

# Horizons Algebra I

Grade 8

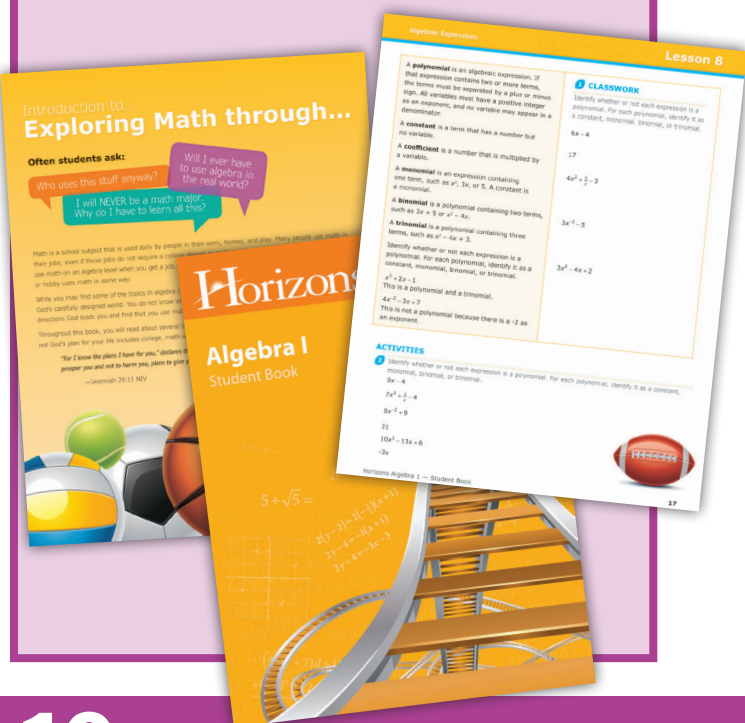
Help your child formulate a better understanding of math with Horizons Algebra I. This hands-on course prepares students to approach and solve problems following a logical succession of steps. Algebraic concepts covered are applied to practical, everyday uses and lay the groundwork for upper-level math skills. Topics include exponents and powers, absolute value, radical expressions, multiplying and dividing monomials and polynomials, the FOIL method, and factoring trinomials, as well as writing, solving, and graphing linear and quadratic equations.

## What makes Horizons Algebra I so effective?

- Contains sports and real-world situations where algebra is used on a daily basis.
- Prepares students for standardized math testing with college test prep questions.
- Assists visual and kinesthetic learners in concept mastery with hands-on materials.
- Reinforces new concepts with extra exercises for additional practice.
- Provides a thorough assessment with periodic tests and quarterly exams.
- Reproducible worksheets provide drill for initial learning, extra practice, and individual challenges

“Horizons Math lays a strong foundation and is an incredibly easy course to use whether a parent is ‘mathy’ or not. Written with homeschoolers in mind, Horizons has reviews built in, but no busy work and no extras that you have to weed through just looking for the basic lesson.”

— Laura W., Tennessee



## Lessons 1-40

- Number terminology, order of operations, signed numbers
- Distributive property, properties of equality, powers of 10
- Factoring, prime numbers, absolute value, scientific notation
- Greatest common factor, least common multiple
- Exponents, roots, rational exponents
- Algebraic expressions and equations
- Adding and subtracting polynomials
- Multiplying and dividing monomials
- Radical expressions, rationalizing the denominator
- Multiplying and dividing radicals, y-intercept, intercepts
- Coordinate plane, solving, writing, and graphing linear equations
- Slope, standard form, slope-intercept form, point-slope form
- Horizontal, vertical, perpendicular, and parallel lines

## Lessons 41-80

- Writing linear equations from graphs
- Inequalities, graphing linear inequalities
- Systems of equations, multiplying rational expressions
- Multiplying and dividing a polynomial by a constant
- Adding and subtracting linear equations, linear combinations
- Multiplying a polynomial by a monomial
- Multiplying binomials and monomials
- The FOIL method, multiplying and dividing polynomials
- Special products of binomials, factoring by grouping
- Dividing a polynomial by a monomial or binomial
- Dividing a monomial by a monomial
- Factoring common monomials, special products, and trinomials
- Adding and subtracting rational expressions

## Lessons 81-120

- Multiplying and dividing rational expressions
- Complex fractions, complex rational expressions
- Quadratic equations
- Solving quadratic equations by factoring, taking roots, and completing the square
- Quadratic formula, discriminant, zeros of a function
- Functions, domain, range, relations
- Quadratic functions, parabolas, conic sections
- Graphing parabolas, directrix, focus, axis of symmetry, vertex
- Radicals in quadratic equations
- Graphing quadratic inequalities
- Money, simple interest, motion, mixtures
- Ratios, direct and inverse variation

## Lessons 121-160

- Inequalities on a number line
- Conjunctions and disjunctions
- Inequalities, compound inequalities
- Bounded and unbounded solutions, extraneous solutions
- Systems of linear inequalities, graphing quadratic inequalities
- Exponential growth, compound interest, exponential decay
- Graphs of exponential functions
- Work, motion, and investment problems, distance formula
- Square roots without a calculator, ratios, proportions
- Pythagorean Theorem, hypotenuse, literal equations
- Length of a segment, middle of a segment, midpoint formula
- Radicals, quadratic equations with radicals