

**Unit 7: Exponents and Scientific Notation**[Open Up Family Resource Link](#)

| Lesson | Skill  | Online Resources   | Standard |
|--------|--|--|----------|
| 1      | Use exponents to describe repeated multiplication.<br><br>Understand the meaning of a term with an exponent.   | <a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-exponents/v/introduction-to-exponents">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-exponents/v/introduction-to-exponents</a><br><br><a href="https://www.ixl.com/math/grade-8/understanding-exponents">https://www.ixl.com/math/grade-8/understanding-exponents</a><br><br><a href="https://www.ixl.com/math/grade-8/evaluate-exponents">https://www.ixl.com/math/grade-8/evaluate-exponents</a>  | 8.EE.A   |
| 2      | Explain and use a rule for multiplying powers of 10.   | <a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-orders-of-magnitude/v/multiplying-multiples-of-powers-of-10">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-orders-of-magnitude/v/multiplying-multiples-of-powers-of-10</a><br><br><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-orders-of-magnitude/e/orders-of-magnitude">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-orders-of-magnitude/e/orders-of-magnitude</a>   | 8.EE.A.1 |
| 3      | Explain and use a rule for raising a power of 10 to a power.   | <a href="https://www.ixl.com/math/grade-8/power-rule">https://www.ixl.com/math/grade-8/power-rule</a><br><br><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-exponent-properties/v/products-and-exponents-raised-to-an-exponent-properties">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-exponent-properties/v/products-and-exponents-raised-to-an-exponent-properties</a>   | 8.EE.A.1 |
| 4      | Explain and use a rule for dividing powers of 10.<br><br>Evaluate $10^0$ and explain why it makes sense.       | <a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-exponents/v/raising-a-number-to-the-0th-and-1st-power">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-exponents/v/raising-a-number-to-the-0th-and-1st-power</a><br><br><a href="https://www.ixl.com/math/grade-8/division-with-exponents">https://www.ixl.com/math/grade-8/division-with-exponents</a>   | 8.EE.A.1 |
| 5      | Use the exponent rules with negative exponents.<br><br>Know what it means if 10 is raised to a negative power. | <a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-negative-exponents/v/negative-exponents">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-negative-exponents/v/negative-exponents</a><br><br><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-negative-exponents/v/negative-exponent-intuition">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-negative-exponents/v/negative-exponent-intuition</a><br><br><a href="https://www.ixl.com/math/grade-8/understanding-negative-exponents">https://www.ixl.com/math/grade-8/understanding-negative-exponents</a><br><br><a href="https://www.ixl.com/math/grade-8/evaluate-negative-exponents">https://www.ixl.com/math/grade-8/evaluate-negative-exponents</a> | 8.EE.A.1 |
| 6      | Use the exponent rules for bases other than 10.  | <a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-exponent-properties/e/divide-powers">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-exponent-properties/e/divide-powers</a><br><br><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-</a>   | 8.EE.A.1 |

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|    |   | <a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-exponent-properties/e/multiply-powers">algebra-exponent-properties/e/multiply-powers</a>   |                                    |
| 7  | <p>Change an expression with a negative exponent into an equivalent expression with a positive exponent.</p> <p>Choose an appropriate exponent rule to rewrite an expression to have a single exponent.</p> | <a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-negative-exponents/a/negative-exponents-review">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-negative-exponents/a/negative-exponents-review</a><br><a href="https://www.ixl.com/math/grade-8/multiplication-and-division-with-exponents">https://www.ixl.com/math/grade-8/multiplication-and-division-with-exponents</a><br><a href="https://www.ixl.com/math/grade-8/evaluate-expressions-using-properties-of-exponents">https://www.ixl.com/math/grade-8/evaluate-expressions-using-properties-of-exponents</a><br><a href="https://www.ixl.com/math/grade-8/identify-equivalent-expressions-involving-exponents">https://www.ixl.com/math/grade-8/identify-equivalent-expressions-involving-exponents</a><br><a href="https://www.khanacademy.org/math/in-eighth-grade-math/exponents-powers-1/laws-exponents/v/exponent-rules-part-1">https://www.khanacademy.org/math/in-eighth-grade-math/exponents-powers-1/laws-exponents/v/exponent-rules-part-1</a> | 8.EE.A.1                           |
| 8  | Use and explain a rule for multiplying terms that have different bases but the same exponent.   | <a href="https://www.youtube.com/watch?v=-JRsu3wyBWY">https://www.youtube.com/watch?v=-JRsu3wyBWY</a>   | 8.EE.A.1                           |
| 9  | Given a very large or small number, write an expression equal to it using a power of 10.  | <a href="https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-orders-of-magnitude/v/approximating-with-powers-of-10">https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-orders-of-magnitude/v/approximating-with-powers-of-10</a><br><a href="https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-orders-of-magnitude/e/approximating-with-orders-of-magnitude">https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-orders-of-magnitude/e/approximating-with-orders-of-magnitude</a>  | 8.EE.A.3                           |
| 10 | Write a large number as a multiple of a power of 10.  | <a href="https://www.youtube.com/watch?v=TxldAtPxU2c">https://www.youtube.com/watch?v=TxldAtPxU2c</a><br><a href="https://www.youtube.com/watch?v=vRjGarlCa4">https://www.youtube.com/watch?v=vRjGarlCa4</a><br><a href="http://sciencepedagogs.pbworks.com/w/page/43754519/Orders%20of%20Magnitude">http://sciencepedagogs.pbworks.com/w/page/43754519/Orders%20of%20Magnitude</a>   | 8.EE.A.3,<br>8.EE.A.4              |
| 11 | Write a small number as a multiple of a power of 10.  | <a href="https://www.youtube.com/watch?v=TxldAtPxU2c">https://www.youtube.com/watch?v=TxldAtPxU2c</a><br><a href="https://www.youtube.com/watch?v=vRjGarlCa4">https://www.youtube.com/watch?v=vRjGarlCa4</a><br><a href="http://sciencepedagogs.pbworks.com/w/page/43754519/Orders%20of%20Magnitude">http://sciencepedagogs.pbworks.com/w/page/43754519/Orders%20of%20Magnitude</a>   | 8.EE.A.1,<br>8.EE.A.3,<br>8.EE.A.4 |
| 12 | Use powers of 10 to answer questions about real-world situations.   | <a href="http://lasp.colorado.edu/~bagenal/MATH/math0.html">http://lasp.colorado.edu/~bagenal/MATH/math0.html</a><br><a href="http://lasp.colorado.edu/~bagenal/MATH/problems/problems0.html">http://lasp.colorado.edu/~bagenal/MATH/problems/problems0.html</a>  | 8.EE.A.3,<br>8.EE.A.4              |
| 13 | Determine if a number is written in scientific notation.  | <a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-</a>   | 8.EE.A.4                           |

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|    |   | <a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-scientific-notation/e/scientific-notation">algebra-scientific-notation/v/scientific-notation-old</a><br><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-scientific-notation/e/scientific-notation">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-scientific-notation/e/scientific-notation</a><br><a href="https://www.ixl.com/math/grade-8/convert-between-standard-and-scientific-notation">https://www.ixl.com/math/grade-8/convert-between-standard-and-scientific-notation</a>   |                                    |
| 14 | <p>Use scientific notation and estimation to compare very large or very small numbers.</p> <p>Multiply and divide numbers given in scientific notation.</p> | <a href="https://www.ixl.com/math/grade-8/compare-numbers-written-in-scientific-notation">https://www.ixl.com/math/grade-8/compare-numbers-written-in-scientific-notation</a><br><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-computing-scientific-notation/v/scientific-notation-example-2">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-computing-scientific-notation/v/scientific-notation-example-2</a><br><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-computing-scientific-notation/v/multiplying-and-dividing-in-scientific-notation">https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-computing-scientific-notation/v/multiplying-and-dividing-in-scientific-notation</a><br><a href="https://www.ixl.com/math/grade-8/multiply-numbers-written-in-scientific-notation">https://www.ixl.com/math/grade-8/multiply-numbers-written-in-scientific-notation</a><br><a href="https://www.ixl.com/math/grade-8/divide-numbers-written-in-scientific-notation">https://www.ixl.com/math/grade-8/divide-numbers-written-in-scientific-notation</a> | 8.EE.A.1,<br>8.EE.A.3,<br>8.EE.A.4 |
| 15 | Add and subtract numbers given in scientific notation.  | <a href="https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-scientific-notation-compu/v/subtracting-in-scientific-notation">https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-scientific-notation-compu/v/subtracting-in-scientific-notation</a><br><a href="https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-scientific-notation-compu/e/adding-and-subtracting-in-scientific-notation">https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-scientific-notation-compu/e/adding-and-subtracting-in-scientific-notation</a>  | 8.EE.A.4                           |