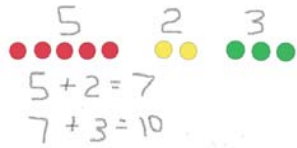| Task: The Four-Leaf Clover Task	Kindergarten

Max is collecting four-leaf clovers. He found 5 clovers while playing at the park. He found 2 clovers in his yard. How many four-leaf clovers does Max have? Use a drawing, objects, or a number sentence (equation) to show how you found your answer.

Max claims that if he finds 3 more clovers he will have 10. Do you agree or disagree with Max? Use a drawing or a number sentence (equation) in your explanation.

Teacher Notes:

Cubes, counters, or other manipulatives should be available for students to use as needed. A part-part-whole map or a tens frame may be helpful for some students to visualize and to make sense of the problem. The term "number sentence" is used instead of "equation". Teachers should model the term "equation" but students may continue to use the term "number sentence". Students may choose not to write an equation, but should be able to explain how they found the answer with a drawing or model. If students do not write an equation, the teacher may choose to model this in the whole group discussion.

Common Core State Standards for Mathematical Content	Common Core State Standards for Mathematical Practice
K.OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings[1], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. **K.OA.A.2** Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. **K.OA.A.4** For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation. [1] Drawings need not show details, but should show the mathematics in the problem.	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

- The addition of whole numbers is based on sequential counting.
- Addition equations can be used to describe situations that involve combining quantities.

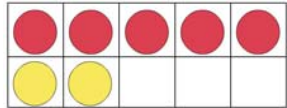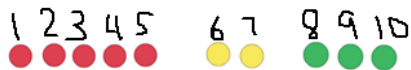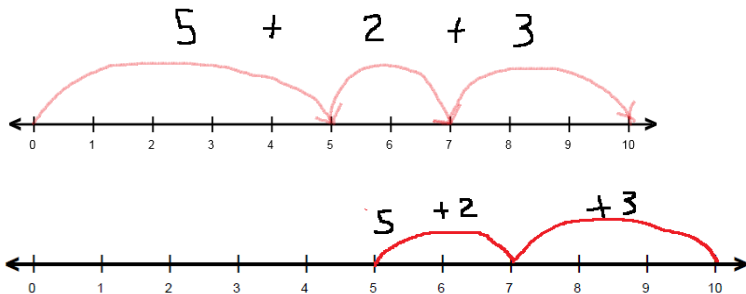| Explore Phase	
Possible Solution Paths	**Assessing and Advancing Questions**
Direct Modeling with manipulatives or drawings Student draws or counts 5 objects and 2 objects and recognizes that the quantities should be combined to get a total of 7. Student then determines that 7 and 3 more will equal 10. Student agrees with Max's statement that he needs 3 more to have a total of 10. Using a tens frame, student can count that 5 and 2 are 7. Student agrees that if Max had three more he would have a total of ten.	**Assessing Questions** • How did you determine the number of clovers that Max has? • How did you determine the number of clovers that Max will need to have 10 clovers? • Describe your drawing or equation. How did this help you determine your solution? • What do the 5 and 2 represent in your equation? **Advancing Questions** • You have determined that Max has 7 clovers. How can you determine how many more he needs to have 10? • Can you write an equation to represent this situation? (for students who did not write an equation)
Counting On Students begins with 5 (or counts up to 5) and counts on 2 more for a total of 7 and then counts on 3 more for a total of 10. Student then agrees with Max's statement that if he had 3 more he would have a total of 10. This could be illustrated with a number line in one of the following ways: 	**Assessing Questions** • How did you determine the number of clovers that Max has? • How did you determine the number of clovers that Max will need to have 10 clovers? • Where did you start counting? How do you know where to stop counting? • What do the 5 and 2 represent in your equation? **Advancing Questions** • You have determined that Max has 7 clovers. How can you determine how many more he needs to have 10? • Can you write an equation to represent this situation? (for students who did not write an equation) • How can a number line be used to model this situation?

Possible Student Misconceptions	
Student does not correctly add the number of clovers and finds an incorrect sum.	- How do you know where to start counting? - What does the starting number represent? - How much will you add to the starting number? - What do the numbers 5, 2 and 3 represent? - How can counting help you find your answer?
Student does not agree that if Max finds 3 more clovers then he will have 10.	- How many clovers does Max have after he finds 5 and 2 clovers? - If Max has 7 clovers, how many more will he need to have 10?

Entry/Extensions	**Assessing and Advancing Questions**
If students can't get started….	- Describe the story problem. - How many clovers does Max have after he visits the park and his yard? - How can you model this story problem with cubes?
If students finish early….	- How many more clovers will Max need to find so that he has 12 clovers? - If Max finds 5 clovers and 2 clovers, but then loses 1 clover. How many more will he need to have 10 clovers?

Discuss/Analyze
Whole Group Questions
- Describe how you found the total number of clovers that Max found at the park and in his yard?   - How can a tens frame, cubes or a number line help us model this problem?   - How can we represent this problem with an equation?

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