****

**STUDENT LEARNING OBJECTIVE TEACHER TEMPLATE**

|  |  |  |
| --- | --- | --- |
| **Teacher Name:**  | **School: Elementary School** | **Complex:**  |
| **Grade: 4** | **Content Area: Mathematics** | ***Course Name:***  | ***Period:*** |

|  |
| --- |
| **Student Population:**  |
| Total Number of Students \_20\_\_\_ Males \_9\_\_\_\_ Females\_11\_\_\_ SPED Inclusion \_\_\_\_\_ SPED Pullout \_\_\_\_\_ ELL \_\_\_\_\_ GT \_\_\_\_\_ Other Groups \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_ Additional Information:  |

Interval of instruction necessary to address goal: \_X\_ yearlong \_\_\_ semester \_\_\_ other (for quarter, track or trimester courses only)

|  |  |
| --- | --- |
| **SLO Components** | **For a complete description of SLO components and guiding questions, use the “Student Learning Objective Technical Guidance and Planning Document” supplement.** |
| **Learning Goal***What are the most important knowledge/skills I want my students to know and be able to do?*  | **Learning Goal Statement:** Students will explain, model, and justify their thinking after they read, analyze and choose a method to solve a word problems involving:-addition and subtraction of fractions and decimals-multiplication of fractions -finding of equivalent fractions-comparing of fractions and decimals -converting from fractions to decimals **Aligned Standards/Benchmarks:** 4.MD.2- Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. ***(DOK 2)*** 4.NF.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. ***(DOK 2)***4.NF.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. ***(DOK 2)***4.NF.B.3a - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. ***(DOK 2)***4.NF.B.3b - 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. ***(DOK 2)***4.NF.B.3c - 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. ***(DOK 2)***4.NF.B.3d - 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. ***(DOK 2)***4.NF.B.4 - Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. ***(DOK 2)***4.NF.B.4a - 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). ***(DOK 2)***4.NF.B.4b - 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.) ***(DOK 2)***4.NF.B.4c - ***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 a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie? ***(DOK 3)***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 100.2 For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100. ***(DOK 1)***4.NF.C.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. ***(DOK 1)*** 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. Record the results of comparisons with the symbols >, =, or <, and ***justify the conclusions, e.g., by using a visual model***. ***(DOK 2,3)*****Rationale:** Fractions and decimals are a part of everyday life from baking to money to building structures. The real world will ask students to solve problems with fractions and decimals. Students need to be able to solve problems to function in today’s society. School benchmark end-of-unit assessments show fourth grade students performing at 40% proficiency, thus, there is a need to address the gap. Therefore, students will be required to read a problem, identify the important information as well as what is being asked of them. Students will have to determine what is needed to solve the problem. This process helps students learn to analyze a problem and determine what is already given. It also teaches students to figure out what is being asked. Finally, this process builds on students’ skills of choosing a method to solve the problem. Students will be asked to explain their thinking and justify their answer. This builds logic skills and helps students learn that they must provide evidence for their math answers. This is a skill that can be used across all subjects (e.g. provide evidence from the text to support your opinion). Finally, by asking students to explain the reasonableness of their answer, they are further building logic and critical thinking skills. Furthermore, students will be asked to convert fractions to decimals (or vice versa) which add another layer of complexity. This builds critical thinking skills because it asks students to analyze the information given rather than simply using the given numbers in a problem. **Depth of Knowledge level (circle one):** 1 2 3 4 |
| **Assessments***How will I know if my students have met the learning goal?* | **Assessment Plan:**Formative – **Checks for Understanding**  - Students work individually to answer word problems using white boards. Students will hold up their white boards with their answer and teacher will visually ***check for understanding.*** This will be completed daily.Formative – ***Observational checklist*** –Teacher will walk around with checklist to record individual understanding using the summative rubric and learning target checklists. Reflection and completion of this checklist will be completed ***weekly***. Formative – **Classwork/homework** – Students will individually complete class and homework. Students will be asked to show their answers or indicate if they were able to arrive at the ***correct answer (red/green cards).*** Teacher will record student progress on a checklist. This will be completed and graded daily using summative rubrics. Formative – ***Exit Pass/Lesson Closure*** – Students will complete an exercise at the end of the lesson or period to check for understanding. Students will turn in the problem and teacher will correct. This will identify areas needing re-teaching or reviewing. Teacher will record information and reteach or review as needed. This will be completed **three to four times per unit.**Summative –***Students will be asked to solve problem, show their work, and justify their answer (show evidence)***. Students will also be asked to prove why their answer is reasonable. Students will be assessed using Constructed Responses. Their responses will be assessed using a 4-point rubric. (See attached rubric.) Summative assessments will be given ***twice during the quarter***. To determine proficiency: -all summative assessments will be equally combined to determine an overall percentage (Please see attached rubric). -Percent of completed targets and record of teacher observations will also be considered in determining proficiency levels.  |
| **Expected Targets***What are my learning expectations for each student?* | **This section will be recorded in the record sheet.**  |
| **Instructional Strategies***What strategies will I use to help all students meet the target?* | **Instructional strategies for various readiness level and content:****Manipulatives** – Students will use fraction/decimal strips to explore and show understanding of a word problem. **Pictorial Representations** – Students will draw a picture to represent fractions and/or decimals to show understanding of the word problem. Pictures represent the next step in moving students form concrete (manipulatives) to abstract understanding (symbolic) understanding of how to solve fraction and decimal word problems. **Think alouds** – Teacher will think aloud how to solve fraction and/or decimal word problems. This will be an explicit explanation of the thinking that is going on. It will also include common missteps illustrating how this results in an incorrect answer. Teacher will think aloud checking answer and its reasonableness. Students will be asked to do the same (see Student Sharing). **Collaborative learning** – Students will work collaboratively on word problems to allow for peer tutoring and assistance. Students will be grouped in pairs to maximize student talk time. **Student Sharing** – After individual or collaborative exercises, students will be asked to share their problem solving strategy. This will help explain alternate processes to arrive at the correct answer. It models that everyone thinks differently and allows for greater understanding given the alternate methods used. **White Boards** – Students will respond to exercises in class by writing their answers on their individual white boards allowing the teacher to check for understanding. Students will hold up their white board as the teacher scans the room to check for understanding. **Math Journal** – Teacher will provide examples of problems and answers that students record in their math journal. This journal will be used as a resource for home learning as well as in class learning. ***For students that are not ready or almost ready for the goal*:** Fraction tiles- Students will have small group instruction using fraction tiles moving from concrete to abstract as students improve their understanding of concepts. ***For students that are more than ready for the goal:*** Have students develop math rules, principles and relationships. **Provide problems with higher levels of complexity.**  |

Learning Target Checklist

4.NF.1

\_\_\_\_\_ I can explain why fractions are equivalent.

\_\_\_\_\_ I can create equivalent fractions.

\_\_\_\_\_ I can use models to explain why different fractions are equivalent.

4.NF.2

\_\_\_\_\_ I can explain that comparing 2 fractions must refer to the same whole.

\_\_\_\_\_ I can compare 2 fractions by reasoning about their size.

\_\_\_\_\_ I can compare 2 fractions by creating equivalent fractions with a common denominator (if  needed).

\_\_\_\_\_ I can order fractions using <, >, and = and justify the comparison.

4.NF.3

\_\_\_\_\_ I can use models to add and subtract fractions.

\_\_\_\_\_ I can use visual models to decompose a fraction. For example, 7/12 = 4/12 + 1/12 + 1/12 +  1/12.

\_\_\_\_\_ I can add or subtract mixed numbers.

\_\_\_\_\_ I can solve word problems with fractions.

4.NF.4

\_\_\_\_\_ I canexplainwhya/b=ax1/busingmodels.Forexample,3/4=1/4+1/4+1/4=3x1/4).

\_\_\_\_\_ I candecomposeafractionintomultipleunitfractions.5x7/8=5x(7x1/8)=(5x7)x1/8=   35 x 1/8 -or- 35/8.

\_\_\_\_\_ I can solve word problems that involve a whole number and a fraction.

4.NF.5

\_\_\_\_\_ I can write a fraction with a denominator of 10 as an equivalent fraction with a denominator  of 100.

\_\_\_\_\_ I can add two fractions with denominators 10 and 100. 4.NF.6

\_\_\_\_\_ I can explain the relationship between a fraction and a decimal.

\_\_\_\_\_ I can show a fraction with a denominator of 10 or 100 as a decimal.

\_\_\_\_\_ I can identify the tenths and hundredths place.

\_\_\_\_\_ I can show a decimal on a number line.

4.NF.7

\_\_\_\_\_ I can justify the comparison of two decimals by reasoning about their size and using a model.

\_\_\_\_\_ I can compare decimals to the hundredths place.

4.MD.2

\_\_\_\_\_ I can use +, -, x, and ÷ to solve word problems.

\_\_\_\_\_ I can solve measurement word problems that include whole numbers, fractions, and  decimals.

\_\_\_\_\_ I can convert larger units into equivalent smaller units to solve a problem.

Summative Rubric

|  |  |  |
| --- | --- | --- |
| **Observation** | **- Not yet:** Student shows evidence of misunderstanding, incorrect concept or procedure.  | **+ Got It:** Student essentially understands the target concept. |
| **Proficiency Levels and Criteria** | **0 Well-Below: Little Accomplishment** The task is attempted and some mathematical effort is made. There may be fragments of accomplishment but little or no success. Further teaching is required.  | **1 Developing: Partial Accomplishment** Part of the task is accomplished, but there is lack of evidence of understanding or evidence of not understanding. Further teaching is required.  | **2 Proficient: Substantial Accomplishment** Strategy and execution effectively meet the content, process, and qualitative demands of the task or concept. Student accurately communicates justification and reasonableness. May have minor errors that do not impact the mathematics.   | **3 Exceeding:  Full Accomplishment** Strategy and execution effectively meet the content, process, and qualitative demands of the task or concept. Student accurately and clearly communicates justification and reasonableness. No errors are found.   |
| **Percentage** | 59% and below | 74-60% | 89-75% | 90-100% |
| **Report Card Indicators** | **NI** | **DP** | **MP** | **ME** |