KEY Order of Operations
Riddles for Hands-On Learning

1. $3 + 7 \cdot 12 \div 2 = 45$
2. $3 \cdot 7 - 12 + 2 = 11$
3. $3 \cdot 7 - 12 \div 2 = 15$
4. $3 + 7 \cdot 12 - 2 = 85$

Level 1
No parentheses or exponents. Just addition, subtraction, multiplication, and division.

5. $3 \cdot 7 + (12 - 2) = 31$
6. $3 \cdot (7 + 12) - 2 = 55$
7. $(3 + 7) \cdot 12 \div 2 = 60$
8. $3 \cdot (7 + 12 - 2) = 51$

Level 2
Parentheses are introduced. No exponents.

9. $3 \cdot 7 + 12 - 2^2 = 29$
10. $(3 + 7^2 - 12) \div 2 = 20$
11. $(3^3 - 7) + 12 \div 2 = 26$
12. $3^3 + 7^2 - (12 \cdot 2) = 52$

Level 3
Includes all four operations, parentheses, and exponents.

I Have It: Order of Operations ~ With Exponents - Key

start	$3 \cdot 9 + 6^2$
63	$19 + (4^2 - 8)$
27	$3^2 \cdot 5 - (6 \div 3)^2$
41	$18 - 4^2 + 23$
25	$24 \div 2^3 \cdot 6$
18	$20 \div 4 + 2^3$
13	$93 - (5 + 8^2)$
24	$(14 \div 2)^2 + 86$
135	$67 - (42 \div 6 + 5^2)$
35	end

start	$3 \times 4 + 6^2$
63	$14 + (4^2 - 8)$
27	$3^2 \cdot 5 - (6 \div 3)^3$
41	$18 - 4^2 + 23$
25	$24 \div 2^3 \cdot 6$
18	$20 \div 4 + 2^3$
12	$17 - (5 + 3)$
24	$(14 \div 2)^2 + 66$
135	$67 - (45 \div 6 + 5^2)$
75	end

Name _____

Evaluate each expression.

How to Evaluate an Expression Using the Order of Operations	1) Do operations inside **P**arentheses. 2) Evaluate **E**xponents. 3) **M**ultiply and **D**ivide in order from left to right. 4) **A**dd and **S**ubtract in order from left to right.

1 $4 + 2(6 + 3^2)$ ← simplify the exponent

$4 + 2(6 + 9)$ ← add within parentheses

$4 + 2(15)$ ← multiply 2 x 15

$4 + 30$ ← add

_____

2 $12 \div 2 + 3 \times 7$ ← Divide

_____ $+ 3 \times 7$ ← Multiply

_____ $+$ _____ ← Add

_____

3 $5(8 - 3)$

$5 \times$ _____

_____

> Remember: This means to multiply the value in the parentheses by 5.

4 $4^2 + 6 \times 3$

_____ $+ 6 \times 3$

_____ $+$ _____

_____

5 $(6 + 24) \div 5$

_____ $\div 5$

_____

6 $(9 + 7) - (2 \times 4)$

_____ $-$ _____

_____

7 $5^2 \div 5$

_____ $\div 5$

_____

8 $26 - 2 \times 3^2$

☆ **Look at Problem 8. Draw a circle around the first thing you should do to evaluate the expression.**