style-type: none"> ● learn and practice multiplication facts for 9 ● learn and practice division facts for 9 ● multiply and divide a number within 1,000 by 9 ● solve word problems involving multiplication/division
<p><u>Unit 5</u></p> <p>Meters and Centimeters</p> <p>Kilometers</p> <p>Other Units of Length</p>	<p style="text-align: center;">Length</p> <ul style="list-style-type: none"> ● review meters and centimeters as units of length ● estimate and measure lengths in meters and centimeters ● convert meters to centimeters and centimeters to meters ● use mental math strategies to subtract centimeters or compound units from meters ● add lengths, subtract lengths, and solve word problems involving addition and subtraction in meters, centimeters <ul style="list-style-type: none"> ● understand a kilometer as a unit of measure ● convert kilometers to meters ● convert meters to kilometers ● add and subtract kilometers and meters ● solve word problems involving addition, subtraction, multiplication and division of kilometers. <ul style="list-style-type: none"> ● measure and estimate lengths in yards, feet, and inches ● compare yard to meter and inch to centimeter

	<ul style="list-style-type: none"> ● convert a measurement between yards and feet and inches and feet ● add and subtract feet and inches in compound units ● solve word problems involving miles
<p><u>Unit 6:</u></p> <p>Comparing Masses</p> <p>Measuring Mass in Kilograms</p> <p>Measuring Mass in Grams</p> <p>Kilograms and Grams</p> <p>Word Problems</p> <p>Measuring Weight in Pounds and Ounces</p>	<p style="text-align: center;">Mass and Weight</p> <ul style="list-style-type: none"> ● compare the mass of two or more objects ● estimate the weigh objects in nonstandard units ● estimate and find the mass of objects to the nearest kilogram ● solve word problems involving mass in kilograms <ul style="list-style-type: none"> ● estimate and find the mass of objects to the nearest kilogram ● solve word problems involving mass in kilograms <ul style="list-style-type: none"> ● find the mass of objects in grams ● solve word problems involving mass in grams <ul style="list-style-type: none"> ● estimate and find the mass of objects in kilograms and grams ● read scales ● convert kilograms and grams to grams ● subtract and add grams from kilograms ● solve word problems involving kilograms and grams <ul style="list-style-type: none"> ● solve word problems involving compound measures <ul style="list-style-type: none"> ● estimate and measure weight in pounds, ounces, kilogram and grams ● solve word problems involving weight in pounds and ounces ● convert pounds and ounces to ounces and ounces to pounds and ounces ● will add and subtract weight in pounds and ounces ● solve word problems.
<p><u>Unit 7:</u></p>	<p style="text-align: center;">Capacity</p>

Comparing Capacity	<ul style="list-style-type: none"> ● compare the capacity of containers
Liters	<ul style="list-style-type: none"> ● measure and estimate the capacity of containers in liters ● solve problems of liters
Liters and Milliliters	<ul style="list-style-type: none"> ● learn about milliliters as a measure of capacity ● convert milliliters to liters and milliliters ● add and subtract milliliters ● subtract capacity in liters and milliliters ● solve word problems involving four operations of a single unit.
Gallons, Quarts, Pints and cups	<ul style="list-style-type: none"> ● measure and estimate the capacity of containers in gallons, quarts Pints and cups. ● compare quart to liters ● convert between gallons, quarts, pints, and cups ● add and subtract capacity in compound units.

Unit Title & Timeframe	Unit Topics & Goals
<u>Unit 8:</u>	Money
Dollars and Cents	<ul style="list-style-type: none"> ● review decimal notation for money ● count money up to \$100. in coins and bills ● write amounts of money in words and figures ● convert dollars and cents to cents ● convert cents to dollars and cents ● make change for bills up to \$100.
Addition	<ul style="list-style-type: none"> ● add money within \$100. mentally by first adding dollars and cents ● add money within \$100. using the addition algorithm ● add money within \$100. using mental math strategies
Subtraction	<ul style="list-style-type: none"> ● solve word problems involving the addition of money ● subtract money within \$100. by first subtracting dollars and cents ● subtract money within \$100. using subtraction algorithm ● subtract money within \$100. using mental math strategies ● solve word problems involving the subtraction of money
<u>Unit 9:</u>	Fractions

<p>Fractions of a Whole</p>	<ul style="list-style-type: none"> ● recognize and name fractions of a whole ● make a whole with a fraction ● compare and order fractions with a common numerator ● compare and order fractions with a common denominator ● show fractions on a number line ● compare fractions with a number line
<p>Equivalent Fractions</p>	<ul style="list-style-type: none"> ● recognize and name equivalent fractions ● find equivalent fractions ● find equivalent fractions ● find the simplest form of a fraction ● compare fractions using equivalent fractions
<p>Fractions and Measurement</p>	<ul style="list-style-type: none"> ● measure the length of objects in units plus a fraction of the next unit ● represent fractions on a number line ● express whole numbers as fractions ● recognize fractions that are equivalent to whole numbers ● name parts of sets as fractions of a whole when each part has one item
<p>Fraction of a Set</p>	<ul style="list-style-type: none"> ● name parts of sets as fractions of a whole when each part has one item ● name parts of sets as fractions of a whole when each part has more than one item
<p><u>Unit 10:</u></p> <p>Hours and Minutes</p> <p>Other units of Time</p>	<p style="text-align: center;">Time</p> <ul style="list-style-type: none"> ● tell, read, and write time to 1 minute ● understand the relative magnitude of hours and minutes ● find the duration of a time interval using a clock face ● convert hours and minutes to minutes ● convert minutes to hours and minutes ● solve word problems involving time intervals ● add or subtract time in hours and minutes ● measure time in seconds ● subtract seconds from minutes ● convert minutes and seconds to seconds ● convert seconds to minutes and seconds ● add or subtract time in minutes and seconds ● convert between years and months in compound units ● convert between weeks and days in compound units
<p><u>Unit 11:</u></p> <p>Presenting Data</p>	<p style="text-align: center;">Data Analysis</p> <ul style="list-style-type: none"> ● read and interpret scaled picture graphs

	<ul style="list-style-type: none"> ● read and interpret bar graphs ● create bar graphs ● generate and show measurement data by making a line plot ● interpret line plots
<p><u>Unit 12:</u></p> <p>Right Angles and Shapes</p>	<p style="text-align: center;">Geometry</p> <ul style="list-style-type: none"> ● review angles and shapes ● identify right angles ● determine the number of right angles in shapes ● classify shapes by number of sides ● distinguish between types of quadrilaterals based on the number of right angles and the lengths of the sides ● identify rhombuses
<p><u>Unit 13:</u></p> <p>Area</p> <p>Perimeter</p> <p>Area of a Rectangle</p> <p>Composite Figures</p>	<p style="text-align: center;">Area and Perimeter</p> <ul style="list-style-type: none"> ● find the area of figures in square units ● understand that figures with different shapes can have the same area ● compare the area of figures in square units ● find the area by multiplying length by width for rectangular parts ● compare the area of different figures ● find the perimeter of a figure ● compare the area and perimeter of figures ● find the perimeter given the side lengths ● find the unknown side length given the perimeter ● understand and use the formula for finding area of a rectangle ● use the formula for the area of a rectangle to find the area of composite rectilinear figures

MATHEMATICS: GRADE 4

Unit Title	Unit Topics & Goals
Unit 1 - Whole Numbers	<ul style="list-style-type: none">• Numbers to 1,000,000• Approximation• Multiples• Factors• Order of Operation
Unit 2 - The Four Operations of Whole Numbers	<ul style="list-style-type: none">• Addition and Subtraction• Multiplication by a 1-Digit Number• Division by Ones and Tens• Multiplication by a 2-Digit Number
Unit 3 - Fractions	<ul style="list-style-type: none">• Equivalent Fractions• Adding and Subtracting Like Fractions• Mixed Numbers• Improper Fractions
Unit 4 - Operations on Fractions	<ul style="list-style-type: none">• Adding and Subtracting Related Fractions• Adding and Subtracting Mixed Numbers• Multiplying a Fraction and a Whole Number• Fraction of a Set
Unit 5 - Measures	<ul style="list-style-type: none">• Looking Back - Review of Metric & Customary Units)• Multiplying and Diving Compound Measure• Measure and Fractions

MATHEMATICS: GRADE 5

Unit Title & Timeframe	Unit Topics & Goals
Unit 1: Whole Numbers Large Numbers, Approximation and Estimation, Factors and Multiples, Multiplying and Dividing by Tens, Hundreds, or Thousands	<ul style="list-style-type: none"> • Understand place value concepts for numbers within 1 trillion. • Write numbers of up to 12 digits in standard and expanded form, and in words. • Compare and order numbers within 1 trillion. • Determine the scale of a number line and locate large numbers on a scaled number line. • Round numbers within 1 trillion to a given place value. • Use place value concepts in mental computation. • Estimate sums, differences, products, and quotients. • Review the meaning of factors and multiples, and relate multiples to factors. • Find the factors of numbers within 200. • Find common factors and common multiples. • Find the greatest common factor of two within 200. • Find the lowest common multiple of two numbers within 200.
Unit 2: More Calculations with Whole Numbers Methods for Mental Calculation, Word Problems, Multiplication and Division by a 2-digit Whole Number	<ul style="list-style-type: none"> • Review the rules for order of operations. • Apply order of operations to expressions with and without parentheses. • Understand and use the distributive property of multiplication. • Review Mental Math strategies • Apply the distributive property in Mental Math strategies. • Use factors to facilitate mental math computation. • Review model drawing as a tool for solving word problems • Solve multistep word problems involving whole numbers. • Multiply a number up to 4 digits by a 2-digit number. • Divide by tens. • Estimate the quotient when dividing by a 2-digit number. • Adjust the estimated quotient when dividing.
Unit 3: Fractions Fractions and Division, Addition and Subtraction of Unlike Fractions, Mixed Numbers, Product of a	<ul style="list-style-type: none"> • Review equivalent fractions and simplest form. • Review mixed numbers. • Compare fractions, including mixed numbers. • Relate fractions to division. • Add and Subtract Fractions • Add and Subtract mixed numbers • Solve simple word problems involving subtraction and addition of

<p>Fraction and a Whole Number, Word Problems</p>	<p>fractions or mixed numbers.</p> <ul style="list-style-type: none"> ● Multiply a fraction by a whole number. ● Find the product of a mixed number and a whole number.
<p>Unit 4: Multiply and Divide Fractions Product of a Fraction, Word Problems, Dividing a Fraction by a Whole Number, Dividing a Fraction by a Fraction</p>	<ul style="list-style-type: none"> ● Multiply a fraction by a fraction ● Multiply mixed numbers ● Solve word problems involving product of fractions ● Divide a unit fraction by a whole number ● Divide a whole number by a unit fraction in word problems. ● Divide a fraction by a whole number.
<p>Unit 5: Perimeter and Area Square Units, Area of Composite Figures-Rectangles and Squares, Area of a Triangle and Parallelogram</p>	<ul style="list-style-type: none"> ● Review the concept of area ● Review the area of a rectangle ● Find the area of a rectangle with fractional side lengths ● Find the area of composite rectilinear figures that include sides with fractional lengths. ● Derive the formula for area of a triangle. ● Derive the formula for area of a parallelogram ● Find the area of a parallelogram using the formula.
<p>Unit 7: Decimals Tenths, Hundredths, Thousandths, Approximation, Add, Subtract, Multiply and Divide decimals by a 1-digit whole number, Tens, Hundreds, or Thousands</p>	<ul style="list-style-type: none"> ● Relate each digit in a decimal to its place value. ● Compare and order decimals ● Write decimals as fractions ● Round a decimal to the nearest whole number. ● Round a decimal to one or two decimal places. ● Add and Subtract decimals ● Multiply and Divide a decimal by a 1-digit whole number. ● Round the quotient to one or two decimal places. ● Express a fraction as a decimal correct to two decimals places. ● Multiply a decimal by a hundreds or thousands ● Divide a decimal by tens, hundreds, or thousands.
<p>Unit 8- More Calculations Multiplication and Division by a 2-digit decimal, Multiplication and Division by a Whole number, Convert to a larger and smaller</p>	<ul style="list-style-type: none"> ● Multiply and Divide a decimal by a 2-digit whole number. ● Estimate the product in multiplication and division of decimals. ● Multiply and Divide a decimal by tenths or hundredths. ● Multiply and Divide a decimal by a decimal ● Convert a decimal measurement to a smaller unit or a compound unit. ● Convert a measurement to larger unit as a decimal.

unit of measurement	
Unit 9: Volume Cubic Units, Volume of Rectangular Prisms, Finding the Volume of a Solid	<ul style="list-style-type: none"> • Find the volume of solids made up of cubic units. • Find the volume of rectangular prisms, given lengths, width, and height. • Convert cm to liters and milliliters. • Solve word problems involving rectangular prisms and volume of liquids. • Find the volume of composite solids made from non-overlapping rectangular prisms. • Find the volume of a rectangular prism given the area of one face and the length of the third side.
Unit 10: Average, Plots, and Graphs Average, Line Plots, Coordinate Graphs, and Line Graphs	<ul style="list-style-type: none"> • Find the average of numerical data. • Find the average when given the total and the number of items • Solve word problems of up to three steps that involve averages. • Make a line plot to display a set of data in fractions of a unit. • Use operations on fractions to solve problems involving information presented in the line plots. • Identify and plot ordered pairs on a coordinate grid. • Complete a table for a simple pattern that gives a proportional relationship • Graph relationship using the values from the table. • Graph two simple linear relationships on the same graph and compare them.

MATHEMATICS: GRADE 6

Unit Title & Timeframe	Unit Topics & Goals
<p>Skills Review: All basic operations, place value review, order of operations</p> <p>1-3 weeks</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Review of Addition, Subtraction, Multiplication (up to four by three digits) ● Place value to the billions, billionths. ● Order of operations
<p>Primary Math: Unit 1 Chapter 1 Algebraic Expressions</p> <p>2 weeks</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Write algebraic expressions using addition and subtraction ● Write algebraic expressions using multiplication and division ● Write algebraic expressions using the four operations
<p>Primary Math: Chapter 2: Algebraic Equations</p> <p>1-3 weeks</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Write and solve one step algebraic equations ● Draw bar models to represent simple algebraic expressions ● Add and subtract algebraic expressions with two variables ● Write and solve two step algebraic equations ● Evaluate expressions with 1,2 and 3 variables
<p>Primary Math: Unit 2 Chapter 1 Fractions and Decimals</p> <p>1-2 weeks</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Write fractions as decimals ● Write decimals as fractions ● Review addition and subtraction of decimals (outside of text)
<p>Chapter 3: Comparing Fractions</p> <p>*** Review of multiplying and dividing decimals</p> <p>1-2 weeks</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Compare and order fractions ● Compare and order fractions and decimals (e.g.; $\frac{2}{3}$, .4, and $\frac{1}{6}$) ● Review multiplying and dividing decimals Discuss terminating and repeating decimals

<p>Unit 3: Chapter 1: Addition and Subtraction of Fractions</p> <p>1-2 weeks</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Find equivalent fractions ● Add and subtract like (denominators) and unlike fractions ● Add and subtract with unlike denominators ● Add and subtract mixed numbers ● Solve word problems that involve addition and subtraction of fractions ● Solve word problems that involve algebra and fractions
<p>Chapter 2 and 3: Multiplication and Division of Fractions</p> <p>1-2 weeks</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Multiply fractions ● Find the fraction of a mixed number ● Solve word problems that involve multiplication of fractions ● Divide fractions and whole numbers ● Divide mixed numbers ● Solve word problems involving division
<p>Unit 4 - Percentage: Chapter 1: Percent of a Quantity</p> <p>3 weeks</p> <p>Chapter 3 and 4: Sales Tax, Interest and Discount</p> <p>2 weeks</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Find the value for a percentage part given the value of the whole ● Find the whole given percentage and part ● Find the percent given the part and the whole ● Use bar models to represent percentages ● Choose the right method to solve percentage problems ● Define Interest, Sales tax, and discount ● Solve word problems involving, interest, sales tax, and discount ● Discuss multiple ways of solving percent problems (solve and check using different methods)
<p>Unit 5 - Ratio and Proportion: Chapter 1: Comparing Quantities</p> <p>1 week</p> <p>EngageNY Module 1, Lessons 1-8 will also be used in this Unit</p> <p>2-3 weeks</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Compare two quantities using ratio ● Express a ratio of two quantities in its simplest form ● Students understand that a ratio is an ordered pair of non-negative numbers, which are not both zero. Students understand that a ratio is often used instead of describing the first number as a multiple of the second. ● Students use the precise language and notation of ratios (e.g., 3:2, 3 to 2). Students understand that the order of the pair of numbers in a ratio matters and that the description of the ratio relationship determines the correct order of the numbers. Students conceive of real-world contextual situations to match a given ratio ● Students create multiple ratios from a context in which more than two quantities are given. Students conceive of real-world contextual situations to match a given ratio.

	<ul style="list-style-type: none"> Students develop an intuitive understanding of equivalent ratios by using tape diagrams to explore possible quantities of each part when given the part-to-part ratio. Students use tape diagrams to solve problems when the part-to-part ratio is given and the value of one of the quantities is given.
	<ul style="list-style-type: none"> Students create multiple ratios from a context in which more than two quantities are given. Students conceive of real-world contextual situations to match a given ratio.
<p>Unit 6 - Rate: Chapter 1: Rate</p> <p>Module 1 EngageNY Topic C: Lessons 16-23</p> <p>2 weeks</p>	<ul style="list-style-type: none"> Understand rate as a measure of one quantity per unit of another quantity Students recognize that they can associate a ratio of two quantities, such as the ratio of miles per hour is 5:2, to another quantity called the rate. Given a ratio, students precisely identify the associated rate. They identify the unit rate and the rate unit Students solve problems by analyzing different unit rates given in words, tables, equations, and graphs.
<p>Module 5 EngageNY: Topics A-D</p> <p>Topic A: Area of Triangles, Quadrilaterals and Polygons Lessons 1-6</p> <p>2 weeks</p>	<ul style="list-style-type: none"> Students show the area formula for the region bounded by a parallelogram by composing it into rectangles. They understand that the area of a parallelogram is the area of the region bounded by the parallelogram. Students justify the area formula for a right triangle by viewing the right triangle as part of a rectangle composed of two right triangles. Students find the area for the region bounded by a trapezoid by decomposing the region into two triangles. They understand that the area of a trapezoid is actually the area of the region bounded by the trapezoid. Students decompose rectangles to determine the area of other quadrilaterals

<p>Topic B: Polygons in the Coordinate Plane Lessons 7-10</p> <p>1 week</p>	<ul style="list-style-type: none"> Given coordinates for the vertices, students draw polygons in the coordinate plane. Students find the area enclosed by a polygon by composing or decomposing using polygons with known area formulas. Students name coordinates that define a polygon with specific properties. Students determine distance, perimeter, and area in real-world contexts.
<p>Topic C: Volume of Right Rectangular Prisms Topic D: Surface Area Lessons 11-19</p> <p>2 weeks</p>	<ul style="list-style-type: none"> Students extend their understanding of the volume of a right rectangular prism with integer side lengths to right rectangular prisms with fractional side lengths. They apply the formula $V = lwh$ to find the volume of a right rectangular prism and use the correct volume units when writing the answer. Students determine the surface area of three-dimensional figures in real-world contexts. Students choose appropriate formulas to solve real-life volume and surface area problems. Students determine that a right rectangular prism has six faces: top and bottom, front and back, and two sides. They determine that surface area is obtained by adding the areas of all the faces and develop the formula $SA = 2lw + 2lh + 2wh$. Students develop and apply the formula for the surface area of a cube as $SA = 6s^2$. Students determine the surface area of three-dimensional figures in real-world contexts. Students choose appropriate formulas to solve real-life volume and surface area problems.
<p>Module 3 EngageNY: Topics A-D</p> <p>Rational Numbers, Lessons 1-9</p> <p>Text Chapter 2 Negative Fractions and Decimals</p> <p>2 weeks</p>	<ul style="list-style-type: none"> Students use positive integers to locate negative integers, moving in the opposite direction from zero. Students understand that the set of integers includes the set of positive whole numbers and their opposites, as well as zero. They also understand that zero is its own opposite. Students understand that, for instance, the opposite of -5 is denoted -(-5) and is equal to 5. In general, they know that the opposite of the opposite is the original number; e.g., $-(-a) = a$. Students write and explain inequality statements involving rational numbers.

	<ul style="list-style-type: none"> • Students justify inequality statements involving rational numbers. • Students will represent positive and negative fractions on vertical and horizontal number lines
<p>Module 3 EngageNY: Topic B Inequalities and Absolute Value Lessons 10-13</p> <p>1 week</p>	<ul style="list-style-type: none"> • Students write and explain inequality statements involving rational numbers. • Students justify inequality statements involving rational numbers. • Students understand the absolute value of a number as its distance from zero on the number line. • Students use absolute value to find the magnitude of a positive or negative quantity in a real-world situation.
<p>Module 3 EngageNY: Topic C Rational Numbers and the Coordinate Plane Lessons 14-19</p> <p>1 week</p>	<ul style="list-style-type: none"> • Students use ordered pairs to name points in a grid and to locate points on a map. • Students identify the first number in an ordered pair as the <i>first coordinate</i> and the second number as the <i>second coordinate</i>. • Students solve problems related to the distance between points that lie on the same horizontal or vertical line. • Students use the coordinate plane to graph points, line segments and geometric shapes in the various quadrants and then use the absolute value to find the related distances.
<p>Module 6 EngageNY: Topic B</p> <p>Mean as a Measure of Center Mean Absolute Deviation as a Measure of Variability</p> <p>2 weeks</p>	<ul style="list-style-type: none"> • Students understand that the mean is a balance point by calculating the distances of the data points from the mean and call the distances, <i>deviations</i>. • Students understand that the mean is the value such that the sum of the deviations is equal to zero. • Students find median, mode and range of data sets. • Students create real world data sets and find central tendencies based on observed data

<p>Primary Math: Unit 11-Data Handling Chapter 1 Mean Chapter 3 Median Chapter 4 Mode Chapter 5 Range</p> <p>1 week</p>	<ul style="list-style-type: none"> • Interpret data displays correctly and compute the mean of the data sets • Review median • State how the inclusion of new data changes the mean or median. • Review mode • Interpret graphs for the range of a data set
<p>Review: State Test</p> <p>Review Books and CCLS (old lessons review)</p>	<ul style="list-style-type: none"> • Review of all topics using CCLS lessons and EngageNY Module lessons not covered already
<p>Post State Test topics: Probability Positive /Negative Integers Scientific Notation</p> <p>3-5 weeks</p>	<ul style="list-style-type: none"> • Students will learn all operations with positive and negative integers. Order of operations with integers • Students will explore theoretical and experimental probabilities • Students will play games to determine ‘fairness’ • Students will calculate and write using scientific notation

MATHEMATICS: GRADE 7

Unit Title & Timeframe	Unit Topics & Goals
Integers (14 Days)	<p>Goals:</p> <ol style="list-style-type: none">1. Define the absolute value of a number and find absolute values of numbers.2. Solve real-life problems.3. Add, subtract, multiply and divide integers.4. Show that the sum of a number and its opposite is 0.
Rational Numbers (12 Days)	<p>Goals:</p> <ol style="list-style-type: none">1. Understand that a rational number is an integer divided by an integer.2. Convert rational numbers to decimals.3. Add rational numbers.4. Subtract rational numbers.5. Multiply and divide rational numbers.6. Solve real life problems.

<p>Expressions and Equations (15 Days)</p>	<p>Goals:</p> <ol style="list-style-type: none"> 1. Apply properties of operations to simplify expressions. 2. Solve real life problems. 3. Apply properties of operations to add and subtract linear expressions. 4. Solve two-step equations 5. Solve equations using multiplication/division.
<p>Inequalities (12 days)</p>	<p>Goals:</p> <ol style="list-style-type: none"> 1. Write and graph inequalities. 2. Use substitution to check whether a number is a solution of an inequality. 3. Solve inequalities using addition, subtraction, multiplication, and division. 4. Solve real life problems. 5. Solve multi-step inequalities.
<p>Ratios and Proportions (17 days)</p>	<p>Goals:</p> <ol style="list-style-type: none"> 1. Find ratios, rates and unit rates. 2. Find ratios and rates involving ratios of fractions. 3. Use equivalent ratios to determine whether two ratios form a proportion. 4. Use cross products property to determine whether two ratios form a proportion. 5. Use graphs to determine whether two ratios form a proportion. 6. Interpret graphs of proportional relationships. 7. Write proportions and solve.

Percents (18 days)	<p>Goals:</p> <ol style="list-style-type: none"> 1. Write percents as decimals, decimals as percents. 2. Solve real life problems. 3. Compare and order fractions, decimals, and percents. 4. Use the percent proportion to find parts, wholes and percents. 5. Use the percent equation to find parts, wholes and percents. 6. Use percents of discounts and mark-ups to find the selling prices of items. 7. Find percent of increase and decrease. 8. Use simple interest formulas to find interest earned or paid.
Constructions and Scale Drawings (15 Days)	<p>Goals:</p> <ol style="list-style-type: none"> 1. Identify adjacent and vertical angles. 2. Find angle measurements using adjacent and vertical angles. 3. Classify and find pairs of angles as complementary, supplementary or neither. 4. Construct triangles with given side lengths and given angles.
Circles and Area (12 days)	<p>Goals:</p> <ol style="list-style-type: none"> 1. Describe a circle in terms of radius and diameter. 2. Understand the concept of pi. 3. Find circumferences of circles and perimeters of semi-circles. 4. Find perimeters of composite figures. 5. Find areas of circles and semi-circles. 6. Find areas of composite figures.

MATHEMATICS: GRADE 8

Unit Title	Goals
Equations	Goals: <ol style="list-style-type: none">1. Solve simple equations using addition, subtraction, multiplication, or division.2. Use inverse operations to solve multi-step equations.3. Use the Distributive Property to solve multi-step equations.4. Solve equations with variables on both sides.5. Determine whether equations have no solution or infinitely many solutions.6. Rewrite equations to solve for one variable in terms of the other variable(s).
Transformations	Goals: <ol style="list-style-type: none">1. Name corresponding angles and corresponding sides of congruent figures.2. Identify congruent figures. Identify translations.3. Translate figures in the coordinate plane.4. Identify reflections.5. Reflect figures in the x-axis or the y-axis of the coordinate plane.6. Identify rotations.7. Rotate figures in the coordinate plane.8. Use more than one transformation to find images of figures.9. Name corresponding angles and corresponding sides of similar figures.10. Identify similar figures.11. Find unknown measures of similar figures.12. Understand the relationship between perimeters of similar figures.13. Understand the relationship between areas of similar figures.14. Find ratios of perimeters and areas for similar figures.15. Dilate figures in the coordinate plane.16. Use more than one transformation to find images of figures.17. Identify dilations.
Angles and Triangles	Goals: <ol style="list-style-type: none">1. Identify the angles formed when parallel lines are cut by a transversal.2. Find the measures of angles formed when parallel lines are cut by a transversal.3. Understand that the sum of the interior angle measures of a triangle is 180°.4. Find the measures of interior and exterior angles of triangles.5. Find the sum of the interior angle measures of polygons.6. Understand that the sum of the exterior angle measures of a polygon is 360°.7. Find the measures of interior and exterior angles of polygons.

	<ol style="list-style-type: none"> 8. Understand the concept of similar triangles. 9. Identify similar triangles. 10. Use indirect measurement to find missing measures
Graphing and Writing Linear Equations	Goals: <ol style="list-style-type: none"> 1. Understand that lines represent solutions of linear equations. 2. Graph linear equations. 3. Find slopes of lines by using two points. 4. Find slopes of lines from tables. 5. Identify parallel and perpendicular lines. 6. Write and graph proportional relationships. 7. Find slopes and y-intercepts of graphs of linear equations. 8. Graph linear equations written in slope-intercept form. 9. Graph linear equations written in standard form. 10. Write equations of lines in slope- intercept form. 11. Write equations of lines using a slope and a point. 12. Write equations of lines using two points.
Systems of Linear Equations	Goals: <ol style="list-style-type: none"> 1. Write and solve systems of linear equations by graphing. 2. Write and solve systems of linear equations by substitution. 3. Write and solve systems of linear equations by elimination. 4. Solve systems of linear equations with no solution or infinitely many solutions. 5. Solve linear equations by graphing a system of linear equations. 6. Solve real-life problems.
Functions	Goals: <ol style="list-style-type: none"> 1. Define relations and functions. 2. Determine whether relations are functions. 3. Describe patterns in mapping diagrams. 4. Write function rules. 5. Use input-output tables to represent functions. 6. Use graphs to represent functions. Understand that the equation $y = mx + b$ defines a linear function. 7. Write linear functions using graphs or tables. 8. Compare linear functions. 9. Identify linear and nonlinear functions from tables or graphs. 10. Compare linear and nonlinear functions.

	<ol style="list-style-type: none"> 11. Analyze the relationship between two quantities using graphs. 12. Sketch graphs to represent the relationship between two quantities.
Real Numbers and The Pythagorean Theorem	<p>Goals:</p> <ol style="list-style-type: none"> 1. Find square roots of perfect squares. 2. Evaluate expressions involving square roots. 3. Use square roots to solve equations. 4. Find cube roots of perfect cubes. 5. Evaluate expressions involving cube roots. 6. Use cube roots to solve equations. 7. Provide geometric proof of the Pythagorean Theorem. 8. Use the Pythagorean Theorem to find missing side lengths of right triangles. 9. Define irrational numbers. 10. Approximate square roots. 11. Approximate values of expressions involving irrational numbers. 12. Write a repeating decimal as a fraction. 13. Use the converse of the Pythagorean Theorem to identify right triangles. 14. Use the Pythagorean Theorem to find distances in a coordinate plane. 15. Solve real-life problems.
Volumes and Similar Solids	<p>Goals:</p> <ol style="list-style-type: none"> 1. Find the volumes of cylinders. 2. Find the heights of cylinders given the volumes. 3. Find the volumes of cones. 4. Find the heights of cones given the volumes. 5. Find the volumes of spheres. 6. Find the radii of spheres given the volumes. 7. Identify similar solids. 8. Use properties of similar solids to find missing measures. 9. Understand the relationship between surface areas of similar solids. 10. Understand the relationship between volumes of similar solids. 11. Solve real-life problems.
Data Analysis and Displays	<p>Goals:</p> <ol style="list-style-type: none"> 1. Construct and interpret scatter plots. Describe patterns in scatter plots. Find lines of fit. Use lines of fit to solve problems. 2. Read two-way tables. Make and interpret two-way tables. Choose appropriate data displays. 3. Identify and analyze misleading data displays.

**Exponents and
Scientific Notation**

Goals:

1. Write expressions using integer exponents.
2. Evaluate expressions involving integer exponents.
3. Multiply powers with the same base.
4. Find a power of a power. Find a power of a product.
5. Divide powers with the same base.
6. Simplify expressions involving the quotient of powers.
7. Evaluate expressions involving numbers with zero as an exponent.
8. Evaluate expressions involving negative integer exponents.
9. Identify numbers written in scientific notation.
10. Write numbers in standard form.
11. Compare numbers in scientific notation.
12. Write large and small numbers in scientific notation.
13. Perform operations with numbers written in scientific notation.
14. Add, subtract, multiply, and divide numbers written in scientific notation.