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| **TEAM Lesson Plan Template** |
| Teacher: Rachael Worley and Carrie Stringer |
| Subject/Grade: 4th grade Math |
| Lesson Title: “Decomposing Fractions” |
| **STANDARDS:** |
| 4.NF.B.3a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.  4.NF.B.3b 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. |
| **OBJECTIVES:** |
| I can statements:   * I can explain that when I add fractions I am joining parts that come from the same whole and when I subtract fractions I am separating parts that come from the same whole. (level 3) * I can decompose a fraction into a sum of fractions with the same denominator in more than one way and record the decomposition by an equation. (level 3) |
| **MATERIALS AND RESOURCES:** |
| Materials:   * Each student is given 1 fraction bar set. * Chart paper * Projector and screen * Post stick notes   What if technology is not working?   * Ideally, this is shown under document cameras and observations are recorded on a whiteboard; however, circulating around the room and writing observations on butcher paper works as well.   Routine for distributing materials:   * Each fraction bar set is prebagged and each student is given one set. If this is the first time they are given these manipulatives, outline expectations of use and give them a few minutes to explore them with a neighbor. |
| **ACCOMMODATIONS/ADAPTATIONS:** |
| Accommodations:   * Preferential seating   + Close to teacher for behavior or attention needs   + Close to a peer for students with math difficulties   Enrichment option:   * Students will use fraction tiles to demonstrate and explain in writing and verbally why fractions must come from the same whole in order to add or subtract. |
| **MOTIVATING STUDENTS/ANTICIPATORY SET:** |
| Put the following question on the board:   * Jada ate 3/8 of a candy bar. Write two equations to show how much of the candy bar she ate. * Students will write their answer on a post stick note and place at the front of the room. Make sure to explain that they will have the opportunity to revise their answer later on, so have them write neatly and put their name or student # on it for easy identification. |
| **INSTRUCTIONAL PROCEDUCRES:** |
| **Lesson Layout**  Introduction:   * Pass out bagged fraction sets – 1 per student. If this is the first time using fraction bars, tell them to “Organize it.” Give no further instructions. * Allow 2-3 minutes for students to organize the fraction bars, then have a class discussion about how they organized it and why. * Allow time here for the class discussion to deepen understanding. Use assessing and advancing questions and accountable talk practices; encourage the students to lead. You may want to add good observations to a class created anchor chart.   Middle:   * Instruct the students to pull out the 1whole tile bar. Ask, “Is there another way to build 1 whole?” Allow a few minutes for exploration. Then discuss as a class what equivalent fractions they found. On chart paper, record all ways students create 1 whole. (Ex. – ½ + ½ = 1; 1/3 + 1/3 + 1/3 = 1, etc.) Using assessing and advancing questions guide student discussion of what they notice about the addition equations that have been recorded (Each equation always contains the same denominator = part of the same whole.) Discuss how the different denominators represent the “whole” decomposed into different sized pieces. (If *decompose* is a new math term, spend time discussing what it means.) Ask students, “Do you think the addition equations would work if we had different denominators?” Ask, “Can we use thirds and fourths to make one whole?” Have students try to build 1 whole using thirds and fourths. Guide class discussion using assessing and advancing questions focusing on how thirds and fourth are different sizes and not part of the same whole. * Have students build 3/8 with fraction tiles. Ask, “How can we decompose 3/8?” Guide class discussion using assessing and advancing questions. On chart paper, record student responses (ex. 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 2/8 + 1/8). Repeat process with 4/5 and 1 ¼. Discuss and record student responses. Have students work with a partner to decompose 2 1/8. Discuss and record student responses   (ex. 1 + 1 + 1/8; 8/8 + 8/8 + 1/8).  End/Closure:   * Put the original hook question about Jada back on the board. Instruct students to get their post stick notes and rethink their first answer. They can NOT erase the original answer, but they can write that they’ve changed it and why, or they can add to their original explanation to make it clearer and more math focused. Have them turn in their post stick note. This is now used by the teacher to see each child’s understanding of the concept. * Instruct students to clean up their fraction tiles and collect them.   **Motivating Students**   * Verbal praise; make sure to praise the *process* and not the end result. This helps encourage those struggling learners and keeps them engaged in putting forth the effort.   **Presenting Instructional Content**   * Hands-on * Class discussion with teacher assessing and advancing questioning and accountable talk   **Instructional Strategies**  Input:   * Hook   Exploration and Discussion:   * Hands on work * Teacher guides exploration through assessing and advancing questions   Check for Understanding:   * Check for understanding through questioning and observing student models   + Struggling Students: Give more 1 on 1 attention during partner/group work; question individually to see where the misunderstanding lies and help aid in understanding.   + Challenging Students: Extend thinking using higher level of questioning and include more advanced fractions; challenge to complete equivalencies without the fraction tiles or beyond what the tiles allow. |
| **QUESTIONING/THINKING/PROBLEM SOLVING:** |
| Questioning - These questions will occur throughout the activity as prompts based on groups’ or individual students’ progress and needs. These are also meant to be springboards to other questions.  Knowledge:   * Real life scenario – Jada ate 3/8 of a candy bar. Write two equations to show how much of the candy bar she ate.   Comprehension:   * Is there another way to build 1 whole? * How can we decompose 3/8? Repeat process with 4/5, 1 ¼, and 2 1/8.   Application:   * Do you think the addition equations would work if we had different denominators? * Can we use thirds and fourths to make one whole?   **Thinking**  Practical:   * Real life scenario – candy bar problem   Analytical:   * Application questions – decomposing fractions   What am I going to do to give students an opportunity to:   * Generate a variety of ideas?   + Use assessing and advancing questions during the class discussion.   + Allow students to explore the concept of decomposing fractions using manipulatives. * Analyze problems from multiple viewpoints?   + Facilitate class discussions and encourage a variety of thoughts/ideas from different levels of students.   **Problem Solving**  Experimenting:   * Allow plenty of time for students to use the manipulatives to discover decomposing fractions.   Predicting outcomes:   * Hook question * Students will generate a variety of ideas after using manipulatives.   Improving solutions:   * Teacher-led discussion using assessing and advancing questions based on student ideas * Exit ticket |
| **ASSESSMENT** |
| * Hook and Exit Ticket |
| **CLOSURE** |
| Students go and get their “hook” post stick note. They must leave their original work, but can change their answer or add to their original explanation to reflect their learning. ALL students will write and explanation to justify their answer. |

**NOTES:**

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