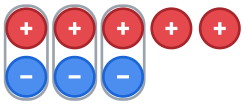
Names (pair) _____ Date _____

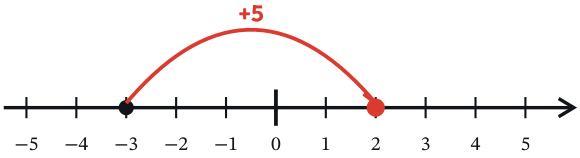
Adding and Subtracting on the Number Line

Example

The calculation $-3 + 5$ in two ways:



Counters: 3 blue and 5 red. Three zero pairs are worth 0, so 2 red are left: $-3 + 5 = 2$.

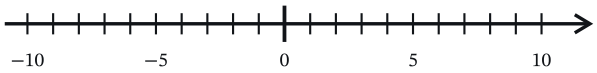


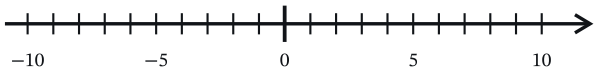
Number line: start at -3 and jump 5 **to the right**. Adding a negative number means jumping to the left.

1 ON YOUR OWN Draw the jump on the number line and work it out.

$-2 + 6 =$ ☐

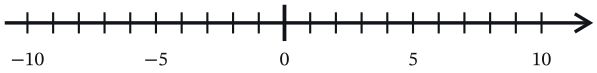
$4 + (-7) =$ ☐

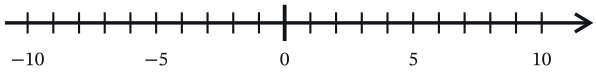




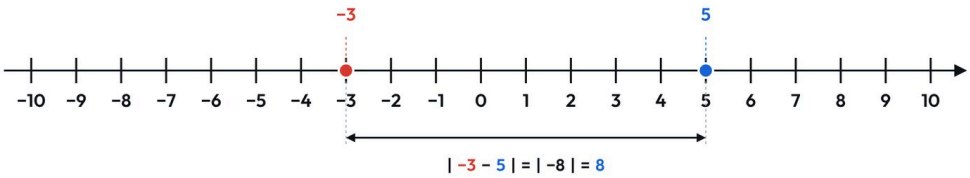
$-3 + (-4) =$ ☐

$5 + (-5) =$ ☐





2 IN PAIRS **Subtraction as distance.** The difference $a - b$ tells how far it is from b to a. In the picture from the app: from -3 to 5 there are 8 steps, so $5 - (-3) = 8$.



from -4 to 3: $3 - (-4) =$ ☐

from -9 to -2: $-2 - (-9) =$ ☐

from 6 to -1: $-1 - 6 =$ ☐

Names (pair) _____ Date _____

Remember

Subtracting a number is the same as adding its opposite: $a - b = a + (-b)$. So $5 - (-3) = 5 + 3 = 8$ and $-4 - 6 = -4 + (-6) = -10$. With counters: removing blue counters is the same as adding red ones.

3 IN PAIRS **Money and debt.** A bank balance can be negative (a debt). Complete the table.

balance	what happens	calculation	new balance
-10	gets 25 euros		
8	pays 12 euros		
-6	takes on a new debt of 4 euros		
-6	someone cancels (removes) a debt of 4 euros		

Why is the balance better when a debt is removed? How does the calculation $-6 - (-4)$ show this?

4 ON YOUR OWN Turn each subtraction into an addition and work it out.

$7 - (-2) = 7 + \square = \square$

$-4 - 6 = -4 + \square = \square$

$-5 - (-8) = -5 + \square = \square$

$0 - (-9) = 0 + \square = \square$

5 IN PAIRS **Find the mistake.** Mia says: "$-3 - 4 = 1$, because minus and minus make plus." What is wrong? Show it on the number line.

The Number Line app · otooly.com/number-line

Put points at -3 and 5 and turn on **distance**. Move the points: when is the difference $a - b$ positive, and when negative?

★ ON YOUR OWN **Exit card.** $-6 + 9 = \square$ $2 - (-5) = \square$