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Math 3

Content Area: Mathematics

Grade Span: 3

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COURSE OVERVIEW

Description		
This course aims to: develop understanding of multiplication and division and strategies for multiplication and division within 100; develop understanding of fractions, especially unit fractions (fractions with numerator 1); develop understanding of the structure of rectangular arrays and of area; and describe and analyze 2D shapes.		
Goals		
<p>Operations and Algebraic Thinking</p> <ul style="list-style-type: none"> • Represent and solve problems involving multiplication and division. • Understand properties of multiplication and the relationship between multiplication and division. • Multiply and divide within 100. • Solve problems involving the four operations, and identify and explain patterns in arithmetic. <p>Number and Operations in Base Ten</p> <ul style="list-style-type: none"> • Use place value understanding and properties of operations to perform multi-digit arithmetic. <p>Number and Operations—Fractions</p> <ul style="list-style-type: none"> • Develop understanding of fractions as numbers. <p>Measurement and Data</p> <ul style="list-style-type: none"> • Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. • Represent and interpret data. • Geometric measurement: understand concepts of area and relate area to multiplication and to addition. • Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. <p>Geometry</p> <ul style="list-style-type: none"> • Reason with shapes and their attributes. <p>Mathematical Practices</p> <ul style="list-style-type: none"> • Make sense of problems and persevere in solving them. • Reason abstractly and quantitatively. • Construct viable arguments and critique the reasoning of others. • Model with mathematics. • Use appropriate tools strategically. • Attend to precision. • Look for and make use of structure. • Look for and express regularity in repeated reasoning. <p>Scope and Sequence</p>		
Scope and Sequence		
Unit	Topic	Length
1	Addition and Subtraction	10 Days
2	Multiplication	31 Days
3	Division	46 days
4	Area and Perimeter	19 days
5	Telling Time	8 days
6	Fractions	22 days
7	Measurement and Geometry	18 days
8	Represent and Interpret Data	11 days
Resources		

Core Text: Go Math 2.0

Suggested Resources: Waggle, Freckle,
ABCya

UNIT 1: Addition and Subtraction

Summary and Rationale	
Solidify understanding of addition and subtraction and the strategies of addition and subtraction within 1000	
Recommended Pacing	
10 days- Chapter 1	
State Standards	
Standard: Operations and Algebraic Thinking (OA)	
CPI #	Cumulative Progress Indicator (CPI)
	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding
9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.
Standard: Number and Operations in Base Ten (NBT)	
CPI #	Cumulative Progress Indicator (CPI)
	Use place value understanding and properties of operations to perform multi-digit arithmetic
1	Use place value understanding to round whole numbers to the nearest 10 or 100.
2	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
Instructional Focus	
Unit Enduring Understandings	
<ul style="list-style-type: none"> Numbers, variables, and symbols are elements of a language that is used to model and express mathematical meanings and relationships. Mathematics is based on patterns, relationships, and a defined set of rules that interconnect and explain all mathematical concepts and natural phenomena. There are a variety of forms of computation and the one you choose is based on the content of the problem. Problem solving is a process of analyzing the situation, selecting an appropriate method, implementing it, and evaluating the procedure and the results for reasonableness and the degree of accuracy 	
Unit Essential Questions	
<ul style="list-style-type: none"> Is math a language? What is the best way to compute it? What is the most effective way to solve a problem? What is the best answer? What is mathematics? 	
Objectives	
Students will know: <ul style="list-style-type: none"> How to use place value understanding and properties of operations to perform multi-digit arithmetic How to solve problems involving addition and subtraction, and identify and explain patterns in arithmetic 	

- Students Identify and describe whole number patterns and solve problems
- Round 2 and 3 digit numbers to the nearest ten or hundred
- Use compatible numbers and rounding to estimate sums
- Count by tens and ones, use a number line, make compatible numbers, or use friendly numbers to find sums mentally
- Use the Commutative and Associative Properties of Addition to add more than two addends
- Use the break part strategy to add 3-digit numbers
- Use place value to add 3-digit numbers
- Use compatible numbers and rounding to estimate differences
- Use number line and bar models to solve addition and subtraction problems

Resources

Core Text: Go Math 2.0

Suggested Resources: Waggle, Freckle,
ABCya

UNIT 2: Multiplication

Summary and Rationale	
Develop understanding of multiplication and strategies for multiplication within 100	
Recommended Pacing	
31 Days 10 days: Chapter 2 13 days: Chapter 3 8 days: Chapter 4	
State Standards	
Standard: Operations and Algebraic Thinking (OA)	
1	Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. For example, describe and/or represent a context in which a total number of objects can be expressed as 5×7 .
2	Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.
3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
Standard: Understand properties of multiplication and the relationship between multiplication and division.	
5	Apply properties of operations as strategies to multiply and divide.
Multiply and Divide within 100	
7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
Solve problems involving the four operations, and identify and explain patterns in arithmetic.	
8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.
Standard: Number and Operations in Base Ten (NBT)	
CPI # Cumulative Progress Indicator (CPI)	
Use place value understanding and properties of operations to perform multi-digit arithmetic.	
3	Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations.
Unit Essential Questions	

- Numbers, variables, and symbols are elements of a language that is used to model and express mathematical meanings and relationships.
- There are a variety of forms of computation and the one you choose is based on the content of the problem.
- Problem solving is a process of analyzing the situation, selecting an appropriate method, implementing it, and evaluating the procedure and the results for reasonableness and the degree of accuracy.

Objectives

Students will know:

- How to represent and solve problems involving multiplication and division.
- The properties of multiplication and the relationship between multiplication and division.
- How to multiply and divide within 100.
- How to solve problems involving the four operations, and identify and explain patterns in arithmetic.
- How to use place value understanding and properties of operations to perform multi-digit arithmetic.

Students will be able to:

- Model and skip count objects in equal groups to find how many there are.
- Write an addition sentence and a multiplication sentence for a model.
- Model and skip count on a number line to find how many there are.
- Solve one and two-step problems by using the strategy to draw a diagram.
- Use arrays to model products and factors.
- Model the Commutative Property of Multiplication and use it to find products.
- Model multiplication with the factors 1 and 0.
- Draw a picture, count by 2s, or use doubles to multiply with the factors 2 and 4.
- Use skip counting, a number line, or a bar model to multiply with the factors 5 and 10.
- Draw a picture, use 5s facts and addition, doubles, or a multiplication table to multiply with the factors 3 and 6.
- Use the Distributive Property to find products by breaking apart arrays.
- Use the Commutative or Distributive Property or known facts to multiply with the factor 7.
- Use the Associative Property of Multiplication to multiply with three factors.
- Identify and explain patterns on the multiplication table.
- Use doubles, a number line, or the Associative Property of Multiplication to multiply with the factor 8.
- Use the Distributive Property with addition or subtraction or patterns to multiply with the factor 9.
- Use the Distributive Property with addition or subtraction or patterns to multiply with the factor 11 and 12.
- Solve multiplication problems with multiples of 10 by using the Distributive Property.
- Use base-ten blocks, a number line, or place value to multiply with multiples of 10.
- Model and record multiplication with multiples of 10.
- Use base ten-blocks, a quick picture, a number line, patterns, and mental math to multiply a multiple of 100 by a 1-digit number.
- Use the Distributive Property and partial products to multiply a 2-digit number by a 1-digit number.

Resources

Core Text: Go Math 2.0

Suggested Resources: Waggle, Freckle,
ABCya

UNIT 3: Division

Summary and Rationale	
Develop an understanding of division and strategies for division within 120.	
Recommended Pacing	
46 days 14 days: Chapter 5 15 days: Chapter 6 17 days: Chapter 7	
State Standards	
Standard	
Operations and Algebraic Thinking (OA)	
CPI #	Cumulative Progress Indicator (CPI) Represent and solve problems involving multiplication and division.
1	Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. For example, describe and/or represent a context in which a total number of objects can be expressed as 5×7 .
2	Interpret whole number quotients of whole numbers, e.g., interpret 56 divided by 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as 56 divided by 8.
3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
CPI #	Cumulative Progress Indicator (CPI) Understand properties of multiplication and the relationship between multiplication and division.
5	Apply properties of operations as strategies to multiply and divide.
6	Understand division as an unknown factor problem
CPI #	Cumulative Progress Indicator (CPI) Multiply and divide within 100.
7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows that 40 divided by 5 equals 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
CPI #	Cumulative Progress Indicator (CPI) Solve problems involving the four operations, and identify and explain patterns in arithmetic.
8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
Instructional Focus	
Unit Enduring Understandings	
<ul style="list-style-type: none"> There are a variety of forms of computation and the one you choose is based on the content of the problem. Numbers, variables, and symbols are elements of a language that is used to model and express mathematical meanings and relationships. 	

- Problem solving is a process of analyzing the situation, selecting an appropriate method, implementing it, and evaluating the procedure and the results for reasonableness and the degree of accuracy.

Unit Essential Questions

- What is the best way to compute it?
- Is math a language?
- What is the most effective way to solve a problem?
- What is the best answer?

Objectives

Students will know:

- How to represent and solve problems involving division
- That there is a relationship between multiplication and division
- How to divide within 100
- How to solve problems involving division

Students will be able to:

- Use the information in a division problem to represent the number of equal groups or the number in each equal group
- Model a division problem to find how many in each group
- Model a division problem to find how many equal groups
- Use a bar model to represent and solve division problems
- Use repeated subtraction or a number line to solve division problems
- Use arrays to find the number of objects in each row or the number of rows to solve division problems
- Use related multiplication and division equations to solve problems
- Write related multiplication and division facts
- Use properties to apply rules for division with 1 and 0
- Divide by 2 to find the number of equal groups or the number in each group
- Use different strategies to divide by 10
- Use counting up, counting back, and doubles to divide by 5
- Divide by 3 by making equal groups
- Divide by 4 using factors of 4, making equal groups, and using related multiplication facts
- Use different strategies to divide by 6 and 7
- Use repeated subtraction and related multiplication facts as strategies to divide by 8
- Use different strategies to divide by 9, 11, and 12
- Use multiplication to compare amounts using models and equations
- Describe a pattern in a table in different ways
- Find multiples
- Recognize odd and even numbers
- Use an array or a multiplication table to find an unknown factor or product
- Make a table to solve multiplication problems
- *Act it out* to solve two-step problems
- Solve two-step problems with unknowns

Resources

Core Text: Go Math 2.0

Suggested Resources: Waggle, Freckle, ABCya

UNIT 4: Area and Perimeter

Summary and Rationale	
Develop an understanding of the structure of rectangular arrays to aid in finding the area and perimeter of various figures.	
Recommended Pacing	
19 days 9 days: Chapter 8 10 days: Chapter 9	
State Standards	
Standard Measurement and Data (MD)	
CPI #	Cumulative Progress Indicator (CPI) Geometric measurement: understand concepts of area and relate area to multiplication and addition.
5	Recognize area as an attribute of plane figures and understand concepts of area measurement.
5.A	A square with side length of 1 unit, called a “unit square”, is said to have “one square unit” of area, and can be used to measure area.
5.B	A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units
CPI #	Cumulative Progress Indicator (CPI)
6	Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units)
CPI #	Cumulative Progress Indicator (CPI)
7	Relate area to the operations of multiplication and addition.
7.A	Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
7.B	Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
7.C	Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.
7.D	Recognize the area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.
CPI #	Cumulative Progress Indicator (CPI) Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.
8	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

Instructional Focus
Unit Enduring Understandings
<ul style="list-style-type: none"> • There are a variety of units and tools for measuring real-world phenomena, and the appropriateness of choice is based on what is being measured and why. • Technology is a tool that can assist problem solving and enhance the discovery of new ideas. • Problem solving is a process of analyzing the situation, selecting an appropriate method, implementing it, and evaluating the procedure and the results for reasonableness and the degree of accuracy. • Spatial sense and various geometric terms, concepts, and properties are used to model, identify, interpret, and describe relationships as they exist in the world; the terms, properties, and concepts chosen are based on the situation and what is to be communicated.
Unit Essential Questions
<ul style="list-style-type: none"> • What is the best way to use geometry? • What is the best answer? • What is the most effective way to solve a problem? • What is the best way to measure? • What is the purpose of technology?
Objectives
<p>Students will know:</p> <ul style="list-style-type: none"> • How to find the area and perimeter of a figure. • That area is related to addition and multiplication. • That there are several strategies to find the area and perimeter of a figure. <p>Students will be able to:</p> <ul style="list-style-type: none"> • Count unit squares to find the area of a figure • Find the area by counting unit squares without gaps or overlap • Multiply to find the area of a rectangle • Use the strategy <i>find a pattern</i> to solve area problems • Apply the Distributive Property to area models and to find the area of combined rectangles • Model the perimeter of a rectangle and other figures • Find the perimeter of a rectangle by measuring the lengths of the sides and then adding the lengths of the sides • Use a formula to find the perimeter of a rectangle • Use area to compare the rectangles with the same perimeter • Use perimeter to compare rectangles with the same area • Use the perimeter formula to find the unknown measures of a figure
Resources
<p>Core Text: Go Math 2.0</p> <p>Suggested Resources: Waggle, Freckle, ABCya</p>

Unit 5: Telling Time

Summary and Rationale	
Develop an understanding of telling time to the minute, finding the elapsed time, and finding the starting and/or ending time when the elapsed time is known.	
Recommended Pacing	
8 days: Chapter 10	
State Standards	
Standard Measurement and Data (MD)	
CPI #	Cumulative Progress Indicator (CPI) Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
1	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
Instructional Focus	
Unit Enduring Understandings <ul style="list-style-type: none"> There are a variety of units and tools for measuring real-world phenomena, and the appropriateness of choice is based on what is being measured and why. Technology is a tool that can assist problem solving and enhance the discovery of new ideas. Problem solving is a process of analyzing the situation, selecting an appropriate method, implementing it, and evaluating the procedure and the results for reasonableness and the degree of accuracy. Spatial sense and various geometric terms, concepts, and properties are used to model, identify, interpret, and describe relationships as they exist in the world; the terms, properties, and concepts chosen are based on the situation and what is to be communicated. 	
Unit Essential Questions <ul style="list-style-type: none"> What is the best way to use geometry? What is the best answer? What is the most effective way to solve a problem? What is the best way to measure? What is the purpose of technology? 	
Objectives <p>Students will know:</p> <ul style="list-style-type: none"> That there are several tools to use when telling time such as clocks and number lines. That elapsed time can be found when the starting/ending time is known. That the starting/ending time can be found when the elapsed time is known. <p>Students will be able to:</p> <ul style="list-style-type: none"> Tell and write time to the nearest minute. Tell when to use a.m. and p.m. when telling time to the nearest minute. Measure elapsed time in minutes. Find a starting time or an ending time when they know the elapsed time. Solve problems about time. 	

Resources
<p>Core Text: Go Math 2.0</p> <p>Suggested Resources: Waggle, Freckle, ABCya</p>

Unit 6: Fractions

Summary and Rationale	
Develop understanding of fractions, especially unit fractions (fractions with numerator 1)	
Recommended Pacing	
22 Days: 10 days - Chapter 11 12 days - Chapter 12	
State Standards	
Standard: Number and Operations – Fractions (NF) Develop understanding of fractions as numbers.	
CPI #	Cumulative Progress Indicator (CPI)
1	Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by a parts of size $\frac{1}{b}$.
2	Understand a fraction as a number on the number line; represent fractions on a number line diagram.
2A	Represent a fraction $\frac{1}{b}$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $\frac{1}{b}$ and that the endpoint of the part based at 0 locates the number $\frac{1}{b}$ on the number line.
2B	Represent a fraction $\frac{a}{b}$ on a number line diagram by marking off a lengths $\frac{1}{b}$ from 0. Recognize that the resulting interval has size $\frac{a}{b}$ and that its endpoint locates the number $\frac{a}{b}$ on the number line.
3	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
3A	Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
3B	Recognize and generate simple equivalent fractions, e.g., $\frac{1}{2} = \frac{2}{4}$, $\frac{4}{6} = \frac{2}{3}$. Explain why the fractions are equivalent, e.g., by using a visual fraction model.
3C	Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
3D	Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.
Instructional Focus	
Unit Enduring Understandings	
<ul style="list-style-type: none"> Numbers, variables, and symbols are elements of a language that is used to model and express mathematical meanings and relationships. Problem solving is a process of analyzing the situation, selecting an appropriate method, implementing it, and evaluating the procedure and the results for reasonableness and the degree of accuracy. 	
Unit Essential Questions	
<ul style="list-style-type: none"> Is math a language? What is the most effective way to solve a problem? What is the best answer? 	
Objectives	
Students will know:	

- An understanding of fractions as numbers.

Students will be able to:

- Explore and identify equal parts of a whole.
- Use a fraction to name one part of a whole that is divided into equal parts.
- Read, write, and model fractions that represent more than one part of a whole that is divided into equal parts.
- Represent and locate fractions on a number line.
- Express numbers greater than 1 as fractions and recognize fractions that are equivalent to whole numbers.
- Model, read, and write fractional parts of a set.
- Represent and interpret fractions as the result of adding the unit fractions.
- Solve comparison problems by using visual models.
- Compare fractions with the same denominator by using models and reasoning strategies.
- Compare fractions with the same numerator by using models and reasoning strategies.
- Compare fractions by using models and strategies involving the size of the pieces in the whole.
- Compare and order fractions by using models and reasoning strategies.
- Model equivalent fractions by folding paper, using area models, and using number lines.
- Identify and generate equivalent fractions by using models

Resources

Core Text: Go Math 2.0

Suggested Resources: Waggle, Freckle,
ABCya

Unit 7: Measurement & Geometry

Summary and Rationale	
Describe and analyze two-dimensional shapes	
Recommended Pacing	
18 Days 10 days - Chapter 13 8 days - Chapter 14	
State Standards	
Standard: Measurement and Data Solve problems involving measurement and estimation of liquid volumes, and masses of objects.	
CPI #	Cumulative Progress Indicator (CPI)
2	Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).1 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.
Standard : Represent and interpret data.	
CPI #	Cumulative Progress Indicator (CPI)
4	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
Standard: Geometry Reason with shapes and their attributes.	
CPI #	Cumulative Progress Indicator (CPI)
1	Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
Instructional Focus	
Unit Enduring Understandings <ul style="list-style-type: none"> There is a variety of units and tools for measuring real-world phenomena, and the appropriateness of choice is based on what is being measured and why. Technology is a tool that can assist problem solving and enhance the discovery of new ideas. Problem solving is a process of analyzing the situation, selecting an appropriate method, implementing it, and evaluating the procedure and the results for reasonableness and the degree of accuracy. Spatial sense and various geometric terms, concepts, and properties are used to model, identify, interpret, and describe relationships as they exist in the world; the terms, properties, and concepts chosen are based on the situation and what is to be communicated. 	
Unit Essential Questions <ul style="list-style-type: none"> What is the best way to use geometry? What is the best answer? What is the most effective way to solve a problem? What is the best way to measure? 	

- What is the purpose of technology?

Objectives

Students will know:

- How to evaluate measures to determine if they make sense.

Students will be able to:

- Measure length to the nearest half or fourth inch and use measurement data to make a line plot.
- Identify the relationships between cups, pints, quarts, and gallons.
- Identify the best unit to use when measuring or estimating liquid volume
- Estimate weights and solve real-world weight problems.
- Estimate and measure temperature in degrees fahrenheit and degrees Celsius
- Estimate and measure mass in grams and kilograms.
- Add, subtract, multiply, or divide to solve problems involving liquid volumes or masses.
- Identify and describe attributes of plane shapes.
- Describe angles in two-dimensional shapes
- Identify polygons by the number of sides they have.
- Determine if lines or line segments are intersecting, perpendicular, or parallel.
- Describe, classify, and compare quadrilaterals based on their sides and angles.
- Draw quadrilaterals.

Resources

Core Text: Go Math 2.0

Suggested Resources: Waggle, Freckle,
ABCya

Unit 8: Represent and Interpret Data

Summary and Rationale	
Understand how to represent data in multiple forms and interpret data given in various graphical forms	
Recommended Pacing	
11 days - Chapter 15	
State Standards	
Standard : Measurement and Data	
Read and Interpret Data	
CPI #	Cumulative Progress Indicator (CPI)
3	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs
4	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
Standard: Operations and Algebraic Thinking	
Solve problems involving the four operations, and identify and explain patterns in arithmetic.	
CPI #	Cumulative Progress Indicator (CPI)
8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
Standard: Numbers and Operations in Base Ten	
Use place value understanding and properties of operations to perform multi-digit arithmetic.	
CPI #	Cumulative Progress Indicator (CPI)
2	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
Instructional Focus	
Unit Enduring Understandings	
<ul style="list-style-type: none"> There is a variety of ways to process data, predict outcomes, and enumerate possibilities and the ones chosen are based on the information available, the audience, and ethical considerations. Problem solving is a process of analyzing the situation, selecting an appropriate method, implementing it, and evaluating the procedure and the results for reasonableness and the degree of accuracy. 	
Unit Essential Questions	
<ul style="list-style-type: none"> What is the best way to use data? How do we know what we know? How certain do we need to be? What is the most effective way to solve a problem? What is the best answer? 	
Objectives	
Students will know:	
<ul style="list-style-type: none"> How to represent and interpret data. 	

Students will be able to:

- Organize data in tables and solve problems using the strategy to make a table.
- Read and interpret data in a scaled picture graph.
- Draw a scaled picture graph to show data in a table.
- Read and interpret data in a scaled bar graph.
- Draw a scaled bar graph to show data in a table or picture graph.
- Read and interpret data in a line plot and use data to make a line plot.
- Read and Interpret data in a circle graph.
- Solve one and two step problems using data

Resources**Core Text:** Go Math 2.0**Suggested Resources:** Waggle, Freckle,
ABCya