Fourth Grade Mathematics Curriculum Map, 3rd Nine Weeks 2020-2021

Third Nine Weeks		
TN Standards	**Learning Outcomes**	**Content**
Week 1: 4.NF.B.3a-d Fractions: "Add and Subtract Mixed Numbers"		
4.NF.B.3 **Understand a fraction a/b with a>1 as a sum of fractions 1/b. For example, 4/5 = 1/5 + 1/5 + 1/5 + 1/5.** **a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.** **b. Decompose a fraction into a sum of fractions with the same denominator in more than one way (e.g., 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8), recording each decomposition by an equation. Justify decompositions by using a visual fraction model.** **c. Add and subtract mixed numbers with like denominators by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction.** **d. Solve contextual problems involving addition and subtraction of fractions referring to the same whole and having like denominators.**	**Learning Targets:** • I can add and subtract mixed numbers when the denominator is the same. • I can replace a mixed number with an equivalent fraction. • I can solve word problems with fractions that have the same denominator. • I can use the four operations to solve measurement word problems. • I can solve word problems involving various measurements expressed by whole numbers, fractions, and decimals **Essential Questions:** 1. How can you rename mixed numbers as fractions greater than 1 and rename fractions greater than 1 as mixed numbers? 2. How can you add and subtract mixed numbers with like denominators? 3. How can you rename a mixed number to help you subtract? 4. How can you add fractions with like denominators using the properties of addition? 5. How can you use the strategy act it out to solve multistep problems with fractions? Ensure that instruction meets the rigor called for by the standard. To help with this, use the Instructional Focus Documents (Use the dropdown to choose what grade-level) and the Go Math Guidance Documents	**Go Math! Chapter 7: Add and Subtract Fraction** Lesson 7.6 Rename Fractions and Mixed Numbers (NF3b) Lesson 7.7 Add and Subtract Mixed Numbers (NF3c) Lesson 7.8 Subtraction with Renaming (NF3c) Lesson 7.9 Fractions and Properties of Addition (NF3c) Lesson 7.10 Multistep Fraction Problems (NF3d) **Vocabulary:** Associative Property of Addition, Commutative Property of Addition, denominator, fractions, mixed number, numerator, simplest form, unit fraction **Mathematical Practice Focus** MP1 Make sense of problems and persevere in solving them. MP2 Reason abstractly and quantitatively. MP3 Construct viable arguments and critique the reasoning of others. MP4 Model with mathematics. MP6 Attend to precision. MP7 Look for and make use of structure. MP8 Look for and express regularity in repeated reasoning. **Instructional Tasks: Engage NY** https://www.engageny.org/resource/grade-4-mathematics Module 5 Topic F Module 2 Topic A, Topic B ****Math Instructional Focus Document**** https://www.tn.gov/content/dam/tn/education/standards/math/Standards_Support_grade_4_Mathematics.pdf **Fourth Grade Math Teachers in TN Blog of Resources** https://fourthgrademathteachersintn.blogspot.com/

4.MD.A.2 Solve one - or two-step real-world problems involving whole number measurements with all four operations within a single system of measurement including problems involving simple fractions.		

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Week 2: 4.NF.B.4a-c. Fractions: "Multiplying Fractions by Whole Numbers"		
4.NF.B.4 **Apply and extend previous understandings of multiplication as repeated addition to multiply a whole number by a fraction.** **a. Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product of 5 x 1/4, recording the conclusion by the equation 5/4 = 5 x 1/4.** **b. Understand a multiple of a/b as a multiple of 1/b and use this understanding to multiply a whole number by a fraction. For example, use a visual fraction model to express 3 x 2/5 as 6 x 1/5, recognizing this product as 6/5. (In general, n x a/b = (n x a) / b = (n x a) x 1/b.)** **c. Solve contextual problems involving multiplication of a whole number by a fraction (e.g., by using visual fraction models and equations to represent the problem). For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 4 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?**	**Learning Targets:** • I can understand that multiplication is repeated addition. • I can multiply a whole number by a fraction. • I can use a visual model to represent the product of a whole number and fraction. • I can use my understanding of multiples to multiply a whole number by a fraction (3 x 2/5 = 6 x 1/5). • I can solve word problems that involve multiplying a whole number by a fraction. • I can determine between which two whole numbers my answer lies. **Essential Questions:** 1. How can you write a fraction as a product of a whole number and a unit fraction? 2. How can you write a product of a whole number and a fraction as a product of a whole number and a unit fraction? 3. How can you use a model to multiply a fraction by a whole number? 4. How can you multiply a fraction by a whole number to solve a problem?	**Go Math! Chapter 8: Multiplying Fractions by Whole Numbers** Lesson 8.1 Mutliples of Unit Fractions (NF4a) Lessons 8.2 Mutliples of Fractions NF4b) Lessons 8.3 Multiply a Whole Number by a Fraction Using Models (NF4b) Lesson 8.4 Multiply a Fraction or Mixed Number by a Whole Number (NF4c) Lesson 8.5 Problem Solving-Comparison Problems with Fractions (NF4c) **Vocabulary:** compare, decimal, decimal point, equivalent decimals, equivalent fractions, hundredth, tenth, whole **Mathematical Practice Focus** MP1 Make sense of problems and persevere in solving them. MP2 Reason abstractly and quantitatively. MP4 Model with mathematics. MP5 Use appropriate tools strategically. **Instructional Tasks: Engage NY** https://www.engageny.org/resource/grade-4-mathematics Module 5 Topic G ****Math Instructional Focus Document**** https://www.tn.gov/content/dam/tn/education/standards/math/Standards_Support_grade_4_Mathematics.pdf **Fourth Grade Math Teachers in TN Blog of Resources** https://fourthgrademathteachersintn.blogspot.com/

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Week 3 and 4: 4.NF.C.5 Fractions: "Denominators 10 & 100" 4.NF.C.6-7 Decimals: "Write and Compare"		
4.NF.C.5 **Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.** ***For example, express 3/10 as 30/100, and add 3/10 as 30/100 and add 3/10 + 4/100 = 34/100.*** **4.NF.C.6** **Read and write decimal notation for fractions with denominators 10 or 100.** ***Locate these decimals on a number line.*** **4.NF.C.7** **Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Use the symbols >, =, or < to show the relationships and justify the conclusions.**	**Learning Targets:** • I can express a fraction with 10 as a denominator as an equivalent fraction with 100 as the denominator. • I can add two fractions with 10 and/or 100 as the denominators. • I can read decimals for fractions with 10 and/or 100 as the denominator. • I can write decimals for fractions with 10 and/or 100 as the denominator. • I can read decimals for fractions with 10 and/or 100 as the denominator. • I can write decimals for fractions with 10 and/or 100 as the denominator. • I can explain that comparing two decimals is valid only when they refer to the same whole. • I can compare and order decimals to the hundredths place. • I can recognize that comparisons are only valid when they refer to the same whole. • I can justify the comparisons of the value of the decimals. • I can use the four operations to solve measurement word problems. • I can solve word problems involving various measurements expressed by whole numbers, fractions, and decimals.	**Go Math! Chapter 9: Fractions and Decimals** Lesson 9.1 Relate Tenths and Decimals (NF6) Lesson 9.2 Relate Hundredths and Decimals (NF6) Lesson 9.3 Equivalent Fractions and Decimals (NF5) Lesson 9.4 Relate Fractions, Decimals, and Money (NF6) Lesson 9.5 Problem Solving: Money (MD2) Lesson 9.6 Add Fractional Parts of 10 and 100 (NF5) Lesson 9.7 Compare Decimals (NF7) **Vocabulary:** compare, decimal, decimal point, equivalent decimals, equivalent fractions, hundredth, tenth, whole **Mathematical Practice Focus** MP2 Reason abstractly and quantitatively. MP3 Construct viable arguments and critique the reasoning of others. MP4 Model with mathematics. MP5 Use appropriate tools strategically. MP6 Attend to precision. MP7 Look for and make use of structure. MP8 Look for and express regularity in repeated reasoning. **Instructional Tasks: Engage NY** https://www.engageny.org/resource/grade-4-mathematics Module 6 Topic A, Topic B, Topic C, Topic D, Topic E

4.MD.A.2 Solve one-or two-step real-world problems involving whole number measurements with all four operations within a single system of measurement including problems involving simple fractions.	**Essential Questions:** 1. How can you record tenths as fractions and decimals? 2. How can you record hundredths as fractions and decimals? 3. How can you record tenths and hundredths as fractions and decimals? 4. How can you relate fractions, decimals, and money? 5. How can you use the strategy act it out to solve problems that use money? 6. How can you add fractions when the denominators are 10 or 100? 7. How can you compare decimals?	****Math Instructional Focus Document**** https://www.tn.gov/content/dam/tn/education/standards/math/Standards_Support_grade_4_Mathematics.pdf **Fourth Grade Math Teachers in TN Blog of Resources** https://fourthgrademathteachersintn.blogspot.com/ • Ensure that instruction meets the rigor called for by the standard. To help with this, use the Instructional Focus Documents (Use the dropdown to choose what grade-level) and the Go Math Guidance Documents

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Weeks 5 and 6: 4.G.A.1/2/3 Geometry: "Lines, Classification, and Symmetry"		
4.G.A.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse, straight, reflex), and perpendicular and parallel lines. Identify these in two-dimensional figures. 4.G.A.2 Classify two-dimensional figures based on the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. 4.G.A.3 Recognize and draw lines of symmetry for two-dimensional figures. 4.OA.A.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.	**Learning Targets:** • I can identify and draw an example of a point, line, line segment, ray, right angle, acute angle, obtuse angle, straight angle, reflex angle, perpendicular lines, and parallel lines. • I can classify two-dimensional figures based on the lines and angles of that figure. • I can identify and recognize right triangles. • I can recognize lines of symmetry for 2D figures. • I can draw lines of symmetry for 2D figures. **Essential Questions:** 1. How can you identify and draw points, lines, line segments, rays, and angles? 2. How can you classify triangles by the size of their angles? 3. How can you identify and draw parallel lines and perpendicular lines? 4. How can you sort and classify quadrilaterals? 5. How can you check if a shape has line symmetry? 6. How do you find lines of symmetry? 7. How can you use the strategy act it out to solve pattern problems?	**Go Math! Chapter 10: Two-Dimensional Figures** Lesson 10.1 Lines, Rays, and Angles (G1) Lesson 10.2 Classify Triangles by Angles (G2) Lesson 10.3 Parallel Lines and Perpendicular Lines (G1) Lesson 10.4 Classify Quadrilaterals (G2) Lesson 10.5 Line Symmetry (G3) Lesson 10.6 Find and Draw Lines of Symmetry (G3) Lesson 10.7 Problem Sovling Shape Patterns (OA5) **Vocabulary:** perpendicular lines, point, rectangle, rhombus, right angle, square, straight angle, trapezoid **Mathematical Practice Focus** MP1 Make sense of problems and persevere in solving them. MP2 Reason abstractly and quantitatively. MP3 Construct viable arguments and critique the reasoning of others. MP4 Model with mathematics. MP5 Use appropriate tools strategically. MP6 Attend to precision. MP7 Look for and make use of structure. MP8 Look for and express regularity in repeated reasoning. **Instructional Tasks: Engage NY** https://www.engageny.org/resource/grade-4-mathematics Module 4 Topic A, Topic D ****Math Instructional Focus Document**** https://www.tn.gov/content/dam/tn/education/standards/math/Standards_Support_grade_4_Mathematics.pdf **Fourth Grade Math Teachers in TN Blog of Resources**

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Weeks 7 and 8: Measurement: 4.MD.C.5a-b "Angles" 4.MD.6 "Draw Angles" 4.MD.7 "Additive Angles"		
4.MD.C.5 Recognize angles as geometric shapes that are formed wherever two rays share a common end point, and understand concepts of angle measurement. a. Understand that an angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. b. Understand that an angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. An angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees and represents a fractional portion of the circle. 4.MD.C.6 Measure angles in whole number degrees using a protractor. Sketch angles of specified measure. 4.MD.C.7 Recognize angle measure as additive.	**Learning Targets:** • I can understand that angles are formed wherever two rays share a common end point. • I can understand concepts of angle measurement. • I can understand that an angle is measured with reference to a circle with its center at the common end point of the rays. • I can consider the fraction of a circular arc between the points where two rays intersect a circle. • I can understand that an angle that turns through 1/360 of a circle is called a "one-degree angle and can be used to measure angles. • I can understand that an angle that turns through n one-degree angles, it represents a fractional portion of the circle. • I can measure angles using a protractor. • I can draw angles of a specified measure. • I can recognize angles measure as additive. • I can solve addition and subtraction problems to find unknown angles on a diagram in real world and math problems by using an equation with a symbol for the unknown angle measure. **Essential Questions:** 1. How can you relate angles and fractional parts of a	**Go Math! Chapter 11: Angles** Lesson 11.1 Angles and Fractional Parts of a Circle (MD5a) Lesson 11.2 Degrees (MD5a-b) Lesson 11.3 Measure and Draw Angles (MD6) Lesson 11.4 Join and Separate Angles (MD7) Lesson 11.5 Problem Solving Unknown Angle Measures (MD7) **Vocabulary:** acute angle, clockwise, counterclockwise, degree, protractor, ray, right angle, vertex **Mathematical Practice Focus** MP1 Make sense of problems and persevere in solving them. MP2 Reason abstractly and quantitatively. MP3 Construct viable arguments and critique the reasoning of others. MP4 Model with mathematics. MP5 Use appropriate tools strategically. MP6 Attend to precision. **Instructional Tasks: Engage NY** https://www.engageny.org/resource/grade-4-mathematics Module 4 Topic B ****Math Instructional Focus Document**** https://www.tn.gov/content/dam/tn/education/standards/math/Standards_Support_grade_4_Mathematics.pdf **Fourth Grade Math Teachers in TN Blog of Resources** https://fourthgrademathteachersintn.blogspot.com/ • Ensure that instruction meets the rigor called

When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, (e.g., by using an equation with a symbol for the unknown angle measure).	circle? 2. How are degrees related to fractional parts of a circle? 3. How can you use a protractor to measure and draw angles? 4. How can you determine the measure of an angle separated into parts? 5. How can you use the strategy draw a diagram to solve angle measurement problems?	for by the standard. To help with this, use the Instructional Focus Documents (Use the dropdown to choose what grade-level) and the Go Math Guidance Documents

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Weeks 9 and 10: 4.MD.C.1/2 Measurement: "Customary and Metric" 4.MD.C.4 "Line Plots"		
4.MD.A.1 Measure and estimate to determine relative sizes of measurement units within a single system of measurement involving length, liquid volume, and mass/weight of objects using customary and metric units. 4.MD.A.2 Solve one - or two-step real-world problems involving whole number measurements with all four operations within a single system of measurement including problems involving simple fractions. 4.MD.B.4 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection*.	**Learning Targets:** • I can describe the relative size of measurement units (e.g., km, m, cm, kg, g, lb., oz., ml, hr., sec.) • I can estimate to determine relative sizes of measurement units. • I can use the four operations to solve measurement word problems. • I can solve word problems involving various measurements expressed by whole numbers, fractions, and decimals. • I can display data on a line plot. • I can interpret the information on a line plot. • I can make a line plot to show data gathered as fractions of a unit. • I can solve problems using information from line plots. • I can use addition of fractions displayed in a line plot to solve problems. • I can use subtraction of fractions displayed in a line plot to solve problems. **Essential Questions:**	**Go Math! Chapter 12: Relative Sizes of Measurement Units** Lesson 12.1 Measurement Benchmarks (MD1) Lesson 12.2 Customary Units of Length (MD1) Lesson 12.3 Customary Units of Weight (MD1) Lesson 12.4 Customary Units of Liquid Volume (MD1) Lesson 12.5 Line Plots (MD4) Lesson 12.6 Metric Units of Length (MD1) Lesson 12.7 Metric Units of Mass and Liquid Volume (MD1) Lesson 12.8 Units of Time (Optional) (MD1) Lesson 12.9 Problem Solving-Elapsed Time (Optional) (MD2) Lesson 12.10 Mixed Measures (MD2) Lesson 12.11 Patterns in Measurement Units (MD1) **Vocabulary:** cup, fluid ounce, gallon, half gallon, kilometer, liquid volume, mile, milliliter, millimeter, ounce, pint, pound, quart, second, ton, line plot, number line, data, fraction, length, information **Mathematical Practice Focus** MP1 Make sense of problems and persevere in solving them. MP2 Reason abstractly and quantitatively. MP3 Construct viable arguments and critique the reasoning of others. MP4 Model with mathematics. MP5 Use appropriate tools strategically. MP6 Attend to precision. MP7 Look for and make use of structure. MP8 Look for and express regularity in repeated reasoning.

	1. How can you use benchmarks to understand the relative sizes of measurement units? 2. How can you use models to compare customary units of length? 3. How can you use models to compare customary units of weight? 4. How can you use models to compare customary units of liquid volume? 5. How can you make and interpret line plots with fractional data? 6. How can you use models to compare metric units of length? 7. How can you compare metric units of mass and liquid volume? 8. How can you use models to compare units of time? 9. How can you use the strategy draw a diagram to solve elapsed time problems? 10. How can you solve problems involving mixed measures? 11. How can you use patterns to write number pairs for measurement units? 12. How can you make and interpret line plots with fractional data?	**Instructional Tasks: Engage NY** Module 2 Topic A, Topic B Module 5 Topic E **https://www.engageny.org/resource/grade-4-mathematics** ****Math Instructional Focus Document**** https://www.tn.gov/content/dam/tn/education/standards/math/Standards_Support_grade_4_Mathematics.pdf **Fourth Grade Math Teachers in TN Blog of Resources** https://fourthgrademathteachersintn.blogspot.com/ • Ensure that instruction meets the rigor called for by the standard. To help with this, use the Instructional Focus Documents (Use the dropdown to choose what grade-level) and the Go Math Guidance Documents

Please NOTE:

1. Each chapter of Go Math has a Chapter Resource Book that contains reteach, enrich, and chapter tests as well as Performance Tasks available to print out for use in your classrooms.

2. Student Go Math Editions contain Mid-Chapter Checkpoints, as well as Chapter Review/Test pages, which may be used at your discretion.
3. Each lesson contains a Journal Writing Prompt that can be used as an exit ticket or formative assessment piece of work.
4. Online resources are available for each chapter.
5. Engage New York modules and topics have been provided as extra resources to reach each standard.
6. A blog has been created for 4th Grade Math Teachers in TN to share resources and ideas:
   Fourth Grade Math Teachers in TN Blog of Resources: https://fourthgrademathteachersintn.blogspot.com/
7. iBooks have been created and shared for all of the NBT standards to use for reteach and review in your classroom.
   The link to the shared OneDrive folder is:
   https://bartlettcityschool-my.sharepoint.com/:f:/g/personal/hsamuelson_bartlettschools_org/EozK_6pMu9xHonanqjnSwfkBNel2hOQmRO4sF-xcVu-LOw?e=VW82ZV

To access the Ed Toolbox website including the instructional tasks go to the Tennessee Tools link at: http://www.edutoolbox.org/tntools

More Resources:

Textbook Online Resource: Go Math "Think Central": https://www-k6.thinkcentral.com/ePC/start.do

Math Instructional Focus Document: https://www.tn.gov/content/dam/tn/education/standards/math/Standards_Support_grade_4_Mathematics.pdf

Assessment Tasks: https://www.edutoolbox.org/tntools/list/grade/819/6128/4

Instructional Resources and Task Arcs: https://www.edutoolbox.org/tntools/list/grade/819/6119/4#6120

Worksheets for each standard sorted by grade level: http://www.commoncoresheets.com/SortedByGrade.php

Illustrative Math Tasks Website: https://www.illustrativemathematics.org/content-standards/4

Study Jams Website: http://studyjams.scholastic.com/studyjams/jams/math/index.htm

Math Antics Website: https://www.mathantics.com/

YouTube Math Tutorials:

Fourth Grade Math Suggestions in Children's Literature

Grandfather Tang's Story by Ann Tompert

The Greedy Triangle by Marilyn Burns

The Patchwork Quilt by Valerie Flournoy

Sweet Clara and the Freedom Quilt by Deborah Hopkinson

Anno's Magic Seeds by Mitsumasa Anno

Fourth Grade Blogs to follow for ideas and activity shares

Meg Anderson, "The Teacher Studio", https://theteacherstudio.com/blog/

Jennifer Findley, "Teaching with Jennifer Findley" http://jenniferfindley.com/

Brittany Hege, "Mix and Math", https://www.mixandmath.com/