

Laws of Exponents Foldable Activity

Make a hotdog fold in your paper. Make 6 cuts to create 7 tabs on the front. Write the following laws of exponents, explanations, and examples to help you learn the laws of exponents. This will be your resource as you work problems during this unit.

OUTSIDE FLAP Title of each property	INSIDE FLAP Exponent Laws	INSIDE 2 or 3 Examples of each
Product of Powers	$a^m \cdot a^n = a^{m+n}$ Multiply numbers, add exponents with the same base	$b^2 \cdot b^5 =$ $(5x^2)(9x^3) =$
Power of a Power	$(a^m)^n = a^{m \cdot n}$ When an exponent is raised to a power, multiply exponents. *Raise numbers to the specific power as well.	$(d^5)^3 =$ $(-3x^2y^4)^3 =$
Power of a Product	$(ab)^m = a^m b^m$ When an exponent is outside the parentheses, everything inside is raised to the specific power.	$(xyz)^3 =$ $(5bc)^3 =$
Quotient of Powers	$\frac{a^m}{a^n} = a^{m-n}$ Divide numbers, subtract exponents	$\frac{a^{10}b^9}{a^2b^4} =$ $\frac{12x^7y^8}{6x^6y^3} =$
Power of a Quotient	$\left(\frac{a}{b}\right)^m = \frac{(a)^m}{(b)^m}$ When an exponent is outside parentheses of a fraction, raise both the numerator and denominator to the power	$\left(\frac{2a^3b^5}{3b^2}\right)^3$ <p><i>*Once the top and bottom are raised, then follow quotient of powers rules!</i></p>
Zero Exponent	$a^0 = 1$ Any number raised to the zero power ALWAYS = 1	$a^0b^3 =$ $(25c^3d^7)^0 =$
Negative Exponent	$a^{-n} = \frac{1}{a^n} \quad \frac{1}{a^{-n}} = a^n$ <p><u>Only positive exponents may be used!</u> Negative numerator moves to denominator, Negative denominator moves to numerator.</p>	$\frac{4a^{-3}b^6}{16a^2b^{-2}} =$ $\frac{x^4y^0}{x^{-2}} =$