



**YINGHUA  
ACADEMY**

## 2016-2017 Middle School Grades 5-8 Core 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 Core (Level 1 and 2)	Grade 6 Core (Level 1 and 2)	Grade 7 Core (Level 1 and 2)	Grade 8 Core (Level 1 and 2)
Target Math Level in 9 <sup>th</sup> Grade	Algebra 1 or Geometry*			
Sept	Whole numbers and fractions <ol style="list-style-type: none"> <li>Place value to 10,000,000</li> <li>Rounding and estimating</li> </ol>	Algebra <ol style="list-style-type: none"> <li>Use letters to represent unknown numbers</li> <li>Write an algebraic expression in one variable</li> </ol>	<ol style="list-style-type: none"> <li>The real number system               <ol style="list-style-type: none"> <li>Real numbers are represented as points on an infinite line.</li> </ol> </li> <li>Rational number operations               <ol style="list-style-type: none"> <li>The operations can be applied to rational numbers including negative numbers.</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>Exponents               <ol style="list-style-type: none"> <li>Exponential notations can be used to represent repeated multiplication of the same factor.</li> </ol> </li> <li>Scientific notations               <ol style="list-style-type: none"> <li>Scientific notation is a way of writing numbers that makes it easier to work with very big or very small numbers.</li> </ol> </li> </ol>
Oct	Algebra <ol style="list-style-type: none"> <li>Use letters as numbers</li> <li>Inequalities and equations</li> </ol>	Solid figures Visualize pyramids, prisms, and cylinders from two-dimensional drawings	Algebraic expressions Algebraic expressions containing rational numbers and several variables can be simplified, expanded, or factored to write equivalent expressions.	<ol style="list-style-type: none"> <li>Algebraic linear equations               <ol style="list-style-type: none"> <li>Linear equations can be used to solve mathematical and real world problems.</li> </ol> </li> <li>Lines and linear equations               <ol style="list-style-type: none"> <li>The graph of a linear equation in two variables is a line, and can be written in a slope-intercept form.</li> </ol> </li> </ol>
Nov	Area of triangle <ol style="list-style-type: none"> <li>Base and height of a triangle</li> <li>Finding area of a triangle</li> </ol>	Ratio and percentage <ol style="list-style-type: none"> <li>Compare quantities using ratios</li> <li>Express a ratio in simplest form</li> </ol>	Algebraic equations and inequalities Algebraic equations and inequalities can be used to model mathematical or real world situations and to find the value of the variables.	System of linear equations A system of linear equations may have a unique solution and can be solved using elimination, substitution, or graphical methods.
Dec	Ratio <ol style="list-style-type: none"> <li>Ratio and equivalent ratio</li> <li>Ratio and fraction</li> </ol>	Speed <ol style="list-style-type: none"> <li>Interpret speed as distance traveled per unit of time</li> <li>Read and write units of speed</li> </ol>	Direct and inverse proportion Two quantities that are in a proportional relationship can be used to solve real world and mathematical problems.	Functions A function is a relation between a set of inputs and a set of outputs, in which every input has exactly one output.
Jan	Decimals <ol style="list-style-type: none"> <li>Understanding thousandths</li> <li>Rounding decimals</li> </ol>	Fractions <ol style="list-style-type: none"> <li>Divide a whole number</li> <li>Divide a fraction by a whole number</li> </ol>	Angle properties and straight lines Angles formed on a straight line or by parallel lines and a transversal have special properties that are useful in solving problems.	The Pythagorean theorem The Pythagorean theorem describes the relationship among the three sides of a triangle.



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Feb	Percent <ol style="list-style-type: none"><li>Express fractions as percents</li><li>Percent of a number</li></ol>	Circle and graphs <ol style="list-style-type: none"><li>Identify the center, diameter, and radius of a circle</li><li>Measure the radius or diameter of a circle</li></ol>	Geometric transformation Triangles and quadrilaterals can be constructed using a compass, a protractor, and a straightedge.	Geometric transformation Geometric transformations move figures about on a plane.
Mar	Graphs and probability <ol style="list-style-type: none"><li>Make and interpret data bar graphs</li><li>Graphing equations</li></ol>	Volume Find unknown dimension of a cuboid when given its volume and two dimensions or the area of a face	Volume and surface area of solids Solids such as pyramids, cylinders, cones, and spheres can be found and their surface area and volume can be used to solve real world problems.	Congruence and similarity Both congruent figures and similar figures can be related by geometric transformation.
Apr	Angles, properties of triangles and 4-sided figures <ol style="list-style-type: none"><li>Angles at a point and on a line</li><li>Vertical angles</li></ol>	Triangles and 4 sided figures Review angle properties and find unknown angles involving triangles and quadrilaterals	Statistic Measures of central tendency can be used to estimate the center of data.	Statistics A line best fit can be used to model the linear association of bivariate quantitative data.
May	Three dimensional shapes, surface area and volume <ol style="list-style-type: none"><li>Identify prisms and pyramids</li><li>Identify cylinder, sphere and cone</li></ol>	Challenging word problems <ol style="list-style-type: none"><li>Solve challenging word problems</li></ol>	Probability Events happen can be described using probability or how likely an event is to occur.	Probability The probability of simple events can be used to compute the probability of compound events either dependent or independent.
June	Grade 5 math content, knowledge and skills review	Grade 6 math content, knowledge and skills review	Grade 7 math content, knowledge and skills review	Grade 8 math content, knowledge and skills review