LESSON MAKER PRO

Power Up Numbers

Use exponents to build and evaluate expressions.

GRADE 6 · 6.EE.A.1

CCSS.Math.Content.6.EE.A.1 "Write and evaluate numerical expressions involving whole-number exponents."

NAME _____ DATE _____

POWERS FIRST

An exponent tells how many times the base is used as a factor. Rewrite each power as repeated multiplication, then evaluate powers before doing the other operations.

WORKED EXAMPLE

Evaluate: $7^4 - 5$

1. Rewrite: $7^4 - 5 = 7 \times 7 \times 7 \times 7 - 5$.
2. Multiply the power: $7 \times 7 \times 7 \times 7 = 2401$.
3. Subtract: $2401 - 5 = 2396$.

Answer: 2396

PRACTICE 6 problems

1 Evaluate: 3^3

ANSWER _____

2 Evaluate: 6^2

ANSWER _____

3 Evaluate: $8^2 + 3$

ANSWER _____

4 Evaluate: $9^2 - 6$

ANSWER _____

5 Evaluate: $2^3 \times 6$

ANSWER _____

6 Evaluate: $(3^2 + 8) \times 6$

ANSWER _____

APPLY IT Show your work

1 In an online game, Maya earns 3^3 gems after finishing a quest. She spends 6 gems on a new avatar item. How many gems does she have left?

WORK SPACE

ANSWER _____

2 A school music club posts a video. It gets 2^6 views on Friday and 8 more views on Saturday. How many views does it have after Saturday?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Evaluate: $(8^2 + 6^2) / 2^2$

WORK SPACE AND ANSWER

ANSWER KEY

Power Up Numbers

GRADE 6 · 6.EE.A.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Evaluate: 3^3	**27**
2	Evaluate: 6^2	**36**
3	Evaluate: $8^2 + 3$	**67**
4	Evaluate: $9^2 - 6$	**75**
5	Evaluate: $2^3 \times 6$	**48**
6	Evaluate: $(3^2 + 8) \times 6$	**102**

PART 2 · APPLY IT

1. **21 gems** Evaluate 3^3 to get 27. Then subtract 6, so Maya has 21 gems left.
2. **72 views** Evaluate 2^6 to get 64. Add 8 more views to get 72 views.

CHALLENGE

25

Accept equivalent repeated-multiplication work, such as $3 \times 3 \times 3$ for 3^3. Students should evaluate each power before completing the remaining operations.