

Number Line – Adding Up to Subtract

Materials: Paper and pencil

Purpose: Student practices solving subtraction problems by adding to find the missing piece.

Tell student:

“In Ten Frame Tornado – Subtraction you found answers to subtraction problems by finding the missing piece. You were given the total number and the number on one side. You then determined how many dots were on the second side. This is called ‘adding up to subtract’ and you can use this this method for any subtraction problem.

Today we will try some more problems and use a number line to keep track of your thinking.”

Example: $65 - 39$

Write $65 - 39$ on paper and ask student to solve on the Number Line by jumping back to subtract as he/she has done before. He/she might jump back 5, jump back 30, and jump back 4 to get the answer, 26. He/she could also take away 39 using other pieces/jumps. Let student verify that the answer is 26 however he/she chooses.

Tell student,

“Now we are going to solve the same problem another way. Instead of thinking $65 - 39 = ?$, we will think of 65 as the total, and 39 as one of the pieces, so to find the other piece we can solve $39 + ? = 65$.”

Write $39 + ? = 65$ on paper. Ask student to start at 39 and figure out the distance to 65, moving in jumps/chunks. One possibility (as shown below) would be to add **1** to get to 40 and **20** to get to 60, then **5** to get to 65. The sum of the parts added is **26**.

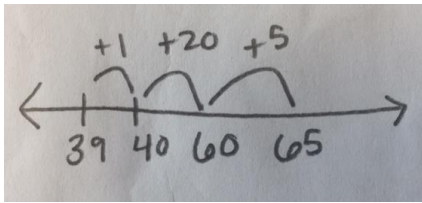
If student struggles to solve, read the example student response below and ask student to model it on the number line.

After solving, ask student,

“Can you find all the parts of our equation modeled in our number line drawing? Where is the 65 we started with? Where is the 39? Where is our answer?”

Ask student to record his/her method of solving the problem in numeric form as shown below:

Example for 65 - 39:



Example Student Recording Sheet

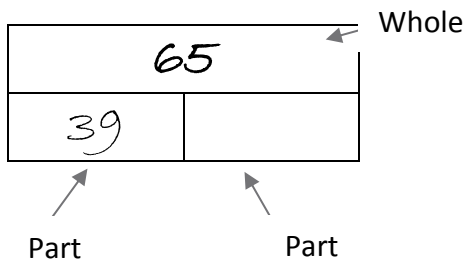
<p><i>Student</i></p> <p>$39 + 1 = 40$</p> <p>$40 + 20 = 60$</p> <p>$60 + 5 = 65$</p>
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Example Student Response

<p>"I am at 39. I will add 1 to get to 40 and then 20 to get to 60. I will then add 5 more to get to 65. That means I added 26 total."</p>
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Tell student,

"Essentially you broke the number 65 into two pieces, 39 and 26. That means that 65 - 39 is 26. Another way to look at this connection is to create a fact family, like you've done with smaller numbers. Copy the diagram below onto your own paper and fill it in to represent the way you broke apart 65. Then write the four matching equations below the diagram."



$$65 - 39 = 26$$

$$65 - 26 = 39$$

$$26 + 39 = 65$$

$$39 + 26 = 65$$

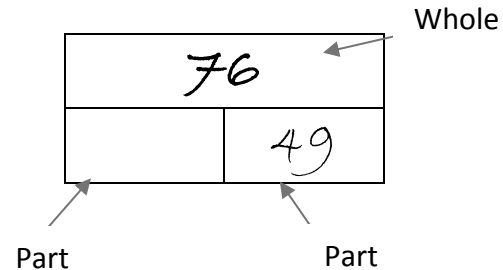
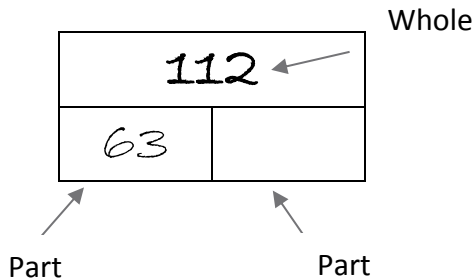
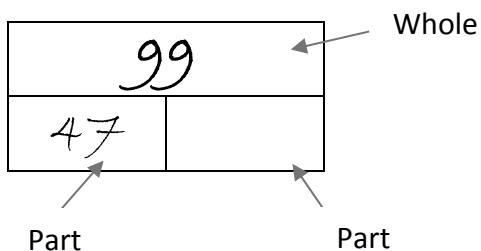
Additional Examples:

For each problem below, ask student to solve by "adding up" on the Number Line and show in numeric form his/her method of solving. Then have him/her copy and complete the diagrams below, including the four matching equations.

$$99 - 47$$

$$112 - 63$$

$$76 - 49$$



NOTE: If student struggles to understand the concept of "adding up" to subtract, move on to the next lesson. This is one of many strategies he/she can use to subtract and this method does not need to be mastered.