Name _____

Model Powers Answer Key

1. Repeated multiplication: 3 × 3
   Exponent expression: 3^2
2. Repeated multiplication: 2 × 2 × 2
   Exponent expression: 2^3
3. Repeated multiplication: 4 × 4
   Exponent expression: 4^2
4. Repeated multiplication: 3 × 3 × 3
   Exponent expression: 3^3
5. Repeated multiplication: 2 × 2
   Exponent expression: 2^2
6. Repeated multiplication: 1 × 1 × 1 × 1
   Exponent expression: 1^4

Teacher's Guide

- Explain that a square array represents a number multiplied by itself twice, while a cube stack represents a number multiplied by itself three times.
- Model the first example by identifying the side length before writing the repeated multiplication and exponent.
- Support students by having them count the number of rows, columns, or layers before writing their answers.
- Challenge advanced students to draw their own square array or cube stack and exchange it with a partner.
- Encourage discussion by asking students how the visual model helps them identify the base and exponent.
- Extend the lesson by having students sketch a model for a given exponent expression such as 5^2 or 2^3.
- Reinforce that the exponent tells how many equal factors are multiplied together, not the total number of objects in the model.