

Helena Public Schools
High School Mathematics
Honors Math I - Teacher Resource

Over-riding practices:

- Graphical, Analytical and numerical relationships
- Word Problems / Problem Solving
- Comfort with "unfriendly" answers

Focal Points	
Solving Equations Graphically, Algebraically and Numerically	<ul style="list-style-type: none"> • Arithmetic manipulations of expressions • Exponents and Radicals <ul style="list-style-type: none"> ◦ Laws of exponents ◦ Multiplication property ◦ Power to a Power Property ◦ Distributive Property ◦ Division Property ◦ Negative and Zero exponents ◦ Rationalizing • Single variable equations <ul style="list-style-type: none"> ◦ $ax + b = c$ ◦ $ax + b = cx + d$ ◦ $a(bx + c) = d$ ◦ $a(bx + c)^2 = d$ ◦ Absolute value ◦ Radicals ◦ Square root ◦ Inequalities ◦ Matrices ◦ Absolute value ◦ Inequalities ◦ Compound Inequalities ◦ Rational
Linear Relationships	<ul style="list-style-type: none"> • Graphical, numerical, algebraic representations • Direct variation • Slope-intercept form • Standard form • Point-slope form • Curve fitting/modeling
Quadratics and nonlinear functions	<ul style="list-style-type: none"> • Polynomials • Addition, subtraction, multiplication of polynomials • Factoring • FOIL • Graphing • Quadratic formula • Completing the Square • Parabolas $y = a(x-h)^2 + k$ • Line of Symmetry, vertex, concavity, x and y-intercepts
Functions and Relations	<ul style="list-style-type: none"> • Domain and Range • Function notation • Composite
Systems of Equations, linear and nonlinear	<ul style="list-style-type: none"> • Solve by graphing • Solve by elimination (linear) • Solve by substitution • Matrices
Geometry	<ul style="list-style-type: none"> • Transformational • Area and perimeter • Logic and Inductive reasoning • Deductive reasoning • Language of Logic <ul style="list-style-type: none"> ◦ Counterexample ◦ Venn Diagrams ◦ Defined and Undefined terms ◦ Theorem, conjectures, and postulates ◦ Conditional Statements • Angles <ul style="list-style-type: none"> ◦ Measuring ◦ Definitions: right, acute, obtuse, etc. • Constructions <ul style="list-style-type: none"> ◦ Congruent segments ◦ Congruent Angles ◦ Perpendicular to a line ◦ Midpoint of Segment ◦ Angle bisector • Volume and surface area <ul style="list-style-type: none"> ◦ Solve for an unknown dimension

Maintenance Topics

Probability	<ul style="list-style-type: none"> • Fundamental counting principal • Finding Simple Probabilities
Algebra	<ul style="list-style-type: none"> • Set and Set Notation • Equations, Inequality and Expressions • Solving Equations and Inequalities • Number lines and absolute value • Scientific notation • Properties of algebra • substitution <ul style="list-style-type: none"> ◦ distributive
Preview Topics	<ul style="list-style-type: none"> • Adding, Subtract, Multiply and Divide Fractions • Adding, Subtract, Multiply and Divide Integers • Simplify Expressions (add, subtract, distribute) • Coordinate Geometry <ul style="list-style-type: none"> ◦ Graphing
<ul style="list-style-type: none"> • Trigonometry Ratios • Proofs <ul style="list-style-type: none"> ◦ Deductive ◦ Coordinate 	