

**Helena Public Schools
High School Mathematics
Math III - Teacher Resource**

Over-riding practices:

- Comfort with Algebraic Solution of problems

Focal Points	
Functions	<ul style="list-style-type: none"> • Basic Function Ideas <ul style="list-style-type: none"> ◦ Function Notation ◦ Domain and Range ◦ Function Operations • Piece-wise Functions <ul style="list-style-type: none"> ◦ Graphing • Polynomial Functions <ul style="list-style-type: none"> ◦ Graphing ◦ Zeros • Radical Functions <ul style="list-style-type: none"> ◦ Solving ◦ Graphing • Inverse Functions <ul style="list-style-type: none"> ◦ Finding ◦ Graphing • Rational Functions <ul style="list-style-type: none"> ◦ Asymptotes ◦ Undefined values ◦ Trig. ratios • Composite Functions <ul style="list-style-type: none"> ◦ Evaluating • Exponential/Logarithmic <ul style="list-style-type: none"> ◦ Growth/Decay ◦ Problem Solving ◦ $e=2.71828$ • Logarithmic <ul style="list-style-type: none"> ◦ Solve ◦ Expand Condense ◦ Convert from logarithmic to exponential and vice versa • Function Transformations <ul style="list-style-type: none"> ◦ General ◦ Quadratic
Sequence, Series & Sigma Notation	<ul style="list-style-type: none"> • Arithmetic <ul style="list-style-type: none"> ◦ Recursive ◦ Explicit • Geometric <ul style="list-style-type: none"> ◦ Recursive ◦ Explicit • Sigma Notation
Probability	<ul style="list-style-type: none"> • Sampling and Binomial Probability • Conditional Probability • Expected Value • Geometric Probability
Statistics	<ul style="list-style-type: none"> • Standard Deviation • Normal Distribution • Regression Equations <ul style="list-style-type: none"> ◦ Linear ◦ Quadratic
Geometry	<ul style="list-style-type: none"> • Logic • Coordinate Proof • Arcs & Angles • Circumscribed/Inscribed Polygons
Trigonometry	<ul style="list-style-type: none"> • Vectors <ul style="list-style-type: none"> ◦ Construct ◦ Resultants ◦ Operations <ul style="list-style-type: none"> ▪ Scalar Mult. ▪ Add/Subtract • Coordinates <ul style="list-style-type: none"> ◦ Rectangular Coordinates ◦ Polar-Rectangular • Law of Sines • Law of Cosines
Matrices (3-dimensional)	<ul style="list-style-type: none"> • Working with intersecting planes
Maintenance Topics	
Matrices	<ul style="list-style-type: none"> • Operations • Solving linear systems
Geometric Angle Properties	<ul style="list-style-type: none"> • Interior angle sum • Exterior angle sum
Other Functions	<ul style="list-style-type: none"> • Quadratic Functions • Linear Functions • Trig. Ration/Functions