Names (pair) _____ Date _____

Order of Operations with Integers

Example

At 6 o'clock it was −4 °C. By noon the temperature rose by 2 °C three times, then fell by 5 °C. What was it then?

$-4 + 3 \times 2 - 5 = -4 + 6 - 5 = 2 - 5 = -3$

The order is the same as with natural numbers: brackets first, then multiplication and division, and finally addition and subtraction, from left to right.

1 ON YOUR OWN Work out. Watch the order and the signs.

$-2 + 3 \times (-4) =$ ☐

$(-2 + 3) \times (-4) =$ ☐

$20 \div (-5) - 3 =$ ☐

$20 \div (-5 - 5) =$ ☐

$-3 \times (-2) - 4 \times 5 =$ ☐

$-(-6 + 2) \times 3 =$ ☐

2 IN PAIRS **Find the mistake.** Luke: $-2 + 3 \times (-4) = 1 \times (-4) = -4$. Mia: $12 - (-3) \times 2 = 15 \times 2 = 30$. What went wrong? Work them out correctly.

3 IN PAIRS Make up a story for the expression $-10 + 2 \times 3$ (for example about temperature or a bank balance) and work it out.

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Remember

Order: brackets, then × and ÷, then + and −. A sign belongs to the number after it: in $12 - (-3) \times 2$ we first work out $(-3) \times 2 = -6$, then $12 - (-6) = 18$. A minus in front of brackets changes the sign of the result inside: $-(-6 + 2) = -(-4) = 4$.

4 IN PAIRS Write one expression for each story and work it out.

A diver is at -20 m. She rises 4 m three times. How deep is she now?		
A balance is -15 euros. It gets 10 euros three times, then 8 euros is paid. What is the balance?		
It was -6 °C. For 4 hours the temperature fell by 2 °C each hour. What is it now?		

5 ON YOUR OWN Put in brackets so that the equation is true.

$-2 + 3 \times (-4) = -4$

$6 - 8 \div 2 = -1$

$-10 + 4 \times (-2) = 12$

$5 - 7 - 3 = 1$

6 IN A GROUP CHALLENGE Write +, −, × or ÷ so that the equation is true.

$(-6) \square 2 \square 3 = 0$

$(-8) \square 4 \square (-2) = 4$

★ ON YOUR OWN **Exit card.** $-5 + 2 \times (-3) =$ ☐ $(-5 + 2) \times (-3) =$ ☐