

ST Math Immersion (Virtual)



Grade 2 Problem Solving - Answer Key

Week 2

Activate Prior Knowledge (G2_GPK_W2_D1)

A man had 45 dog treats. He gave his dogs 12 treats on Monday and 9 treats on Tuesday. The man believes that he has 21 treats left. Is he right?

- Discuss what students know about the problem and what they need to know.

Look for student thinking to answer:

- *What is happening in this story?*
- *How many treats did the man start with?*
- *How did the number of treats change (increase/decrease)?*
- *Target question: Did the man have 21 treats left?*

- Ask students to share how they would represent that problem in an equation and then describe what each number in the equation represents.

Does $21 = 45 - 12 - 9$?

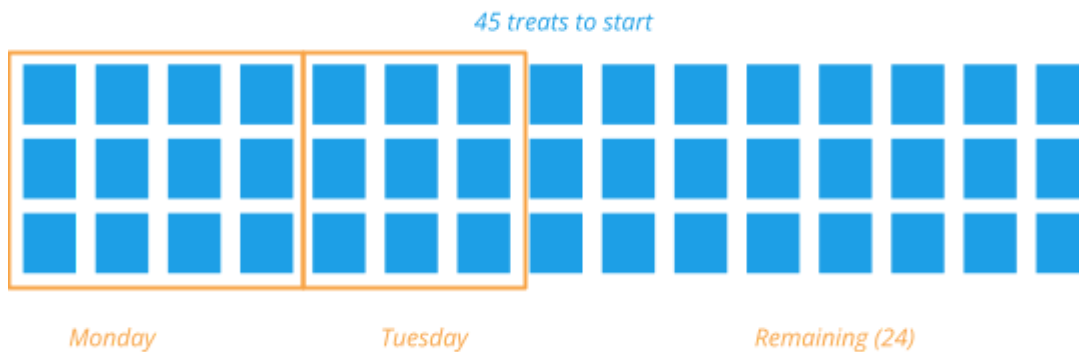
21: The number of treats the man thinks he has

45: The number of treats the man had to start

12: The number of treats the man gave his dog on Monday

9: The number of treats the man gave his dog on Tuesday

- Ask students to draw a model to represent the equation.



- Have students solve the problem and share their solution.

The man is not right. He has 24 treats remaining. He used 21 treats.

Push Box Two Operations Pre-Work

Can you think of something you do each day that takes more than 1 step to complete? What is it? What steps do you take?

Answers will vary. Students should provide an example of a multi-step task they do daily, with corresponding action steps. For example, students may discuss brushing their teeth. They might say they put toothpaste on their toothbrush, brush their teeth, rinse their teeth and toothbrush, and then put their toothbrush away.

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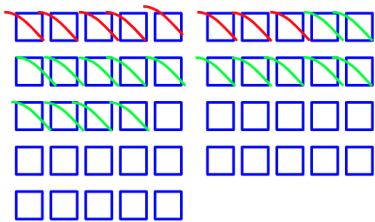
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Can a math problem have both addition AND subtraction in it? Explain.

Answers will vary. Students should explain that more than one operation can be a part of a math equation. Students may explain by writing a two-step number sentence (e.g. $10 + 2 - 3$ or $5 - 1 + 6$). Students may also write a story problem that would require two steps to solve (e.g. 4 birds sat on a wire. 1 bird flew away. 3 more birds landed on the wire. How many birds are on the wire now?).

Kayla is selling 45 brownies to raise money for a trip. She sold 8 brownies on Monday. On Tuesday she sold 16 brownies. How many brownies does Kayla have left? Write or draw a picture to show how you got your answer.

Students should state that Kayla has 21 brownies remaining. Students may show that they solved $45 - 8 = 37$ first and then solved $37 - 16 = 21$ to get an answer of 21 brownies remaining. Students may have first added up the total brownies sold ($8 + 16 = 24$) and then subtracted the total sold from the 45 brownies made for the fundraiser ($45 - 24 = 21$). Students may also use a picture, such as the one shown below:



Problem of the Day (G2_POD_W2_D2)

A cafeteria has 19 bananas, 16 apples, and 43 oranges. How many pieces of fruit are in the cafeteria? How many more pieces of fruit are needed to make 100 pieces? Write or draw a picture to show how you got your answer.

There are 78 pieces of fruit in the cafeteria. 22 more pieces are needed to make 100 pieces.

Possible Student Strategies

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<i>Estimating and Adjusting</i>	<i>Decomposing by Place Value</i>	<i>Using a 100 Grid</i>																																																																																																				
$19 = 20 - 1$ $16 = 15 + 1$ $43 = 40 + 3$ $20 + 15 + 40 = 75$ $75 - 1 + 1 + 3 = 78$	$19 = 10 + 9$ $16 = 10 + 6$ $43 = 40 + 3$ $10 + 10 + 40 = 60$ $3 = 2 + 1$ $9 + 1 = 10$ $6 + 2 = 8$ $60 + 10 + 8 = 78$	<table><tr><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td></tr><tr><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>B</td><td>A</td></tr><tr><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td></tr><tr><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td></tr><tr><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td></tr><tr><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td></tr><tr><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td></tr><tr><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O																						
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Math Writing Prompt (G2_Journal_W2_D2)

You have some gumballs and your friend gave you some more. If you know you have 35 gumballs total and you started with 12, explain how you could find out how many your friend gave you.

Your friend gave you 23 gumballs.

Student explanations will vary.

Look for:

- Adding on from 12.
- Using a number line to represent the difference between the gumballs that you had to start and the total.
- Take away 12 from 35

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Problem of the Day (G2_Extended_W2_D3)

Create two examples of new Jiji puzzles. Each example must have 2 steps like the puzzles you did earlier and result in an answer of 18.

Student solutions will vary.

Look for:

- *Two steps (two stacks of blocks).*
- *18 total blocks*

Math Writing Prompt (G2_Extended_W2_D3)

Compare the two puzzles you created. How are they alike? How are they different?

Student comparisons will vary.

Problem of the Day (G2_POD_W2_D4)

Devin has some cards in his collection. Joe gave him 16 cards and Mark gave him 27 cards. He has 92 cards in total.

- How many cards did he start with?
- Use words or pictures to explain how you found your answer.

Devin started with 49 cards.

Possible Student Strategies

<i>Overcompensating</i>	<i>Decomposing by Place Value, Adding On</i>	<i>Decomposing by place value, Finding the Difference\</i>
$16 + 27 = 43$ $43 + 50 = 93$ $93 - 1 = 92$ <i>"I added 1 more than I needed to make 92, so my answer will be 1 less."</i> $50 - 1 = 49$	$16 = 10 + 6$ $27 = 20 + 7$ $10 + 20 = 30$ $6 + 7 = 13$ $30 + 13 = 43$ $43 + 40 = 83$ $83 + 9 = 92$ $40 + 9 = 49$	$16 = 10 + 6$ $27 = 20 + 7$ $10 + 20 = 30$ $6 + 7 = 13$ $30 + 13 = 43$ $92 - 43$ $92 - 40 = 52$ $52 - 3 = 49$

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