

# DMT INSTITUTE

Developing Mathematical Thinking Institute (DMTI)



Professional  
Development



Curricular  
Resources



Assessment

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# DMTI Varied Practice Worksheets

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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.

# 1: Relational Thinking - Dice

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DMTI VARIED PRACTICE

# Grade 1: Relational Thinking - Dice

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## Materials Needed

Dice: [DMTI Math Pack] or regular dice

Blank paper for drawing models

# Grade 1: Relational Thinking - Dice

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## Instructions



## Part 1

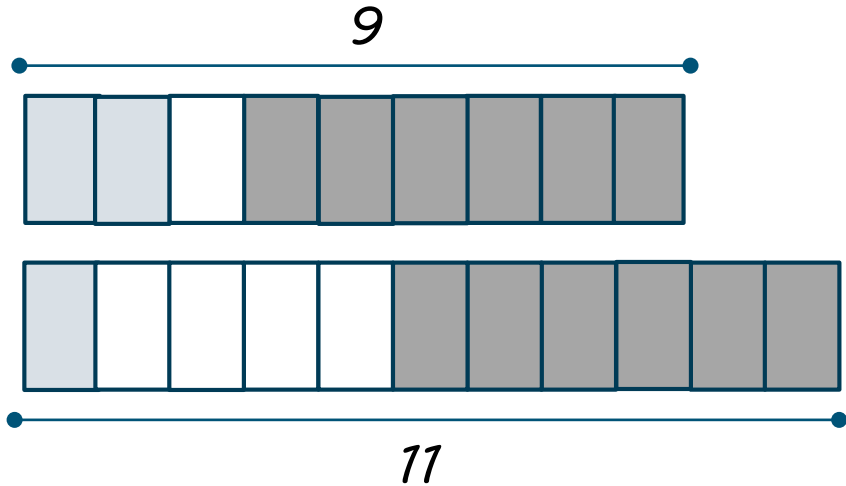
1. Roll dice to generate 6 numbers.
2. The child represents 3 of the numbers with a bar model and writes an equation.
3. Then create a bar model for the other 3 numbers below the first one and write an equation.
4. Next, the child describes the relationship of the combinations as equal, greater than or less than.

5. Write the symbolic number sentence: \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_  \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_

*Note: The progression for drawing bar models is first drawing each unit of one. The next step is drawing composed units (see examples).*

# Example – Part 1

I rolled a two, a one, a six, a one, a four and a six.



Two and one and six compose nine.  
 $2 + 1 + 6 = 9$

One and four and six compose 11.  
 $1 + 4 + 6 = 11$



$2 + 1 + 6$  is less than  $1 + 4 + 6$

$$\underline{2} + \underline{1} + \underline{6} \quad \boxed{<} \quad \underline{1} + \underline{4} + \underline{6}$$

*Note: Make sure to start each bar model at the same place to visually see the relationship of the models. These bar models are showing each unit of one.*

# Example – Part 1

I rolled a two, a one, a six, a one, a four and a six.



$$2 + 1 + 6 = 9$$



$$1 + 4 + 6 = 11$$

$2 + 1 + 6$  is less than  $1 + 4 + 6$

$$\underline{2} + \underline{1} + \underline{6} \quad < \quad \underline{1} + \underline{4} + \underline{6}$$



*Note: Make sure to start each bar model at the same place to visually see the relationship of the models. These bar models are showing composed units.*

# Grade 1: Relational Thinking - Dice

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## Instructions

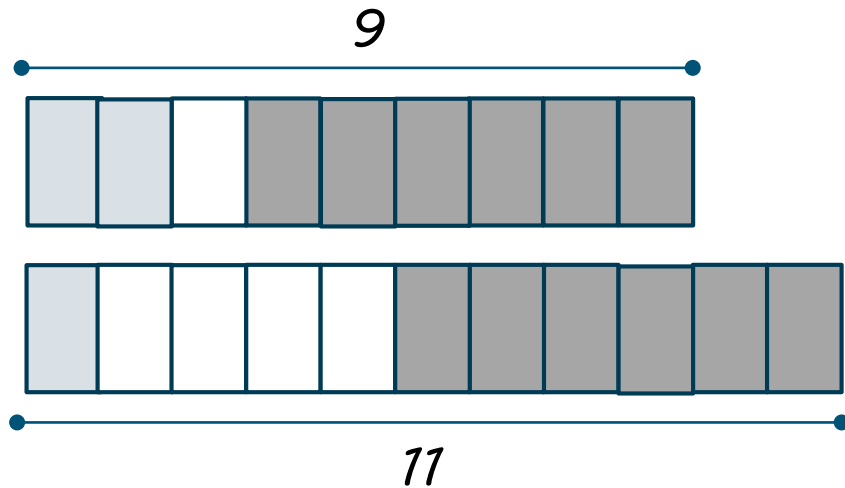
### Part 2



1. Roll dice to generate 6 numbers.
2. The child represents 3 of the numbers with a bar model and describes the combination.
3. Then create a bar model for the other 3 numbers below the first one and describe the combination.
4. If the relationship is not equal, what could you do to make them equal?
6. Draw the bar models showing how to make them the same (see example).



# Example – Part 2



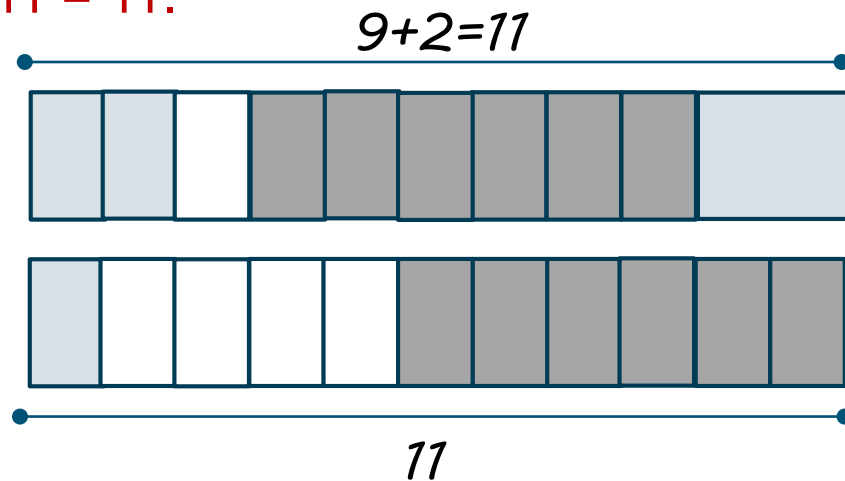
I rolled a two a one, a six, a one, a four and a six.

$$2 + 1 + 6 = 9$$

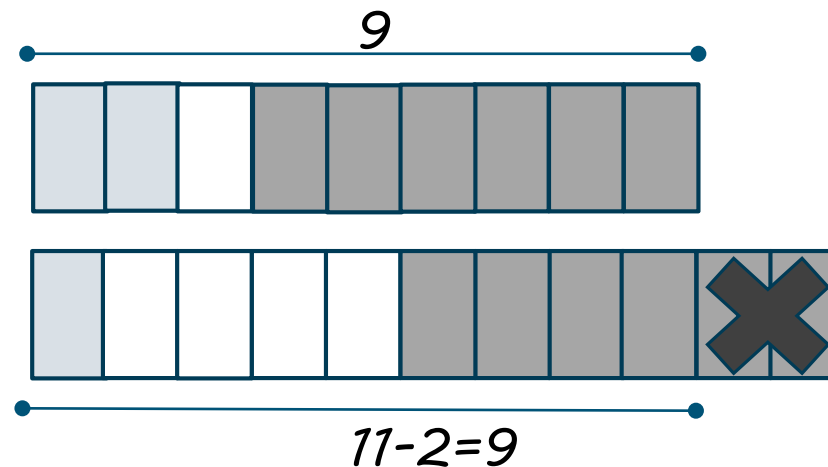
9 does not equal 11

$$1 + 4 + 6 = 11$$

To make them the same, add two to the nine, so  $11 = 11$ .



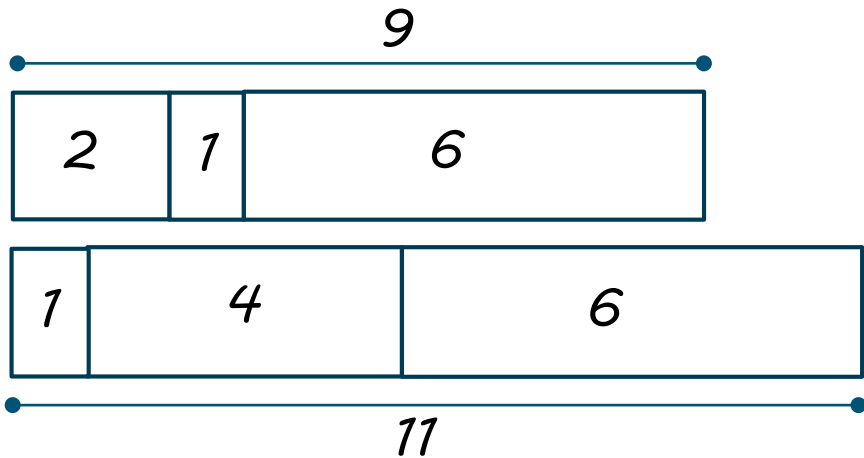
To make them the same, take two away from eleven, so  $9 = 9$ .



# Example – Part 2



I rolled a two a one, a six, a one, a four and a six.

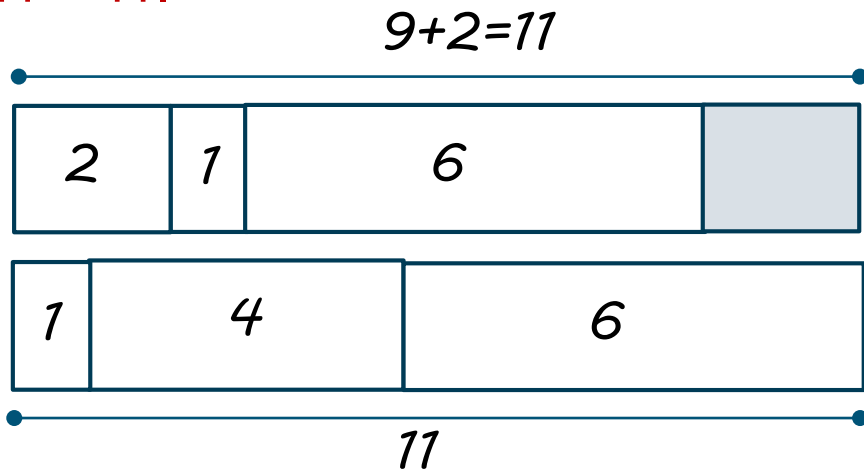


$$2 + 1 + 6 = 9$$

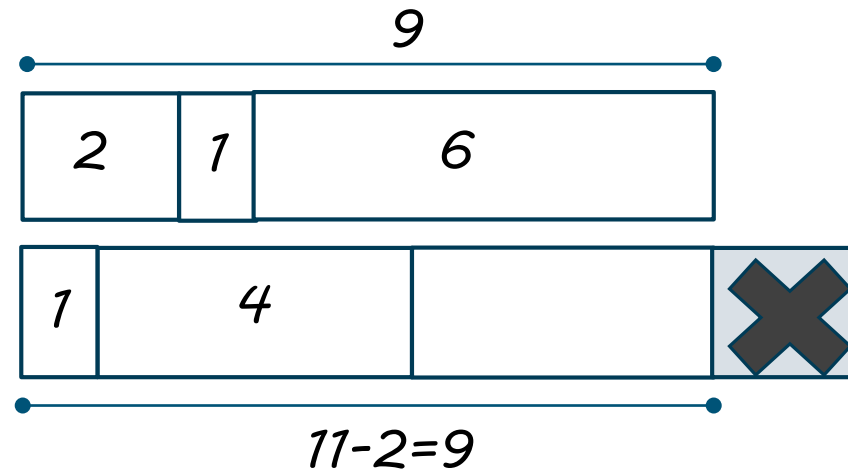
9 does not equal 11

$$1 + 4 + 6 = 11$$

To make them the same, add two to the nine, so  $11 = 11$ .



To make them the same, take two away from eleven, so  $9 = 9$ .





“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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