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| **R.L. Stevenson- Scales** | | | |
| Grade: Fifth Subject: Mathematics | | | |
| Priority Standard: **MAFS.5.NF.1.2**: Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.  Supporting Standards: **MAFS.5.NF.1.1**: Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)  **MAFS.5.NF.2.3**: Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?  **MAFS.5.NF.2.5**: Interpret multiplication as scaling (resizing), by:  a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.  b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence a/b = (n×a)/(n×b) to the effect of multiplying a/b by 1.  **MAFS.5.NF.2.6**: Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem. | | | |
| Score 4.0 | **In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught. Students will demonstrate declarative knowledge.**  Students will make a **decision** on what real world situation they want to use to **generate** a word problem. Students will use the strategies they have been taught to solve it, then share their tested word problem with other students and explain how to solve it. They are expected to explain to other students all the steps needed to solve their **student generated** problem. | | Sample Activities:  Student writes something similar to the following problem, demonstrates how to solve the problem, and explains the steps it took to create and solve it.  John brought ¼ cup of chocolate chips to Sue’s house so they can bake cookies. Sue already has 3/8 cup of chocolate chips.  How many cups of chocolate chips do they have altogether? |
|  | 3.5 | In addition to score 3.0 performance, partial success at score 4.0 content |  |
| Score 3.0 | **The student will:**  **Distinguish** between Addition and subtraction of a fraction and a mixed number, or two mixed numbers. They will **identify** and add/subtract three fractions/mixed numbers and **create** models to support their answers.  Students will **analyze** errors when they add or subtract two mixed numbers where regrouping into the whole number is necessary. They will **identify** multiply ways to find common denominators to make addition and subtraction of fractions possible.  Students will **specify** and **organize** using benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. They will **interpret** word problems and **apply** correct operations.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Example:** | 2 3 | + | 1 6 | + | 7  12 |   **Solution**.  The LCM of 3, 6, and 12 is 12.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | 2 3 | + | 1 6 | + | 7  12 | = | 8 + 2 + 7      12 |  |  |  |  |  |  | | --- | --- | --- | --- | --- | | We converted | 2 3 | to | 8  12 | by saying, "3 goes into 12 *four* times.  Four |   times 2 is 8."   |  |  |  |  |  | | --- | --- | --- | --- | --- | | We converted | 1 6 | to | 2  12 | by saying, "6 goes into 12 *two* times.  Two |   times 1 is 2."   |  |  |  | | --- | --- | --- | | We did not change | 7  12 | , because we are not changing the |   denominator 12.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Finally, we changed the improper fraction | 17 12 | to  1 | 5  12 | by dividing 17 |   by 12  "12 goes into 17 one (1) time with remainder 5." | | Sample Activities:  John brought ¼ cup of chocolate chips to Sue’s house so they can bake cookies. Sue already has 3/8 cup of chocolate chips.  How many cups of chocolate chips do they have altogether?  John and Sue are baking cookies. The recipe lists ¾ cup of flour. They only have 3/8 cup of flour left.  How many more cups of flour do they need to bake the cookies?  Javon, Sam, and Antoine are baking cookies. Javon has 1/2 cup of flour, Sam has 1 1/6 cups of flour, and Antoine has 1 ¾ cups of flour.  How many cups of flour do they have altogether?  Richard and Gianni each bought a pizza. The pizzas are the same size.  Richard cut his pizza into 12 slices.  Gianni cut his pizza into 6 slices, and ate 2 slices.  Together, Richard and Gianni ate 9/12 of one pizza.  How many slices of his pizza did Richard eat?  Jasmine has ½ cup of flour in a mixing bowl. She adds more flour.  Jasmine claims that she now has 3/7 cup of flour in the mixing bowl.  Which statement explains why Jasmine’s claim is incorrect?  A. 7 is not a multiple of 2  B. 1 is less than 3  C. 3/7 is less than 1/2  D. 3/7 is not a multiple of 1/2 |
|  | Score 2.5 | No major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content |  |
| Score 2.0 | **The student will recognize or recall specific vocabulary, such as:**  Add, addition, benchmark fraction, denominator, estimate, fraction, mixed number, reasonableness, refer, subtract, subtraction, unlike, whole, word problem  **The student will perform basic processes showing procedural understanding, such as:**   * Add and subtract fractions with unlike denominators, including mixed numbers. * Solve to find equivalent fractions * Understand that fractions with the same denominators can be combined. | | Sample Activities:  Your class had a pizza party. 3/8 of one pizza was left over, and 4/8 of another pizza was left over. You put them both into one box. How much pizza do you have altogether?  A cake recipe requires 3/5 cup of sugar for the frosting and 1/5 cup of sugar for the cake. How much sugar is that altogether?  You walk 3/10 of a mile to your friend’s house, and then 5/10 of a mile to school. How far did you walk altogether?  After a party, 5/8 of the cake is left over. That night, big brother eats 2/8 of the cake. How much is left over after that?  You have 7 5/8 feet of yarn to make a bracelet. You only use 4 1/8 yards for the bracelet. How much yarn is left over? |
|  | Score 1.5 | Partial success at score 2.0 content, and major errors or omissions regarding score 3.0 content |  |
| Score 1.0 | **With help, partial success at score 2.0 content and score 3.0 content**  Student will **recognize** fraction visuals presented in segmented wholes. **Demonstrate** addition and subtraction using 1/2s, 1/3s, and ¼ with simple visuals and/or manipulatives. Mirror through guided practice as the teachers demonstrates the steps. Subtract and/or add, fractions, wholes, parts of a whole. Student can **identify** adding and subtractions without understanding of how to apply it. | | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | 7 | | 3 | | + | |  | | --- | | 4 | | 3 | | = |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | 7 | | 3 | | – | |  | | --- | | 1 | | 3 | | = | |  |  |  |  |  | | |  |  |  | | --- | --- | --- | | http://www.homeschoolmath.net/worksheets/fraction-images/0-4.gif |  | http://www.homeschoolmath.net/worksheets/fraction-images/0-2.gif | | |  | | --- | | 2 | | 4 | | = | |  | | --- | | 1 | | 2 | | |  |  |  |  | |
|  | Score 0.5 | With help, partial success at score 2.0 content but not at score 3.0 content |  |
| Score 0.0 | **Even with help, no success** | |  |