Lesson 2-2: Adding Positive and Negative Integers

Use Algeblocks and the Basic Mat to model addition.

Example: Add: \(-8 + (-3)\)

Step 1. Model the first integer on the mat. Remember this integer is negative.

Step 2. Model the second integer on the mat.

Step 3. Read the mat.

Step 4. Record.

\(-8 + (-3) = -11\)

Try It

1. What would change in the example if the numbers being added were positive?

2. Explain how to find the sum of \(-4 + (-6)\).

Practice

Draw blocks to show the addition. Write the sum.

3. \(7 + 2 = \underline{\text{_____}}\)

4. \(-5 + (-3) = \underline{\text{_____}}\)

5. \(-2 + (-4) = \underline{\text{_____}}\)

6. \(5 + 9 = \underline{\text{_____}}\)

Find each sum.

7. \(-5 + (-6) = \underline{\text{_____}}\)

8. \(3 + 2 = \underline{\text{_____}}\)

9. \(-3 + (-8) = \underline{\text{_____}}\)

10. \(5 + 4 = \underline{\text{_____}}\)

11. \(-5 + (-2) = \underline{\text{_____}}\)

12. \(7 + 4 = \underline{\text{_____}}\)

13. \(-2 + (-9) = \underline{\text{_____}}\)

14. \(6 + 7 = \underline{\text{_____}}\)
Lesson 2-3: Finding the Opposite of an Integer

Recognizing the opposite of an integer is the first step in learning to solve algebraic problems using Algeblocks.

Example: What is the opposite of 4?

Step 1. Model the integer using Algeblocks.

Step 2. Place the same number of blocks on the other side of the mat.

Step 3. Read the integers you have modeled.

Step 4. Record the integer and its opposite.

Try It

1. How do you know how many blocks to use to model the opposite of an integer?

2. If the given integer is negative, what sign would its opposite have?

Practice

Show the opposite of each given integer.

3. 4 and \(-4\)

4. 4

5. \(-4\)

6. Complete each sentence.

7. The opposite of \(-7\) is \(\text{_____}\).

8. The opposite of 3 is \(\text{_____}\).

9. The opposite of 0 is \(\text{_____}\).

10. The opposite of \(-12\) is \(\text{_____}\).
Lesson 2-4: Making Zero Pairs on the Basic Mat

Remember that each member of a pair of numbers such as \(-3\) and \(3\) is called the opposite of the other number. The pairs are also called “zero pairs” because their sum is zero.

Example: In one game, you scored 9 points. Then, you made mistakes that lost 3 points. What is your final score?

Step 1. Model the problem on the mat. Use the positive side for points earned and the negative side for points lost.

Step 2. Identify and remove the zero pairs. Remember the zero pairs will have the same number of squares on each side.

Step 3. Read the mat. score: 6

Step 4. Record. \(9 - 3 = 6\)

Try It

1. What is the opposite of \(-7\)?

2. What is true about every zero pair?

Practice

Add squares to make zero pairs on each mat.

3. 4. 5. 6.

Circle the zero pairs on each mat.

7. 8. 9. 10.
Lesson 2-5: Using Zero Pairs to Add a Positive Integer

Use what you know about modeling integers and zero pairs to add a positive integer.

Example: Add $-7 + 4$.

Step 1.
Model both integers on the mat.

Step 2.
Make zero pairs and take them off the mat.

Step 3.
Read the mat.

Step 4.
Record.

Try It
1. What two opposite numbers make up the zero pairs removed from the mat in the example?

2. Write a rule for how many blocks to take off the mat when you remove zero pairs.

Practice
Add. Show the zero pairs on each mat.

3. $-6 + 1 = \underline{\underline{\phantom{1}}}$  
4. $-3 + 8 = \underline{\underline{\phantom{1}}}$  
5. $-4 + 7 = \underline{\underline{\phantom{1}}}$  
6. $-1 + 5 = \underline{\underline{\phantom{1}}}$

Use Algeblocks to add.

7. $-5 + 8 = \underline{\underline{\phantom{1}}}$  
8. $-9 + 2 = \underline{\underline{\phantom{1}}}$  
9. $-2 + 6 = \underline{\underline{\phantom{1}}}$  
10. $-3 + 9 = \underline{\underline{\phantom{1}}}$

11. $-4 + 1 = \underline{\underline{\phantom{1}}}$  
12. $-6 + 5 = \underline{\underline{\phantom{1}}}$  
13. $-7 + 3 = \underline{\underline{\phantom{1}}}$  
14. $-1 + 8 = \underline{\underline{\phantom{1}}}$
Lesson 2-6: Using Zero Pairs to Add a Negative Integer

Use what you know about modeling integers and zero pairs to add a negative integer.

Example: Add 5 + (−3)

Step 1. Model both integers on the mat.
Step 2. Make zero pairs and take them off the mat.
Step 3. Read the mat.
Step 4. Record.

5 + (−3) = 2

Try It

1. What two opposite numbers make up the zero pairs removed from the mat in the example?

2. Explain how you can tell what sign a sum will have before you add.

Practice

Add. Show the zero pairs on each mat.

3. 2 + (−8) = _____
4. 5 + (−1) = _____
5. 4 + (−6) = _____
6. 3 + (−7) = _____

Use Algeblocks to add.

7. 4 + (−6) = _____
8. 1 + (−8) = _____
9. 6 + (−8) = _____
10. 7 + (−1) = _____

11. 8 + (−4) = _____
12. 5 + (−5) = _____
13. 3 + (−2) = _____
14. 9 + (−4) = _____

15. 3 + (−7) = _____
16. 5 + (−8) = _____
17. 4 + (−1) = _____
18. 8 + (0) = _____