

## Learning Objective

3-2 We will evaluate<sup>1</sup> equations and inequalities.

<sup>1</sup> to judge

What are we going to do today?

We will evaluate equations and inequalities.

What are we going to evaluate?

We will evaluate equations and inequalities.

What does evaluate mean?

Evaluate means to judge.

## Activating Prior Knowledge

Teacher:  $9+1$   $12+3$   $5-1$   $14-4$

Student :  $3+2$   $9-4$   $8-7$   $16-5$

Answers: 10, 15, 4, 10, 5, 5, 1, 11

1. Circle the greatest value .
2. Circle the value that is the least.
3. Circle the values that are equal.

Teacher works problem #1 then students identify their answer on their whiteboards (CFU). Teacher works problem #2 then students identify their answer on their whiteboards (CFU). Teacher works problem #3 then students identify their answer on their whiteboards (CFU).

CFU: Today, we will evaluate equations and inequalities, which will require us to use skills we already know such as how to add, subtract, and compare values.

## 3-2 We will evaluate equations and inequalities.

### Concept development

An **equation** includes an equals sign. In an equation, both sides have the same value.

Examples:

$$\begin{aligned} 3 + 8 &= 7 + 4 \\ 5 + 9 &= 18 - 4 \end{aligned}$$

An **inequality** has two sides that do not have the same value. The symbols > and < are used.

Examples:

$$\begin{aligned} 6 + 3 &> 7 - 2 \\ 10 - 6 &< 5 + 4 \end{aligned}$$

What is an equation?

An equation has an equal sign and both sides have the same value.

Which example is an inequality? How do you know?

Example A is an inequality, because the two sides do not have the same value and the < symbol is used.

A.  $4 - 1 < 2 + 5$

B.  $8 + 3 = 15 - 4$

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## Importance

### CST or Test

**54** What number makes this number sentence true?

$$3 + 5 = \square \times 2$$

**A** 3

**B** 4

**C** 5

**D** 6

### Playing sports

If you want to get better at something, then you have to compare how you practice to how your competitor practices.

$$\underbrace{2 \text{ hours} + \boxed{3} \text{ hours}}_{\text{you}} < > \underbrace{\text{hours}}_{\text{competitor}}$$

### Buying gifts (Being fair)

Your mom can determine how many toys to buy for each of the children so they all have the same amount of toys.


$$3 \text{ marbles} + 2 \text{ marbles} = 4 \text{ marbles} + \boxed{1} \text{ marbles}$$


Why is it important to evaluate equations and inequalities? (pair-share) Does anyone else have another reason why it is important to be able to evaluate equations and inequalities? You may give me one of my reasons or one of your own. Which reason means more to you? Why?

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# Skill development/Guided practice


Write  $>$ ,  $<$ , or  $=$  in the . Tell if the number sentence is an equation or an inequality.


1.  $12 + 10$    $22$   
22  
equation

2.  $12 - 10$    $2$   
2  
equation

3.  $52 + 23$    $65 - 14$   
75 51  
inequality

4.  $37 - 24$    $9 - 28$   
13 51  
inequality

5.  $25 + 44$    $52 - 20$   
69 32  
inequality

6.  $38 - 12$    $14 + 12$   
26 26  
equation

Step 1	Calculate the value of each expression, if necessary.
Step 2	Compare the values. Make sure the number sentence is true.

**Skill development CFU:** How did I calculate the value of each expression? What values did I have to compare? What symbol did I write to make the number sentence true? How did I determine if the number sentence is true? How did I decide it was an *equation/inequality*?

**Guided practice CFU:** Do step #1 and show me. (Randomly choose students to share answers.) Do step #2 and show me. Why did you choose the “ $=$ ,  $<$ , or  $>$ ” symbol? How did you decide it was an *equation/inequality*?

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## Skill development/Guided practice

Write a number in the  that makes the number sentence true.

1.  $12 + \boxed{8} = 20$

2.  $\boxed{9} - 4 = 5$

3.  $123 + 52 < 199 - \boxed{14}$

4.  $287 - 33 > \boxed{27} + 222$

26 32 14

36 27 41

5.  $\boxed{111} - 140 = 498 - 247$

6.  $97 - \boxed{43} = 31 + 23$

111 47 152

34 63 43

Step 1	Calculate the value of each expression, if necessary.
Step 2	Compare the values. Make sure the number sentence is true.

**Skill development CFU:** How did I calculate the value of each expression? As I compare the values, what do I need to make sure is true? Why did I choose the number #? How did I determine the *equation/inequality* is true?

**Guided practice CFU:** Do step #1 and show me. (Randomly choose students to share answers.) Do step #2 and show me. Why did you choose that number? How do you know the *equation/inequality* is true?

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## Closure

1. Write the word next to its definition.

equation

inequality

inequality. I have one of these symbols  $>$  or  $<$  and my two sides are not equal.

equation. I have an equal sign and my two sides have the same value.

Write  $>$ ,  $<$ , or  $=$  in the . Tell if the number sentence is an equation or an inequality.

2.  $46 + 51$    $22 + 67$       inequality

Write a number in the  that makes the number sentence true.

3.  $78 - 24 > 31 +$    $23$      $14$      $56$

4. What did you learn today about equations and inequalities? Why is that important to you?

CFU: For #1 have students write the word (answer) on their whiteboards.



300 120 214      350 445 355      17 47 87