# 5<sup>th</sup> Grade Math Club 2018-2019 Curriculum

| *Topic* | Subtopics | Notes |
|---|---|---|
| Geometric Sense I | Geometry, Angles and Triangles overview | Explain what an angle is, and what the unit of measurement is (degrees). Explain the properties of a triangle (sum of angles is 180). Talk   about different kinds of triangles (right, isosceles, equilateral, scalene).<br><br>Homework<br><br>Solution |
| Fun Mental math | Khan Academy | |
| Number Sense I | GCF, LCM, Primes | Prime numbers. Divisibility rules for 1, 2, 3, 4, 5, 6, 7, 8,   9, and 10. Factors, and how to factor a number. Greatest Common Factor (GCF).   Multiples, and how to find the Least Common Multiple (LCM)<br><br>Homework<br><br>Solution |
| Fun Mental math | Khan Academy | |
| Number Sense II | Fractions, Decimals, Percentages | Finding equivalent fractions, and reducing fractions to lowest   terms. How to convert between fractions, decimals, and percentages.   (Conversion between these different number representations is a fundamental   skill that will be used throughout the rest of Math Club, so it's important   to master this skill early.)<br><br>Homework |
| Fun Mental math | Khan Academy | Solution |
| Number Sense III | Ratios   and fraction arithmetic | Ratios and proportions. Equivalent ratios and comparing two   ratios to see if they're equivalent. Continued ratios (more than two   quantities). Improper fractions vs. proper fractions vs. mixed numbers. How   to add and subtract fractions, especially with different denominators. How to   multiply fractions.<br><br><br>Homework |
| | Khan Academy | Solution |

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| *Number Sense IV* | Exponents and order of operations | Explain what an exponent is (34 is 3x3x3x3). Also cover the term "square number", "cube number", "square root", and "cube root". Explain the precedence order for operations, both when parentheses are present and not present (first exponents, then mult/div, then add/subtract). |
| | Khan Academy | Homework Solution |
| *Measurement I* | Conversion between units | Practice converting between all different kinds of units (simple whole number conversions only) -- days/weeks, inches/feet, meters/kilometers, pounds/ounces, etc. |
| | Khan Academy | Homework Solution |
| *Measurement II* | Area and perimeter | Calculate area of a rectangle. Calculate area of a triangle. Calculate area of odd shapes by composing them into rectangles and triangles. Explain perimeter. 5th graders: How to compute the area and circumference of circles. |
| | Khan Academy | Homework Solution |
| *Geometric Sense II* | Quadrilaterals, polygons and Coordinate system | Explain the properties of a quadrilateral (sum of angles is 360), and different classifications of quadrilaterals (rhombus, parallelogram, square, rectangle, etc.). Also briefly touch on other regular polygons (pentagons, hexagon, etc.). Also cover the coordinate system (x-y grid). 5th graders: Slope and y-intercept |
| | Right triangles | Pythagorean theorem, including how to apply the Pythagorean theorem to the diagonals of squares and rectangles as well. |

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| | | [Quadrilateral Homework](#)<br>[Quadrilateral Solution](#)<br><br>[Right Triangles Homework](#)<br>[Right Triangles Solution](#) |
| | [Right Triangles Khan Academy](#) | |
| *Algebra I* | [Expressions and single variable equations](#)<br><br><br><br><br><br>[Khan Academy](#) | Explain what a variable is, and how to write an expression using a variable. Explain that *6x* is shorthand for *(6 times x)*. 5th graders: Expressions involving inequalities, and the transitive property (if a>b and b>c, then a>c).<br><br>[Homework](#)<br>[Solution](#) |
| *Algebra II* | [Two variable equations](#)<br><br>[Khan Academy](#) | Explain how to write an equation containing a single variable, and solve using algebraic techniques. This is very hard for 4th graders, but expose them to it anyway. 5th graders: Two-variable equations (two equations and two unknowns).<br>[Homework](#)<br>[Solution](#) |