

<b>Grade 1</b>	<b>Lesson: 2-10</b> <b>Connecting Models and Symbols</b>	Reference to English
<b>Math Standard(s): 1.OA.7 &amp; 1.OA.8</b>		<b>Domain: Operations and Algebraic Thinking</b>
<b>Content Objective(s):</b>	<b>Language Objective(s):</b>	
Students will write and identify different subtraction sentences that are true for the same model. <i>I can write and identify different subtraction sentences for the same model.</i>	Students will say 4 difference subtraction sentences with each number combination. <i>I can say 4 different subtraction sentences using 3 numbers.</i>	
<b>Essential Understanding:</b> The differences can be written at the beginning or end of a subtraction sentence, as long as the number or expressions on each side of the equal sign are the same amount.	<b>Academic Vocabulary for Word Wall:</b> <b>Listen:</b> same amount, difference <b>Read:</b> <b>Write:</b> <b>Speak:</b> same amount, <b>Sentence Frame:</b>	
<b>Materials:</b> <ul style="list-style-type: none"> <li>Two-color counters</li> <li>Whiteboards and dry erase markers</li> <li>Guided Practice page 78-79</li> <li>Problem Solving page 80</li> </ul>	<b>Additional Lesson Vocabulary:</b> parts	
<b>Lesson: Connecting Models and Symbols</b>		<b>Instructional Time: 45 minutes</b>
<p><b>Opening: (3 minutes)</b></p> <p><b>T: "You have learned how to write subtraction sentences that show the difference at the end. Today, you will learn another way to write a subtraction sentence."</b></p> <ul style="list-style-type: none"> <li>Teacher puts up 3 fingers on each hand.</li> </ul> <p><b>T: "Show me 3 fingers on each of your hands."</b></p> <ul style="list-style-type: none"> <li>Write <math>3 = 3</math> on the whiteboard.</li> </ul> <p><b>T: "Now change, your fingers to show 3 another way. What if I have 2 fingers up on one had and 1 finger up on the other. I will write that, <math>2 + 1 = 3</math>. How else can we make three with our fingers?"</b></p> <p>S: will hold up their hands showing how to make 3.</p> <ul style="list-style-type: none"> <li>Teacher will write down the different ways the students show how to make 3 with their fingers.</li> </ul> <p><b>T: "Let's see how we can write that."</b></p> <ul style="list-style-type: none"> <li>Students hold up fingers on their two hands to show different ways to make 3.</li> </ul> <p><b>T: "What does this equal?"</b></p> <p>S: will say "3".</p> <ul style="list-style-type: none"> <li>Teacher records <math>2 + 1 = 3</math> on the whiteboard. Write this new equation under the first one, but this time write the sum on the left: <math>3 = 2 + 1</math>.</li> </ul> <p><b>T: "Look at the board, you see <math>1 + 2 = 3</math> and <math>3 = 1 + 2</math>. How are these equations the same?"</b></p> <p>S: will say "the number(s)"</p> <p><b>T: "You need to have the same amount on both sides of the equal sign."</b></p> <p><b>Introduction to New Material (Direct Instruction): (10 minutes)</b></p> <ul style="list-style-type: none"> <li>Write the following on the whiteboard: <math>\underline{\quad} - \underline{\quad} = \underline{\quad}</math> <math>\underline{\quad} = \underline{\quad} - \underline{\quad}</math></li> </ul> <p><b>T: "We have spaces for two number sentences here. How are they different?"</b></p> <p>S: will say, "the equal sign and subtraction sign are in different place."</p> <ul style="list-style-type: none"> <li>Help students with the vocabulary or allow them to come up to the board and point out the differences.</li> <li>Pass out counters, whiteboards and markers to the students.</li> <li>Draw a large square on the whiteboard. Draw a line down the middle of the square to divide it into two equal parts. Have the students draw the same thing on their whiteboards.</li> </ul> <p><b>T: "We are going to make two subtraction sentences using the numbers 4, 1, and 5? I will make the first and I need your help to make the second."</b></p> <p><b>T: "Put 4 counters in the first box."</b></p> <ul style="list-style-type: none"> <li>The teacher will draw 4 counters in the first box on the whiteboard.</li> </ul> <p><b>T: "How many counters do I put in the second box?"</b></p> <p>S: will respond, "1"</p>		

- The teacher will draw 1 counter in the second box on the whiteboard.

**T: “Good, how many counters are in the whole? Tell your neighbor.”**

S: will say to their neighbor, “5”.

**T: “What is the first subtraction sentences you can use with 4 and 1 as the parts? Let’s do it together.”**

**T: “The whole is 5, so that goes first. Then what?”**

S: will respond with “4” or “1”

**T: “5 minus 4 equals what? Show me with your fingers.”**

S: will show 1 with their fingers.

**T: “Read the subtraction sentence to your neighbor.”**

S: will read “ $5 - 4 = 1$ ” to their neighbor.

**T: “On your white board please write the other subtraction sentence using 5, 4, 1. Then tell your neighbor.”**

S: will write and say “ $5 - 1 = 4$ ”.

**T: “Show me your boards. Good,  $5 - 1 = 4$ . Now I want you to use a different order. I will start it by writing  $4 = \underline{\quad} - \underline{\quad}$ . Fill in the blanks.”**

S: will fill in the blanks.

**T: “Do it again with 1. What are the two subtraction sentences where the difference is 1? Write them and say them to your neighbor.”**

S: will write and say “ $5 - 4 = 1$  and  $1 = 5 - 4$ .”

- The teacher records these two number sentences on the whiteboard.
- The students record these two number sentences on their whiteboards.

**T: “Is  $5 - 4$  the same as 1?”**

S: will say “yes”.

**T: “Does  $1 = 5 - 4$  mean the same as  $5 - 4 = 1$ ?”**

S: will say “yes”.

**T: “What are two subtraction sentences where the difference is 4? Write and say it to your neighbor.”**

S: will write and say “ $5 - 1 = 4$  and  $4 = 5 - 1$ .”

**T: “Say the subtraction sentences with me.”**

S: will say, “ $5 - 1 = 4$  and  $4 = 5 - 1$ .”

- The teacher records these two number sentences on the whiteboard.
- The students record these two number sentences on their whiteboards.

**T: “Is  $5 - 1$  the same as 4?”**

S: will say “yes”.

**T: “Does  $5 - 1 = 4$  mean the same as  $4 = 5 - 1$ ?”**

S: will say “yes”.

### **Guided Practice: (17 minutes)**

Use the modeling cycle:

Teacher Does:

**T: “Let’s make subtraction sentences using the numbers 4, 2, and 6. Put 4 counters in the first box.”**

- The teacher will draw 4 counters in the first box on the whiteboard.

**T: “Put 2 counters in the second box.”**

- The teacher will draw 2 counters in the second box on the whiteboard.

**T: “How many counters are in the whole? Let’s count them together.”**

S: will say “1,2,3,4,5,6”.

**T: “Yes, there are 6 in all. What are subtraction sentences you can use with 4 and 2 as the parts? Write it on your board and tell your neighbor.”**

S: will write and say “ $6 - 4 = 2$ ,  $6 - 2 = 4$ ,  $2 = 6 - 4$ , or  $4 = 6 - 2$ ”.

**T: “What are the two subtraction sentences where the difference is 2? Circle those subtraction sentences on your board.”**

S: will circle “ $6 - 4 = 2$  and  $2 = 6 - 4$ .”

**T: “Hold up your boards and show me. Let’s say them together as I write them on the board.”**

S: will say, “ $6 - 4 = 2$  and  $2 = 6 - 4$ .”

- The teacher records these two number sentences on the whiteboard.

**T: “Is  $6 - 4$  the same as 2?”**

S: will say “yes”.

**T: “How do you know?”**

S: will say, “6 minus 4 equals 2.”

**T: “Does  $2 = 6 - 4$  mean the same as  $6 - 4 = 2$ ?”**

S: will say “yes”.

**T: "What are two subtraction sentences where the difference is 4? Write them on the board and then tell your neighbor."**

S: will write and say " $6 - 2 = 4$  and  $4 = 6 - 2$ ."

**T: "Show me your boards. Good job. Help me write the two subtraction sentences where the difference is 4."**

•The teacher records these two number sentences on the whiteboard.

S: will help the teacher write the two subtraction sentences.

**T: "Help me read the sentences. " $6 - 2 = 4$  and  $4 = 6 - 2$ ."**

**T: "Is  $6 - 2$  the same as 4?"**

S: will say "yes".

**T: "How do you know?"**

S: will say, "6 minus 2 equals 4. 4 equals 4."

**T: "Does  $6 - 2 = 4$  mean the same as  $4 = 6 - 2$ ?"**

S: will say "yes".

Student Does with Teacher:

**T: "I need a student to help me."**

• Pick a student to come up and demonstrate the activity with the teacher.

**T: "Let's look at another problem. This time let's use the numbers 3, 4, and 7. I am going to put 3 counters in the first box."**

• The teacher will draw 3 counters in the first box on the whiteboard.

**T: "I am going to put 4 counters in the second box."**

• The teacher will draw 4 counters in the second box on the whiteboard.

**T: "How many counters are in the whole? Count with me. 1,2,3,4,5,6,7"**

S: will say "7".

**T: "Now I want you to fill in the blanks for the four subtraction sentences you can make with 4,3 and 7. We will read them with you as you write them."**

S: will write and say " $7 - 4 = 3$ ,  $7 - 3 = 4$ ,  $3 = 7 - 4$ , or  $4 = 7 - 3$ ".

• The student volunteer will write these four subtraction sentences on the whiteboard.

**T: "I want you to circle two subtraction sentences with the same difference?"**

S: will say " $7 - 4 = 3$  and  $3 = 7 - 4$  or  $7 - 3 = 4$  and  $4 = 7 - 3$ ."

• The student volunteer will circle two subtraction sentences on the whiteboard with the same difference.

**T: "Great job!"**

2 Students Do:

**T: "I need 2 students to help me. Raise your hand if you want to help me."**

• Teacher will choose 2 students.

**T: "You two are going to demonstrate this activity for us today. This time we are going to use the numbers 2, 6, and 8."**

**T: "Student #1 will draw counters in the first box and counters in the second box. Student #2 will write four subtraction number sentences. Student #2 will then circle two subtraction sentences with the same difference. Then you will read them together."**

S: #1 draws 2 counters in one box and 6 counters in the second boxes.

S: #2 will write will write four subtraction number sentences. Student #2 will then circle two subtraction sentences with the same difference.

**T: "Then, you will switch jobs. Thank you for helping. You two may go back to your seats."**

• The teacher will write the following number combination on the whiteboard: 2, 3, and 5; 1, 3 and 4; 1, 2, and 3; 1, 5, and 6; 2, 5, and 7. Underneath each write the 4 blank subtractions sentences.

All Students Do:

**T: "Now you all know how to do the activity. I am going to separate you into groups of two. When I say your name take your supplies and find a place to sit with your partner. You will have 5 minutes to do this activity with your partner. You may use any of the number combination written on the whiteboard for this activity. Make sure you are switching roles, so that you each have an opportunity to write and circle the subtraction number sentences. When I clap my hands I want your attention on me."**

**T: "Look at the board. There are 4 number combinations. You will need to write 4 subtraction sentences for all of them."**

• As the teacher calls on the students they find a place in the classroom to work with their partner.

• Teacher will walk around the classroom as the students do the activity and make sure they are on task.

**T: (Clap to get their attention.) "You have 10 seconds to put your supplies away and sit at the carpet. 10,9,8,7,6,5,4,3,2,1. Good, you all made it."**

**Independent Practice: (12 minutes)**

**T: "Now it is your turn to do it on your own. Each of you will be given this worksheet. Let's do the first problem together."**

• Pass out guided practice page 78-79.

**T: "Which number sentence is true?"**

S: will say " $4 = 6 - 2$ ".

**T: "Circle that true number sentence. Which number sentence is not true?"**

S: will say " $4 - 6 = 2$ ".

**T: "Draw a line through that false number sentence. What is another number sentence that is true about the model?"**

S: will say " $6 - 2 = 4$ ".

**T: "Write that number sentence on the lines. Now it is your turn to do problems #2, 3, 4, and 5. You will have 4 minutes, when I clap my hands come back to the carpet."**

- Students will get to work finishing pages 78-79. As they are working independently the teacher will walk around the room asking students to answer questions and check for any misconceptions.
- Teacher claps hands and students return to the carpet. Do problems 6, 7, and 8 on the problem solving page together.

**Closing: (3 minutes)**

- Collect the papers and bring the class together on the floor.

**T: "Let's look at question #4 on page 79. Which number sentence is true?"**

S: will say " $3 = 8 - 5$ ".

**T: "Circle that true number sentence. Which number sentence is not true?"**

S: will say " $5 - 8 = 3$ ".

**T: "Draw a line through that false number sentence. What is another number sentence that is true about the model?"**

S: will say " $5 - 8 = 3$ ".

**T: "So, you should have  $5 - 8 = 3$  written on the lines. Great job today!"**

**Assessment:**

**Guided Practice**