

Curriculum Map: Math - Third Grade

Course: MATHEMATICS Sub-topic: General

Grade(s): 3

Unit: Unit 1 - Three Digit Numbers - Place Value, Addition and Subtraction

Timeline: 3 Weeks

STANDARDS: STANDARDS

NATIONAL: US Common Core State Standards (2010)

[MA.3.NBT.A.1 \(Advanced\)](#) Use place value understanding to round whole numbers to the nearest 10 or 100.

[MA.3.NBT.A.2 \(Advanced\)](#) 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.

(* standards consolidated from Topic level)

Topic: Lesson 0: Lessons for the First Five Days

Topic: Lesson 1: Use Place Value to Round Numbers

STANDARDS

NATIONAL: US Common Core State Standards (2010)

[MA.3.NBT.A.1 \(Advanced\)](#) Use place value understanding to round whole numbers to the nearest 10 or 100.

Topic: Lesson 2: Add Three Digit Numbers

STANDARDS

NATIONAL: US Common Core State Standards (2010)

[MA.3.NBT.A.2 \(Advanced\)](#) 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.

Topic: Lesson 3: Subtract Three Digit Numbers

STANDARDS

NATIONAL: US Common Core State Standards (2010)

[MA.3.NBT.A.2 \(Advanced\)](#) 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.

Unit: Unit 2 - Multiplication and Division: Concepts, Relationships, and Patterns

Timeline: 9 Weeks

STANDARDS: STANDARDS

NATIONAL: US Common Core State Standards (2010)

[MA.3.OA.A.1 \(Advanced\)](#) Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each.

[MA.3.OA.A.2 \(Advanced\)](#) 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.

[MA.3.OA.A.3 \(Advanced\)](#) 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.

[MA.3.OA.A.4 \(Advanced\)](#) Determine the unknown whole number in a multiplication or division equation relating three whole numbers.

[MA.3.OA.B.5 \(Advanced\)](#) Apply properties of operations as strategies to multiply and divide.

Students need not use formal terms for these properties.

[MA.3.OA.B.6 \(Advanced\)](#) Understand division as an unknown-factor problem.

[MA.3.OA.C.7](#) Fluently multiply and divide within 100, using strategies such

(Advanced)	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.
MA.3.OA.D.9 (Advanced)	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.
MA.3.NBT.A.3 (Advanced)	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.
 (* standards consolidated from Topic level)	
 	

Topic: Lesson 4: Understanding the Meaning of Multiplication

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.OA.A.1 (Advanced) Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each.

Topic: Lesson 5: Multiply with 0, 1, 2, 5, and 10

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.OA.A.3 (Advanced) 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.

MA.3.OA.B.5 (Advanced) Apply properties of operations as strategies to multiply and divide.

Students need not use formal terms for these properties.

MA.3.OA.C.7 (Advanced) 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.

Topic: Lesson 6: Multiply with 3, 4, and 6

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.OA.A.3 (Advanced) 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.

MA.3.OA.B.5 (Advanced) Apply properties of operations as strategies to multiply and divide.

Students need not use formal terms for these properties.

MA.3.OA.C.7 (Advanced) 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.

Topic: Lesson 7: Multiply with 7, 8, and 9

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.OA.A.3 (Advanced) 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.

MA.3.OA.B.5 (Advanced) Apply properties of operations as strategies to multiply and divide.

Students need not use formal terms for these properties.

MA.3.OA.C.7 (Advanced) 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.

Topic: Lesson 8: Use Order and Grouping to Multiply

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.OA.B.5 (Advanced) Apply properties of operations as strategies to multiply and divide.

Students need not use formal terms for these properties.

Topic: Lesson 9: Use Place Value to Multiply

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.NBT.A.3 (Advanced) 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.

Topic: Lesson 10: Understand the Meaning of Division

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.OA.A.2 (Advanced) 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.

Topic: Lesson 11: Understand how Multiplication and Division are Connected

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.OA.B.6 (Advanced) Understand division as an unknown-factor problem.

Topic: Lesson 12: Multiplication and Division Facts

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.OA.A.4 (Advanced) Determine the unknown whole number in a multiplication or division equation relating three whole numbers.

MA.3.OA.C.7 (Advanced) 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.

Topic: Lesson 13: Understand Patterns

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.OA.D.9 (Advanced) Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.

Unit: Unit 3 - Multiplication: Finding Area, Solving Word Problems, and Using Scaled Graphs

Timeline: 6 Weeks

STANDARDS: STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.OA.A.3 (Advanced) 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.

MA.3.OA.D.8 (Advanced) 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.

This standard is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations).

MA.3.MD.B.3 (Advanced) 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

MA.3.MD.C.5.A (Advanced)	using information presented in scaled bar graphs. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
MA.3.MD.C.5.B (Advanced)	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.
MA.3.MD.C.6 (Advanced)	Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
MA.3.MD.C.7.A (Advanced)	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.
MA.3.MD.C.7.B (Advanced)	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.
MA.3.MD.C.7.C (Advanced)	Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.
MA.3.MD.C.7.D (Advanced)	Recognize 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.

 (* standards consolidated from Topic level)

Topic: Lesson 14: Understand Area

STANDARDS

NATIONAL: US Common Core State Standards (2010)

- MA.3.MD.C.5.A (Advanced) A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
- MA.3.MD.C.5.B (Advanced) 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.
- MA.3.MD.C.6 (Advanced) Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).

Topic: Lesson 15: Multiply to Find Area

STANDARDS

NATIONAL: US Common Core State Standards (2010)

- MA.3.MD.C.7.A (Advanced) 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.
- MA.3.MD.C.7.B (Advanced) 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.

Topic: Lesson 16: Add Areas

STANDARDS

NATIONAL: US Common Core State Standards (2010)

- MA.3.MD.C.7.C (Advanced) Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.
- MA.3.MD.C.7.D (Advanced) Recognize 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.

Topic: Lesson 17: Solve One Step Word Problems Using Multiplication and Division

STANDARDS

NATIONAL: US Common Core State Standards (2010)

- MA.3.OA.A.3 (Advanced) 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.

Topic: Lesson 18: Solve Two-Step Word Problems Using the Four Operations

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.OA.D.8 (Advanced) 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.

This standard is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations).

Topic: Lesson 19: Scaled Graphs

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.MD.B.3 (Advanced) 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.

Unit: Unit 4 - Fractions: Equivalence and Comparison, Measurement, and Data

Timeline: 6 Weeks

STANDARDS: STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.NF.A.1 (Advanced) 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 $\frac{1}{b}$.

MA.3.NF.A.2 (Advanced) Understand a fraction as a number on the number line; represent fractions on a number line diagram.

MA.3.NF.A.2.A (Advanced) 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.

MA.3.NF.A.3.A (Advanced) Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.

MA.3.NF.A.3.B (Advanced) 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.

MA.3.NF.A.3.C (Advanced) Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.

MA.3.NF.A.3.D (Advanced) 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., $\frac{2}{5} > \frac{1}{5}$ by using a visual fraction model.

MA.3.MD.B.4 (Advanced) 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.

(* standards consolidated from Topic level)

Topic: Lesson 20: Understand What a Fraction Is

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.NF.A.1 (Advanced) 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 $\frac{1}{b}$.

Topic: Lesson 21: Understand Fractions on a Number Line

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.NF.A.2 (Advanced) Understand a fraction as a number on the number line; represent fractions on a number line diagram.

MA.3.NF.A.2.A (Advanced) 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.

Topic: Lesson 22: Understand Equivalent Fractions

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.NF.A.3.A (Advanced) Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.

Topic: Lesson 23: Find Equivalent Fractions

STANDARDS

NATIONAL: US Common Core State Standards (2010).

MA.3.NF.A.3.B (Advanced) 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.

MA.3.NF.A.3.C (Advanced) Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.

Topic: Lesson 24: Understand Comparing Fractions

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.NF.A.3.D (Advanced) 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.

Topic: Lesson 25: Use Symbols to Compare Fractions

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.NF.A.3.D (Advanced) 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.

Topic: Lesson 26: Measure Length and Plot Data on Line Plots

STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.MD.B.4 (Advanced) 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.

Unit: Unit 5 - Measurement: Time, Liquid Volume, and Mass

Timeline: 3 Weeks

STANDARDS: STANDARDS

NATIONAL: US Common Core State Standards (2010)

MA.3.MD.A.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.	
(Advanced)		

MA.3.MD.A.2 (Advanced)	Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). 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.	
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Excludes compound units such as cm^3 and finding the geometric volume of a container. Excludes multiplicative

comparison problems (problems involving notions of "times as much"; see Glossary, Table 2).

 (* standards consolidated from Topic level)

Topic: Lesson 27: Time

STANDARDS

NATIONAL: US Common Core State Standards (2010)

[MA.3.MD.A.1 \(Advanced\)](#) 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.

Topic: Lesson 28: Liquid Volume

STANDARDS

NATIONAL: US Common Core State Standards (2010)

[MA.3.MD.A.2 \(Advanced\)](#) Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). 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.

Excludes compound units such as cm^3 and finding the geometric volume of a container. Excludes multiplicative comparison problems (problems involving notions of "times as much"; see Glossary, Table 2).

Topic: Lesson 29: Mass

STANDARDS

NATIONAL: US Common Core State Standards (2010)

[MA.3.MD.A.2 \(Advanced\)](#) Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). 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.

Excludes compound units such as cm^3 and finding the geometric volume of a container. Excludes multiplicative comparison problems (problems involving notions of "times as much"; see Glossary, Table 2).

Unit: Unit 6 - Shapes: Attributes and Categories, Perimeter and Area, and Partitioning

Timeline: 4 Weeks

STANDARDS: STANDARDS

NATIONAL: US Common Core State Standards (2010)

[MA.3.MD.D.8 \(Advanced\)](#) 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.

[MA.3.G.A.1 \(Advanced\)](#) 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.

[MA.3.G.A.2 \(Advanced\)](#) Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.

 (* standards consolidated from Topic level)

Topic: Lesson 30: Understand Categories of Shapes

STANDARDS

NATIONAL: US Common Core State Standards (2010)

[MA.3.G.A.1 \(Advanced\)](#) 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.

Topic: Lesson 31: Classify Quadrilaterals

STANDARDS

NATIONAL: US Common Core State Standards (2010)

[MA.3.G.A.1 \(Advanced\)](#) 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.

Topic: Lesson 32: Area and Perimeter of Shapes

STANDARDS

NATIONAL: US Common Core State Standards (2010)

[MA.3.MD.D.8 \(Advanced\)](#) 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.

Topic: Lesson 33: Partition Shapes into Parts with Equal Areas

STANDARDS

NATIONAL: US Common Core State Standards (2010)

[MA.3.G.A.2 \(Advanced\)](#) Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.