

**Unit 4: Proportional Relationships and Percentages**[Open Up Family Resource Link](#)

| Lesson | Skill   | Online Resources   | Standard              |
|--------|---|--|-----------------------|
| 1      | Compute percentages.<br>Calculate dimensions on scaled copies of a rectangle.   | <a href="https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-fractions-decimals/cc-7th-percent-word-problems/v/solving-percent-problems">https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-fractions-decimals/cc-7th-percent-word-problems/v/solving-percent-problems</a><br><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-problems/v/finding-percentages-example">https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-problems/v/finding-percentages-example</a><br><a href="https://www.ixl.com/math/grade-6/percents-of-numbers-word-problems">https://www.ixl.com/math/grade-6/percents-of-numbers-word-problems</a><br><a href="https://www.youtube.com/watch?v=0x-PhARnLCA">https://www.youtube.com/watch?v=0x-PhARnLCA</a>   | 7.RP.A.1              |
| 2      | Solve problems about ratios of fractions and decimals.  | <a href="https://www.youtube.com/watch?v=itaMvTvGlyo">https://www.youtube.com/watch?v=itaMvTvGlyo</a><br><a href="https://www.youtube.com/watch?v=vtC8QIyUTpc">https://www.youtube.com/watch?v=vtC8QIyUTpc</a><br><a href="https://www.youtube.com/watch?v=dQFStlXEsI8">https://www.youtube.com/watch?v=dQFStlXEsI8</a>  | 7.RP.A.1              |
| 3      | Identify the two quantities that are in a proportional relationship, when there is a constant rate.<br>Use a table with 2 rows and 2 columns to find an unknown value in a proportional relationship. | <a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-proportional-rel/v/introduction-to-proportional-relationships">https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-proportional-rel/v/introduction-to-proportional-relationships</a><br><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-proportional-rel/e/analyzing-and-identifying-proportional-relationships-2">https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-proportional-rel/e/analyzing-and-identifying-proportional-relationships-2</a><br><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-visualize-ratios/v/solving-ratio-problems-with-tables-exercise">https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-visualize-ratios/v/solving-ratio-problems-with-tables-exercise</a><br><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-visualize-ratios/e/solving-ratio-problems-with-tables">https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-visualize-ratios/e/solving-ratio-problems-with-tables</a> | 7.RP.A.1,<br>7.RP.A.2 |
| 4      | Use the distributive property to rewrite an expression.   | <a href="https://www.khanacademy.org/math/algebra-basics/alg-basics-algebraic-expressions/alg-basics-distributive-property/v/distributive-property-with-variables-exercise">https://www.khanacademy.org/math/algebra-basics/alg-basics-algebraic-expressions/alg-basics-distributive-property/v/distributive-property-with-variables-exercise</a><br><a href="https://www.khanacademy.org/math/algebra-basics/alg-basics-algebraic-expressions/alg-basics-distributive-property/e/distributive-property-with-variables">https://www.khanacademy.org/math/algebra-basics/alg-basics-algebraic-expressions/alg-basics-distributive-property/e/distributive-property-with-variables</a>   | 7.RP.A.2              |

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| 5  | <p>Write fractions as decimals.</p> <p>Use the distributive property to rewrite an equation.</p>   | <p><a href="https://www.youtube.com/watch?v=do_lbHld2Os">https://www.youtube.com/watch?v=do_lbHld2Os</a></p> <p><a href="https://www.khanacademy.org/math/arithmetics/arith-decimals/arith-review-decimals-to-fractions/e/converting_fractions_to_decimals">https://www.khanacademy.org/math/arithmetics/arith-decimals/arith-review-decimals-to-fractions/e/converting_fractions_to_decimals</a></p> <p><a href="https://www.youtube.com/watch?v=lkM-Wozf7Jk">https://www.youtube.com/watch?v=lkM-Wozf7Jk</a></p>   | 7.NS.A.2.d,<br>7.RP.A.2 |
| 6  | <p>Draw a tape diagram that represents a percent increase or decrease.</p> <p>Find the new amount when the original amount and the percentage of increase or decrease is known.</p>                | <p><a href="https://www.youtube.com/watch?v=fKccGztpJQc">https://www.youtube.com/watch?v=fKccGztpJQc</a></p> <p><a href="https://www.youtube.com/watch?v=ci4aOkXJNfg">https://www.youtube.com/watch?v=ci4aOkXJNfg</a></p> <p><a href="https://www.youtube.com/watch?v=ldEd_oJCIQ">https://www.youtube.com/watch?v=ldEd_oJCIQ</a></p>   | 7.RP.A.3                |
| 7  | <p>Find the original amount, when the new amount and the percentage of increase or decrease is known.</p> <p>Use a double number line diagram to solve percent increase and decrease problems.</p> | <p><a href="https://www.youtube.com/watch?v=3XqIBm2N2jM">https://www.youtube.com/watch?v=3XqIBm2N2jM</a></p> <p><a href="https://www.youtube.com/watch?v=hYcQhehLQ9o">https://www.youtube.com/watch?v=hYcQhehLQ9o</a></p>  | 7.RP.A.3                |
| 8  | <p>Solve percent increase and decrease problems by writing an equation to represent the situation and solving it.</p>  | <p><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-word-problems/v/growing-by-a-percentage">https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-word-problems/v/growing-by-a-percentage</a></p> <p><a href="http://virtualnerd.com/pre-algebra/percents/change/change-examples/percent-change-example">http://virtualnerd.com/pre-algebra/percents/change/change-examples/percent-change-example</a></p>  | 7.RP.A.3                |
| 9  | <p>Understand that to find 0.1% of an amount you have to multiply by 0.001.</p> <p>Calculate percentages of quantities involving decimals like 12.5% and 0.4%.</p>                                 | <p><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-decimal-conversions/v/converting-percents-to-decimals-ex-1">https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-decimal-conversions/v/converting-percents-to-decimals-ex-1</a></p> <p><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-decimal-conversions/v/converting-percents-to-decimals-ex-2">https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-decimal-conversions/v/converting-percents-to-decimals-ex-2</a></p> <p><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-decimal-conversions/e/converting_percents_to_decimals">https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-decimal-conversions/e/converting_percents_to_decimals</a></p> | 7.RP.A.3                |
| 10 | <p>Understand and solve problems about sales tax and tip.</p>  | <p><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-word-problems/v/tax-discount-and-tip-examples">https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-word-problems/v/tax-discount-and-tip-examples</a></p> <p><a href="https://www.youtube.com/watch?v=RQjtFqXDaZg">https://www.youtube.com/watch?v=RQjtFqXDaZg</a></p> <p><a href="https://www.ixl.com/math/grade-6/percents-calculate-tax-tip-mark-up-and-more">https://www.ixl.com/math/grade-6/percents-calculate-tax-tip-mark-up-and-more</a></p>   | 7.RP.A.3                |
| 11 | <p>Understand and solve problems about</p>   | <p><a href="https://www.youtube.com/watch?v=6AZijeJDmgY">https://www.youtube.com/watch?v=6AZijeJDmgY</a></p>   | 7.RP.A.3                |

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|    | commission, interest, markups, and discounts.   | <a href="https://www.youtube.com/watch?v=qy9wVhUCvr4">https://www.youtube.com/watch?v=qy9wVhUCvr4</a><br><a href="https://www.youtube.com/watch?v=TDJWLrl3T-o">https://www.youtube.com/watch?v=TDJWLrl3T-o</a><br><a href="https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-word-problems/e/discount_tax_and_tip_word_problems">https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-word-problems/e/discount_tax_and_tip_word_problems</a> |          |
| 12 | Calculate the percentage of increase or decrease when the original and the new amount are known.                                | <a href="https://www.youtube.com/watch?v=pNowDI2vVro">https://www.youtube.com/watch?v=pNowDI2vVro</a><br><a href="https://www.youtube.com/watch?v=CuQO-XeWYxw">https://www.youtube.com/watch?v=CuQO-XeWYxw</a><br><a href="https://www.ixl.com/math/grade-7/percent-of-change">https://www.ixl.com/math/grade-7/percent-of-change</a>   | 7.RP.A.3 |
| 13 | Understand that all measurements include some error.<br>Represent measurement error as a percentage of the correct measurement. | <a href="https://sciencenotes.org/calculate-percent-error/">https://sciencenotes.org/calculate-percent-error/</a><br><a href="https://www.youtube.com/watch?v=uNlvpLmOyhE">https://www.youtube.com/watch?v=uNlvpLmOyhE</a>  | 7.RP.A.3 |
| 14 | Solve problems that involve percent error.  | <a href="https://www.youtube.com/watch?v=FTtrOUUJUzQ">https://www.youtube.com/watch?v=FTtrOUUJUzQ</a><br><a href="https://www.youtube.com/watch?v=sWYx3G9o894">https://www.youtube.com/watch?v=sWYx3G9o894</a><br><a href="https://www.mathsisfun.com/numbers/percentage-error.html">https://www.mathsisfun.com/numbers/percentage-error.html</a>   | 7.RP.A.3 |
| 15 | Find a range of possible values for a quantity if the maximum percent error and the correct value are known.                    | <a href="https://www.youtube.com/watch?v=h--PfS3E9Ao">https://www.youtube.com/watch?v=h--PfS3E9Ao</a><br><a href="https://www.youtube.com/watch?v=loduc50molQ">https://www.youtube.com/watch?v=loduc50molQ</a>  | 7.RP.A.3 |