Explore Numerical Expressions with Exponents

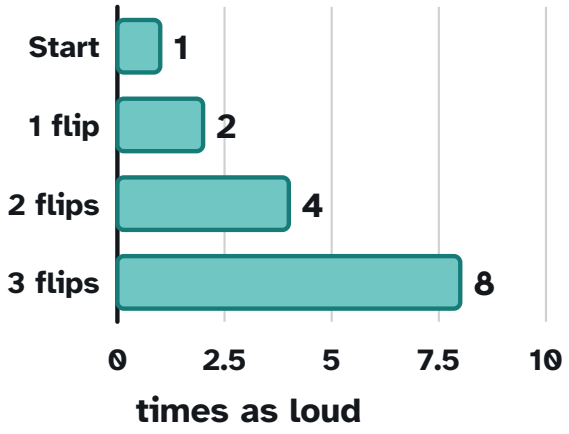
Write and find the value of a number with an exponent.

Name _____ **Date** _____

Tonight's spark

A school music studio has a switch that doubles the sound each time you flip it. You flip it 3 times. How many times as loud is it now?

Make a guess first: more than 6 times as loud, or fewer?



Our class model: repeated multiplication

Try it

Work it out on paper. Write one answer on each line.

1 **In the power 5^4, which number is the base?**

A. 4 **B.** 625 **C.** 5 **D.** 20

My answer _____

2 **Which is $7 \times 7 \times 7$ written with an exponent?**

A. 7^3 **B.** 7×3 **C.** 3^7 **D.** 21

My answer _____

3 **Write 2^4 as repeated multiplication.**

A. 2×4 **B.** $2 + 2 + 2 + 2$ **C.** 4×4 **D.** $2 \times 2 \times 2 \times 2$

My answer _____

4 **What is the value of 4^3?**

A. 12 **B.** 64 **C.** 7 **D.** 43

My answer _____

5 **What is the value of 10^3?**

A. 30 **B.** 100 **C.** 1,000 **D.** 10,000

My answer _____

Talk about it

In 2^3, what does the small 3 tell us? How many 2s are multiplied?

Home mission

Put 1 bean or coin on the table. Pretend a switch doubles the sound. Add beans until there are twice as many. Do it 3 times. Ask: how many now? Write the power with a 2.

If we get stuck, ask

- How many times does the small number tell us to write the base? Let's write that many.
- Which number is the base — the one we multiply again and again?
- Let's multiply just two numbers at a time and write each step.

Do it on a screen

Scan or type the link. Same lesson, with hints.

eduwonderlab.com/lessons/6-3/homework.html

How did it feel? (optional)

Tricky Getting there Got it