

Growing Powers Answer Key

Table A

Exponent Form	Repeated Multiplication	Value
2^1	2	2
2^2	2×2	4
2^3	$2 \times 2 \times 2$	8
2^4	$2 \times 2 \times 2 \times 2$	16
2^5	$2 \times 2 \times 2 \times 2 \times 2$	32

1) 2

2) The value is multiplied by 2 each time.

Table B

Exponent Form	Repeated Multiplication	Value
3^1	3	3
3^2	3×3	9
3^3	$3 \times 3 \times 3$	27
3^4	$3 \times 3 \times 3 \times 3$	81

3) 3

4) 3^4

5) Sample answer: It has more factors of 3, so the value is larger.

Teacher's Guide

- Review that each increase of 1 in the exponent adds one more factor of the base.
- Have students complete one row together before working independently.
- Encourage students to look for the pattern in the values before answering the questions.
- Differentiate by providing multiplication charts for students who need support and extending the tables with one additional exponent for advanced students.
- Ask pairs to compare their completed tables and explain the pattern using the words base, exponent, factor, and value.
- Extend the activity by having students create a similar table for base 4 or base 5 and describe the pattern they notice.
- Reinforce that exponential patterns grow by repeatedly multiplying by the base, not by repeatedly adding the base.