



**YINGHUA  
ACADEMY**

## 2016-2017 Middle School Grades 5-8 Honor Mathematics Curriculum Map

The followings are general topic areas and intended timelines for instruction.

The topics and resources listed are only samples, not a complete listing. Topics listed may occur earlier or later than indicated.

| Yinghua MS Math Course                     | Grade 5 Honor (Level 3 and 4)   | Grade 6 Honor (Level 3 and 4)  | Grade 7 Honor (Level 3 and 4)  | Grade 8 Honor (Level 3 and 4)   |
|--|---|--|--|---|
| Target Math Level in 9 <sup>th</sup> Grade | Algebra 2 or Precalculus*   |  |  |   |
| Sept                                       | Whole numbers and fractions<br>1. Place value to 10,000,000<br>Decimals<br>1. Understanding thousandths<br>Algebra<br>1. Use letters as numbers   | 1. The real number system<br>2. Rational number operations   | 1. The Pythagorean theorem<br>a. The Pythagorean Theorem describes the relationship among the three sides of a triangle.<br>2. Geometric transformation<br>a. Geometric transformations move figures about on a plane. | 1. Linear equations and functions<br>a. Functions, graphs and notations<br>2. System of linear equations<br>a. Graphing, substitution, linear combination methods |
| Oct  | Ratio<br>1. Ratio and equivalent ratio<br>Percent<br>1. Express fractions as percents<br>Graphs and probability<br>1. Make and interpret data bar graphs  | 1. Algebraic expressions<br>2. Algebraic equations and inequalities  | Congruence and similarity<br>Both congruent figures and similar figures can be related by geometric transformation.  | Inequalities and absolute value<br>1. Solving linear inequalities<br>2. System of linear inequalities   |
| Nov  | Area of triangle<br>1. Base and height of a triangle<br>Angles, properties of triangles and 4-sided figures<br>1. Angles at a point and on a line<br>Three dimensional shapes, surface area and volume<br>1. Identify prisms and pyramids | Direct and inverse proportion<br>Two quantities that are in a proportional relationship can be used to solve real world and mathematical problems. | 1. Statistics<br>2. Probability.   | 1. Quadratic functions and factoring<br>a. Graphing quadratic functions<br>2. Polynomials and polynomial functions<br>a. Properties of exponents                  |
| Dec  | Algebra<br>1. Use letters to represent unknown numbers<br>Fractions<br>1. Divide a whole number or a fraction by a fraction   | 1. Angle properties and straight lines<br>2. Geometric transformation  | 1. Solving linear equations<br>a. Solving equations<br>2. Graphing linear equations and functions<br>a. Coordinates and scatter plots  | 1. Powers, roots, and radicals<br>a. Rational exponents<br>2. Exponential and logarithmic functions<br>a. Exponential growth and decay functions and modeling     |



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|------------------------|--|--|---|---|
| Jan                    | Ratio and percentage <ol style="list-style-type: none"><li>1. Compare quantities using ratios</li><li>2. Express a ratio in simplest form</li></ol>  | Volume and surface area of solids<br>Solids can be found and can be used to solve real world problems.               | <ol style="list-style-type: none"><li>1. Writing linear equations<ol style="list-style-type: none"><li>a. Using given information</li></ol></li><li>2. Solving and graphing linear equations<ol style="list-style-type: none"><li>a. One step, multi-steps, and compound inequalities</li></ol></li></ol> | <ol style="list-style-type: none"><li>1. Rational equations and functions<ol style="list-style-type: none"><li>a. Graphing rational functions</li></ol></li><li>2. Trigonometry<ol style="list-style-type: none"><li>a. Functions of any angle</li></ol></li></ol>  |
| Feb                    | Circle and graphs <ol style="list-style-type: none"><li>1. Identify the center, diameter, and radius of a circle</li></ol>   | <ol style="list-style-type: none"><li>1. Statistic</li><li>2. Probability</li></ol>                                  | System of linear equations <ol style="list-style-type: none"><li>1. Solve linear system by graphing, substitution, and linear combination methods</li><li>2. Special types of linear systems</li></ol>  | <ol style="list-style-type: none"><li>1. Data analysis and probability<ol style="list-style-type: none"><li>a. Counting principle and permutations</li></ol></li><li>2. Discrete mathematics<ol style="list-style-type: none"><li>a. Matrix operations</li></ol></li></ol>  |
| Mar                    | Solid figures <ol style="list-style-type: none"><li>1. Associate two-dimensional drawings with three-dimensional shapes</li></ol><br>Volume <ol style="list-style-type: none"><li>1. Find volume of a cuboid</li></ol> | <ol style="list-style-type: none"><li>1. Exponents</li><li>2. Scientific notations</li></ol>                         | <ol style="list-style-type: none"><li>1. Exponents and exponential functions<ol style="list-style-type: none"><li>a. Properties of exponents</li></ol></li><li>2. Quadratic equations and functions<ol style="list-style-type: none"><li>a. Solving quadratic equations</li></ol></li></ol>               | <ol style="list-style-type: none"><li>1. Triangle relationships<ol style="list-style-type: none"><li>a. Classifying triangles</li></ol></li><li>2. Congruent triangles<ol style="list-style-type: none"><li>a. SSS and SAS</li></ol></li><li>3. Similarity<ol style="list-style-type: none"><li>a. Similar polygons</li></ol></li></ol> |
| Apr                    | Triangles and 4 sided figures <ol style="list-style-type: none"><li>1. Review angle properties of triangles and quadrilaterals</li></ol>   | <ol style="list-style-type: none"><li>1. Algebraic linear equations.</li><li>2. Lines and linear equations</li></ol> | <ol style="list-style-type: none"><li>1. Polynomials and factoring<ol style="list-style-type: none"><li>a. Polynomial operations</li></ol></li><li>2. Rational equations and functions<ol style="list-style-type: none"><li>a. Rational expressions</li></ol></li></ol>                                   | Right triangles and trigonometry <ol style="list-style-type: none"><li>1. Special right triangles</li><li>2. Tangent ratio</li></ol>  |
| May                    | Speed <ol style="list-style-type: none"><li>1. Interpret speed as distance traveled per unit of time</li></ol>   | <ol style="list-style-type: none"><li>1. System of linear equations</li><li>2. Functions</li></ol>                   | Radicals and connections to geometry <ol style="list-style-type: none"><li>1. Square roots</li><li>2. Radical expressions</li></ol>   | Circle <ol style="list-style-type: none"><li>1. Parts of a circle</li><li>2. Properties of tangents</li></ol>   |
| June                   | 5 <sup>th</sup> grade and 6 <sup>th</sup> grade math review  | Grade 7 math and some grade 8 math review  | 8 <sup>th</sup> grade and 9 <sup>th</sup> grade math review   | 10 <sup>th</sup> grade and 11 <sup>th</sup> grade math review   |