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 2

MULTIPLICATION AND DIVISION

Grade 4: Problem Solving – Part 2

Materials Needed

Printed copies of the Problem Solving: Multiplication and Division worksheet.

Instructions

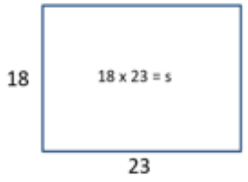
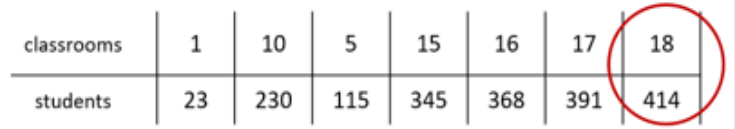
1. Using the **Problem Solving: Multiplication and Division** worksheet, you will need to fill in all of the missing information.

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. You can use the given story problems to help you if you can't think of your own story.

3. Solve each problem using the **ratio table**. You may have other preferred methods you can use first, but then try to complete the ratio table after solving with another method.

4. A **Problem String template** is provided to create your own varied practice sheet.

Example:

Equation	Story Problem	Model of the Story	Ratio Table
18 x 23 = *s*	Each classroom in the school has 23 students. If there are 18 classrooms, how many total students are in the entire school?	*Models may vary* 	*Ratio table strategies may vary.* 

Name:_____

Equation	Story Problem	Model of the Story	Ratio Table
$24 \times 23 = s$	Each classroom in the school has 23 students. If there are 24 classrooms, how many total students are in the entire school?		classrooms | 1 students | 23
	Aubrey walks for 21 minutes each day to get to school. If she walked for a total of 399 minutes this month, how many days of school did she have for the month?		days | 1 minutes | 21
	318 kids, 6 buses	 *k represents kids on each bus.*	kids on each bus | 1 total kids | 6
$252 \div 4 = n$ *n represents any number.*			1 4

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 use a **Ratio table** to 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 number 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 want to practice your division skills. Remember that for each number set in the string you will write a story problem, draw a model, and solve. Then, you would keep the same story context but change to the next problem and repeat the process.

Equation
a) $96 \div 12 = n$
b) $264 \div 12 = n$
c) $696 \div 12 = n$
d) $1{,}512 \div 12 = n$

Problem String Template

Name:_____

Equation	Story Problem	Model of the Story	Ratio Table
a)			
b)			
c)			
d)			

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"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."

For more information contact
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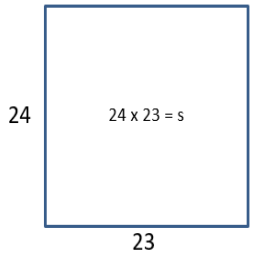
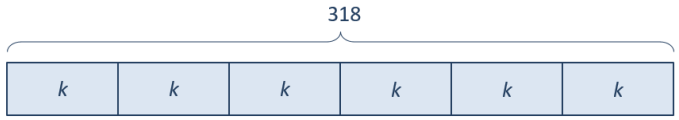
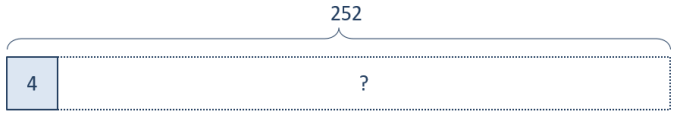
KEY

Equation	Story Problem	Model of the Story	Ratio Table
24 x 23 = *s*	Each classroom in the school has 23 students. If there are 24 classrooms, how many total students are in the entire school?	*Models may vary* 	*Ratio table strategies may vary.* classrooms: 1, 10, 20, 2, 4, **24** students: 23, 230, 460, 46, 92, **552**
d x 21 = 399 399 ÷ 21 = *d*	Aubrey walks for 21 minutes each day to get to school. If she walked for a total of 399 minutes this month, how many days of school did she have for the month?	*Models may vary* 	*Ratio table strategies may vary.* days: 1, 10, 20, **19** minutes: 21, 210, 420, **399**
318 ÷ 6 = *k*	318 kids, 6 buses *Story problems may vary* There are 318 kids who need to placed equally on 6 buses. How many kids are on each bus?	 *k represents kids on each bus.*	*Ratio table strategies may vary.* kids on each bus: 1, 10, 50, 3, **53** total kids: 6, 60, 300, 18, **318**
252 ÷ 4 = *g* *m represents minutes.*	*Story problems may vary* An aquarium tank holds 252 gallons of water. If it takes 1 minute to drain 4 gallons, how long will it take to empty the tank?	*Models may vary* 	*Ratio table strategies may vary.* minutes: 1, 10, 20, 40, 60, 3, **63** gallons: 4, 40, 80, 160, 240, 12, **252**