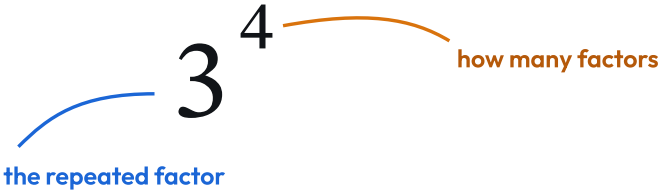
Names (pair) _____ Date _____

Writing and Reading Powers

Example



$3^4 = 3 \times 3 \times 3 \times 3 = 81$

We read: "three to the power of four". The factor 3 is repeated four times.

Careful: 3^4 is not $3 \times 4 = 12$.

Remember

A power is a short way to write a product of equal factors. If there is only one factor, we write $7^1 = 7$. A power with 2 raised is also called a **square** (5^2: "five squared"), and with 3 raised a **cube** (5^3: "five cubed").

1 ON YOUR OWN Write as a power.

$7 \times 7 \times 7 =$ ☐

$4 \times 4 \times 4 \times 4 \times 4 =$ ☐

$10 \times 10 =$ ☐

$1 \times 1 \times 1 \times 1 \times 1 \times 1 =$ ☐

$9 =$ ☐

$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} =$ ☐

2 ON YOUR OWN Write as a product, then work out the value.

$2^5 =$ ☐ $=$ ☐

$4^3 =$ ☐ $=$ ☐

$10^4 =$ ☐ $=$ ☐

$1^7 =$ ☐ $=$ ☐

$6^2 =$ ☐ $=$ ☐

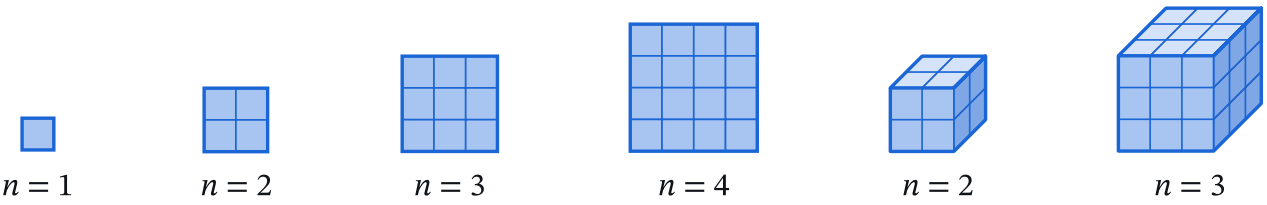
$0^3 =$ ☐ $=$ ☐

3 IN PAIRS How do we read it? Complete the table.

written	we read	value
2^3	two to the power of three, or two cubed	☐
8^2	☐	☐
☐	ten to the power of five	☐

Names (pair) _____ Date _____

4 IN PAIRS **Squares and cubes.** How many unit squares make a square with side n? How many unit cubes make a cube with edge n? Count in the picture, then complete the table.



$n = 1$ $n = 2$ $n = 3$ $n = 4$ $n = 2$ $n = 3$

n	square n^2	cube n^3
1		
2		
3		
4		
5		
10		

5 IN PAIRS Which is greater? Write $<$, $>$ or $=$. Estimate first, then work it out.

$2^3 \square 3^2$ $2^4 \square 4^2$ $3^4 \square 4^3$

$1^9 \square 9^1$ $10^2 \square 2^{10}$ $5^2 \square 2^5$

6 IN PAIRS **Find the mistake.** Max wrote: $3^4 = 12$ and $5^2 = 10$. Mia wrote: $2^3 = 3^2$, "because they are the same two numbers". What is wrong? Correct it.

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Starting from 1 mode: with the **× 3** button, take four steps and check that $3^4 = 81$.

★ ON YOUR OWN **Exit card.** Write as a power and work out: $6 \times 6 \times 6 = \square = \square$ Is 2^5 greater than 5^2? **yes** / **no**