|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Learning Goal**  What do you want students to know and be able to do?  **S**pecific  **M**easurable  **A**ppropriate  **R**ealistic  **T**ime Limited | **STANDARDS:** What do you want students to know and be able to do?  *Points to consider:* Is the goal ambitious, yet realistic, for the grade level? | | | |
| **Big Idea:** Solving multi-step word problems using the four operations.  **Standard(s):**  4.OA.A.3 – Solve multistep word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.  **Student Learning Goal:** Students will show growth in correctly solving multi-step word problems. Students will choose the correct operation(s), draw a visual representation or write an equation and assess the reasonableness of their answer.  Teachers will use the attached assessment at the beginning, middle, and end of the year to show student growth.    **Time Span for SLO Cycle:** 1 school year | | | |
| **Assessment**  How will you evaluate each student’s understanding and achievement? | **Starting Point:** How will you evaluate each student’s depth of understanding and achievement before the instruction?  Teachers will give the [attached assessment](https://webertube.com/document/26570/4th-grade-math-baseline-4-oa-3) at the beginning of the school year and grade using the rubric below.  [Assessment Key](https://webertube.com/document/26573/4th-grade-baseline-key-4-oa3) | | | |
| **Progress monitoring:** How will you evaluate each student’s depth of understanding and achievement during instruction?  Teachers will give the [attached assessment](https://webertube.com/document/26571/4th-grade-mid-year-4-oa-3) in the middle of the school year and grade using the rubric below.  [Assessment Key](https://webertube.com/document/26574/4th-grade-mid-year-key-4-oa3) | | | |
| **Expected Targets:** How will you evaluate each student’s depth of understanding at the conclusion? What are various ways students may demonstrate their understanding and achievement?  Teachers will give the [attached assessment](https://webertube.com/document/26572/4th-grade-end-year-4-oa-3) at the end of the school year and grade using the rubric below.  [Assessment Key](https://webertube.com/document/26575/4th-grade-end-year-key-4-oa3)   |  |  | | --- | --- | | **Points** | **Description of Student Work** | | 0 | Students do not attempt to solve the problem. | | 1 | Students attempt to solve the problem and begin to draw a visual representation or write an equation. | | 2 | Students complete the problem, draw a visual representation or equation, and choose the correct operation, however are not accurate in their computation | | 3 | Students complete the problem, draw a visual representation or write an equation, choose the correct operation, and accurate in their computation. | | | | |
| **Learning Target(s)** | | | |
| **Level** | **Baseline Data** | **Expected Target(s)** | **Outcome Data** |
| **Exceeds Expectations**  (85-100%) |  |  |  |
| **Meets Expectations**  (75-84%) |  |  |  |
| **Approaches Expectations**  (60-74%) |  |  |  |
| **Well-Below Expectations**  (0-59%) |  |  |  |
| **Curriculum & Instruction**  What learning experiences and teaching strategies best promote understanding and achievement?  Consider:   * whole group * small group * partner * individual * collaborative experiences | Describe the instructional strategies you will use to achieve the desired outcome. *Points to consider:*  *As you integrate multiple standards, how are you using a variety of experiences and incorporating diverse resources, media and formats to support student learning?*   * Incorporate problem solving regularly in the classroom so students become comfortable. * Teach problem solving steps and strategies. * **1) READ and UNDERSTAND the problem**   **READ** the problem carefully and **RESTATE** it in your own words. **HIGHLIGHT** important information and ignore what is not needed. **DETERMINE** the question to be solved.   * **2) PLAN a solution**   **CHOOSE** a strategy to help you solve the problem  -find a pattern -guess and check  -make an organized list -draw a diagram/picture/representation  -write an equation -work backward  -solve a simpler problem -read a table/chart  **DECIDE** what mathematical operation(s) need to be used   * 3) **SOLVE** the problem   **ESTIMATE** your answer.  **SHOW** all work.   * 4) **CHECK** your solution.   **RESTATE** the question.  **CHECK** your answer to be sure it is reasonable.  **ADD** necessary units or labels.   * Use real-life data and integrate other content areas into the problems as much as possible. * Have students write their own multistep word problem. Encourage math “storytelling” as they create and design their own problems. Share problems with classmates.   Additional Resources  Videos and Lessons:   * <https://learnzillion.com/lesson_plans/6422-solve-multi-step-word-problems-using-model-drawing#fndtn-lesson> (model drawing) * <https://learnzillion.com/lesson_plans/8662-solve-multi-step-word-problems-using-front-end-estimation#fndtn-lesson> (estimation) * <https://learnzillion.com/lesson_plans/6438-solve-multi-step-word-problems-by-drawing-a-picture#fndtn-lesson> (draw a picture) * <https://learnzillion.com/lesson_plans/8651-solve-multi-step-word-problems-by-organizing-the-data#fndtn-lesson> (T-chart) * [Thinking about Word Problems.pdf](file:///E:\Thinking%20about%20Word%20Problems.pdf) * [file:///C:/Users/Owner/Downloads/math-g4-m3-topic-d-lesson-12.pdf](file:///C:\Users\Owner\Downloads\math-g4-m3-topic-d-lesson-12.pdf) * <https://www.khanacademy.org/math/on-sixth-grade-math/on-number-sense-numeration/on-multiplication-division/e/multi-step-word-problems-with-whole-numbers> * <http://studyjams.scholastic.com/studyjams/jams/math/problem-solving/pscreating-equations.htm> | | | |
| How will you ensure productive collaborative learning experiences that promote both individual and group engagement and accountability? *Points to consider: How will you ensure that all students develop a deep understanding of the desired outcome(s) and increase their abilities to apply and extend knowledge in meaningful ways?*   * Teachers can ensure engagement and accountability by tracking students’ levels of engagement, participation levels and assignments | | | |
| **Differentiation**  How will you respond to differing levels of understanding and achievement throughout the learning cycle? | How will you provide additional instructional support for students who don’t understand?   * Use Learn Zillion videos and models listed above for support. * Make the problem simpler by changing larger numbers to smaller numbers within the same problem. * Break the problem down into smaller steps (scaffolding) * Act out the problem or use concrete manipulatives | | | |
| How will you extend or deepen learning for students who are already proficient?   * Have students solve 3- to 4-step problems * Have students write and create their own multi-step problems * Have students use measurement conversions with multi-step problems   (i.e. cm to m, g to kg) | | | |
| **Reflection and Data Analysis**  How will evidence of student understanding and achievement be used to drive instructional decisions? | **Based on your SLO data** | | | |
| What conclusions can you draw about your instruction and what refinements would you make for future instruction of this concept? | | | |
| What does your SLO data tell you about each subgroup (low, average, high) and their achievement and growth? | | | |
| What changes could be made to your instructional practice to address the needs of all (low, average, high) students? | | | |