

# Summative Assessment – Equality

Name \_\_\_\_\_

Grade \_\_\_\_

1. Is the sentence below true or false?

$$27 = 9 + 18 \quad \underline{\hspace{2cm}}$$

Tell why you said it was true or why you said it was false.

2. What goes in the box to make the sentence true? \_\_\_\_

$$9 + 5 = \square + 6$$

3. What goes in the box to make the sentence true? \_\_\_\_

$$16 - \square = 13 - 8$$

4. Is the sentence below true or false? \_\_\_\_\_

$$5 \times 7 = 7 + 7 + 7 + 7$$

Tell why you said it was true or why you said it was false.

5. Ms Carlson and Mr. Jones have the same number of students. There are 16 girls and 12 boys in Ms Carlson's room. If there are 14 boys in Mr. Jones' room, how many girls are there?

Answer \_\_\_\_\_

Show or tell how you got your answer in the space below.

## Recording Student Responses

The assessment items were developed from the work described by Tom Carpenter and Eric Knuth. Please give this assessment to at least one class that you are teaching. The assessment will take students approximately 10-15 minutes to complete. Please do not help the students as they take the Summative Assessment. Please tell them that you are not able to help them with any question. Use the scoring grids below to tally the results of all your students and give the results to your PLC facilitator

1. Is the sentence below true or false? \_\_\_\_\_

$$27 = 9 + 18$$

Response: Q 1	Grade 3	Grade 4	Grade 5
True (correct response)			
True with no explanation (correct response)			
True but.... (eg. "it is backwards" or ..)			
false			
No response/ Don't know			

2. What goes in the box to make the sentence true?  $9 + 5 = \square + 6$

Response: Q 2	Grade 3	Grade 4	Grade 5
8 (correct response)			
14			
20			
14 and 20			
No response/ Don't know			

3. What goes in the box to make the sentence true?  $16 - \square = 13 - 8$

Response: Q 3	Grade 3	Grade 4	Grade 5
11 (correct response)			
3			
No response/ Don't know			

4. Is the sentence below true or false? \_\_\_\_\_

$$5 \times 7 = 7 + 7 + 7 + 7$$

Tell why you said it was true or why you said it was false.

Response: Q 4	Grade 3	Grade 4	Grade 5
True (incorrect response)			
False – Relational (correct response)			
False – Operational (correct response)			
False with no explanation (correct response)			
No response/ Don't know			

Sample responses

<b>Relational Thinking</b>	<b>Operational Thinking (calculate)</b>
“Five times 7 means there should be five 7’s added together.”	“Five times 7 is 35, but 7 plus 7 plus 7 plus 7 is only 28.”

5. Ms Carlson and Mr. Jones have the same number of students. There are 16 girls and 12 boys in Ms Carlson’s room. If there are 14 boys in Mr. Jones’ room, how many girls are there?

Answer: 14 girls

Response: Q 5	Grade 3		Grade 4		Grade 5	
	correct	incorrect	correct	incorrect	correct	incorrect
Answer only						
Relational Thinking						
Operational Thinking						
Other						
No response/ Don't know						

Sample responses:

<b>Relational Thinking</b>	<b>Operational Thinking</b> (calculate)
"There are 2 more boys in Mr. Jones' room so there have to be 2 fewer girls"	"16 + 12 is 28 so there are 28 students in Ms Carlson's room. There must be 14 girls in Mr. Jones' room to make 28 students in his room too."