

2nd Grade	
Task: Carla’s Tall Order!	
<p>Carla wants to know how tall everyone in her family is. She knows that her mom’s height is 66 inches. She also knows that her mom is 18 inches taller than she is, and that her dad is 5 inches taller than her mom.</p> <p>(1) How tall is Carla’s dad? Write an equation that represents this problem and explain your answer.</p> <p>(2) How tall is Carla? Write an equation with an unknown that represents this problem and solve the problem using pictures, numbers, and words.</p> <p>(3) If Carla’s sister is 56 inches tall, put the members of Carla’s family in order from tallest to shortest. Draw a picture to model this situation.</p> <p>(4) Compare Carla’s height to her sister’s height using mathematical symbols and words. Who is taller? How do you know?</p>	
Teacher Notes:	
<p>For part 1, students can write $66 + 5 = ?$ or $? - 5 = 66$. Encourage them to make the connection with addition and subtraction in both responses. Also, encourage them to draw a number line or use ten frame drawings to help them carry over the one. Make sure they include measurement in their final answer.</p> <p>For part 2, encourage students to write the equation $? + 18 = 66$. This includes the unknown and presents an equation. Then they can rewrite $66 - 18 = ?$ to represent the part/part/whole relationship. This technique is similar to part 1, but the question specifically asks for the equation with the unknown. Make sure they include measurement in their final answer.</p> <p>For part 3, the pictures will help students put the family members in numerical order from tallest to shortest, while providing a great visual.</p> <p>For part 4, students will need to use $<$, $>$, or $=$ signs to complete their answer. Try to get them to state into words which number is bigger or smaller, then connect the appropriate symbol with their words. Encourage them to start using the phrases “less than” or “greater than”.</p>	
Common Core State Standards for Mathematical Content	Common Core State Standards for Mathematical Practice
<p>2.OA.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</p> <p>2.MD.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.</p>	<ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.

Essential Understandings	
<ul style="list-style-type: none"> ▪ Missing numbers in a math sentence/equation or word problem can be found using addition and subtraction. ▪ Subtraction has an inverse relationship with addition. ▪ Part-part-whole relationships can be expressed by using number sentences like $a + b = c$ or $c - b = a$, where a and b are the parts and c is the whole. 	
Explore Phase	
Possible Solution Paths	Assessing and Advancing Questions
<p>(1) May write their equation in two ways: $a + b = c$ or $c - b = a$. They could also draw ten frames, pictures, or number lines to assist them with regrouping in this particular part of the problem.</p> <p>(2) May write: $? + 18 = 66$ and state that since Carla's mom is 18 inches taller than her, they need to add 18 inches to Carla's height. They could draw pictures of ten frames or number lines to complete the problem.</p> <p>(3) May draw a picture of Carla's family or place each of their heights on a number line to showcase the order from tallest to shortest.</p> <p>(4) May write that Carla is shorter than her sister and then compare their heights of 48 and 56 using $<$ or $>$ and state 48 is less than 56 or 56 is greater than 48.</p>	<p>Assessing Questions</p> <ul style="list-style-type: none"> ▪ Why did you write your equation the way that you did? Explain. ▪ How does your equation match your picture? Tell me why you chose to draw what you did. ▪ How did you know what order to put Carla's family in? ▪ Why did you choose that mathematical symbol? What two numbers are you comparing? <p>Advancing Questions</p> <ul style="list-style-type: none"> ▪ Can you write your equation a different way? Can you rewrite your equation from addition to subtraction or subtraction to addition? How do you know? ▪ How could you write your equation without using an unknown? Can you draw a new picture to represent this equation? ▪ What if Carla had another sister that is 58 inches tall? How does that change the order? ▪ What if Carla grew 8 inches over the next few years? Will she be taller, shorter, or the same height as her sister (if she does not grow at all)? Explain.
Possible Student Misconceptions	
<ol style="list-style-type: none"> 1. Students could regroup incorrectly or add $18 + 66 = 84$. 2. Students could leave out the unknown and just subtract $66 - 18 = 48$. They may subtract incorrectly. 3. May put Carla's family from shortest to tallest, or in the wrong order altogether. 4. May use the wrong inequality symbol even though they know 48 is smaller than 56. 	<p>Assessing Questions</p> <ul style="list-style-type: none"> ▪ What two numbers are we dealing with in this part of the problem? How do you know? Draw a picture to help you. ▪ Which two numbers are we dealing with in this part of the problem? How do you know? Can you write an equation that includes those two numbers and an unknown? ▪ What is the question asking us to do? Draw Carla's family with their heights. Using those numbers, how do you know what order to put

	<p>them in?</p> <ul style="list-style-type: none"> What numbers are we comparing? What can you tell me about those two numbers? Given what you are telling me, what symbol matches your words?
Entry/Extensions	Assessing and Advancing Questions
If students can't get started....	<p>Assessing Questions</p> <ul style="list-style-type: none"> What is the question asking you? What two numbers are you going to be working with? What two numbers are you working with now? What will you do with those two numbers? Draw a picture to help you. How tall is everyone in Carla's family? How could you put those in order? Draw a picture. What two numbers are you comparing? Which symbol will you use to so that your comparison is true?
If students finish early....	<p>Assessing Questions</p> <ul style="list-style-type: none"> How did you find out how tall Carla and her father are? Explain your method to a classmate. How do you know what order to put Carla's family in? What picture did you draw and why? <p>Advancing Questions</p> <ul style="list-style-type: none"> What if Carla's mom was only 55 inches tall? How would that change Carla's height and her dad's height? How would that change the order from tallest to shortest in Carla's family?
Discuss/Analyze	
Whole Group Questions	
Write the key understandings that students should come to in the discussion of this task and questions you can ask in the whole group setting to support arrival at these key understandings	
Part-Part-Whole	
<ul style="list-style-type: none"> Can anyone tell me the different ways they could represent Carla's height and her dad's height? Why do these give you the same answer? Explain. 	
Comparing numbers using mathematical symbols	
<ul style="list-style-type: none"> How did we know which two numbers to compare? What mathematical symbol can we use to compare these two numbers? Does the symbol we used match our words? 	

Carla's Tall Order

Name _____

Carla wants to know how tall everyone in her family is. She knows that her mom's height is 66 inches. She also knows that her mom is 18 inches taller than she is, and that her dad is 5 inches taller than her mom.

(1) How tall is Carla's dad? Write an equation that represents this problem and explain your answer.

(2) How tall is Carla? Write an equation with an unknown that represents this problem and solve the problem using pictures, numbers, and words.

(3) If Carla's sister is 56 inches tall, put the members of Carla's family in order from tallest to shortest. Draw a picture to model this situation.

(4) Compare Carla's height to her sister's height using mathematical symbols and words. Who is taller? How do you know?