THIRD GRADE MATHEMATICS CURRICULUM

Course 50310

Third grade students will expand their understanding of mathematic operations into multiplication and division. They will explore fractions as numbers. Students will also work on the fluency of their mathematic operations. Their understanding of measurement will include length, mass, volume, time, money, and temperature. They will calculate the area of rectangles and apply that concept to multiplication along with calculating perimeter. The understanding of data representation will become more sophisticated using tally charts, tables, pictographs, line plots, and bar graphs.

THIRD GRADE MATHEMATICS OUTLINE:

Goals	Skills	Summative Assessments	Time Frame	Main Resources
• Apply place value understanding and properties of operations to perform multi-digit arithmetic. • Explore and develop an understanding of fractions as numbers. • Represent and solve problems involving multiplication and division. • Understand properties of multiplication and the relationship between multiplication and division. • Identify, compare, and classify shapes and their attributes • 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. • Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.	• Demonstrate multiplication and division fluency. • Solve problems involving the four operations, and identify and explain patterns in arithmetic. • Solve problems involving measurement and estimation of temperature, liquid volume, mass or length. • Tell and write time to the nearest minute and solve problems by calculating time intervals. • Solve problems involving money using a combination of coins and bills. • Determine the area of a rectangle and apply the concept to multiplication and to addition. • Solve problems involving perimeters of polygons and distinguish between linear and area measures.	Mid-year and End of Year Benchmark Assessments, PSSA	1-year	Everyday Math 4th ed.

THIRD GRADE MATHEMATICS MAP:

TIME FRAME	BIG IDEAS	CONCEPTS	ESSENTIAL QUESTIONS	STANDARDS	OBJECTIVES	DIFFERENTIATION	ASSESSMENT
Unit 1 (Weeks 1-4)	• Mathematical relationships among numbers can be represented compared and communicated. • Patterns exhibit relationships that can be extended, described, and generalized.	1. number sequences 2. number grids 3. analyzing data 4. equivalent names 5. finding differences 6. money 7. patterns 8. telling time 9. elapsed time	• How is mathematics used to quantify, compare, represent, and model numbers? • How can patterns be used to describe relationships in mathematical situations? • How are relationships represented mathematically?	CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multi-digit 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.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.	• Demonstrate types of uses of numbers • Identify patterns on number grids • Find data on graphs • Give equivalent names for numbers • Subtract pairs of numbers • Count money • Solve problems with dollars and cents • Extend number patterns • Tell time to the nearest 5-minutes • Find elapsed time	Read directions out loud Small groups Enrichment activities Math centers for early finishers	Daily checklists Math boxes Informal questioning End of unit test
Unit 2 (Weeks 5-7)	• Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.	1. Fact Families 2. Addition and Subtraction Facts 3. "What's my Rule" 4. Number Stories	• How can expressions, equations, and inequalities be used to quantify, solve, model, and/or analyze mathematical situations? • How are relationships represented mathematically?	CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multi-digit arithmetic. CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic.	• Create/Solve fact families • Use basic and addition subtraction facts • Perform "What's my rule?" problems • Solve parts-and-total number stories • Compare diagrams • Make ballpark estimates	Read directions out loud Small groups Enrichment activities Math centers for early finishers	Daily checklists Math boxes Informal questioning End of unit test
Unit 3 (Weeks 8-10)	• Measurement attributes can be quantified, and estimated using customary and non-customary units of measure	1. Unit of Length 2. Measuring with ruler 3. Standard linear measures 4. Perimeter 5. Area 6. Diameter 7. Circumference	• Why does what we measure how we measure? • How precise do measurements need to be? • What makes a tool appropriate for given task?	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.	• Estimate and Measure a unit of length • Measure with a ruler to the nearest half/quarter inch/centimeter • Explore perimeter and area • Contrast circumference and diameter • Interpret	Read directions out loud Small groups Enrichment activities Math centers for early finishers	Daily checklists Math boxes Informal questioning End of unit test

					experimental data		
Unit 4 (Weeks 11-13)	• Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions. • Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.	1. Multiples of equal groups 2. Multiplication arrays 3. Equal sharing 4. Division number stories using arrays 5. Multiplication fact short cuts 6. Fact Families 7. Map Scale 8. Likely/Unlikely events	• How can patterns be used to describe relationships in mathematical situations? • How can recognizing repetition or regularity assist in solving problems more efficiently? • How are relationships represented mathematically?	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.	• Solve and write number stories involving equal groups. • Use arrays, multiplication/division diagrams, and number models to represent and solve multiplication number stories. • Utilize equal sharing and equal grouping. • Model division number stories with arrays, multiplication/division diagrams, and number models. • Perform fact shortcuts. • Create and solve multiplication/division fact families. • Estimate distances with a map scale. • Develop intuition about likely/unlikely events.	Read directions out loud Small groups Enrichment activities Math centers for early finishers	Daily checklists Math boxes Informal questioning End of unit test
Unit 5 (Weeks 14-16)	• Mathematical relationships among numbers can be represented, compared, and communicated.	1. Place value 2. Ordering numbers 3. Writing numbers 4. Reading numbers 5. Compare large numbers 6. Decimals to the tenths and hundredths place value 7. Interpret data from a map	• How is mathematics used to quantify, compare, represent, and model numbers? • How are relationships represented mathematically?	CC.2.1.2.B.2 Use place value concepts to read, write, and skip count to 1000. CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multi-digit arithmetic.	• Demonstrate place value through ten thousand • Read, write, compare, and order numbers • Extend place value to millions • Identify polygons • Compare perimeters and areas • Model decimals • Illustrate decimal place value	Read directions out loud Small groups Enrichment activities Math centers for early finishers	Daily checklists Math boxes Informal questioning End of unit test
Unit 6 (Weeks 17-20)	• Geometric relationships can be described,	1. Line segments 2. Rays 3. Lines 4. Parallel lines	• How can the application of the attributes of	CC.2.3.3.A.1 Identify, compare, and classify shapes and their attributes.	• Draw line segments, rays, and lines	Read directions out loud Small groups	Daily checklists Math boxes

	analyzed, and classified based on spatial reasoning and/or visualization.	5. Intersecting Lines 6. Angles and turns 7. Triangles 8. Quadrangles 9. Polygons 10. symmetry 11. 3-Dimmensional Shapes	geometric shapes support mathematical reasoning and problem solving? • How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems?	CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures.	• Discriminate between segments, rays, and lines • Distinguish between parallel and intersecting lines • Use angles to record turns • Explore various types of triangles • Discover various types of quadrangles • • Identify the characteristics of polygons • Measure and draw angles • Exhibit symmetry • Name 3-D shapes	Enrichment activities Math centers for early finishers	Informal questioning End of unit test
Unit 7 (Weeks 21-23)	• Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations. • Patterns exhibit relationships that can be extended, described, and generalized. • Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions.	1. Patterns and Products 2. Multiplication Facts 3. Problems with Parentheses 4. Multiply by multiples of 10, 100, and 1,000 5. Estimation 6. Products of 10 7. Ratios of Geometric Figures	• How are relationships represented mathematically? • How can expressions, equations, and inequalities be used to quantify, solve, model, and/or analyze mathematical situations? • How can recognizing repetition or regularity assist in solving problems more efficiently?	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.	• Recall multiplication and division patterns • Practice multiplication and division facts • Express numbers as sums of products using number models that contain parentheses • Multiply one-digit numbers by multiples of 10, 100, and 1,000 • Divide multiples of 10, 100, and 1,000 by one-digit numbers • Determine when an estimate is appropriate • Multiply multiples of 10 by multiples of 10	Read directions out loud Small groups Enrichment activities Math centers for early finishers	Daily checklists Math boxes Informal questioning End of unit test
Unit 8 (Weeks	• Mathematical relationships	1. Naming Parts with Fractions	• How is mathematics used	CC.2.1.3.C.1 Explore and develop	• Use fractions to name equal parts.	Read directions out loud	Daily checklists

24-26)	among numbers can be represented, compared, and communicated.	2. Number Line for Fractions 3. Equivalent Fractions 4. Comparing Fractions 5. Fractions greater than One 6. Fraction Number Stories	to quantify, compare, represent, and model numbers? • How are relationships represented mathematically? • How can mathematics support effective communication?	an understanding of fractions as numbers. 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.	• Make predictions based on outcomes. • Utilize a number line as a model for fractions. • Find equivalent fractions. • Compare fractions using region models. • Name quantities greater than 1 with fractions and mixed numbers. • Solve number stories involving fractions.	Small groups Enrichment activities Math centers for early finishers	Math boxes Informal questioning End of unit test
Unit 9 (Weeks 27-30)	• Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations. • Mathematical relationships among numbers can be represented, compared, and communicated.	1. Multiply and divide with multiples of 10, 100, and 1,000 2. Multiply one digit numbers by multi digit numbers 3. Explore area relationships 4. Find fractions of fractions 5. Use partial-products algorithm 6. Identify factors 7. Share whole dollar amounts equally 8. Interpret remainders 9. Use lattice method of multiplication 10. Positive and negative numbers	• How are relationships represented mathematically? • How can expressions, equations, and inequalities be used to quantify, solve, model, and/or analyze mathematical situations? • How can recognizing repetition or regularity assist in solving problems more efficiently?	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.2.4.3.A.3 Solve problems and make change involving money using a combination of coins and bills.	• Multiply and divide with multiples of 10, 100, and 1,000 • Multiply one-digit numbers by multi-digit numbers • Explore area relationships • Find fractions of fractions • Use partial products algorithm • Identify whole number factors of whole numbers • Share whole dollar amounts equally • Interpret remainders • Use lattice method of multiplication • Multiply 2 digit numbers and 2 digit multiples of 10 • Distinguish between positive and negative numbers	Small groups Enrichment activities Math centers for early finishers	Math boxes Informal questioning End of unit test
Unit 10 (Weeks 31-33)	• Measurement attributes can be quantified, and estimated using	1. Length 2. Volume 3. Weight 4. Capacity	• Why does what we measure how we measure? • How precise do	CC.2.4.3.A.1 Solve problems involving measurement and	• Measure length in U.S. Customary and Metric Systems • Calculate the	Read directions out loud Small groups	Daily checklists Math boxes

	customary and non-customary units of measure. • Data can be modeled and used to make inferences.	5. Mean and Median 6. Coordinate Grids	measurements need to be? • What makes a tool appropriate for given task?	estimation of temperature, liquid volume, mass or length. CC.2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.	volume of rectangular prisms • Examine different kinds of scales and read weights using various scales • Order objects by volume • Measure weight using various kinds of scales • Demonstrate equivalencies between measures of capacity • Calculate the mean of a set of data • Make frequency tables • Find the median, mean, and mode of data sets • Plot coordinates on coordinate grids	Enrichment activities Math centers for early finishers	Informal questioning End of unit test
Unit 11 (Weeks 34-35)	• Data can be modeled and used to make inferences.	1. Line Graph 2. Bar Graphs 3. Interpret Data 4. Likelihood of outcomes 5. Predict outcomes 6. Populations	• How can probability and data analysis be used to make predictions? • How can data be organized and represented to provide insight into the relationship between quantities	CC.2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.	• Read and interpret line and bar graphs • Organize, graph, and interpret data • Collect and interpret data • Determine likelihood of outcomes • Analyze survey data • Predict outcomes • Estimate populations	Read directions out loud Small groups Enrichment activities Math centers for early finishers	Daily checklists Math boxes Informal questioning End of unit test
End of Year Assessment (week 36)						Read directions out loud Small groups Enrichment activities Math centers for early finishers	Daily checklists Math boxes Informal questioning End of unit test