Course Title: 3rd Grade Mathematics
Board Approval Date: July 16, 2022
Revisited: August 15, 2022
Reviewed Annually
Credit / Hours:

Course Description:

This course focuses on mastery of the PA Core Academic Standards for Mathematics. As each student progresses through this course they will participate in a systematic study of: establishing routines; adding and subtracting whole numbers; perimeter and area; basic multiplication and division facts; place value in whole numbers; geometry; extended multiplication and division facts; fractions; multiplication and division strategies; time; measurement and data.

Learning Activities / Modes of Assessment:

Learning Activities:

- Large group instruction
- Small group teacher directed
- Independent application station
- Online Everyday Math website- Student accounts
- Collaborative Learning - Everyday Math Games (hands-on classroom and online)

Modes of Assessment:

- Teacher Observation
- Pre and post data collection assessments (digital)
- Formative Assessments (digital and paper)
- Summative Assessments (digital and paper)

Instructional Resources:

- *Everyday Mathematics / Common Core State Standards Edition* (McGraw Hill, 2015) (Teacher manual and student activity manipulatives)
- *EM Online* (Instructional Resources through Everyday Math) (Teacher and student accounts)
- *Discovery Education*
- *Brain Pop & Brain Pop Jr.*

Course: Third Grade Mathematics

	Course Unit (Topic)	**Length of Instruction (Days/Periods)**
1.	Math Tools, Time, and Multiplication	18 days
2.	Number Stories and Arrays	18 days
3.	Operations	18 days
4.	Measurement and Geometry	16 days
5.	Fractions and Multiplication Strategies	16 days
6.	More Operations	16 days
7.	Fractions	19 days
8.	Multiplication and Division	17 days
9.	Multidigit Operations	14 days
Total Days		**152**

Curriculum: CCSD CURRICULUM PENNSYLVANIA
Course: Mathematics Grade 3 – Unit 1 Date: June 20, 2022

Topic: Math Tools, Time, and Multiplication Days: 18
Subject(s): Mathematics Grade(s): Third

Know:	Understand:	Do:
• Know all products of 1-digit numbers x1, x2, x5, and x10 CC.2.2.3.A.3 Demonstrate multiplication and division fluency. **Vocabulary**: array, bar graph, close-but-easier numbers, column, data, difference, division, division symbol, elapsed time, equal grouping, equal groups, equal shares, equal sharing, essay, estimate, fact family, factors, Fact Triangle, gram, kilogram, length of day, mass, masses, mathematical model, multiplication, multiplication symbol, number grid, open number line, pan balance, precise, product, Quick Looks, round, row, strategy, weight, zero	There are many math tools that are used to solve problems. Time will be read to the nearest minute, and mathematical models will be used to calculate elapsed time. Strategies for multiplication and division are developed.	• Interpret multiplication in terms of equal groups. • Use multiplication and division to solve number story. • Use place-value understanding to round whole numbers to the nearest 10. • Use place-value understanding to round whole numbers to the nearest 100. • Add within 1,000 fluently. • Subtract within 1,000 fluently. • Tell and write time. • Measure time intervals in minutes. • Solve number stories involving time intervals by adding or subtracting. • Solve 1-step number stories involving mass. • Organize and represent data on scaled bar graphs and scaled picture graphs. • Solve 1-digit and 2-step problems using information in graphs. **Standards**: CC.2.2.3.A.1 Represent and solve problems involving multiplication and division. CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multidigit arithmetic. CC.2.4.3.A.2 Tell and write time to the nearest minute and solve problems by calculating time intervals. CC.2.4.3.A.3 Solve problems involving money using a combination of coins and bills CC.2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.

Curriculum: CCSD CURRICULUM PENNSYLVANIA
Course: Mathematics Grade 3 – Unit 2 Date: June 20, 2022

Topic: Number Stories and Arrays Days: 18
Subject(s): Mathematics Grade(s): Third

Know:	Understand:	Do:
Vocabulary: area, array, arrow rule, change diagram, combinations of ten, comparison diagram, dividend, division, divisor, efficient, equal groups, equation, fact extensions, factors, fractions, fraction circles, frames. Frames and Arrows, liter, multiples, number model, number sentence, parts-and-total diagram, product, quotient, remainder, representation, square centimeter (sq cm), square inch (sq in.), unknown, volume, whole	Strategies for finding solutions to one- and two-step number stories involving all four arithmetic operations are practiced. Situations will be represented with diagrams, pictures, arrays, words, and number models. Problem-solving strategies and a further understanding that problems can be solved in more than one way will be developed.	• Use basic addition and subtraction facts to solve problems with larger numbers • Use diagrams or pictures to help solve number stories • Use situation diagrams and other representations to help solve number stories • Make sense and solve two-step number stories • Solve number stories using two operations • Solve problems involving multiples of equal groups and sense of multiplying by 0 and 1 • Solve array problems and play *Array Bingo* • Create mathematical representations for solving division problems • Discuss representations and solutions and then revise their work • Solve division number stories and learn about remainders • Explore even and odd number patterns and play *Division Arrays* • Review Frames-and-Arrows diagrams and solve problems using the four operations • Explore fraction circles, area measures, and liquid volume in liters **Standards**: CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multidigit arithmetic.

		CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic. CC.2.2.3.A.3 Demonstrate multiplication and division fluency. CC.2.2.3.A.1 Represent and solve problems involving multiplication and division. CC.2.2.3.A.2 Understand properties of multiplication and the relationship between multiplication and division. CC.2.1.3.C.1 Explore and develop an understanding of fractions as numbers. CC.2.4.3.A.1 Solve problems involving measurement and estimation of temperature, liquid volume, mass or length. CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures. CC.2.4.3.A.5 Determine the area of a rectangle and apply the concept to multiplication and to addition.

Curriculum: CCSD CURRICULUM PENNSYLVANIA
Course: Mathematics Grade 3 – Unit 3 Date: June 20, 2022

Topic: Operations Days: 18
Subject(s): Mathematics Grade(s): Third

Know:	Understand:	Do:
Vocabulary: adding a group, area, close-but-easier numbers, column addition, counting up, equivalent, estimate, expand-and-trade subtraction, expanded form, expression, factors, facts table, function machine, helper fact, input, key, Multiplication/Division Facts Table, multiplication squares, name-collection box, open number line, output, partial-sums addition, partition, picture graph, precisely, reasonable, rubric, rule, scaled bar graph, scaled picture graph, square product, square units, subtracting a group, tile, turn-around rule, "What's My Rule?"	Strategies for finding solutions to 2- and 3-digit addition and subtraction problems using place value are practiced and developed. Multiplication problems are represented using arrays. Array representations are used to develop strategies for solving multiplication facts.	• Find missing number and rules in "What's My Rule" tables • Make estimates for problems using mental math • Examine others' explanations using a rubric as a guide and then revise their work • Use partial-sums addition to add 2- and 3-digit numbers • Introduced to column addition. Review counting-up subtraction • Use expand and trade to solve subtraction problems • Explore different ways to measure area, partition rectangles, and represent data on a scaled bar graph • Create scaled picture graphs • Discover multiplication squares and begin a fact strategy journal • Learn about the turn-around rule for multiplication • Develop the adding-a-group strategy for solving unknown multiplication facts • Develop the subtracting-a-group strategy • Use all four operations to generate equivalent names for numbers **Standards**: CC.2.2.3.A.1 Represent and solve problems involving multiplication and division. CC.2.2.3.A.3 Demonstrate multiplication and division fluency.

		CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multidigit arithmetic. CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic. CC.2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs. CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures. CC.2.4.3.A.5 Determine the area of a rectangle and apply the concept to multiplication and to addition. CC.2.4.3.A.5 Determine the area of a rectangle and apply the concept to multiplication and to addition. CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures. CC.2.2.3.A.2 Understand properties of multiplication and the relationship between multiplication and division.

Curriculum: CCSD CURRICULUM PENNSYLVANIA
Course: Mathematics Grade 3 – Unit 4 Date: June 20, 2022

Topic: Measurement and Geometry Days: 16
Subject(s): Mathematics Grade(s): Third

Know:	Understand:	Do:
Vocabulary: angle, approximate, area, array, attributes, benchmark, composite unit, data, decompose, face, kilogram, kite, length, line plot, mass, mathematical model, maximum, minimum, parallel, parallelogram, perimeter, polygon, precise, quadrilateral, rectangle, rectilinear figure, rhombus, right angle, scale, side, square, square unit, trapezoid, & vertex	Skills for measuring to the nearest 1/2 inch are practiced. Measurement data is generated and represented on a scaled line plot. Geometric attributes of polygons are explored and quadrilaterals are classified into categories based on their attributes. Perimeters of polygons are measured and skills to distinguish between area and perimeter are developed. Multiple strategies to determine the areas of rectangles are developed and extended to determine the areas of rectilinear shapes.	• Measure to the nearest half inch and centimeter • Generate measurement data and represent the data on a line plot • Measure distance around objects to the nearest ½ inch, compare masses, and determine distance in half-inch increments • Review characteristics of polygons • Classify quadrilaterals • Identify and measure perimeters of rectangles and other polygons • Distinguish between perimeter and area • Find the area of a rectangle by using composite units • Find the areas of rectangles and write matching number sentences • Develop strategies for finding area and perimeter while playing *The Area and Perimeter Game* • Create and use models of a rabbit pen to solve a problem • Compare and discuss their models and explanations and revise their work • Find areas of rectilinear figures **Standards**: CC.2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs. CC.2.1.3.C.1 Explore and develop an understanding of fractions as numbers.

		CC.2.4.3.A.1 Solve problems involving measurement and estimation of temperature, liquid volume, mass or length. CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures. CC.2.3.3.A.1 Identify, compare, and classify shapes and their attributes CC.2.4.3.A.5 Determine the area of a rectangle and apply the concept to multiplication and to addition. CC.2.2.3.A.3 Demonstrate multiplication and division fluency. CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic.

Curriculum: CCSD CURRICULUM PENNSYLVANIA
Course: Mathematics Grade 3 – Unit 5 Date: June 20, 2022

Topic: Fractions and Multiplication Strategies Days: 16
Subject(s): Mathematics Grade(s): Third

Know:	Understand:	Do:
Vocabulary: add a group, break-apart strategy, decompose, denominator, doubling, equal parts, equivalent fractions, even, factor, fraction, helper facts, missing factor, multiples, near squares, numerator, odd, product, subtract a group, unit fraction, whole	Relationships between part-whole understanding of fractions are used to create visual and symbolic representations, including standard notation, and fraction equivalence. Multiplication fact strategies are developed by working from an understanding of multiplication and known facts to find unfamiliar products by using arrays, area models, and properties of multiplication.	• Represent fractions as equal parts of different wholes, and find shapes with a given area • Represent fractions using standard notation, words, and drawings • Recognize equivalent fractions using a visual fraction model • Use known multiplication facts, called helper facts, to solve harder multiplication facts • Explore the use of doubling to solve number stories involving area • Use the doubling strategy to solve multiplication facts • Identify and explain arithmetic patterns using properties of operations • Play *Salute!* to find products of near squares • Use square products to find products of near squares • Make sense and solve a number story • Compare solutions and explanations and revise their work • Decompose factors to solve multiplication facts **Standards**: CC.2.1.3.C.1 Explore and develop an understanding of fractions as numbers.

		CC.2.4.3.A.5 Determine the area of a rectangle and apply the concept to multiplication and to addition. CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures. CC.2.3.3.A.2 Use the understanding of fractions to partition shapes into parts with equal areas and express the area of each part as a unit fraction of the whole. CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multidigit arithmetic. CC.2.2.3.A.1 Represent and solve problems involving multiplication and division. CC.2.2.3.A.2 Understand properties of multiplication and the relationship between multiplication and division. CC.2.2.3.A.3 Demonstrate multiplication and division fluency. CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic.

Curriculum: CCSD CURRICULUM PENNSYLVANIA
Course: Mathematics Grade 3 – Unit 6 Date: June 20, 2022

Topic: More Operations Days: 16
Subject(s): Mathematics Grade(s): Third

Know:	Understand:	Do:
Vocabulary: appropriate, efficient, equation, fact power, multiplication/division diagram, order of operations, parentheses, trade-first subtraction	Different approaches to solve the same problem are compared and reflections are made on which strategies are more efficient and appropriate. Multiplication strategies will continue to be developed. Multistep number stories are modeled with one or more equations and the unknown quantities are represented with letters. The order of operations is introduced and how parentheses function as grouping symbols that affect the order of operations is learned.	• Use the trade-first method to solve subtraction problems • Play Baseball Multiplication to build fact fluency • Use square products as helper facts to find products of near squares • Self-assess automaticity with multiplication facts • Construct a quadrilateral, measure and plot distances to the nearest ½ inch, and compare perimeter measurements of polygons • Use multiplication/division diagrams to make sense of and solve number stories • Play *Multiplication Top-It* and apply strategies to multiply larger factors • Use parenthesis in number sentences • Write a two-step number story to fit a number sentence • Analyze others' number stories and revise their work • Use the order of operations to solve multistep problems • Solve two-step number stories and represent them with equations **Standards**:

		CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic. CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multidigit arithmetic. CC.2.2.3.A.3 Demonstrate multiplication and division fluency. CC.2.2.3.A.2 Understand properties of multiplication and the relationship between multiplication and division CC.2.2.3.A.1 Represent and solve problems involving multiplication and division. CC.2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs. CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures. CC.2.3.3.A.1 Identify, compare, and classify shapes and their attributes CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures.

Curriculum: CCSD CURRICULUM PENNSYLVANIA
Course: Mathematics Grade 3 – Unit 7 Date: June 20, 2022

Topic: Fractions Days: 19
Subject(s): Mathematics Grade(s): Third

Know:	Understand:	Do:
Vocabulary: benchmark, collection, denominator, displace, distance, equal shares, equal to, equivalent, fractions greater than one, greater than, less than, liquid volume, liter, milliliter, numerator, unit fraction, volume, whole	Volume measurement is revisited with a focus on comparing, estimating, and then measuring liquid volumes. An understanding of fractions as numbers is continuing to be developed. A new area fraction model is explored and fractions are represented as distances on number lines.	• Estimate and measure liquid volume • Estimate the number of dots in an array, measure liquid volume, and identify equal shares • Solve number stories involving time, mass, volume, and length • Partition fraction strips and use them to name and compare fractions • Represent fractions on number lines • Identify fractions greater then, less then, and equal to one on a number line • Compare fractions using visual models • Order fractions with the same numerator and write a rule for ordering similar sets of fractions • Analyze and discuss others' rules and revise their work • Partition distances to locate fractions on number lines • Make and justify fraction comparisons • Solve fraction number stories • Name fractions of sets of objects **Standards**:

		CC.2.4.3.A.1 Solve problems involving measurement and estimation of temperature, liquid volume, mass or length. CC.2.2.3.A.1 Represent and solve problems involving multiplication and division. CC.2.2.3.A.3 Demonstrate multiplication and division fluency. CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic. CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multidigit arithmetic CC.2.1.3.C.1 Explore and develop an understanding of fractions as numbers. CC.2.4.3.A.2 Tell and write time to the nearest minute and solve problems by calculating time intervals. CC.2.3.3.A.2 Use the understanding of fractions to partition shapes into parts with equal areas and express the area of each part as a unit fraction of the whole.

Curriculum: CCSD CURRICULUM PENNSYLVANIA
Course: Mathematics Grade 3 – Unit 8 Date: June 20, 2022

Topic: Multiplication and Division Days: 17
Subject(s): Mathematics Grade(s): Third

Know:	Understand:	Do:
Vocabulary: argument, bases, conjecture, edge, extended facts, faces, factor pair, factors, multiple of 10, multiples, plot, polyhedron, prisms, products, 3-dimensional, 2-dimensional, vertex	Mathematical reasoning that shows whether a conjecture is true or false. You can use words, pictures, and symbols when you make a mathematical argument.	• Use rulers to measure to the nearest ¼ inch • Develop strategies for solving extended multiplication and division facts • Find factors of counting numbers • Use clues to make conjectures and arguments about the total number of chairs in a room • Discuss some conjectures and arguments, and revise their work • Learn to play Factor Bingo and discuss how to find products for a given factor • Model equal-sharing situations with $10 and $1 bills • Compare fractions, generate equivalent fractions, and explore the areas of rectangles • Explore the shared attributes of prisms **Standards**: CC.2.1.3.C.1 Explore and develop an understanding of fractions as numbers. CC.2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs. CC.2.2.3.A.1 Represent and solve problems involving multiplication and division. CC.2.2.3.A.2 Understand properties of multiplication and the relationship between multiplication and division. CC.2.2.3.A.3 Demonstrate multiplication and division fluency.

		CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multidigit arithmetic. CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures. CC.2.4.3.A.5 Determine the area of a rectangle and apply the concept to multiplication and to addition. CC.2.3.3.A.2 Use the understanding of fractions to partition shapes into parts with equal areas and express the area of each part as a unit fraction of the whole. CC.2.3.3.A.1 Identify, compare, and classify shapes and their attributes

Curriculum: CCSD CURRICULUM PENNSYLVANIA
Course: Mathematics Grade 3 – Unit 9 Date: June 20, 2022

Topic: Multidigit Operations Days: 14
Subject(s): Mathematics Grade(s): Third

Know:	Understand:	Do:
Vocabulary: basic fact, break-apart strategy, decompose, doubling, efficient, elapsed time, extended fact, extended multiplication fact, length of day, multiplication/division diagram, partition	Further development of an understanding of multiplication and division is built as application of basic fact knowledge is used to mentally solve number stories and multiply larger factors. Interpretations of length-of-day data will be made and calculations of elapsed time become more efficient.	• Play a game to practice multiplication facts • Solve number stories by multiplying and dividing with multiples of 10 • Use mental steps to multiply problems involving larger factors • Work with elapsed time, explore polygon relationships, and find the masses of objects • Partition rectangles to solve multidigit multiplication problems • Develop strategies for using a calculator with a broken division key to solve a problem • Compare and discuss strategies and revise their work • Analyze the Length-of-Day Graph **Standards**: CC.2.2.3.A.1 Represent and solve problems involving multiplication and division. CC.2.2.3.A.3 Demonstrate multiplication and division fluency. CC.2.2.3.A.2 Understand properties of multiplication and the relationship between multiplication and division. CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multidigit arithmetic. CC.2.4.3.A.1 Solve problems involving measurement and estimation of temperature, liquid volume, mass or length.

		CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic. CC.2.4.3.A.2 Tell and write time to the nearest minute and solve problems by calculating time intervals. CC.2.3.3.A.1 Identify, compare, and classify shapes and their attributes CC.2.3.3.A.2 Use the understanding of fractions to partition shapes into parts with equal areas and express the area of each part as a unit fraction of the whole. CC.2.4.3.A.5 Determine the area of a rectangle and apply the concept to multiplication and to addition. CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures. CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multidigit arithmetic. CC.2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.

Course/Subject: Third Grade Mathematics Unit 1 Length of instruction: 18 Days

Unit Essential Question:

How do you tell time to the nearest minute and calculate elapsed time?

What strategies are used for multiplication and division?

Concept:	***Concept:***	***Concept:***	***Concept:***
Lesson Essential Question/s: **Lesson 1-1:** (CC.2.1.3.B.1) How do you add and subtract multi-digit numbers? **Lesson 1-2:** (CC.2.1.3.B.1) How do we use the *Student Reference Book* to help us solve math problems? **Lesson 1-3:** (CC.2.1.3.B.1, CC.2.4.3.A.2) What are the tools we use in math, and how are they used to solve math problems? **Lesson 1-4:** (CC.2.1.3.B.1, CC.2.2.3.A.4) How do you round numbers to the nearest 10 or 100?	***Lesson Essential Question/s:*** **Lesson 1-5:** (CC.2.4.3.A.2) How do you tell time to the nearest minute and calculate elapsed time? **Lesson 1-6:** (CC.2.4.3.A.2) (2-day lesson) What strategies do you use to calculate elapsed time? **Lesson 1-7:** (CC.2.4.3.A.2, CC.2.4.3.A.4) How do you represent and interpret data on a scaled bar graph? **Lesson 1-8:** (CC.2.2.3.A.1) What strategies do you use to solve multiplication number stories?	***Lesson Essential Question/s:*** **Lesson 1-9:** (CC.2.2.3.A.1) What strategies do you use to solve division number stories? **Lesson 1-10:** (CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3) How do you improve your fluency with multiplication facts? **Lesson 1-11:** (CC.2.4.3.A.2) What strategies do you use to calculate elapsed time? **Lesson 1-12:** (CC.2.2.3.A.1, CC.2.1.3.C.1, CC.2.4.3.A.1) Exploration A: How do you compare the masses of objects? Exploration B: How do you divide	***Lesson Essential Question/s:*** **Lesson 1-13:** (CC.2.4.3.A.1) How do you estimate and measure the masses of objects? **Lesson 1-14:** (Unit Assessment) (2-day lesson) (CC.2.1.3.B.1, CC.2.2.3.A.1, CC.2.2.3.A.3, CC.2.4.3.A.1, CC.2.4.3.A.2, CC.2.4.3.A.4) How do you tell time to the nearest minute and calculate elapsed time? What strategies are used for multiplication and division?

		multiple wholes into equal shares? Exploration C: How do you create equal groups?	
Vocabulary: • **1-1** - number grid, difference • **1-2** - essay • **1-4** - estimate, close-but-easier numbers, round, open number line	***Vocabulary:*** • **1-5** - precise, elapsed time • **1-6** - strategy, mathematical model, elapsed time • **1-7** - bar graph, data • **1-8** - equal groups, multiplication, multiplication symbol, array, row, column	***Vocabulary:*** • **1-9** - equal sharing, division, equal grouping, division symbol • **1-10** - quick looks, fact family, fact triangle, product, factors • **1-11** - elapsed time, length of day • **1-12** - pan balance, mass, weight, zero, masses	***Vocabulary:*** • **1-13** - mass, gram, kilogram

Course/Subject: Third Grade Mathematics Unit 2 Length of instruction: 18 Days

Unit Essential Question:
How do you solve number stories?

Concept:	***Concept:***	***Concept:***	***Concept:***
Lesson Essential Question/s:	***Lesson Essential Question/s:***	***Lesson Essential Question/s:***	***Lesson Essential Question/s:***
Lesson 2-1: (CC.2.1.3.B.1) How do you use basic addition and subtraction facts to help you solve problems with larger numbers? **Lesson 2-2:** (CC.2.2.3.A.4, CC.2.1.3.B.1) How are diagrams and pictures used to help you solve number stories? **Lesson 2-3:** (CC.2.2.3.A.4, CC.2.1.3.B.1) How are situation diagrams used to help you solve number stories? **Lesson 2-4:** (CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.1.3.B.1) How do you solve a number story involving more than one-step?	**Lesson 2-5:** (CC.2.2.3.A.1, CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.1.3.B.1) How do you solve a number story using more than one operation? **Lesson 2-6:** (CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4) How do you solve problems involving multiples of equal groups? **Lesson 2-7:** (CC.2.2.3.A.1, CC.2.2.3.A.3) How do you solve array problems? **Lesson 2-8:** (CC.2.2.3.A.1) (2-day lesson) How do you solve a division problem?	**Lesson 2-9:** (CC.2.1.3.C.1, CC.2.2.3.A.1, CC.2.2.3.A.3, CC.2.3.3.A.2) How do you solve a division number story involving remainders? **Lesson 2-10:** (CC.2.2.3.A.1, CC.2.2.3.A.3) How do you identify patterns in numbers? **Lesson 2-11:** (CC.2.1.3.B.1, CC.2.2.3.A.3) How do you use Frames-and-Arrows diagrams to solve problems involving the four operations? **Lesson 2-12:** (CC.2.1.3.C.1, CC.2.2.3.A.1, CC.2.4.3.A.5, CC.2.4.3.A.6)	**Lesson 2-13:** (CC. (Unit Assessment) (2-day lesson) (CC.2.1.3.B.1, CC.2.2.3.A.1, CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.4.3.A.2, CC.2.4.3.A.4) How do you solve number stories?

		Exploration A: How do you compare parts to a whole? Exploration B: How do you calculate the area of a rectangle? Exploration C: How do you compare liquid volume?	




Vocabulary: • **2-1** - fact extensions, multiples, combinations of ten • **2-2** - part-and-total diagram, change diagram, comparison diagram, unknown, number model • **2-3** - equation	***Vocabulary:*** • **2-6** - equal groups, efficient strategy • **2-7** - array, number sentence, factors, product • **2-8** - division, representation, remainder	***Vocabulary:*** • **2-9** - remainder, dividend, divisor, quotient • **2-11** - frames and arrows, frames, arrow rule • **2-12** - fraction, whole, fraction circle pieces, area, square inch, square centimeter, volume, liter	***Vocabulary:***

Course/Subject: Third Grade Mathematics Unit 3 Length of instruction: 18 Days

Unit Essential Question:
How do you solve multi-digit math problems?

Concept:	***Concept:***	***Concept:***	***Concept:***

Lesson Essential Question/s:	***Lesson Essential Question/s:***	***Lesson Essential Question/s:***	***Lesson Essential Question/s:***
Lesson 3-1: (CC.2.1.3.B.1, CC.2.2.3.A.1, CC.2.2.3.A.3) How do you find missing numbers and rules in "What's My Rule?" tables? **Lesson 3-2:** (CC.2.1.3.B.1, CC.2.2.3.A.4) (2-day lesson) How do you use mental math to make reasonable estimates? **Lesson 3-3:** (CC.2.1.3.B.1, CC.2.2.3.A.4) How do you use the partial-sums addition algorithm to add 2- and 3- digit numbers? **Lesson 3-4:** (CC.2.1.3.B.1, CC.2.2.3.A.4)	**Lesson 3-5:** (CC.2.1.3.B.1, CC.2.2.3.A.4) How do you solve subtraction problems using the counting-up strategy? **Lesson 3-6:** (CC.2.1.3.B.1, CC.2.2.3.A.4) How do you use the expand-and-trade subtraction algorithm to subtract 2- and 3- digit numbers? **Lesson 3-7:** (CC.2.3.3.A.2, CC.2.4.3.A.4, CC.2.4.3.A.5, CC.2.4.3.A.6) Exploration A: How do you create a scaled bar graph?	**Lesson 3-9:** (CC.2.2.3.A.1, CC.2.2.3.A.3) How do you find the products of multiplication squares? **Lesson 3-10:** (CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4) How does knowing one multiplication fact help with knowing its turn-around fact? **Lesson 3-11:** (CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4) How does the adding-a-group strategy help to	**Lesson 3-13:** (CC.2.1.3.B.1, CC.2.2.3.A.3) How do you generate equivalent names for numbers using all four operations? **Lesson 3-14: (Unit Assessment) (2-day lesson)** (CC.2.1.3.B.1, CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.4.3.A.4) How do you solve multi-digit math problems?

How do you use the column addition algorithm to find sums?	Exploration B: How do you measure area? Exploration C: How do you partition rectangles into equal parts to find the area? **Lesson 3-8:** (CC.2.1.3.B.1, CC.2.4.3.A.4) How do you create a scaled picture graph?	solve unknown multiplication facts? **Lesson 3-12:** (CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4) How do you use the subtracting-a-group strategy to help solve unknown multiplication facts?	

Vocabulary: • **3-1** - "What's My Rule?," function machine, input, rule, output • **3-2** - estimate, close-but-easier numbers, reasonable, precisely, rubric • **3-3** - partial-sums addition, expanded form • **3-4** - column addition	***Vocabulary:*** • **3-5** - counting up, open number line • **3-6** - expand-and-trade subtraction • **3-7** - scale, scaled bar graph, area, square units, title, partition • **3-8** - scale, picture graph, key, scaled picture graph	***Vocabulary:*** • **3-9** - factors, multiplication squares, square products • **3-10** - turn-around-rule, Multiplication / Division Facts Table, facts table • **3-11** - helper fact, adding a group • **3-12** - helper fact subtracting a group	***Vocabulary:*** • **3-13** - expression, equivalent, name-collection box

Course/Subject: Third Grade Mathematics Unit 4 Length of instruction: 16 Days

Unit Essential Question:
How do you measure to the nearest 1/2 inch?
How do you find the area and perimeter of polygons?

Concept:	***Concept:***	***Concept:***	***Concept:***
Lesson Essential Question/s: **Lesson 4-1:** (CC.2.4.3.A.4) How do you measure to the nearest 1/2 inch and whole centimeter? **Lesson 4-2:** (CC.2.4.3.A.4) How do you represent measurement data on a line plot? **Lesson 4-3:** (CC.2.1.3.C.1, CC.2.4.3.A.1, CC.2.4.3.A.4, CC.2.4.3.A.6) Exploration A: How do you measure the perimeter of an object to the nearest 1/2 inch? Exploration B: How do you compare the masses of objects? Exploration C: How do you move along a ruler in 1/2 inch increments?	***Lesson Essential Question/s:*** **Lesson 4-5:** (CC.2.3.3.A.1) How do you classify quadrilaterals based on their attributes? **Lesson 4-6:** (CC.2.3.3.A.1, CC.2.4.3.A.4, CC.2.4.3.A.6) How do you measure the perimeters of rectangles and other polygons? **Lesson 4-7:** (CC.2.4.3.A.4, CC.2.4.3.A.5, CC.2.4.3.A.6) How do you distinguish between perimeter and area? **Lesson 4-8:** (CC.2.4.3.A.5, CC.2.4.3.A.6) How do you find the area of a rectangle	***Lesson Essential Question/s:*** **Lesson 4-9:** (CC.2.4.3.A.5, CC.2.4.3.A.6) How do you write a number sentence to calculate the area of a rectangle? **Lesson 4-10:** (CC.2.4.3.A.5, CC.2.4.3.A.6) How do you find the area and perimeter of objects? **Lesson 4-11:** (CC.2.4.3.A.5, CC.2.4.3.A.6) (2-day lesson) How do you apply your knowledge of area and perimeter to real-world situations? **Lesson 4-12:** (CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.4.3.A.5, CC.2.4.3.A.6)	***Lesson Essential Question/s:*** **Lesson 4-13: (Unit Assessment) (2-day lesson)** (CC.2.1.3.B.1, CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.3.3.A.1, CC.2.4.3.A.2, CC.2.4.3.A.4, CC.2.4.3.A.5, CC.2.4.3.A.6) How do you measure to the nearest 1/2 inch? How do you find the area and perimeter of polygons?

Lesson 4-4: (CC.2.3.3.A.1) How do you identify a polygon based on its characteristics?	using composite units?	How do you calculate the area of rectilinear figures?	




Vocabulary:	***Vocabulary:***	***Vocabulary:***	***Vocabulary:***
• **4-1** - precise, approximate • **4-2** - data, line plot, scale, maximum, minimum • **4-3** - mass, kilogram, benchmark • **4-4** - attributes, polygon, side, vertex, angle, right angle, parallel, quadrilateral	• **4-5** - quadrilateral, square, rectangle, parallelogram, rhombus, trapezoid, kite • **4-6** - face, perimeter • **4-7** - perimeter, length, area, square unit • **4-8** - area, composite unit	• **4-9** - area, array, perimeter • **4-10** - area, perimeter • **4-11** - mathematical model, perimeter, area • **4-12** - decompose, rectilinear, polygon	

Course/Subject: Third Grade Mathematics Unit 5 Length of instruction: 16 Days

Unit Essential Question:
How do you use multiplication strategies?

Concept:	***Concept:***	***Concept:***	***Concept:***

Lesson Essential Question/s:	***Lesson Essential Question/s:***	***Lesson Essential Question/s:***	***Lesson Essential Question/s:***
Lesson 5-1: (CC.2.1.3.C.1, CC.2.3.3.A.2, CC.2.4.3.A.5, CC.2.4.3.A.6) Exploration A: How do you create equal parts of different wholes? Exploration B: How do you solve problems involving area and perimeter? Exploration C: How do you represent fractions of different wholes? **Lesson 5-2:** (CC.2.1.3.C.1) How do you represent fractions using standard notation, words, and drawings? **Lesson 5-3:** (CC.2.1.3.C.1, CC.2.3.3.A.2)	**Lesson 5-4:** (CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4) How do you apply your knowledge of helper facts to solve harder multiplication facts? **Lesson 5-5:** (CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.4.3.A.5, CC.2.4.3.A.6) How does using the strategy of doubling help to find the area of a larger rectangle? **Lesson 5-6:** (CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.4.3.A.5,	**Lesson 5-7:** (CC.2.1.3.B.1, CC.2.2.3.A.3, CC.2.2.3.A.4) How do you identify and explain arithmetic patterns using properties of operations? **Lesson 5-8:** (CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3) How do you identify the missing factor in a multiplication problem? **Lesson 5-9:** (CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4) How can the product of a multiplication square help you find the product of near squares?	**Lesson 5-10:** (CC.2.2.3.A.1, CC.2.2.3.A.4) (2-day lesson) How do you solve a number story? **Lesson 5-11:** (CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.4.3.A.5, CC.2.4.3.A.6) How do you use the break-apart strategy to solve multiplication problems? **Lesson 5-12: (Unit Assessment) (2-day lesson)** (CC.2.1.3.C.1, CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.3.3.A.2, CC.2.4.3.A.5, CC.2.4.3.A.6)

How can you recognize equivalent fractions?	CC.2.4.3.A.6) How do you apply the doubling strategy to solve multiplication facts?		How do you use multiplication strategies?

Vocabulary: • **5-1** - equal parts, fraction, whole • **5-2** - numerator, denominator, unit fraction • **5-3** - equivalent fractions, whole	***Vocabulary:*** • **5-4** - add a group, helper facts, subtract a group • **5-5** - doubling • **5-6** - doubling	***Vocabulary:*** • **5-7** - even, multiple, odd • **5-8** - factor, missing factor, product • **5-9** - near squares	***Vocabulary:*** • **5-11** - break-apart strategy, decompose

Course/Subject: Third Grade Mathematics Unit 6 Length of instruction: 16 Days

Unit Essential Question:
How do you apply your multiplication strategies?
How do you solve number stories?

Concept:	***Concept:***	***Concept:***	***Concept:***
Lesson Essential Question/s: **Lesson 6-1:** (CC.2.1.3.B.1, CC.2.2.3.A.4) How do you use the trade-first method to solve subtraction problems? **Lesson 6-2:** (CC.2.2.3.A.3) Why is increasing your multiplication fact fluency important? **Lesson 6-3:** (CC.2.2.3.A.2, CC.2.2.3.A.3) How do you use square products as helper facts to find the products of near squares?	***Lesson Essential Question/s:*** **Lesson 6-4:** (CC.2.2.3.A.1, CC.2.2.3.A.3) How can you use your multiplication strategies to improve your fact fluency? **Lesson 6-5:** (CC.2.3.3.A.1, CC.2.4.3.A.4, CC.2.4.3.A.6) Exploration A: How do you construct quadrilaterals to match written descriptions? Exploration B: How do you measure to the nearest 1/2 inch? Exploration C: How do you calculate the perimeter of a polygon? **Lesson 6-6:** (CC.2.2.3.A.1,	***Lesson Essential Question/s:*** **Lesson 6-7:** (CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.4.3.A.6) How can you use multiplication strategies to multiply larger factors? **Lesson 6-8:** (CC.2.1.3.C.1, CC.2.2.3.A.3, CC.2.2.3.A.4) How do you use parentheses in number sentences? **Lesson 6-9:** (CC.2.2.3.A.4) (2-day lesson) How do you write a two-step number story to fit a number sentence?	***Lesson Essential Question/s:*** **Lesson 6-10:** (CC.2.1.3.C.1, CC.2.2.3.A.3, CC.2.2.3.A.4) How do you apply the order of operations to solve multistep problems? **Lesson 6-11:** (CC.2.1.3.C.1, CC.2.2.3.A.3, CC.2.2.3.A.4) How do you solve two-step number stories and represent them with equations? **Lesson 6-12: (Unit Assessment) (2-day lesson)** (CC.2.1.3.B.1, CC.2.1.3.C.1, CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.3.3.A.1, CC.2.3.3.A.2,

	CC.2.2.3.A.2, CC.2.2.3.A.3) How do you use multiplication/division diagrams to make sense of and solve number stories?		CC.2.4.3.A.1, CC.2.4.3.A.4, CC.2.4.3.A.5, CC.2.4.3.A.6) How do you apply your multiplication strategies? How do you solve number stories?




Vocabulary: • **6-1** - efficient, trade-first subtraction • **6-3** - appropriate, efficient	***Vocabulary:*** • **6-4** - fact power • **6-6** - equation, Multiplication / Division Diagram	***Vocabulary:*** • **6-8** - parentheses • **6-9** - parentheses	***Vocabulary:*** • **6-10** - order of operations

Course/Subject: Third Grade Mathematics Unit 7 Length of instruction: 19 Days

Unit Essential Question:
How do you solve problems involving fractions?

Concept:	***Concept:***	***Concept:***	***Concept:***
Lesson Essential Question/s: **Lesson 7-1:** (CC.2.4.3.A.1) How do you measure and compare liquid volumes? **Lesson 7-2:** (CC.2.1.3.B.1, CC.2.1.3.C.1, CC.2.2.3.A.1, CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.4.3.A.1) Exploration A: How do you estimate the number of dots in an array? Exploration B: How do you measure liquid volume? Exploration C: How do you identify equal shares? **Lesson 7-3:** (CC.2.1.3.B.1, CC.2.2.3.A.1, CC.2.2.3.A.3,	***Lesson Essential Question/s:*** **Lesson 7-5:** (CC.2.1.3.C.1) How do you represent fractions on number lines? **Lesson 7-6:** (CC.2.1.3.C.1) How do you identify fractions greater than, less than, and equal to one on a number line? **Lesson 7-7:** (CC.2.1.3.C.1) How do you compare fractions using visual models? **Lesson 7-8:** (CC.2.1.3.C.1) (2-day lesson) How do you order fractions with the same numerator?	***Lesson Essential Question/s:*** **Lesson 7-9:** (CC.2.1.3.C.1) How do you locate fractions on number lines? **Lesson 7-10:** (CC.2.1.3.C.1, CC.2.3.3.A.2) How do you compare fractions and justify your findings? **Lesson 7-11:** (CC.2.1.3.C.1, CC.2.3.3.A.2) How do you solve number stories involving fractions? **Lesson 7-12:** (CC.2.1.3.C.1, CC.2.2.3.A.1) How do you name fractions of sets of objects?	***Lesson Essential Question/s:*** **Lesson 7-13: (Unit Assessment) (2-day lesson)** (CC.2.1.3.B.1, CC.2.1.3.C.1, CC.2.2.3.A.1, CC.2.3.3.A.2, CC.2.4.3.A.1) How do you solve problems involving fractions?

CC.2.4.3.A.1, CC.2.4.3.A.2) How do you solve number stories involving time, mass, volume, and length? **Lesson 7-4:** (CC.2.1.3.C.1, CC.2.3.3.A.2) How do you partition fraction strips and use them to name and compare fractions?			




Vocabulary: • **7-1** - liquid volume, liter, milliliter • **7-2** - displace, equal shares, volume • **7-4** - equal to, equivalent, greater than, less than	***Vocabulary:*** • **7-5** - denominator, distance, numerator, whole • **7-6** - fractions greater than one • **7-7** - benchmark, greater than, less than	***Vocabulary:*** • **7-10** - equivalent • **7-12** - collection	***Vocabulary:***

Course/Subject: Third Grade Mathematics Unit 8 Length of instruction: 17 Days

Unit Essential Question:
How do you use multiplication and division strategies?

Concept:	***Concept:***	***Concept:***	***Concept:***
Lesson Essential Question/s: **Lesson 8-1:** (CC.2.1.3.C.1, CC.2.4.3.A.4) How do you measure to the nearest 1/4 inch? **Lesson 8-2:** (CC.2.1.3.B.1, CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3) What strategies can be used to solve extended multiplication and division facts? **Lesson 8-3:** (CC.2.1.3.B.1, CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3) How do you identify factors of counting numbers?	***Lesson Essential Question/s:*** **Lesson 8-4:** (CC.2.2.3.A.1) (2-day lesson) How do you use clues to make conjectures and arguments to show if the statement is accurate? **Lesson 8-5:** (CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3) How do you find products for a given factor? **Lesson 8-6:** (CC.2.1.3.C.1, CC.2.2.3.A.1, CC.2.2.3.A.3) How is money shared equally?	***Lesson Essential Question/s:*** **Lesson 8-7:** (CC.2.1.3.C.1, CC.2.2.3.A.2, CC.2.3.3.A.2, CC.2.4.3.A.5) Exploration A: How do you plot fractions on a number line? Exploration B: How do you construct a rectangle when given its area? Exploration C: How do you identify equivalent fractions using fraction circles? **Lesson 8-8:** (CC.2.3.3.A.1) How can you identify prisms given their attributes?	***Lesson Essential Question/s:*** **Lesson 8-9: (Unit Assessment) (2-day lesson)** (CC.2.1.3.B.1, CC.2.1.3.C.1, CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.3.3.A.1, CC.2.3.3.A.2, CC.2.4.3.A.1, CC.2.4.3.A.2, CC.2.4.3.A.4, CC.2.4.3.A.5, CC.2.4.3.A.6) How do you use multiplication and division strategies?

Vocabulary: • **8-2** - extended facts, multiple of 10 • **8-3** - factor pair	***Vocabulary:*** • **8-4** - argument, conjecture • **8-5** - factor, multiples, product	***Vocabulary:*** • **8-7** - plot • **8-8** - bases, edge, faces, polyhedron, prisms, 3-dimensional, 2-dimensional, vertex	***Vocabulary:***

Course/Subject: Third Grade Mathematics Unit 9 Length of instruction: 14 Days

Unit Essential Question:
How do you apply operations to multi-digit numbers?

Concept:	***Concept:***	***Concept:***	***Concept:***
Lesson Essential Question/s: **Lesson 9-1:** (CC.2.2.3.A.1, CC.2.2.3.A.3) How do you apply your basic fact knowledge to help you make comparisons between products? **Lesson 9-2:** (CC.2.1.3.B.1, CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.4.3.A.1) What strategies are applied to solve number stories when the problems involve multiples of 10?	***Lesson Essential Question/s:*** **Lesson 9-3:** (CC.2.1.3.B.1, CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.4.3.A.1) How do you solve problems involving larger factors using mental strategies? **Lesson 9-4:** (CC.2.3.3.A.1, CC.2.3.3.A.2, CC.2.4.3.A.1, CC.2.4.3.A.2) Exploration A: How do you solve problems involving elapsed time? Exploration B: How do you use you your understanding of polygons to reassemble a deconstructed shape?	***Lesson Essential Question/s:*** **Lesson 9-5:** (CC.2.1.3.B.1, CC.2.2.3.A.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.4.3.A.5, CC.2.4.3.A.6) How do you solve multi-digit multiplication problems? **Lesson 9-6:** (CC.2.1.3.B.1, CC.2.2.3.A.1, CC.2.2.3.A.3) (2-day lesson) How do you apply your number sense to develop strategies for using a calculator with a broken key?	***Lesson Essential Question/s:*** **Lesson 9-7:** (CC.2.4.3.A.2, CC.2.4.3.A.4) How do you analyze data in a graph? **Lesson 9-8:** (Unit Assessment) (2-day lesson) (CC.2.1.3.B.1, CC.2.2.3.A.2, CC.2.2.3.A.3, CC.2.2.3.A.4, CC.2.4.3.A.1, CC.2.4.3.A.2, CC.2.4.3.A.5, CC.2.4.3.A.6) How do you apply operations to multi-digit numbers?

	Exploration C: How does the construction of an object affect the amount of mass it is able to support?		
Vocabulary: • **9-2** - extended multiplication fact, Multiplication / Division Diagram	***Vocabulary:*** • **9-3** - break-apart strategy, doubling, efficient	***Vocabulary:*** • **9-5** - basic fact, decompose, extended fact, partition	***Vocabulary:*** • **9-7** - elapsed time, length of day