Name KEY

Unit 3: Expressions PRACTICE BIG GAME

Learning Target: ***Write and evaluate expressions involving whole-number exponents.***
Write each as a **multiplication problem**. Then, find the **product.**

1. 10 squared $10 \cdot 10$ 100
2. 3^4 $3 \cdot 3 \cdot 3 \cdot 3$ 81
3. 2 cubed $2 \cdot 2 \cdot 2$ 8
4. 6^3 $6 \cdot 6 \cdot 6$ 216

Write each expression in **exponential form.**

5. $4 \cdot 4 \cdot 4$ 4^3
6. $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$ 2^6
7. five squared 5^2
8. h cubed h^3

Learning Target: ***Write an algebraic expression using numbers and variables (letters that represent numbers).***

Write each word phrase as an algebraic expression.

9. 5 less than k $k-5$
10. n increased by 7 $n+7$
11. 5 multiplied by x $5x$
12. the sum of twice k and 3 $2k+3$

13. Admission to the zoo costs $3 per person. A family has a coupon for a discount of $5. There are p people in the family. Write an expression to represent how much the family pays.

-5

$3p-5$

Learning Target: ***Identify and provide examples of the parts of an algebraic expression (sum, term, product, factor, quotient, and coefficient).***

14. Identify the coefficients in the following expression: $2x + 4z + a + 6$

2, 4, 1

15. Identify the variables in the following expression: $2x + 5y + 7$

x, y

16. Identify the terms in the following expression: $4x + 6h + 8$

4x, 6h, 8

Name the underlined number or letter as part of the algebraic expression.

17. $6\underline{x} + 9$ — variable

18. $\underline{8}x + 3$ — Coefficient

19. $5x + 7y + \underline{5}$ — Constant

Learning Target: ***Evaluate algebraic expressions at specific values for variables, including formulas, using Order of Operations.***

20. Calculate the value of $24 \div (2 + 2 \cdot 3) \cdot 2^3$

$2+6$

$24 \div 8 \cdot 2^3$

$24 \div 8 \cdot 8$

$3 \cdot 8 = (24)$

21. Determine if the expression below was evaluated correctly. If not, fix the mistake and give the correct answer. $5 + 18 \div 6 \cdot 4 - (8 \cdot 2 - 3^2)$

$5+18 \div 6 \cdot 4 - (8 \cdot 2 - 9)$

$5+18 \div 6 \cdot 4 - (16 - 9)$

$5+18 \div 6 \cdot 4 - (5)$

$5 + 3 \cdot 4 - 5$

$5 + 12 - 5$

$17 - 5 = (12)$

Evaluate using order of operations.

22. $2^3 + 6 \cdot (15 - 12)$

$8 + 6 \cdot 3$

$8 + 18 = (26)$

23. $(7 + 4) \cdot 3 - 2$

$11 \cdot 3 - 2$

$33 - 2$

(31)

Evaluate each expression at x= 2.

24. $3 \cdot x + 2(5 - x)$

$3 \cdot 2 + 2(5-2)$

$2 \cdot 3$

$6 + 6$

(12)

25. $x^2 + x + 3(10 - x)$

$2^2 + 2 + 3(10 - 2)$

$4 + 2 + 3 \cdot 8$

$4 + 2 + 24$

$6 + 24 = (30)$

Learning Target: ***Apply properties of operations to find equivalent expressions (distributive property).***

26. Which shows an equivalent expression to $15x + 20y$?

a. $5(3x + 4y)$ $5(3x+4y)$
b. $3(5x + 6y)$
c. $20x + 15y$
d. $4(4x + 3y)$

Write an equivalent expression for each expression.

27. $y + y + y$ $3y$

28. $v \cdot v \cdot v \cdot v \cdot v$ v^5

Use the distributive property to create an equivalent expression.

29. $3(2 + x)$
$6 + 3x$

30. $5x(x + 7)$
$5x^2 + 35x$

Learning Target: ***Combine like terms to find equivalent expressions.***
Simplify each expression.

31. $5t + 3t^2 - 3t + 9$
$3t^2 + 2t + 9$

32. $4c + 7v - 2c + 3v$
$2c + 10v$

33. $7a^2 + 4a - 2a^2 + 3b + 8 + 7b + 6a$
$5a^2 + 10a + 10b + 8$

34. Are 3a and $3a^2$ like terms? Why or why not?
No, a & a^2 are different variables

35. $4x + 2b - x + 9$
$3x + 2b + 9$

36. Which terms are LIKE TERMS?
$3x$, $4a$, $5x^2$, $3a$, $8x$, y, $5a$
$3x$ & $8x$
$4a$, $3a$, & $5a$

Learning Target: ***Identify when two expressions are equivalent.***

37. Are the three expressions equivalent? How do you know?

$4m + 8$	$4(m + 2)$	$(3m) + 8 + (m)$
	$4m + 8$	$4m + 8$

Yes, they are all equivalent to $4m + 8$

38. Is the expression $(3x) + 8y + (4x)$ equivalent to $7x + 8y$? Why or why not?

$7x + 8y$

Yes, I combined like terms and the expressions are both equal to $7x + 8y$.