

DMT INSTITUTE

Developing Mathematical Thinking Institute (DMTI)



Professional
Development



Curricular
Resources



Assessment

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DMTI Varied Practice Worksheets

This PowerPoint or PDF displays the worksheets that have varied situations (context, visual, equations, and other mathematical models) for children to work on. By completing these worksheets, children increase their foundational skills in the topic, which will help them with these standards and future mathematical topics.

1. If using a journal, have children present the worksheet and complete all the problems.
2. Or print the 'Varied Practice Worksheet Slides' for them to work on. Then, you can return to the PowerPoint or PDF to look at the keys to check their work.

Grade 4 – Problem Solving 1

ADDITION AND SUBTRACTION

Grade 4: Problem Solving – Part 1

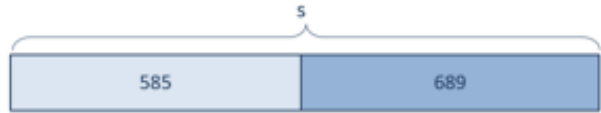
Materials Needed

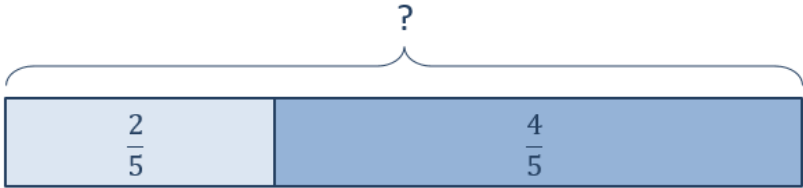
Printed copies of the Problem Solving: Addition and Subtraction worksheet.

Instructions

1. Using the **Problem Solving: Addition and Subtraction** worksheet, you will need to fill in all of the missing information.
2. Sometimes you will need to write your own story problem, in other cases you will need to draw a model and write an equation. If you need help thinking of a story problem, try to write a problem that is about students and school for whole number examples and measurements when using fractions.
3. Solve each problem using your preferred method to add or subtraction. Some options include number lines, partial sums or differences, equations showing mental strategies, and the standard algorithms.
4. A **Problem String template** is provided to create your own varied practice sheet.

Example:

Equation	Story Problem	Model of the Story	How I solved the problem...
$585 + 689 = s$	There are 585 students at Truman Elementary and 689 students at Parks Elementary. How many total students are there at the two schools?		<p><i>Methods and strategies may vary.</i></p> <p>$s = 1,274$</p>

Equation	Story Problem	Model of the Story	How I solved the problem...
$942 - 457 = s$ $457 + s = 942$	Mayfair Middle School has 942 students. Recently, 457 students attended a field trip. The remaining students will go on the same field trip next week. How many students will go on the field trip next week?		
	Franklin walks $\frac{7}{8}$ of a mile to school. Andrew walks $\frac{2}{8}$ of a mile to school. How much farther does Franklin have to walk to school than Andrew?		
$2,025 - 247 = n$			

Problem String Template

Directions

1. Another way to practice your problem solving skills is to follow what is called a **problem string**. A problem string is a series of number sets that begin with numbers that are fairly easy to work with and gradually introduce new, and increasingly difficult number sets.
2. The **Problem String Template** gives you space to select an equation that you think is easy to solve, and then complete a **Story Problem**, **Model of the Story**, and **solve** the problem.
3. The next row on the **Problem String Template** is meant for slightly more difficult numbers, but every other part stays the same. You will restate the **Story Problem** with the new numbers, draw a **Model of the Story** that is similar to the first but with the correct numbers and relative sizes of the numbers, and then solve the more difficult problem.
4. Gradually increase the difficulty of the numbers sets until you get to a point where you feel you are solving the most difficult version of the problem you can.
5. To the right is an example for the different **Equations** that might work if you wanted to practice your subtraction skills. Remember that for each number set in the string you will write a story problem, draw a model, and solve.

Equation
$455 - 126 = \underline{\quad}$
$455 - 166 = \underline{\quad}$
$1,455 - 566 = \underline{\quad}$
$1,405 - 566 = \underline{\quad}$

Equation	Story Problem	Model of the Story	How I solved the problem...

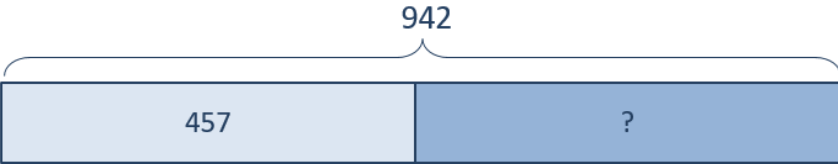
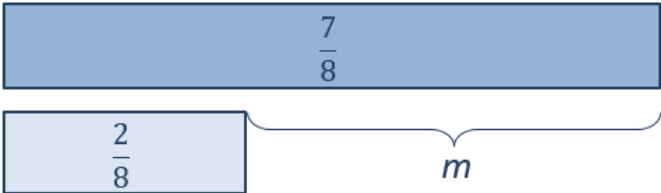

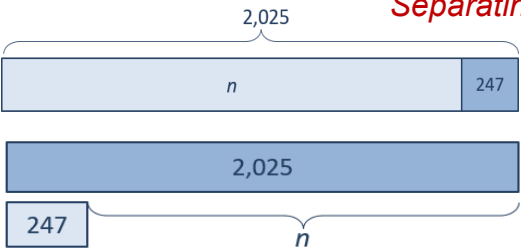


“The Developing Mathematical Thinking Institute (DMTI) is dedicated to enhancing students’ learning of mathematics by supporting educators in the implementation of research-based instructional strategies through high-quality professional development, curricular resources and assessments.”

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KEY

Equation	Story Problem	Model of the Story	How I solved the problem...
$942 - 457 = s$ $457 + s = 942$	Mayfair Middle School has 942 students. Recently, 457 students attended a field trip. The remaining students will go on the same field trip next week. How many students will go on the field trip next week?		<p style="color: red;">Methods and strategies may vary.</p> $942 - 400 = 542$ $542 - 50 = 492$ $492 - 7 = 485$
$\frac{7}{8} - \frac{2}{8} = m$ $\frac{2}{8} + m = \frac{7}{8}$	Franklin walks $\frac{7}{8}$ of a mile to school. Andrew walks $\frac{2}{8}$ of a mile to school. How much farther does Franklin have to walk to school than Andrew?		<p style="color: red;">Methods and strategies may vary.</p> $m = \frac{5}{8}$
$\frac{2}{5} + \frac{4}{5} = m$	<p style="color: red;"><i>Answers will vary but should include the numbers being combined.</i></p> <p style="color: red;">Example: Maddie walks $\frac{2}{5}$ of a mile to school and Sara walks $\frac{4}{5}$ of a mile to school. What is the total distance of their walks?</p>	<p style="color: red;"><i>m is used for miles</i></p> 	<p style="color: red;">Methods and strategies may vary.</p> $m = \frac{6}{5} \quad (\text{or } 1 \frac{1}{5})$
$2,025 - 247 = n$	<p style="color: red;"><i>Answers could be separating, part unknown, or compare situations.</i></p> <p style="color: red;">Example: 2,025 students attend Jackson High School. 247 students participate in athletics. How many students do not participate in athletics</p>	<p style="color: red;"><i>Separating or Part Unknown</i></p>  <p style="color: red;"><i>Compare</i></p>	<p style="color: red;">Methods and strategies may vary.</p> $n = 1,778$ <p style="color: red;"><i>n is used for a number</i></p>