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| **Common Core Strand** | **Cluster** | **Standard** | **Learning Targets**  4th Grade Math Curriculum Map – 3rd Quarter | **Resources** | **Vocabulary** | **Essential Questions** |
| **Numbers and Operations - Fractions** | **Extend understanding of fraction equivalence and ordering.** | 4.NF.1  1. Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. | 1. I can explain why fractions are equivalent using models. (R) 2. I can generate equivalent fractions by multiplying or dividing the numerator and denominator by the same number. (S) 3. I use visual models to justify why multiplying or dividing the numerator and denominator by the same number generates equivalent fractions. (R) | Topic 10 10-4,10-5A | fraction equivalent fractions numerator denominator | 1. How can I model equivalent fractions using pictures and numbers? 2. How do I identify equivalent fractions? 3. How do I generate equivalent fractions? |
| 4.NF.2  2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. | 1. I can explain that comparing two fractions is valid only when they refer to the same whole. (K) 2. I can compare two given fractions by generating equivalent fractions with common denominators. (S) 3. I can compare two given fractions by reasoning about their size or their location on a number line, or comparing them to a benchmark fraction. (S) 4. I can record the comparison using symbols (<, =, and >) and justify each comparison. (S) | Topic 10 10-3,10-7, 10-8 | fraction numerator denominator common denominator benchmark fraction | 1. Can I determine if a fraction is less than, greater than or equal to ½ ? 2. How do I compare fractions that have different numerators or denominators? 3. Can I create accurate models of fractions that can be used to compare? 4. How do I explain the meaning of a fraction and its numerator and denominator, and use my understanding to represent and compare fractions? |
| **Numbers and Operations - Fractions** | **Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.** | 4.NF.3a 3. Understand a fraction a/b with a > 1 as a sum of fractions 1/b. a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. | 1. I can use visual models to add and subtract fractions within the same whole. (S) | Topic 11 11-1A | unit fraction whole | 1. Why are denominators not added or subtracted? 2. How can I add and subtraction fractions? |
| 4.NF.3b  3. Understand a fraction a/b with a > 1 as a sum of fractions 1/b. b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 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. | 1. I can use visual models to decompose a fraction in more than one way, including decomposing a fraction into a sum of its unit fraction. (R) 2. I can record decomposition in an equation. (S) | Topic 11 11-1A | unit fraction decompose | 1. How can I decompose a fraction? 2. How do I justify a decomposition by using a visual model? |
| 4.NF.3c 3. Understand a fraction a/b with a > 1 as a sum of fractions 1/b. c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. | 1. I can add or subtract a mixed fraction using equivalent fractions, properties of operations, or the relationship between addition and subtraction. (S) | Topic 11 11-5A, 11-5B | mixed number improper fractions equivalent fraction | 1. Can I convert improper fractions to mixed numbers?  2. Can I convert mixed numbers to improper fractions?  3. How do I add or subtract mixed numbers? |
| **Numbers and Operations - Fractions** | **Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.** | 4.NF.3d 3. Understand a fraction a/b with a > 1 as a sum of fractions 1/b. d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem. | 1. I can solve addition and subtraction word problems using drawings, pictures, and equations. (S) | Topic 11 11-5A, 11-5B | model equations | 1. How can I solve fraction word problems by using models, pictures and equations? |
| 4.NF.4a 4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. 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 5 × (1/4), recording the conclusion by the equation 5/4 = 5 × (1/4). | 1. I can explain why a/b = a x 1/b by using visual models to show how to decompose fractions into unit fractions and represent it as a multiple of unit fractions (e.g., 3/4 = 1/4 + 1/4+ 1/4 = 3 x 1/4). (R). | 11-5D, 11-5E, 11-5F | fraction unit fraction multiple | 1. How do I find a fraction of a whole number? 2. How do I identify and record the fraction of a whole or group? 3. How can I use my knowledge of repeated addition to represent the multiplication of a fraction by a whole number? |
| 4.NF.4b 4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. b. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express 3 × (2/5) as 6 × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.) | 1. I can decompose a fraction (a/b) into a multiple of unit fractions (a x 1/b) in order to show why multiplying a whole number by a fraction (n x (a/b)) results in (n x a)/b (e.g., 5 x 3/8 = 5 x (3 x 1/8) = (5 x 3) x 1/8 = 15/8). (S) | 11-5D, 11-5E, 11-5F | fraction unit fraction multiple | 1. How can I multiply a fraction by a whole number? |
| **Numbers and Operations - Fractions** | **Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.** | 4.NF.4c  4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at party will eat 3/8 of a pound of roast beef, and there will be 5people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie? | 1. I can solve word problems that involve multiplying a whole number and fraction with visual models and equations. (S) | 11-5D, 11-5E, 11-5F | fraction unit fraction | 1. How can I multiply a fraction by a whole number within a word problem? |
| **Understand decimal notation for fractions, and compare decimal fractions.** | 4.NF.5  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 100.4 For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100. | 1. I can rewrite a fraction with a denominator 10 as an equivalent fraction with denominator 100. (S) 2. I can add two fractions with denominators 10 and 100. (S) | Topic 12 12-3, 12-4 12-5A | fraction equivalent fraction numerator denominator tenths hundredths decimals | 1. How can decimals be used in real life? 2. How can I represent 0.10’s and 0.01’s on a grid? |
| 4.NF.6 **Understand decimal notation for fractions, and compare decimal fractions.** 6. Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram. | 1. I can explain the relationship between a fraction and the decimal representation. (R) 2. I can represent fractions with denominators of 10 and 100 as a decimal. (S) 3. I can identify the tenths and hundredths place of a decimal. (K) 4. I can show the placement of a decimal on a number line. (S) | Topic 12 12-3 12-5A | decimal denominator | 1. How can a fraction with a denominator of 10 or 100 be represented as a decimal? |
| **Numbers and Operations - Fractions** | **Understand decimal notation for fractions, and compare decimal fractions.** | 4.NF.7  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. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model. | 1. I can explain that comparing two decimals is valid only when they refer to the same whole. (K) 2. I can justify the comparison by reasoning about the size of the decimals and by using a visual model. (R) 3. I can compare two decimals to the hundredths place and record the comparison using symbols <, >, or =. (S) | Topic 12 (12-2) | decimal | 1. How can models be used to determine and compare decimals? |