Content Area: Math Grade Level: 5th Grade

Reporting Measure: Exponents

Level	Description
Above & Beyond (4.0)	The student will: • Reason about operations involving exponential values with the same base (for example, when given the problem $5^2 \times 5^3$, reason that the expression can be simplified by summing the exponents because $5^2 \times 5^3 = (5\times5) \times (5\times5\times5) = 5\times5\times5\times5\times5 = 5^5 = 5^{2+3}$).
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Proficient (3.0)	The student will: **E1—Evaluate whole numbers raised to whole-number powers** (for example, evaluate 3^3, 12^2, 10^4, 197^1, and "nine squared"). **E2—Evaluate expressions involving whole-number powers of** 10 (for example, evaluate 10^3, 10^1, 9×10^6, 20×10^4, and $3,500\div10^2$).
2.5	No major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content
Getting There (2.0)	**E1—**The student will recognize or recall specific vocabulary (for example, *base*, *cube*, *exponent*, *power*, *raise*, *square*) and perform basic processes such as: • Explain that a value raised to a power represents the multiplication of 1 by that value the number of times indicated by the exponent. For example, 5^3 is equal to 1 multiplied by 5 three times ($1\times5\times5\times5$). • Explain the difference between multiplying a number by a second number and raising the first number to the power indicated by the second number. For example, explain that $5\times3 = 5 + 5 + 5 = 15$, but $5^3 = 5\times5\times5 = 125$. • Explain that a base raised to a power of 1 indicates a single instance of that base, or 1 multiplied by the base one time, and is equal to the base. For example, 6^1 is equal to 1×6 or 6. **E2—**The student will recognize or recall specific vocabulary (for example, *exponential notation*, *power of ten*) and perform basic processes such as: • Apply the order of operations (parentheses, exponents, multiplication/division, addition/subtraction) to expressions involving exponents. • Explain that multiplying a number by 10 will shift all of the digits of that number one place to the left, while dividing a number by 10 will shift all of the digits of that number one place to the right. • Rewrite a power of ten in standard form as a number in exponential form. For example, rewrite $100,000$ as 10^5. • Rewrite a multiple of 10 as a value multiplied by 10 the appropriate number of times. For example, rewrite 57,000 as $57\times10\times10\times10$. • Explain that dividing by a value raised to a given power is equivalent to dividing by that value the number of times indicated by the power. For example, $250,000\div10^3 = 250,000\div10\div10\div10$.
1.5	Partial success at score 2.0 content, and major errors or omissions regarding score 3.0 content

Beginning (1.0)	With help, partial success at score 2.0 content and score 3.0 content