

Solving Multi-Step Word Problems with Addition

Teacher Guide

Duration: 20 minutes

Standards for Mathematics

TEKS.2.4.C.iii

Solve multi-step word problems involving addition within 1,000 using a variety of strategies based on place value, including algorithms.

Focus Strategies

Think Aloud: The teacher models a process of thinking by speaking aloud what is thought. As an example, 'I think I need more color here in my drawing.' This strategy models for students the type of thinking they can use in an upcoming activity.

Think-Pair-Share: Students are prompted to think about an idea on their own. Students then share their idea with a partner and have a quick discussion. Selected students are asked to share their ideas with the whole group.

Materials

whiteboard, markers, problem string cards with word problems from the source of your choice

Key Vocabulary

addition, strategy, place value, algorithm, problem, solution

Warm-Up

Begin with a quick review of addition strategies, using an example like $305 + 149$, including the use of the standard algorithm. Ask students to share how they solve addition problems and write their responses on the board.

Introduction

Explain to students that they will be solving multi-step word problems using addition. Explain that word problems involve looking for certain words that mean to add (total, sum, more). Explain that they will solve a series of problems to discover and apply these strategies for solving word problems.

Exploration & Whole Class Discussion

Present the first problem on the board. Start with asking for a volunteer to read the problem aloud to the class. Then discuss the numbers and the words used with the numbers. Ask students, 'What information in the problem was given to us?' Ask students, 'What question are we to answer?' Have students solve it individually. After a few minutes, ask students to share their answers and strategies with a partner, revising as needed. Ask for volunteers to share their solutions and strategies with the class.

Application & Reflection

Present the next word problem of your choice from your resource. Students will solve it independently, then discuss their strategies with a partner. Select a few students to share their strategies with the class. Continue this process for 3-6 problems, allowing students to build on their strategies.

Assessment

For the final word problem, students will solve it independently and then share their strategies with a partner. Selected students will present their strategies to the class. Finally, students will write a brief reflection on what strategies they found most helpful and why.

Strategies to Support Emergent Bilingual Students

To support emergent bilingual students, we recommend the following:

1. Provide independent think time after asking questions or posing prompts.
2. Have students pair up with a partner to generate responses together.
3. Have students restate each other's reasoning in classroom discussions.
4. Create a public record of classroom discussions.
5. Use color and annotation to help learners make connections for concepts.
6. Introduce academic vocabulary as needed.
7. Use iconic and semantic gestures to help students understand.

Additional Support Resources

If your students need additional support, you can click on one of the lessons below and present it to your whole class. You can use the interactive manipulatives and built in feedback to support students in a whole class discussion. Good questions to ask are 'What do you see?', 'What do you think?' 'What do you wonder?'



Adding Hundreds Using Compensation as a Strategy



Selecting Pairs of Numbers that Sum to 150: Addend Pairs with 3s in the Ones Place

Sample Lesson Flow

- TEACHER SAY** *Welcome, everyone! Today we are going to solve multi-step word problems using addition. Can anyone remind me what addition means?*
- STUDENTS DO** Raise hands to share their understanding of addition.
- TEACHER DO** Write down students' responses on the board.
- TEACHER SAY** *Great! Now, let's talk about place value. Who can explain what place value means?*
- STUDENTS DO** Raise hands to share their understanding of place value.
- TEACHER DO** Record their responses on the board.
- TEACHER SAY** *Today, we will use a method called Problem Strings. This means we will solve a series of connected problems together. Let's start with our first problem. I will write it on the board.*
- TEACHER DO** Write the first multi-step word problem on the board.
- TEACHER SAY** *Take a few minutes to solve this problem on your own. Think about what strategies you can use.*
- STUDENTS DO** Work independently to solve the problem.
- TEACHER SAY** *Time's up! Who would like to share how they solved the problem?*
- STUDENTS DO** Raise hands to volunteer. Selected students share their strategies.
- TEACHER DO** Record the different strategies on the board.
- TEACHER SAY** *I love hearing all the different ways you approached this problem! Now, let's move on to the next problem in our string.*
- TEACHER DO** Write the next problem on the board.
- TEACHER SAY** *Solve this problem independently, and then discuss your strategies with your shoulder partner.*
- STUDENTS DO** Work independently, then turn to their shoulder partner to discuss.
- TEACHER SAY** *Let's come back together. Who would like to share their strategy for this problem?*
- STUDENTS DO** Raise hands to volunteer. Selected students share their strategies.
- TEACHER DO** Continue this process for 3-6 problems, writing each new problem on the board and allowing time for independent work and partner discussions.
- TEACHER SAY** *For our final problem, I want you to solve it independently first. After you finish, discuss your strategies with a partner.*
- STUDENTS DO** Solve the final problem independently, then discuss with their partner.
- TEACHER SAY** *Now, I would like a few volunteers to present their strategies to the class.*
- STUDENTS DO** Raise hands to volunteer. Selected students present their strategies.

- TEACHER SAY** *Fantastic work today! Before we finish, I want you to take a moment to reflect on what strategies you found most helpful and why.*
- STUDENTS DO** Write a brief reflection in their math booklet.
- TEACHER DO** Walk around and read students' reflections as they work.