UNIT 6 · STANDARD 6.EE.1

Powers and Exponents

Lesson 6-1

Name: Type your name **Date:** Today's date **Class:** Class period

Key Vocabulary Level 2 Standard

Picture first, then the word, then a plain-language meaning. Say each word out loud.

5^{3}

5 × 5 × 5

In 2^3, the small 3 means multiply 2 by itself 3 times: 2 × 2 × 2 = 8

Exponent

Write the definition:

base

bottom side

In 5^2, the base is 5 — it is the number being multiplied: 5 × 5 = 25

Base

Write the definition:

5^{3}

5 × 5 × 5

10^3 = 10 × 10 × 10 = 1,000 — read as '10 to the third power' or '10 cubed'

Power

Write the definition:

$3x + 5$

no equal sign

Evaluate 3^4: write 3 × 3 × 3 × 3, then multiply step by step: 9 × 9 = 81

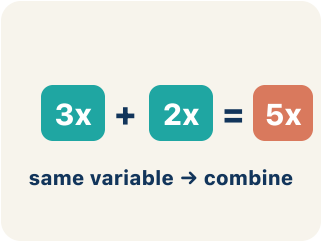
Evaluate

Write the definition:

In 3x, the 3 is the coefficient — if x = 4, then 3x = 3 × 4 = 12

Coefficient

Write the definition:



4x and 2x are like terms (both have x); 4x and 4x² are NOT like terms (different powers)

Like terms

Write the definition:

Guided Notes Level 2 Standard

🎯 **WHAT WE'RE LEARNING TODAY**

I can write and evaluate numbers in exponent form using a base and a power.

✏️ **Fill in each blank as we go. Use the Word Bank to help you.**

📚 **WORD BANK — FILL EACH BLANK WITH THE BEST WORD**

Exponent | Base | Power | Evaluate | Coefficient | Like terms

☝️ *Tap any word to see what it means and a picture.*

1 The small raised number that shows how many times the base is multiplied is the _____.

2 The number being multiplied repeatedly in a power, like the 3 in 3^4, is the _____.

3 A number written with a base and an exponent, like 3^4, is a _____.

4 To find the value of an expression, like $2^3 = 8$, is to _____ it.

5 A number multiplied by a variable, like the 5 in 5x, is a _____.

6 Terms with the same variable raised to the same power, like 3x and 7x, are _____.

🧱 Watch & Try — Worked Examples

See the notes in action: watch one worked all the way through, then try the next with the same steps.

👀 I do — watch

Follow each step as your teacher solves it.

Problem: What is the value of 4^3?

A. 64

B. 12

C. 43

D. 7

Step 1 $4^3 = 4 \times 4 \times 4 = 64$.

✅ **Answer:** A. 64

🤝 We do — together

Solve this one with your class using the same steps.

Problem: What is the value of 6^2?

A. 36

B. 12

C. 62

D. 8

Step 1 _____

Step 2 _____

Answer: _____

✏️ **You do — your turn**

Now try one on your own. Show every step.

Problem: Which expression shows 5^3 as repeated multiplication?

A. $5 \times 5 \times 5$

B. 5×3

C. $5 + 5 + 5$

D. $3 \times 3 \times 3 \times 3 \times 3$

Show your work:

Try It

Solve on your own. Check the answer key when you are done.

1. A synth pattern repeats $7 \times 7 \times 7$. How do you write that as a power?

A. 7^3

B. 3^7

C. 7×3

D. 21^3

Show your work:

2. The bass line doubles for 2^6 counts. What is the value of 2^6?

A. 64

B. 12

C. 32

D. 36

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

A bacteria colony doubles every hour. Starting with 1 bacterium, write a power expression for the number after 6 hours. Explain why exponential growth is so much faster than adding the same number each hour.

Sentence starter: After 6 hours there are ____ bacteria because 2^6 = ____. If it grew by adding 2 each hour instead, there would only be ____ bacteria. Exponential growth is faster because ____.

Show your work:

Reflect — Exit Ticket

What is the value of 3^4?

A. 81

B. 12

C. 34

D. 64

Your answer: