**Algebra 1 Website Tutorials:**

**Unit 1: Functions**

**Distance (Position) vs. Time Graphs:** <https://www.youtube.com/watch?v=x2ve5yucNPQ>

**Relating Graphs to Events:** <https://www.youtube.com/watch?v=HRMXXFYXAoM>

**Relations and Functions:** <https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-linear-equations-functions/cc-8th-function-intro/v/relations-and-functions>

**Vertical Line Test:** <https://www.youtube.com/watch?v=96VqHrvZdXw>

**Domain & Range:** <https://www.khanacademy.org/math/algebra/algebra-functions/domain-and-range/v/domain-and-range-from-graphs>

**Writing a Function Rule:** <https://www.youtube.com/watch?v=yvvdWvEvIEc>

**Unit 3: Linear Equations**

**Distributive Property:** <https://www.khanacademy.org/math/algebra-basics/core-algebra-expressions/core-algebra-manipulating-expressions/v/combining-like-terms-and-the-distributive-property>

**Simplifying Algebraic Expressions:** <http://www.phschool.com/atschool/academy123/english/academy123_content/wl-book-demo/ph-157s.html>

**Properties of Real Numbers:** <https://www.khanacademy.org/math/pre-algebra/order-of-operations/arithmetic_properties/v/commutative-law-of-addition>

**Solving Equations:** <https://www.khanacademy.org/math/algebra-basics/core-algebra-linear-equations-inequalities/core-algebra-solving-basic-equations/v/two-step-equations>

**Equations & Identities:** <http://www.phschool.com/atschool/academy123/english/academy123_content/wl-book-demo/ph-067s.html>

**Consecutive Integers:** <http://www.phschool.com/atschool/academy123/english/academy123_content/wl-book-demo/ph-168s.html>

**Distance, Rate, Time Problems:** <http://www.phschool.com/atschool/academy123/english/academy123_content/wl-book-demo/ph-169s.html>

**Solving for a particular variable:** <https://www.khanacademy.org/math/algebra/alg-1-old-content/manipulating-formulas/v/example-of-solving-for-a-variable>

**Solving Multi-Step Inequalities:** <https://www.khanacademy.org/math/algebra-basics/core-algebra-linear-equations-inequalities/core-algebra-linear-inequalities/v/multi-step-inequalities>

**Compound Inequalities:** <https://www.khanacademy.org/math/algebra/one-variable-linear-inequalities/compound-inequalities/v/compound-inequalities>

**Graphing Absolute Value:** <https://www.youtube.com/watch?v=kAQ-CPyKzq8>

**Solve Absolute Value Equations:** <https://www.khanacademy.org/math/algebra/absolute-value-equations-functions/absolute-value-equations/v/absolute-value-equations>

**Solve Absolute Value Inequalities:** <https://www.khanacademy.org/math/algebra/absolute-value-equations-functions/absolute-value-inequalities/v/absolute-value-inequalities>

**Rate of Change – Slope:** <https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-linear-equations-functions/8th-slope/v/slope-of-a-line>

**Slope-Intercept Form:** <https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-linear-equations-functions/8th-slope-intercept-form/v/graphing-a-line-in-slope-intercept-form>

**Standard Form:** <https://www.khanacademy.org/math/algebra/two-var-linear-equations-and-intro-to-functions/standard-form/v/standard-form-for-linear-equations>

**Point Slope Form:** <https://www.khanacademy.org/math/algebra/two-var-linear-equations-and-intro-to-functions/point-slope/v/idea-behind-point-slope-form>

**Point Slope from two points:** <https://www.khanacademy.org/math/algebra/two-var-linear-equations-and-intro-to-functions/point-slope/v/point-slope-and-slope-intercept-form-from-two-points>

**Parallel Lines:** <https://www.khanacademy.org/math/geometry/analytic-geometry-topic/parallel-and-perpendicular/v/parallel-lines-2>

**Perpendicular Lines:** <https://www.khanacademy.org/math/geometry/analytic-geometry-topic/parallel-and-perpendicular/v/perpendicular-lines>

**Write Equation of Perpendicular Lines:** <https://www.khanacademy.org/math/geometry/analytic-geometry-topic/parallel-and-perpendicular/v/find-the-equation-of-a-line>

**Parallel & Perpendicular Applet:** <http://www.mathwarehouse.com/algebra/linear_equation/parallel-perpendicular-lines-applet.php>

**Scatter Plots & Best Fit Lines:** <https://www.youtube.com/watch?v=gtXAC3DQxC8>

**Writing All 3 Linear Forms:** <https://www.khanacademy.org/math/algebra/two-var-linear-equations-and-intro-to-functions/standard-form/v/point-slope-and-standard-form>

**Solving Systems by Graphing:** <https://www.khanacademy.org/math/algebra-basics/core-algebra-systems/core-algebra-systems-tutorial/v/solving-linear-systems-by-graphing>

**Solving Systems by Substitution:** <https://www.khanacademy.org/math/algebra-basics/core-algebra-systems/core-algebra-systems-tutorial/v/solving-linear-systems-by-substitution>

**Solving Systems by Elimination:** <https://www.khanacademy.org/math/algebra-basics/core-algebra-systems/core-algebra-systems-tutorial/v/solving-systems-of-equations-by-elimination>

**Linear Systems Applications:** <https://www.khanacademy.org/math/algebra/systems-of-linear-equations/systems-of-linear-equations-word-problems/v/using-a-system-of-equations-to-find-the-price-of-apples-and-oranges>

 OR <https://www.khanacademy.org/math/algebra/systems-of-linear-equations/systems-of-linear-equations-word-problems/v/substitution-method-3>

 OR <https://www.khanacademy.org/math/algebra/systems-of-linear-equations/systems-of-linear-equations-word-problems/v/understanding-systems-of-equations-example>

**Graphing Linear Inequalities:** <https://www.khanacademy.org/math/algebra-basics/core-algebra-graphing-lines-slope/core-algebra-graphing-linear-inequalities/v/graphing-inequalities>

**Graphing a System of Linear Inequalities:** <https://www.khanacademy.org/math/algebra/two-variable-linear-inequalities/graphing-inequalities/v/graphical-system-of-inequalities>

**Unit 4: Exponentials**

**Zero Exponents:** <https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-exponents/v/powers-of-zero>

**Negative Exponents:** <https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-negative-exponents/v/negative-exponents>

**Multiplying Exponents with same Base:** <https://www.khanacademy.org/math/pre-algebra/exponents-radicals/exponent-properties/v/exponent-rules-part-1>

**Exponents – Power to a Power:** <https://www.khanacademy.org/math/algebra-basics/core-algebra-exponent-expressions/core-algebra-exponent-properties/v/exponent-properties-3>

**Dividing Exponents with same Base:** <https://www.khanacademy.org/math/algebra-basics/core-algebra-exponent-expressions/core-algebra-exponent-properties/v/exponent-properties-4>

**Exponential Functions:** <https://www.khanacademy.org/math/algebra/introduction-to-exponential-functions/exponential-growth-and-decay/v/exponential-growth-functions>

**Exponential Growth & Decay:** <https://www.khanacademy.org/math/algebra/introduction-to-exponential-functions/solving-basic-exponential-models/v/word-problem-solving-exponential-growth-and-decay>

**Developing Exponential Models:** <https://www.khanacademy.org/math/algebra/introduction-to-exponential-functions/exponential-growth-and-decay/v/constructing-linear-and-exponential-functions-from-data>

**Arithmetic Sequences:** <https://www.khanacademy.org/math/algebra/sequences/introduction-to-arithmetic-squences/v/arithmetic-sequences>

**Geometric Sequences:** <https://www.khanacademy.org/math/algebra/sequences/introduction-to-geometric-sequences/v/geometric-sequences-introduction>

**Unit 5: Quadratics**

**Parts of a Polynomial Expression:** <https://www.khanacademy.org/math/algebra-basics/quadratics-polynomials-topic/polynomial-basics-core-algebra/v/terms-coefficients-and-exponents-in-a-polynomial>

**Add/Subtract Polynomials:** <https://www.khanacademy.org/math/algebra/introduction-to-polynomial-expressions/adding-and-subtracting-polynomials/v/adding-and-subtracting-polynomials-3>

**Finding GCF of a Polynomial (Factoring):** <https://www.khanacademy.org/math/algebra-basics/quadratics-polynomials-topic/Factoring-simple-expressions-core-algebra/v/factor-polynomials-using-the-gcf>

**Multiplying Polynomials:** <https://www.khanacademy.org/math/algebra-basics/quadratics-polynomials-topic/multiplying-binomials-core-algebra/v/multiplication-of-polynomials>

**Multiplying using FOIL:** <https://www.khanacademy.org/math/algebra-basics/quadratics-polynomials-topic/multiplying-binomials-core-algebra/v/multiplying-binomials>

**Multiplying Special Cases (Squaring a Binomial):** <https://www.khanacademy.org/math/algebra/introduction-to-polynomial-expressions/special-products-of-polynomials/v/square-a-binomial>

**Multiplying Special Cases (a+b)(a-b):** <https://www.khanacademy.org/math/algebra-basics/quadratics-polynomials-topic/multiplying-binomials-core-algebra/v/special-polynomials-products-1>

**Factoring Trinomials when a=1:** <https://www.khanacademy.org/math/algebra-basics/quadratics-polynomials-topic/factoring-quadratic-expressions-core-algebra/v/factoring-polynomials-1>

**Factoring Trinomials when a not=1:** <https://www.youtube.com/watch?v=YcMxku99z0I>

**Factoring Special Cases (difference of squares):** <https://www.khanacademy.org/math/algebra2/polynomial-functions/factoring-polynomials-special-product-forms-alg2/v/factoring-to-produce-difference-of-squares>

**Factoring Special Cases (perfect square trinomial):** <https://www.khanacademy.org/math/algebra2/polynomial-functions/factoring-polynomials-special-product-forms-alg2/v/factoring-perfect-square-trinomials>

**Factoring by Grouping:** <https://www.khanacademy.org/math/algebra2/polynomial-functions/factoring-polynomials-quadratic-forms-alg2/v/factoring-trinomials-by-grouping-1>

**Exploring Quadratic Graphs:** <https://www.youtube.com/watch?v=HpGLHZik8jE>

**Quadratic Functions (Finding the vertex):** <https://www.youtube.com/watch?v=rnkk0rC9Gyo>

**Graphing Vertex Form:** <https://www.khanacademy.org/math/algebra/quadratics/graphing-quadratic-functions/v/graphing-a-parabola-in-vertex-form>

**Finding and Estimating Square Roots:** <https://www.khanacademy.org/math/pre-algebra/exponents-radicals/radical-radicals/v/approximating-square-roots>

Solving Quadratics by taking Square Roots: <https://www.khanacademy.org/math/algebra/quadratics/quadratics-square-root/v/simple-quadratic-equation>

**Solving Quads with the Graphing Calculator:** <https://www.youtube.com/watch?v=RxA8YMRF4M4&feature=youtu.be>

**Desmos Graphing Calculator:** <https://www.desmos.com/calculator>

**Solve Quads by Factoring:** <https://www.khanacademy.org/math/algebra-basics/quadratics-polynomials-topic/solving-quadratics-factoring/v/example-1-solving-a-quadratic-equation-by-factoring>

**Solve Quads by Competing the Square:** <https://www.khanacademy.org/math/algebra/quadratics/solving-quadratics-by-completing-the-square/v/solving-quadratic-equations-by-completing-the-square>

**Solve Quads by the Quadratic Formula:** <https://www.khanacademy.org/math/algebra/quadratics/solving-quadratics-using-the-quadratic-formula/v/using-the-quadratic-formula>

**Using the Discriminant:** [https://www.khanacademy.org/test-prep/fr-twelveth-grade-math/Nombres-complexes/La-formule-des-racines-d'un-trin%C3%B4me/v/discriminant-of-quadratic-equations](https://www.khanacademy.org/test-prep/fr-twelveth-grade-math/Nombres-complexes/La-formule-des-racines-d%27un-trin%C3%B4me/v/discriminant-of-quadratic-equations)

**Choose a Model (Linear, Exponential, or Quadratic?):** <https://www.youtube.com/watch?v=CxEFOozrMSE&feature=youtu.be>

**Solve Quadratic Systems:** <https://www.khanacademy.org/math/algebra/quadratics/systems-of-quadratic-equations/v/non-linear-systems-of-equations-1>

**Simplifying Radicals:** <https://www.khanacademy.org/math/algebra-basics/core-algebra-foundations/square-roots-for-college/v/simplifying-radicals>

**Simplifying Radicals with variables:** <https://www.khanacademy.org/math/algebra/rational-exponents-and-radicals/rational-exponents-and-the-properties-of-exponents/v/simplifying-square-roots-comment-response>

Simplify Roots of Negative Numbers: <https://www.khanacademy.org/math/algebra2/introduction-to-complex-numbers-algebra-2/the-imaginary-numbers-algebra-2/v/imaginary-roots-of-negative-numbers>

**Complex Numbers (a + b*i*):** <https://www.khanacademy.org/math/algebra2/introduction-to-complex-numbers-algebra-2/the-complex-numbers-algebra-2/v/complex-number-intro>

**Unit 6: Power & Polynomials**

**Polynomial Functions from a table:** <https://www.youtube.com/watch?v=B4Vp7g_TUtg&feature=youtu.be>

**Polynomials & Linear Factors:** <http://www.phschool.com/webcodes10/index.cfm?wcprefix=age&wcsuffix=0602&area=view>

**End Behavior:** <https://www.khanacademy.org/math/algebra2/polynomial-functions/polynomial-end-behavior/v/polynomial-end-behavior>

**Finding Zeros from factored form:** <https://www.youtube.com/watch?v=lD4QJdMVSzY>

**Unit 7: Statistics**

Mean, Median, Mode: <https://www.khanacademy.org/math/probability/descriptive-statistics/central_tendency/v/mean-median-and-mode>

**Histograms:** <https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-data-statistics/histograms/v/histograms-intro>

**Line Plots:** <https://www.khanacademy.org/math/early-math/cc-early-math-measure-data-topic/cc-early-math-line-plots/v/making-line-plots>

**Box-and-Whisker Plot:** <https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-data-statistics/cc-6th-box-whisker-plots/v/constructing-a-box-and-whisker-plot>

Two-Way Tables: <https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-data/two-way-tables/v/two-way-frequency-tables-and-venn-diagrams>

**Interpreting Correlation Coefficient:** <https://www.youtube.com/watch?v=jf-SIOFUuEo>

**Correlation vs. Causation:** <https://www.khanacademy.org/math/probability/regression/regression-correlation/v/correlation-and-causality>