





2.2 Addition of Integers TEKS a.1, a.6

MATERIALS • algebra tiles

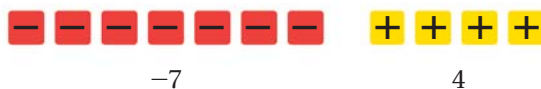
QUESTION How can you use algebra tiles to find the sum of two integers?

You can use algebra tiles to model addition of integers. Each  represents 1, and each  represents -1 . Pairing a  with a  results in a sum of 0.

EXPLORE Find the sum of two integers

Find the sum $-7 + 4$.

STEP 1 Model -7 and 4 using algebra tiles.



STEP 2 Group pairs of positive and negative tiles. Count the remaining tiles.



STEP 3 Copy and complete the statement: $-7 + 4 = \underline{\quad}?$

DRAW CONCLUSIONS Use your observations to complete these exercises

Use algebra tiles to find the sum.

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|-------------|---------------|---------------|----------------|
| 1. $3 + 8$ | 2. $5 + (-1)$ | 3. $-9 + 6$ | 4. $-2 + (-3)$ |
| 5. $-4 + 4$ | 6. $-7 + 5$ | 7. $5 + (-7)$ | 8. $-6 + 0$ |

REASONING In Exercises 9–13, answer the question and give an example from Exercises 1–8 to support your answer.

- Is the sum of two positive integers *positive* or *negative*?
- Is the sum of two negative integers *positive* or *negative*?
- Is the sum of a positive integer and a negative integer *always* positive?
- What is the sum of an integer and its opposite?
- What is the sum of an integer and 0?
- In Exercises 6 and 7, the two integers being added are the same, but the order is reversed. What does this suggest about the sums $a + b$ and $b + a$ where a and b are integers?