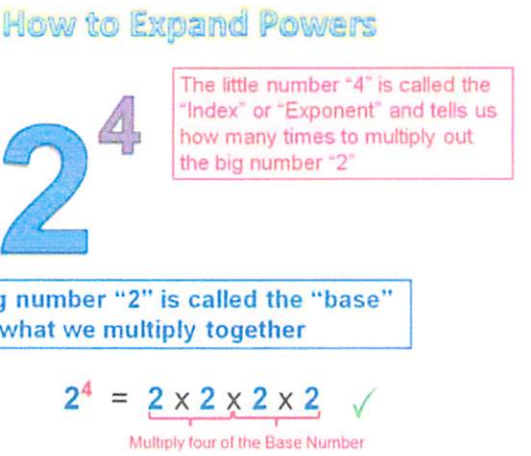
Algebra Exponent Practice



Objective: Practice the word, expanded, and standard form of exponents in a fun and engaging way.

Standard: A.11(B) Simplify numeric and algebraic expressions using the laws of exponents, including integral and rational exponents.

Materials Needed: One set of Algebra Exponent Practice Cards per 4-6 players
Algebra Exponent Practice Recording Sheet
Algebra Exponent Practice Answer Key
Algebra Exponent Practice Passport

Procedure:

- Study the answer key. Place the answer key back in the envelope or folder.
- Put all the cards face down in the center of the group.
- Have players or pairs turn over one card and read what it says.
- The player or the other member of the pair turns over a 2nd card and tries to make a match.
- If they believe they have a match, they must prove it with at least one statement.
- Check with the answer key.
- LEAVE THE CARDS FACE UP IF THERE IS NO MATCH. This provides an opportunity for players to review the possibilities every time they turn over another card.
- Continue with the remaining cards. There can be a match of 2 or 4 cards.
- The player or pair with the most cards wins the game.
- Players record their answers.

Extra Challenge: Match all four cards instead of just two cards.

$3 \cdot 3 \cdot 3$	Three cubed	27
$4 \cdot 4 \cdot 4 \cdot 4$	Four to the 4^{th} power	256
$6 \cdot 6$	Six to the 2^{nd} power	36
$4 \cdot 4$	Four squared	16
$7 \cdot 7 \cdot 7 \cdot 7$	Seven to the 4^{th} power	2,401

$5 \cdot 5 \cdot 5$	Five cubed	125
$3 \cdot 3 + 2 \cdot 2 \cdot 2$	Three squared plus two cubed	17
$2 \cdot 2 + 10 \cdot 10$	Two squared plus ten squared	104
$4 \cdot 4 + 5 \cdot 5 \cdot 5$	Four squared plus five cubed	141
$3 \cdot 3 \cdot 3 \cdot 3$	Three to the 4^{th} power	81

6^2	4^4	3^2
4^2	7^4	5^3
$2^2 + 10^2$	$3^2 + 2^3$	$4^2 + 5^3$
3^4		

Algebra Exponent Practice Recording Sheet

Name_____

Words	Expanded Form	Standard Form
Three Cubed	$3 \cdot 3 \cdot 3$	$3^3 = 27$

Algebra Exponent Practice Recording Sheet ANSWER KEY

Name_____

Words	Expanded Form	Standard Form
Three Cubed	$3 \cdot 3 \cdot 3$	$3^3 = 27$
Four to the 4th power	$4 \cdot 4 \cdot 4 \cdot 4$	$4^4 = 256$
Six to the 2nd power	$6 \cdot 6$	$6^2 = 36$
Four squared	$4 \cdot 4$	$4^2 = 16$
Seven to the 4th power	$7 \cdot 7 \cdot 7 \cdot 7$	$7^4 = 2{,}401$
Five cubed	$5 \cdot 5 \cdot 5$	$5^3 = 125$
Three squared plus two cubed	$3 \cdot 3 + 2 \cdot 2 \cdot 2$	$3^2 + 2^3 = 17$
Two squared plus ten squared	$2 \cdot 2 + 10 \cdot 10$	$2^2 + 10^2 = 104$
Four squared plus five cubed	$4 \cdot 4 + 5 \cdot 5 \cdot 5$	$4^2 + 5^3 = 141$
Three to the 4th power	$3 \cdot 3 \cdot 3 \cdot 3$	$3^4 = 81$

Name

Algebra Exponent Practice

1. Read the word problem. Use what you know about exponents to determine your answer. Show your work.

A swarm of mosquitoes may contain as many as 70 million mosquitoes per square mile on a 1500 square mile plot of land. How many mosquitoes are there in this swarm?

e. $1.05 \cdot 10^{11}$
f. $1.05 \cdot 10^{10}$
g. $1.05 \cdot 10^{21}$
h. $1.05 \cdot 10^{24}$

A biologist is studying green peach aphids. In the lab, the population doubles every week. The expression $1000 \cdot 2^w$ models an initial population of 1000 insects after w weeks of growth.

c. Evaluate the expression for $w = 0$, then describe what that value represents in this situation.

d. Evaluate the expression when $w = -3$, then describe what that value of the expression represents in the situation.

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