Grade 5—Third Nine Weeks

NF	NF	NF	MD	NBT
Fraction Review and Divide Fractions	Add and subtract fractions	Multiply fractions and scaling	Line Plots	Decimal understanding
5-7 days	15 days	10 days	3-5 days	6-8 days

NF (5-7 days)
Fraction Review and Divide Fractions (M.5.11, M.5.12, M.5.13, M.5.14, M.5.15, M.5.16 & M.5.17)

Conceptual Flow	• Review and solidify—representing fractions (concrete & pictorial), find relationships, mixed numbers, name fractional parts). Foundation for M.5.11-17 • Review and solidify (by building, drawing, and words) equivalency relationships such as "How many fourths in two and a half?" Foundation for M.5.11-17 • Review and solidify the relationship between mixed numbers and improper fractions. Foundation for M.5.11-17	• Use language such as "____ separated into ___ equal groups" to interpret a fraction as division of the numerator by the denominator, $\frac{a}{b} = a \div b$, (e.g., $\frac{3}{4} = 3 \div 4$) M.5.13 • Use language such as "____ separated into ___ equal groups" to interpret division of a unit fraction by a whole number (e.g., $\frac{1}{4} \div 3$ is ¼ separated into 3 equal parts or groups). M.5.17a • Use language such as, "How many _____ are in ____?" to interpret division of a whole number by a unit fraction. M.5.17b	• Students create story problems for each of the types of division problems. M.5.17 • Solve word problems involving the division of whole numbers in which remainders are expressed as fractions using visual models or equations. (Students should be fluent with both). M.5.13 • Solve word problems involving the division of fractions by whole numbers and whole numbers by unit fractions using visual models or equations. (Students should be fluent with both). M.5.17c
Essential Goals	• Review and solidify the representations (including verbal) of common fractions. • Understand and represent equivalency as "filling" or "cutting" a fraction into smaller unit fraction pieces OR as making a fractional amount using "fewer" pieces. • Connect work with equivalency language to division of fractions.		
Ongoing Ideas	• Understand that you can use the relationship between units of measure to rewrite a known measurement in smaller or larger units. • The meaning of the operations & language used does not change when computing with common fractions and decimal fractions.		
Daily Math Warm-Ups (Number Talk Style)	• Comparing common fractions (Remember to also read a fraction such as ¾ as three one-fourth pieces). Review the 3 types of comparison problems: common numerator, common denominator, different numerator and denominator. Be sure that students can compare by relative position on a number line and understand relative size of the fractions. Foundation for M.5.12. • Red Think Tank Cards (Fractions/Division)		
Activity suggestions	• See foundational experiences, *Creating Fraction & Decimal AHAs*, pp. 16-25. • Fraction Understanding Game	• See foundational experiences, *Creating Fraction & Decimal AHAs*, pp. 48-53 • How Much is the Pie? Task • Knot-Tying Project Task • Module 8, *Math in Practice* – pg. 166-177 • Activity 3: Why Invert and Multiply?, *A Pleasure to Measure* – pg. 223- 225 • ***My Math*:** pages 551-556	• Word problem 4-square, pp 89-97, *Creating a Language-Rich Math Class.* • Fraction Frenzy! • How Many Marbles? • ***My Math*:** pages 759-782

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NF	NF	NF	MD	NBT
Fraction Review and Divide Fractions	Add and subtract fractions	Multiply fractions and scaling	Line Plots	Decimal understanding
5-7 days	15 days	10 days	3-5 days	6-8 days

NF (15 days)
Add and subtract fractions (M.5.11 & M.5.12)

Conceptual Flow	• Add & subtract fractions, including those with unlike denominators using visual models. Foundation for M.5.12	• Connect work done with visual models to the related symbolic representation. (Be sure that students understand that a common denominator represents a unit fraction size that "fits" into the fractions). Foundation for M.5.11	• Add and subtract fractions with unlike denominators, including mixed numbers using equivalent fractions. M.5.11	• Solve word problems involving addition and subtraction of fractions, including those with unlike denominators. M.5.12
Essential Goals	• Fluently represent the addition and subtraction of common fractions, including mixed numbers, using visual models. • Understand and describe the relationship of a visual model to symbolic representations.			
Ongoing Ideas	• The meaning of the operations and language used does not change when computing with common fractions and decimal fractions.			
Daily Math Warm-Ups (Number Talk Style)	• Toward the end of this sequence have students use benchmark fractions and fraction number sense to estimate mentally and assess the reasonableness of answers. Continue as a number sense warm-up during the next section. M.5.12			
Activity suggestions	• See *Creating Fraction & Decimal AHAs*, pp. 54-60 • ***My Math*:** pages 563-568, 619-662 (students should draw visual fraction models instead of finding least common denominators)	• Missing addend problems. See *Creating Fraction & Decimal AHAs*, pp. 61-63. • Interactive Visual Fraction Model	• See *Creating Fraction & Decimal AHAs*, Why? Why not? games. • How Much Wood? Task • ***My Math*:** pages 663-688 (students should still be using visual fraction models) • Module 7, *Math in Practice* – pg. 142-165	• Road Construction Word Problem • Adding and Subtracting Fractions • Gardening Fractions

Grade 5—Third Nine Weeks

NF	NF	NF	MD	NBT
Fraction Review and Divide Fractions	Add and subtract fractions	Multiply fractions and scaling	Line Plots	Decimal understanding
5-7 days	15 days	10 days	3-5 days	6-8 days

NF (10 days)
Multiplying fractions and scaling (M.5.14, M.5.15 & M.5.16)

Conceptual Flow	• Review and solidify double-digit whole number multiplication using the area model. Foundation for M.5.14-16	• Review and solidify multiplication of a fraction and a whole number (equal grouping model). Foundation for M.5.14 & M.5.15 • Extend 4th grade work to multiplication of fractions less than 1, fraction less than one and a mixed number, and mixed numbers using the area model. Foundation for M.5.14 & M.5.15 • Students describe the effect of multiplying by a fraction less than one, equal to one, and greater than one. M.5.15b	• Extend work with the area model to tiling with squares of dimension other than 1 unit. Foundation for M.5.14b	• Students create story context for a variety of fraction multiplication types (fraction by whole number; fraction by fraction; fraction by mixed number). M.5.14a • Solve real world problems involving fractions and mixed numbers using visual fraction models or equations. (Students should be fluent with both.) M.5.16
Essential Goals	• Determine the most appropriate model to use to multiply fractions. Use the model to multiply. • Understand and describe the relationship between the model used and the property that is represented. • Understand that areas can be tiled with squares of side length other than 1. • Create and solve word problems involving fractions and mixed numbers.			
Ongoing Ideas	• The meaning of the operations and language used does not change when computing with common fractions and decimal fractions.			
Daily Math Warm-Ups (Number Talk Style)	• Examine the effects of a factor on the size of the product. M.5.15a • Examine the effects of multiplying fractions less than one and greater than one on the product. M.5.15b • Examine the effect of multiplying by a fraction equal to one. Represent visually. Link to equivalence. M.5.15b. • Red Think Tank Cards (Multiplying Fractions/Scaling)			
Activity suggestions	• See *Creating Fraction & Decimal AHAs*, Appendix B	• Fraction Target, *Fundamentals*, Blue Book • See *Creating Fraction & Decimal AHAs*, pp. 64-75. • Area Models for Multiplication of Fractions • Folded Paper Lengths Task • How Much Dew? • Module 9, *Math in Practice* – pg. 178- 202 • ***My Math*:** pages 707-744	• Whole number tiling • Fraction tiling • ***My Math*:** pages 751-756	• Real-World Fractions • Fraction Word Problems • ***My Math*:** pages 745-750

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MD (3-5 days)
Line plots (M.5.19)

Conceptual Flow	• Review and solidify fractions and mixed numbers on a number line. Foundation for M.5.19 • Review and solidify connection between fractions and mixed numbers on a number line and ruler measurement. Foundation for M.5.19	• Make line plots to display measurement data in fractions of a unit. M.5.19	• Solve word problems involving the data presented in line plots. M.5.19
Essential Goals	• Review and solidify the connection between number lines and linear measurement tools. • Collect, display, interpret, and solve problems related to measurement data in fractions of units.		
Ongoing Ideas	• The meaning of the operations and language used does not change when computing with common fractions and decimal fractions. • A ruler, yard stick, and meter stick are real world examples of number lines. • We can organize data in many ways. This helps us interpret data.		
Daily Math Warm-Ups (Number Talk Style)	• Fraction review—all operations (4-part charts). • Partial quotient problems. • Human line plot.		
Activity suggestions	• See *Creating Fraction & Decimal AHAs*, p 31 • Fractions on a Line Plot • ***My Math*:** pages 845-850	• Use think-pair-share to debrief graphs. Have students write questions related to the graph. • Fractions on a Line Plot • Shoe Size Line Plot Task • Module 12, *Math in Practice* – pg. 232-244	• How High Did It Bounce? Task

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5-7 days	15 days	10 days	3-5 days	6-8 days

NBT (6-8 days)
Decimal understanding (M.5.6, M.5.7, M.5.8, M.5.9 & M.5.10)

Conceptual Flow	• Review and solidify representations of common fractions with denominators of 10 and 100. Foundation for M.5.6-10 • Review and solidify representations of decimal fractions (tenths and hundredths). Foundation for M.5.6-10	• Extend decimal fraction work to denominators of 1000. Foundation for M.5.6-10 • Read and write decimals to thousandths using base ten numerals, number names, and expanded form. M.5.6a	• Compare two decimals to thousandths using visual representations and the meanings of the digits in each place. M.5.6b
Essential Goals	• Connect common fractions to decimal fractions. • Understand that decimal fractions are fractions with denominators that are powers of 10. • Understand the decimal fraction link to place value.		
Ongoing Ideas	• We can organize data in many ways. This helps us interpret data. • Decimal fractions are an alternative way to think about common fractions with denominators that are powers of 10. They are place value representations.		
Daily Math Warm-Ups (Number Talk Style)	• Compare common fractions • Review and solidify rounding of whole numbers. • Decimal Understanding Quick Images PowerPoint • Red Think Tank Cards (Decimal Understanding)		
Activity suggestions	• See *Creating Fraction & Decimal AHAs*, pp. 78-86. • Module 1, *Math in Practice* – pg. 9-47 • Decimal Art • ***My Math*:** pages 23-42	• Decimal fraction—Roll to 1 in 8 rolls. Use *Make 100* directions from the first quarter. The goal should be 1 instead of higher numbers. Their headings will be tenths, hundredths, and thousandths. • ***My Math*:** pages 43-48	• See *Creating Fraction & Decimal AHAs*, p 90. • Final Lap • ***My Math*:** pages 49-66