

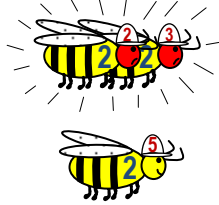
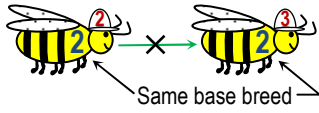
Exponent Ops

$$b^e = P$$

MAD Bees

To multiply bees with same bases, Merge bases and Add exponents.

Bees of the same breed collide, get mad, then decide to work as one by merging bases and adding powers.

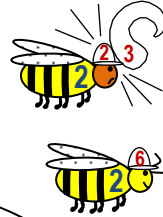


$$2^2 \times 2^3 = 2^{(2+3)} = 2^5$$

$$\begin{array}{ccc} 2^5 \times 2^{-3} & 3^{-4} \times 3^2 & 4^{-2} \times 4^{-3} \\ 2^{(5+(-3))} & 3^{(-4+2)} & 4^{(-2+(-3))} \\ 2^2 & 3^{-2} & 4^{-5} \end{array}$$

RAM Bees

To Raise a bee to a power, Multiply exponents.



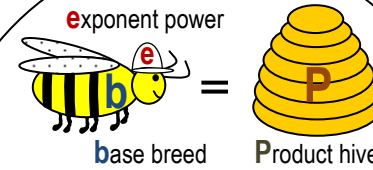
$$\begin{array}{ccc} (2^2)^3 & (3^{-4})^2 & (4^{-2})^{-3} \\ 2^{(2 \times 3)} & 3^{(-4 \times 2)} & 4^{(-2 \times -3)} \\ 2^6 & 3^{-8} & 4^6 \end{array}$$

Ram rams hive, horn breaks off, agitates bee, raising its power.

Distribute horn's power equally to multiplied or divided bees

$$\begin{array}{ccc} (2^3 3^4)^2 & & \\ 2^{(3 \times 2)} 3^{(4 \times 2)} & \left(\frac{2^3}{3^4}\right)^2 & = \frac{2^{(3 \times 2)}}{3^{(4 \times 2)}} = \frac{2^6}{3^8} \end{array}$$

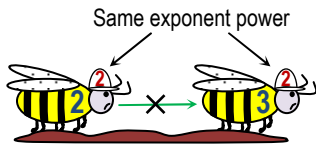
Expand hive for added or subtracted bees
 $(2^3 + 3^4)^2 = (2^3 + 3^4)(2^3 + 3^4)$



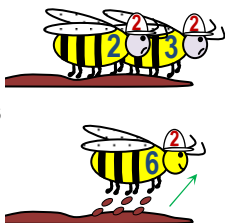
Exponent expands base!

MUK Bees

To multiply bees with same powers, Multiply bases and Keep exponent.



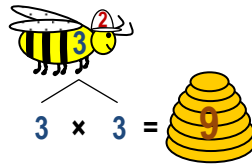
To get out of the muck, bees with equal powers multiply bases and share power.



$$\begin{array}{ccc} 2^3 \times 4^3 & 2^2 \times 3^2 & \\ (2 \times 4)^3 & (2 \times 3)^2 & \\ 8^3 & 6^2 & \end{array}$$

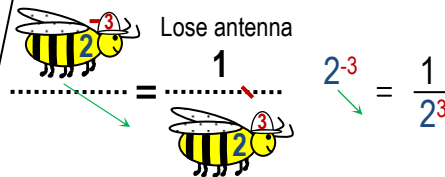
Also works if same base & power

MUK	vs.	MAD
$2^3 \times 2^3$		$2^3 \times 2^3$
$(2 \times 2)^3$		$2^{(3+3)}$
4^3		2^6
64	=	64



Screen Bees

Fly bee through fraction bar "screen" to lose/gain negative "antenna."

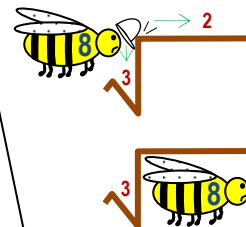
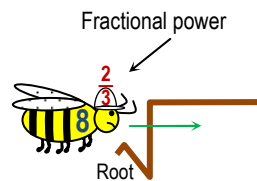


Screen MAD Bees to get positive exponent.

$$\begin{array}{ccc} \frac{3^2}{3^{-3}} = 3^2 \times 3^3 & = & 3^{(2+3)} = 3^5 \\ \frac{4^3}{4^5} = \frac{1}{4^5 \times 4^{-3}} & = & \frac{1}{4^{(5+(-3))}} = \frac{1}{4^2} \end{array}$$

Root Bees

Numerator = Power
Denominator = Root



Tired bee with fraction of full power wants to rest under tree. Hat hits root, flips off, fraction scatters.

$$\begin{array}{ccc} 8^{\frac{2}{3}} & & \\ \sqrt[3]{8^2} & - \text{or} - & \\ \sqrt[3]{8^2} & & \end{array}$$

$$\begin{array}{ccc} 8^{2/3} & = & \sqrt[3]{8^2} = 2^2 = 4 \\ 8^{2/3} & = & \sqrt[3]{8^2} = \sqrt[3]{64} = 4 \\ 4^{1/2} & = & \sqrt{4} = 2 \\ 9^{3/2} & = & \sqrt{9^3} = 3^3 = 27 \end{array}$$