

Solving Multi-Step Word Problems with Addition and Subtraction

Teacher Guide

Duration: 20 minutes

Standards for Mathematics

TEKS.2.4.C.v

Solve multi-step word problems involving addition and subtraction 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

Key Vocabulary

addition, subtraction, strategy, place value, problem, solution

Warm-Up

Begin with a quick review of addition and subtraction strategies. Ask students to share one strategy they use when solving addition or subtraction problems.

Introduction

Explain to students that today they will be solving multi-step word problems using a method called Problem Strings. Emphasize that they will be using strategies they already know and building on them to solve more complex problems.

Exploration & Whole Class Discussion

Present the first problem from your resource 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. As a larger group, ask for volunteers to share their solutions and strategies. Discuss the different approaches and highlight any effective strategies.

Application & Reflection

Continue with the next problem in the string. Students will solve it independently, then discuss their strategies with a partner. Select a few students to share their strategies with the class. Repeat this process for a total of three to six problems, allowing students to build on their strategies.

Assessment

For the final problem in the string, students will solve it independently and then write a brief reflection on the strategy they used and why it worked for them. After sharing with a partner, select a few students to share their reflections with the class. Collect their written reflections for assessment.

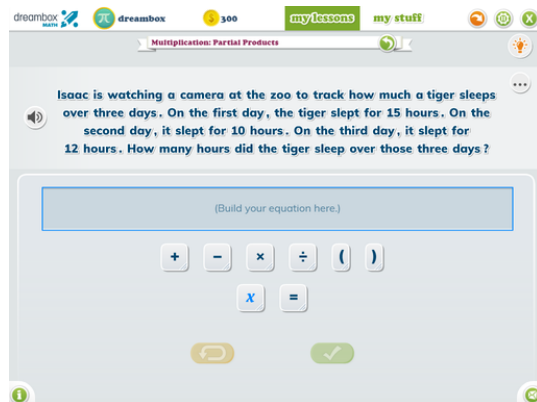
Strategies to Support Emergent Bilingual Students

To support emergent bilingual students, we recommend the following:

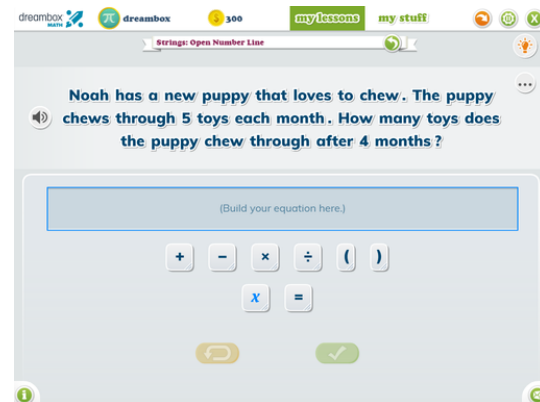
1. Provide independent think time after asking questions or posing prompts.
2. Have students pair up with a partner to generate responses together.
3. Have students restate each other's reasoning in classroom discussions.
4. Create a public record of classroom discussions.
5. Use color and annotation 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?'



Two-Step Word Problems



One- and Two-Step Word Problems

Sample Lesson Flow

- TEACHER SAY** *Welcome, everyone! Today, we are going to dive into solving multi-step word problems using a method called Problem Strings. Who can remind us what addition and subtraction are?*
- STUDENTS DO** Raise hands to share their understanding of addition and subtraction.
- TEACHER SAY** *Great! We will build on those strategies today. Let's start with a quick review. Can anyone share a strategy they use when solving addition or subtraction problems?*
- STUDENTS DO** Share their strategies with the class.
- TEACHER SAY** *Thank you for sharing! Now, let's look at our first problem. I will write it on the board.*
- TEACHER DO** Write the first multi-step word problem on the whiteboard.
- TEACHER SAY** *Take a minute 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 and share their strategies.
- TEACHER SAY** *I love hearing all the different approaches! Let's discuss some of the effective strategies you used.*
- TEACHER DO** Facilitate a discussion about the different strategies shared by students.
- TEACHER SAY** *Now, let's move on to the next problem in our string. I will write it on the board.*
- TEACHER DO** Write the second multi-step word problem on the whiteboard.
- TEACHER SAY** *Solve this problem independently, and then discuss your strategies with your shoulder partner.*
- STUDENTS DO** Work independently to solve the problem, then turn to their shoulder partner to discuss.
- TEACHER SAY** *Who would like to share their strategy with the class?*
- STUDENTS DO** Raise hands to volunteer and share their strategies.
- TEACHER SAY** *Excellent work! Let's continue this process for a total of three to six problems. I will keep writing them on the board.*
- TEACHER DO** Write additional multi-step word problems on the whiteboard as students solve them.
- TEACHER SAY** *For our final problem, I want you to solve it independently and then write a brief reflection on the strategy you used and why it worked for you.*
- STUDENTS DO** Solve the final problem independently and write their reflections.
- TEACHER SAY** *Once you've finished writing, share your reflections with your partner.*

STUDENTS DO Share their reflections with their shoulder partner.

TEACHER SAY *I would love to hear a few reflections from the class. Who would like to share?*

STUDENTS DO Raise hands to volunteer and share their reflections.

TEACHER DO Collect students' written reflections for assessment.

TEACHER SAY *Fantastic job today, everyone! You all did an amazing job solving multi-step word problems and reflecting on your strategies.*