

<b>Domain:</b> <b>Operations and Algebraic Thinking</b>	<b>Cluster:</b> <b>Represent and solve problems involving addition and subtraction.</b>
<b>1.OA.A.1</b> <b>Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.*</b>  <small>* See Glossary, Table 1 of Common Core State Standards for Mathematics for clarification of various types of problems.</small>	
<b>Notes to Teacher:</b>	
<p>Below are samples of each of the types of addition and subtraction problems outlined for first grade with unknowns in various positions.</p> <p>Using these, and other similar problems, will provide practice with each type of thinking required for first graders. Keep in mind that the goal of mathematics instruction is to teach children to make sense of mathematics and use it to solve problems. Although each of these problems represents a specific type designated in the standard, there may be multiple ways to approach the solution. Students should be encouraged to make their own sense of the problem and not be penalized if their approach does not line up with the stated type. For example, a student may set up a subtraction problem for one that is designated as an unknown addend. As long as the student uses sound reasoning and can explain his/her approach, he/she should be allowed to proceed in the manner that makes sense to him/her. Allow students ample opportunities to share their reasoning with each other so that they may experience multiple approaches and deepen their own understanding.</p> <p>Students may need explicit instruction in making mathematical drawings. Point out that these drawings should be quick and simple to draw. Many students may benefit from numerous experiences completing the drawings before attempting to write an equation with an unknown. Once students become familiar with using drawings to solve problems, the drawings may help to clarify their thinking and enhance their ability to use symbols to write an equation.</p> <p>Although the standard states that students will represent the unknown with a symbol, it does not necessarily have to be a letter. It could be a blank, an empty box, a question mark, etc.</p> <p>The examples given below may exceed the independent reading ability of most first graders, particularly at the beginning of the school year. It would be difficult to achieve the level of rigor expected to develop the</p>	




mathematical concepts while maintaining a first grade reading level.

# GLOSSARY:

Addend + Addend = Sum

Minuend — Subtrahend = Difference

Knowledge of these terms is necessary for the teacher to interpret the different types of problems below. It is **NOT** necessary for students to know the terms addend, minuend and subtrahend.

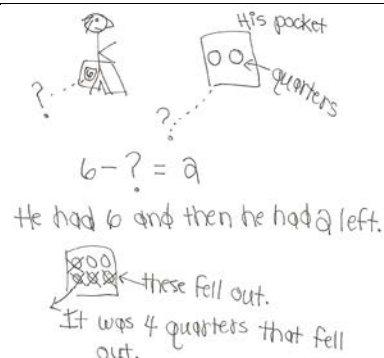
Task	Explanation/Comments	Sample Student Work
<p>Graham had 5 toy cars. He bought 8 more at his neighbor's yard sale. How many toy cars does Graham have now?</p> <p>Draw a picture to help you solve this problem.</p> <p>Write an equation to represent your work.</p>	<p>Example of <i>Adding to</i> w/unknown sum</p>	<p>x = cars he had o = cars he bought</p>  <p>13 5+8=13 cars</p>
<p>Aubrey had some seashells in a box. She found 4 more seashells in her closet and put them in the box. Now there are 13 seashells in the box. How many seashells were in the box to begin with?</p> <p>Draw a picture to help you solve this problem.</p> <p>Write an equation to represent your work.</p>	<p>Example of <i>Adding to</i> w/unknown addend</p>	 <p>? + 4 = 13 I counted 4 seashells</p>
<p>Anna had 18 dog treats. She gave 7 to her puppy. How many dog treats does Anna have now?</p> <p>Draw a picture to help you solve this problem.</p> <p>Write an equation to represent your work.</p>	<p>Example of <i>Taking from</i> w/unknown difference</p>	 <p>18-7=11 dog treats</p>

Isaac had 6 quarters in his pocket. Some of them slipped out through a hole in his pocket. When he got to the store he only had 2 quarters left in his pocket. How many fell out?

Draw a picture to help you solve this problem.

Write an equation to represent your work.

Example of *Taking from* w/unknown subtrahend

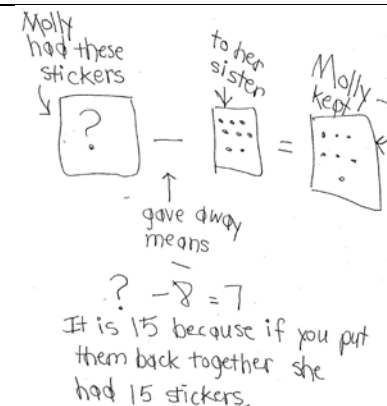


Molly had some ladybug stickers. She gave 8 of the stickers to her sister and kept 7 for herself. How many stickers did Molly have to begin with?

Draw a picture to help you solve this problem.

Write an equation to represent your work.

Example of *Taking from* w/unknown minuend

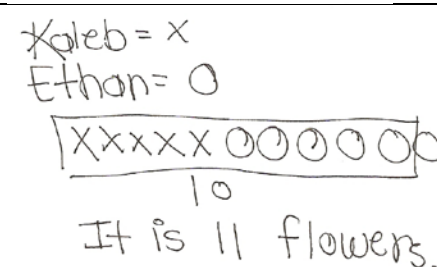


Kaleb and Ethan were planting flowers in pots for a school project. Kaleb brought 5 pots and Ethan brought 6 pots. They had just enough pots to put one flower in each pot. How many flowers did they have?

Draw a picture to help you solve this problem.

Write an equation to represent your work.

Example of *Putting together* w/unknown sum

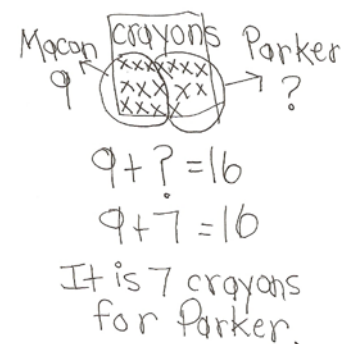


Macon and Parker picked up the crayons that spilled onto the floor. When they put all the crayons back in the box, there were 16 crayons. Macon counted as he put the crayons in the box. He knows that he put 9 crayons in. How many crayons did Parker put in the box?

Draw a picture to help you solve this problem.

Write an equation to represent your work.

Example of *Putting together*  
w/unknown addend

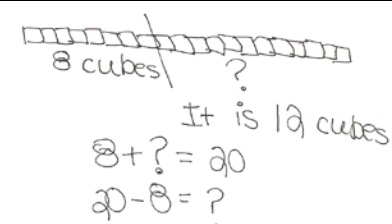


Cole and Maggie worked together to make a train that had 20 cubes. They broke it into two pieces. One piece had 8 cubes. How many cubes were in the other piece?

Draw a picture to help you solve this problem.

Write an equation to represent your work.

Example of *Taking apart*  
w/unknown difference

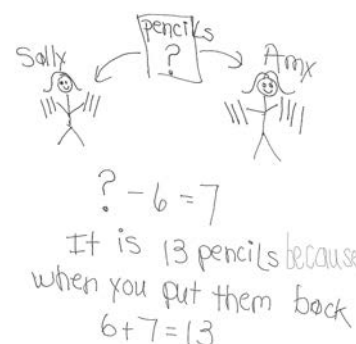


Sally and Amy shared one box of colored pencils. They used all of the pencils to make drawings for art class. Sally chose 6 pencils to use for her drawing. Amy chose 7 pencils. How many pencils were in the box to begin with?

Draw a picture to help you solve this problem.

Write an equation to represent your work.

Example of *Taking apart*  
w/unknown minuend

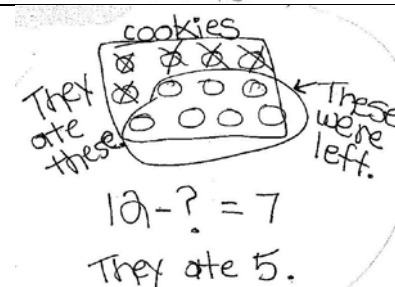


Skip and Jacob made 12 cookies. They ate some as soon as they had cooled off. There were 7 cookies left. How many cookies did Skip and Jacob eat?

Draw a picture to help you solve this problem.

Write an equation to represent your work.

Example of *Taking apart*  
w/unknown subtrahend



In the basketball game, Tiffany scored 10 points and Alexa scored 12 points. How many more points did Alexa score?

Draw a picture to help you solve this problem.

Write an equation to represent your work.

Example of *Comparing*  
w/unknown difference

Tiffany  
|||||  
  
Alexa  
||||| (11) This is how many more.  
 $12 - 10 = 2$   
It is 2 points.

Carson has 14 plastic bugs in his collection. He has 5 more bugs than his brother has. How many bugs does Carson's brother have?

Draw a picture to help you solve this problem.

Write an equation to represent your work.

Example of *Comparing*  
w/unknown subtrahend

Carson's bugs  
~~|||||~~ ||||| not these  
brother's bugs  
|||||  
He has 9 bugs  
 $14 - ? = 5$