Secondary Mathematics Curriculum and Instruction Overview

Use the link below to go directly to that course:

Middle School	High School
❖ Math 6 (IM) ❖ Applied Investigations in Mathematics (C2.0) ❖ Accelerated Math 6+ (IM) ❖ Math 7 (IM) ❖ Accelerated Math 7+ (IM) ❖ Math 8 (IM)	❖ Algebra 1 (IM) ❖ Geometry (IM) ❖ Algebra 2 (C2.0) ❖ PreCalculus (C2.0) ❖ Statistics and Math Modeling ❖ Honors Statistics

*IM denotes the curriculum resource is Illustrative Mathematics. Illustrative Math also provides **Lesson Summary Videos**.

**C2.0 denotes the curriculum resource is MCPS Curriculum

Math 6		
Marking Period	**Unit**	**Learning Targets**
MP 1	1 - Area and Surface Area ● Reasoning to Find Area ● Parallelograms ● Triangles ● Polygons ● Surface Area ● Squares and Cubes	Unit 1 - Learning Targets
	2 - Introducing Ratios	Unit 2 - Learning Targets

	• What are Ratios? • Equivalent Ratios • Representing Equivalent Ratios • Solving Ratio and Rate Problems • Part-Part-Whole Ratios	
MP 2	3 - Unit Rates and Percentages • Units of Measurement • Unit Conversion • Rates • Percentages	Unit 3 - Learning Targets
	4 - Dividing Fractions • Making Sense of Division • Meanings of Fraction Division • Algorithm for Fraction Division • Fractions in Lengths, Areas, and Volumes	Unit 4 - Learning Targets
MP 3	5 - Arithmetic in Base Ten • Warming Up to Decimals • Adding and Subtracting Decimals • Multiplying Decimals • Dividing Decimals	Unit 5 - Learning Targets
	6 - Expressions and Equations • Equations in One Variable • Equal and Equivalent • Expressions with Exponents • Relationships Between Quantities	Unit 6 - Learning Targets
MP 4	7 - Rational Numbers • Negative Numbers and Absolute Value	Unit 7 - Learning Targets

	• Inequalities • The Coordinate Plane • Common Factors and Common Multiples	
	8 - Data Sets and Distributions • Data, Variability, and Statistical Questions • Dot Plots and Histograms • Mean and MAD • Median and IQR	Unit 8 - Learning Targets

Investigations into Mathematics (C2.0 AIM)		
Marking Period	**Unit**	**Learning Targets**
MP 1	1 - Ratios and Proportional Relationships • Understanding Proportional Relationships • Application of Proportional Relationships	Unit 1 - Learning Targets
	2 - Rational Number Operations • Building Understanding of Rational Number Operations	Unit 2 - Learning Targets
MP 2	2 - Rational Number Operations • Integrating Rational Number Operation in Expressions and Equations	
	3 - Expressing Geometric Relationships • Measurement in Two and Three Dimensions • Angle Relationships	Unit 3 - Learning Targets
MP 3	4 - Statistics and Probability • Chance Events and Probability Models • Random Sampling	Unit 4 - Learning Targets

	5 - The Real Number Systems ● Magnitude and Scientific Notation ● Rational and Irrational Numbers	Unit 5 - Learning Targets
	6 - Functional Relationships and Linear Equations ● Connecting Proportional Relationships to Linear Equations	Unit 6 - Learning Targets
MP 4	6 - Functional Relationships and Linear Equations ● Solving Linear Equations	
	7 - Transformational and Geometric Measurement ● Congruence Through Rigid Transformations ● Similarity Through Non-Rigid Transformations	Unit 7 - Learning Targets

Acceleration Math 6+ (Acc6+)		
Marking Period	**Unit**	**Learning Targets**
MP 1	1 - Areas ● Reasoning to Find Area ● Parallelograms ● Triangles ● Surface Area	Unit 1 - Learning Targets
	2 - Ratios, Rates, and Percentages ● What are Ratios? ● Representing Equivalent Ratios ● Rates	Unit 2 - Learning Targets
MP 2	2 - Rations, Rates, and Percentages ● Percentages	

	3 - Fractions and Decimals ● Making Sense of Division ● Dividing Fractions ● Fractions in Lengths, Area, and Volumes ● Warming Up to Decimals ● Dividing Decimals	Unit 3 - Learning Targets
	4 - Equations and Expressions ● Equations in One Variable	Unit 4 - Learning Targets
MP 3	4 - Equations and Expressions ● Equal and Equivalent ● Expressions with Exponents ● Relationships Between Quantities	
	5 - Proportional Relationships ● Representing Proportional Relationships with Equations ● Comparing Proportional and Nonproportional Relationships ● Representing Proportional Relationships with Graphs ● Circumference of a Circle ● Area of Circle	Unit 5 - Learning Targets
	6 - Percentage Increase and Decrease ● Proportional Relationships with Fractions ● Percent Increase and Decrease	Unit 6 - Learning Targets
MP 4	6 - Percentage Increase and Decrease ● Applying Percentages	
	7 - Rational Numbers ● Negative Numbers and Absolute Value ● Adding and Subtracting Rational Numbers	Unit 7 - Learning Targets

	• The Coordinate Plane • Multiplying and Dividing Rational Numbers • Equations with Rational Numbers	
	8 - Data Sets and Distributions • Dot Plots and Histograms • Measures of Center and Variability • Sampling • Probabilities of Single-Step Events	Unit 8 - Learning Targets

Math 7		
Marking Period	**Unit**	**Learning Targets**
MP 1	1 - Scale Drawings • Scaled Copies • Scale Drawings	Unit 1 - Learning Targets
	2 - Introducing Proportional Relationships • Representing Proportional Relationships with Tables • Representing Proportional Relationships with Equations • Comparing Proportional Relationships with Nonproportional Relationships. • Representing Proportional Relationships with Graphs	Unit 2 - Learning Targets
MP 2	3 - Measuring Circles • Circumference of a Circle • Area of a Circle	Unit 3 - Learning Targets
	4 - Proportional Relationships and Percentages • Proportional Relationships with Fractions • Percent Increase and Decrease	Unit 4 - Learning Targets

	• Applying Percentages	
	5 - Rational Number Arithmetic • Interpreting Negative Numbers • Adding and Subtracting Rational Numbers • Multiplying and Dividing Rational Numbers • Four Operations with Rational Numbers • Solving Equations When There Are Negative Numbers	Unit 5 - Learning Targets
MP 3	6 - Expressions, Equations and Inequalities • Representing Situations of the Form $px+q=r$ and $p(x+q)=r$ • Solving Equations of the Form $px+q=r$ and $p(x+q)=r$ and Problems That Lead to Those Equations • Inequalities • Writing Equivalent Expressions	Unit 6 - Learning Targets
	7 - Angles, Triangles and Prisms • Angle Relationships • Drawing Polygons with Given Conditions • Solid Geometry	Unit 7 - Learning Targets
MP 4	8 - Probability and Sampling • Probability of Single-Step Events • Probability of Multi-step Events • Sampling • Using Samples	Unit 8 - Learning Targets
	9 - Putting It All Together	N/A

Acceleration Math 7+ (Acc7+)		
Marking Period	**Unit**	**Learning Targets**

MP 1	1 - Rigid Transformations and Congruence ● Rigid Transformations ● Properties of Rigid Transformations ● Congruence ● Angles in a Triangle ● Drawing Polygons with Given Conditions	Unit 1 - Learning Targets
	2 - Scale Drawings, Similarity, and Slope ● Scaled Copies ● Scale Drawings ● Dilation	Unit 2 - Learning Targets
MP 2	2 - Scale Drawings, Similarity, and Slope ● Similarity ● Slope	
	3 - Writing and Solving Equations ● Representing Situations of the Form $px+q=r$ and $p(x+q)=r$ ● Solving Equations of the Form $px+q=r$ and $p(x+q)=r$ and Problems That Lead to Those Equations	Unit 3 - Learning Targets
	4 - Inequalities, Expressions, and Equations ● Inequalities ● Writing Equivalent Expressions ● Equations in One Variable	Unit 4 - Learning Targets
MP 3	5 - Linear Relationships ● Proportional Relationships ● Representing Linear Relationships ● Finding Slopes and Linear Equations ● Systems of Linear Equations ● Associations in Numerical Data	Unit 5 - Learning Targets

	• Associations in Categorical Data	
	6 - Functions and Volume • Inputs and Outputs • Representing and Interpreting Functions • Linear Functions and Rates of Change	Unit 6 - Learning Targets
MP4	6 - Functions and Volume • Prisms, Cylinders, and Cones • Dimensions and Spheres	
	7 - Exponents and Scientific Notation • Exponents Review • Exponents Rules • Scientific Notation	Unit 7 - Learning Targets
	8 - Pythagorean Theorem and Irrational Numbers • Side Lengths and Areas of Squares • The Pythagorean Theorem • Decimal Representation of Rational and Irrational Numbers	Unit 8 - Learning Targets

Math 8		
Marking Period	**Unit**	**Learning Targets**
MP 1	1 - Rigid Transformations and Congruence • Rigid Transformations • Properties of Rigid Transformations • Congruence • Angles in a Triangle	Unit 1 - Learning Targets

	2 - Dilations, Similarity and Introducing Slope ● Dilations ● Similarity ● Slope	Unit 2 - Learning Targets
MP 2	3 - Linear Relationships ● Proportional Relationships ● Representing Linear Relationships ● Finding Slopes ● Linear Equations	Unit 3 - Learning Targets
	4 - Linear Equations and Linear Systems ● Puzzle Problems ● Linear Equations in One Variable ● Systems of Linear Equations	Unit 4 - Learning Targets
MP 3	5 - Functions and Volume ● Inputs and Outputs ● Representing and Interpreting Functions ● Linear Functions and Rates of Change ● Cylinders and Cones ● Dimensions and Spheres	Unit 5 - Learning Targets
	7 - Exponents and Scientific Notation ● Exponent Review ● Exponent Rules ● Scientific Notation	Unit 7 - Learning Targets
MP 4	8 - Pythagorean Theorem and Irrational Numbers ● Side Lengths and Areas of Squares ● The Pythagorean Theorem ● Side Lengths and Volumes of Cubes	Unit 8 - Learning Targets

	• Decimal Representation of Rational and Irrational Numbers	
	6 - Associations in Data • Does This Predict That? • Associations in Numerical Data • Associations in Categorical Data	Unit 6 - Learning Targets

IM Algebra I		
Marking Period	**Unit**	**Learning Targets**
MP 1	2 - Linear Equations, Inequalities and Systems • Writing and Modeling with Equations • Manipulating Equations and Understanding Their Structure • Systems of Linear Equations in Two Variables • Linear Inequalities in One Variable • Linear Inequalities in Two Variables • Systems of Linear Inequalities in Two Variables	Unit 2 - Learning Targets
MP 2	4 - Functions • Functions and Their Representations • Analyzing and Creating Graphs of Functions • A Closer Look at Inputs and Outputs • Inverse Functions	Unit 4 - Learning Targets
	5 - Introduction to Exponential Functions • Looking at Growth • A New Kind of Relationship	Unit 5 - Learning Targets

	• Exponential Functions • Percent Growth and Decay • Comparing Linear and Exponential Functions	
MP 3	6 - Introduction to Quadratic Functions • A Different Kind of Change • Quadratic Functions • Working with Quadratic Expressions • Features of Graphs and Quadratic Functions	Unit 6 - Learning Targets
MP 4	7 - Quadratic Equations • Finding Unknown Inputs • Solving Quadratic Equations • Completing the Square • The Quadratic Formula • Vertex Form Revisited	Unit 7 - Learning Targets
	1 - One-Variable Statistics • Getting to Know You • Distribution of Shapes • How to Use Spreadsheets • Manipulating Data • Analyzing Data	Unit 1 - Learning Targets
	3 - Two-Variable Statistics • Two-way Tables • Scatterplots • Correlation Coefficients • Estimating Lengths	Unit 3 - Learning Targets
*Please note that the Algebra I units will not follow the traditional sequential order. Instead, it will follow 2, 4, 5, 6, 7, 1, 3.		

IM Geometry		
Marking Period	**Unit**	**Learning Targets**
MP1	1 - Congruence and Rigid Transformations ● Constructions ● Rigid Transformations ● Evidence & Proof ● Designs	Unit 1 - Learning Targets
MP2	2 - Congruence ● Congruent Triangles ● About Quadrilaterals ● Putting it All Together	Unit 2 - Learning Targets
	3 - Similarity ● Properties of Dilations ● Similarity Transformations and Proportional Reasoning ● Similarity in Right Triangles ● Putting it All Together	Unit 3 - Learning Targets
MP3	4 - Right Triangle Trigonometry ● Angles and Steepness ● Trigonometric Ratios	Unit 4 - Learning Targets
	5 - Solid Geometry ● Cross-Sections, Scaling, and Area ● Scaling Solids ● Prism & Cylinder Volumes ● Putting it All Together	Unit 5 - Learning Targets
MP4	6 - Coordinate Geometry	Unit 6 - Learning Targets

	• Transformations in the Plane • Distances, Circles & Parabolas • Proving Theorems Algebraically • Putting it All Together	
	7 - Circles • Lines, Angles & Circles • Polygons & Circles • Measuring Circles • Putting it All Together	Unit 7 - Learning Targets
	8 - Conditional Probability (optional)	Unit 8 - Learning Targets

C2.0 Algebra 2		
Marking Period	**Unit**	**Learning Targets**
MP 1	1 - Functions and Their Inverses • Inverse Relationships • Radical Expressions and Equations • Exponential and Logarithmic Expressions, Equations, & Functions	Unit 1 - Learning Targets
MP 2	2 - Polynomials and Rational Functions • Quadratic Expressions & Equations • Polynomial Expressions & Equations • Rational Expressions & Equations	Unit 2 - Learning Targets
MP 3	3 - Introduction to Trigonometric Functions • Modeling Circular Motion • Graphing Trigonometric Functions	Unit 3 - Learning Targets

MP 4	4 - Modeling with Functions ● The Modeling Cycle	Unit 4 - Learning Targets
	5 - Applications of Probability ● Conditional Probability and the Rules of Probability	Unit 5 - Learning Targets
	6 - Inferences and Conclusions from Data (optional for Algebra 2, Honors Algebra 2) ● Normal Models ● Sample Surveys, Experiments, and Observational Studies	Unit 6 - Learning Targets

C2.0 PreCalculus		
Marking Period	**Unit**	**Learning Targets**
MP 1	1 - Polynomials, Power, and Rational Function ● Piecewise-Defined Functions/Composition of Functions/*LImits (H)* ● Power Functions ● Graphs of Rational Functions Extended ● The Algebra of Rational Expressions/Equations/Inequalities/*Partial Fractions (H)*	Unit 1 - Learning Targets
MP2	2 - Exponential and Logarithmic Functions ● Extensions of any Base/Laws of Logarithms/Change of Base ● Solving Exponential and Logarithmic Equations	Unit 2 - Learning Targets
MP3	3 - Trigonometric Functions ● Special Angles and REciprocal Trigonometric Functions	Unit 3 - Learning Targets

	• Inverse Trigonometric Functions • Trigonometric Identities and Equations • Laws of Sines and Cosines	
	4 - Vectors and Parametrics • The Algebra of Vectors 4- Vectors and Parametrics, *and Polars (Honors)* • The Algebra of Vectors • Parametrically-Defined Functions/*Vector-Valued Functions (Honors)*	Unit 4 - Learning Targets
MP4	4 - Vectors and Parametrics • Parametrically-Defined Functions 4 - Vectors and Parametrics (*Honors)* • *Polar Curves/Complex Numbers in Polar Form (H)*	
	5 - Systems and Matrices • The Algebra of Matrices	Unit 5 - Learning Targets
	6 - Discrete Math • Combinatorics/Binomial Theorem • Sequences and Series	Unit 6 - Learning Targets
	7 - Analytic Geometry in Three Dimensions (Optional - Honors)	Unit 7 - Learning Targets

Statistics & Mathematical Modeling		
Marking Period	**Unit**	**Learning Targets**
MP1	1 - Logic 2 - Matrices	Learning Targets

	3 - Mathematical Decisions	
MP2	4 - Data Displays 5 - Comparing Data Displays 6 - Regression	
MP3	7 - Probability 8 - Conditional Probability 9 - Discrete Probability	
MP4	10 - Functions 11 - Trigonometry 12 - Ready for more?	

Honors Statistics		
Marking Period	**Chapter**	**Learning Targets**
MP1	1 - Analyzing One-Variable Data ● Constructing and Interpreting Graphical Displays ● Summarizing Distributions of Univariate Data	Learning Targets
	3 - Collecting Data ● Sampling and Surveys ● Observational Studies and Experiments	
MP2	4 - Probability ● Introduction to Probability ● Probability Rules and the Counting Principle	
	5 - Random Variables	

	• Discrete Random Variables • Continuous Random Variables	
MP3	6 - Sampling Distributions • Understanding Sampling Distributions • Estimating Proportions and Means	
	7 - Estimating a Parameter • Confidence Intervals for Proportions • Confidence Intervals for Means	
MP4	8 - Testing a Claim	
	10 - Inference for Distributions and Relationships	
	2 - Analyzing Two-Variable Data • Exploring Bi-variate Data • Creating and Analyzing Regression Models	