

Name \_\_\_\_\_

Date \_\_\_\_\_

1. There are 9 ducks swimming along in a line. There are 2 grown-up ducks, and the rest are babies. How many of the ducks are babies?

a. Explain your thinking using pictures, numbers, or words.

b. Write a number sentence that shows how you solved the problem.

\_\_\_\_\_

2. Jennifer says you can use addition to solve subtraction.

She says to solve  $9 - 6 = \square$ , just add  $9 + 6$ .

Explain how Jennifer is right **and** wrong using words, pictures, and numbers.

3. Jeremy is confused about this problem:  $\square = 10 - 8$ . Be his teacher. Write two addition number sentences that might help him understand and solve it. Explain to Jeremy using words, pictures, or numbers, too.
4. At the park, there are 6 friends playing baseball. Some more friends come. Now, there are 10 friends playing.
- a. How many friends come to play with the first 6 friends? Explain your thinking using a math drawing, numbers, and words.

- b. Write an addition sentence and a subtraction sentence to match the story.

\_\_\_\_\_

- c. Write the addition sentence you found when solving the problem, and use the same 3 numbers to write 3 more number sentences:

\_\_\_\_\_

\_\_\_\_\_

**End-of-Module Assessment Task  
Standards Addressed**

Topics A-J

**Number and Operations****The student is expected to:**

- 1.3B** use objects and pictorial models to solve word problems involving joining, separating, and comparing sets within 20 and unknowns as any one of the terms in the problem such as  $2 + 4 = [ ]$ ;  $3 + [ ] = 7$ ; and  $5 = [ ] - 3$ ;
- 1.3D** apply basic fact strategies to add and subtract within 20, including making 10 and decomposing a number leading to a 10;
- 1.3E** explain strategies used to solve addition and subtraction problems up to 20 using spoken words, objects, pictorial models, and number sentences;
- 1.3F** generate and solve problem situations when given a number sentence involving addition or subtraction of numbers within 20.

**Algebraic Reasoning****The student is expected to:**

- 1.5D** represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences;
- 1.5E** understand that the equal sign represents a relationship where expressions on each side of the equal sign represent the same value(s);
- 1.5F** determine the unknown whole number in an addition or subtraction equation when the unknown may be any one of the three or four terms in the equation;
- 1.5G** apply properties of operations to add and subtract two or three numbers.

**Evaluating Student Learning Outcomes**

A Progression Toward Mastery is provided to describe steps that illuminate the gradually increasing understandings that students develop *on their way to proficiency*. In this chart, this progress is presented from left (Step 1) to right (Step 4). The learning goal for students is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what the students CAN do now and what they need to work on next.

A Progression Toward Mastery				
Assessment Task Item	STEP 1 Little evidence of reasoning without a correct answer.  (1 Point)	STEP 2 Evidence of some reasoning without a correct answer.  (2 Points)	STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer.  (3 Points)	STEP 4 Evidence of solid reasoning with a correct answer.  (4 Points)
<p><b>1</b></p> <p><b>1.3B</b> <b>1.3D</b> <b>1.3E</b> <b>1.3F</b> <b>1.5D</b> <b>1.5F</b> <b>1.5G</b></p>	The student demonstrates a limited ability to both explain his thinking and answer accurately.	The student demonstrates a beginning concept of how to solve an <i>addend unknown</i> relationship problem using pictures, words, or numbers by attempting to show her thinking but provides an inaccurate answer.	The student correctly solves the <i>addend unknown</i> relationship problem and writes a corresponding equation but cannot explain his thinking in pictures, words, or numbers.  Or, the student explains her thinking using pictures, words, or numbers, but is unable to write an accurate equation.	The student correctly <ul style="list-style-type: none"> <li>Solves the <i>addend unknown</i> relationship problem and determines that 7 ducks are babies.</li> <li>Explains thinking by drawing a picture, writing numbers or equations, or words.</li> <li>Writes an equation that corresponds with her solution process (addition or subtraction).</li> </ul>
<p><b>2</b></p> <p><b>1.3D</b> <b>1.5E</b> <b>1.5F</b></p>	The student shows little evidence of understanding how addition and subtraction differ or is unable to complete the task.	The student shows evidence of beginning to understand how addition and subtraction differ through his explanation but demonstrates incomplete reasoning or an incorrect answer.	The student identifies that Jennifer is incorrect but cannot fully support the claim or explain his thinking clearly.	The student correctly identifies that Jennifer is correct, that addition can be used to solve a subtraction problem, and that she is incorrect in adding 9 and 6 to solve $9 - 6$ . The student shows her thinking using words, pictures, or numbers.



## A Progression Toward Mastery

<p><b>3</b></p> <p><b>1.3D</b> <b>1.5E</b> <b>1.5F</b></p>	<p>The student demonstrates little to no understanding of the concept of the connection between addition and subtraction and is unable to explain her thinking.</p>	<p>The student demonstrates a beginning understanding of the connection between addition and subtraction but does not answer accurately.</p>	<p>The student correctly writes two accurate equations using 8, 2, and 10 but is unable to explain her thinking.</p> <p>Or, the student is able to explain her thinking, somehow citing the connection between addition and subtraction, but is unable to write two accurate equations.</p>	<p>The student correctly</p> <ul style="list-style-type: none"> <li>▪ Writes two accurate addition equations using 8, 2, and 10.</li> <li>▪ Explains her thinking using pictures, numbers, or words, and cites the connection between addition and subtraction in her explanation.</li> </ul>
<p><b>4</b></p> <p><b>1.3B</b> <b>1.3C</b> <b>1.3D</b> <b>1.3E</b> <b>1.3F</b> <b>1.5D</b> <b>1.5E</b> <b>1.5F</b> <b>1.5G</b></p>	<p>The student shows very little understanding of how to solve the <i>add to with change unknown</i> problem and cannot write corresponding equations.</p>	<p>The student shows a beginning understanding of how to solve the <i>add to with change unknown</i> problem, but lacks reasoning or equation writing skills.</p>	<p>The student correctly answers the <i>add to with change unknown</i> problem (4 friends came to play), writes accurate addition and subtraction equations, including those that demonstrate an understanding of the commutative property, but is unable to explain his thinking.</p> <p>Or, the student writes addition and subtraction equations correctly and clearly explains his thinking, but does not answer accurately (something other than 4 friends came to play).</p> <p>Or, the student solves the problem (4 friends came to play) and explains thinking clearly, but does not write all addition and subtraction sentences accurately.</p>	<p>The student clearly</p> <ul style="list-style-type: none"> <li>▪ Solves the <i>add to with change unknown</i> problem, determines that 4 friends came to play, and explains his thinking.</li> <li>▪ Writes addition and subtraction equations which correspond to the problem.</li> <li>▪ Applies the commutative property and knowledge of the equal sign to write three additional equations (<math>10 = 6 + 4</math>; <math>4 + 6 = 10</math>; <math>10 - 4 = 6</math>; etc.).</li> </ul>

Name Maria

Date \_\_\_\_\_

1. There are 9 ducks swimming along in a line. There are 2 grown-up ducks, and the rest are babies. How many of the ducks are babies?

a. Explain your thinking using pictures, numbers or words.

Diagram showing 2 grown-up ducks (circles) and 7 baby ducks (stick figures). Below the grown-ups is the text "Grown ups" and below the babies is "Babies". To the right is the equation  $2 + 7 = 9$  with a question mark above the 7.

b. Write a number sentence that shows how you solved the problem.

$2 + 7 = 9$   
 $2 + \square = 9$

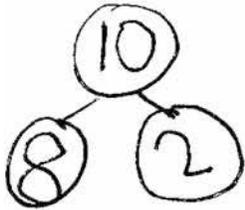
2. Jennifer says you can use addition to solve subtraction.

She says to solve  $9 - 6 = \square$ , just add  $9 + 6$ .

Explain how Jennifer is right **and** wrong using words, pictures, and numbers.

Diagram showing two boxes. The first box contains  $6 + \underline{\quad} = 9$  and  $9 - 6 = 3$  with the word "rite" written below. The second box contains  $9 + 6$  is not 3 with the word "rong" written below. Below the second box is a row of 9 circles with the first 6 crossed out and the equation  $6 + \underline{\quad} = 9$  written below.

3. Jeremy is confused about this problem:  $\underline{\quad} = 10 - 8$ . Be his teacher. Write two addition number sentences that might help him understand and solve it. Explain to Jeremy using words, pictures, or numbers, too.

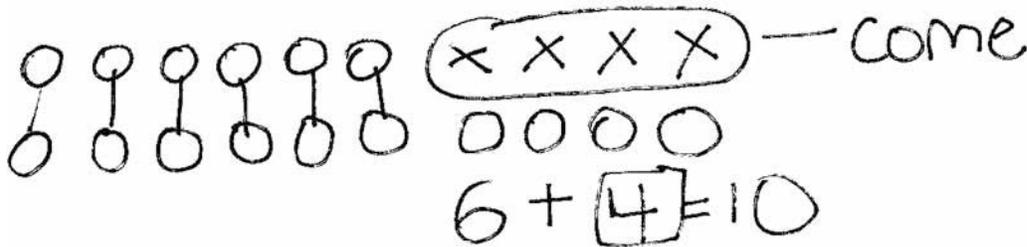


$10 - 8 = \underline{\quad}$  is the same.

$$8 + \boxed{2} = 10$$

$$\boxed{2} + 8 = 10$$

4. At the park, there are 6 friends playing baseball. Some more friends come. Now, there are 10 friends playing.
- a. How many friends come to play with the first 6 friends? Explain your thinking using a math drawing, numbers, and words.



- b. Write an addition sentence and a subtraction sentence to match the story.

$$\underline{6 + \boxed{4} = 10} \quad \underline{10 - 6 = \boxed{4}}$$

- c. Write the addition sentence you found when solving the problem, and use the same 3 numbers to write 3 more number sentences:

$$\underline{6 + 4 = 10} \quad \underline{10 = 6 + 4}$$

$$\underline{4 + 6 = 10} \quad \underline{10 = 4 + 6}$$