Math Foundations: Order of Operations

Take Away Practice Worksheet

ANSWER KEY

1. $(4+2)^2 \div (3 \times 2)$

$$(\mathbf{4+2})^2 \div (\mathbf{3 \times 2}) =$$
$$\mathbf{6^2} \div 6 =$$
$$\mathbf{36 \div 6} = 6$$

2. $5 + 4 \times 3 - 2^3 + (6 \div 3)$

$$5 + 4 \times 3 - 2^3 + (\mathbf{6 \div 3}) =$$
$$5 + 4 \times 3 - \mathbf{2^3} + 2 \; =$$
$$5 + \mathbf{4 \times 3} - 8 + 2 \; =$$
$$\mathbf{5 + 12} - 8 + 2 =$$
$$\mathbf{17 - 8} + 2 =$$
$$\mathbf{9 + 2} = 11$$

3. $\{[6 + 2 \times (3+1)] - 5\}^2 \div 9$

$$\{[6 + 2 \times (\mathbf{3+1})] - 5\}^2 \div 9 =$$
$$\{[6 + \mathbf{2 \times 4}] - 5\}^2 \div 9 =$$
$$\{\mathbf{[6+8]} - 5\}^2 \div 9 =$$
$$\{\mathbf{14 - 5}\}^2 \div 9 =$$
$$\mathbf{9^2} \div 9 =$$
$$\mathbf{81 \div 9} = 9$$

4. $\frac{(2^3+4\times(6-3)^2)-[5\times(2+1)^2-3]}{(4+2)^2-17\times2}$

This is equivalent to $\{(2^3 + 4 \times (6-3)^2) - [5 \times (2+1)^2 - 3]\} \div [(4+2)^2 - 17 \times 2]$
However, not all the equations will be in this format. For that, let us try it as a fraction (fractions are fun, I promise :D)

$$\frac{(2^3 + 4 \times (\mathbf{6-3})^2) - [5 \times (\mathbf{2+1})^2 - 3]}{(\mathbf{4+2})^2 - 17 \times 2} =$$
$$\frac{(\mathbf{2^3} + 4 \times \mathbf{3^2}) - [5 \times \mathbf{3^2} - 3]}{\mathbf{6^2} - 17 \times 2} =$$
$$\frac{(8 + \mathbf{4 \times 9}) - [\mathbf{5 \times 9} - 3]}{36 - 17 \times 2} =$$
$$\frac{(\mathbf{8 + 36}) - [\mathbf{45 - 3}]}{36 - 17 \times 2} =$$
$$\frac{44 - 42}{36 - \mathbf{17 \times 2}} =$$
$$\frac{\mathbf{44 - 42}}{\mathbf{36 - 34}} =$$
$$\frac{\mathbf{2}}{\mathbf{2}} = 1$$

Extra challenge: Jamie is following a recipe that says: multiply the sum of 4 and 5 by 3, then subtract 6. What number does Jamie end up with?

First, we convert the word problem into an equation.
Multiply (the **sum** of 4 and 5) **by** (3), then **subtract** (6)

$$(\mathbf{4+5}) \times 3 - 6 =$$
$$\mathbf{9 \times 3} - 6 =$$
$$\mathbf{27 - 6} = 21$$