Grade 6 Mathematics

Curriculum Map for parents

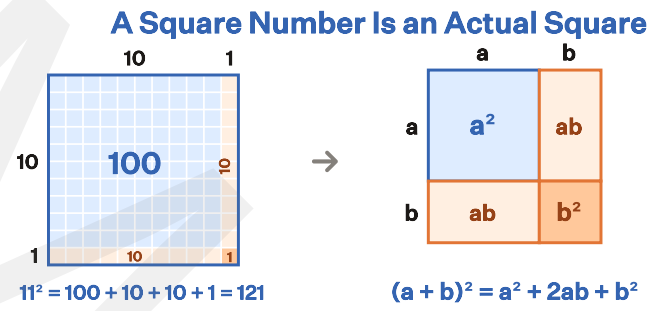
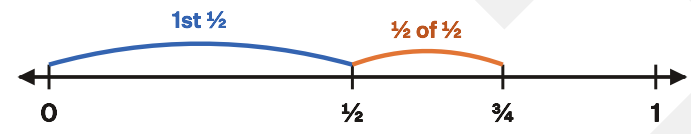
Aligned with US Common Core. **Designed to exceed it.**

The 1:1 coach who stays with your child for years is irreplaceable.

> When problems become tough, as life sometimes does - a coach identifies the moments your child stops trying. With a gentle nudge, a warm word of encouragement, they egg them on to give it "one more try." That one intervention compounds a thousand times, building resilience and making your child MathFit for life.

For students on other boards, the coach maps modules to your child's school.

The Grade 6 Curriculum

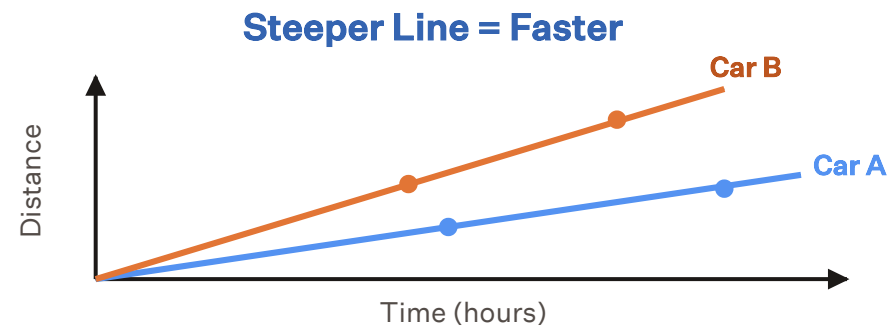
#	Chapters	What the child unlocks
01	**Numbers and Operations** • Use the standard algorithm for multi-digit division • Interpret the meaning of exponents • **Find the squares of numbers up to 20** • Solve expressions with parentheses using order of operations • Solve expressions with exponents using order of operations	Most students first memorize square numbers like $11^2 = 121$. At Cuemath, the child first learns to visualize a square number as an actual square: 11 rows of 11 unit squares. Only after they understand this visual model do they move to memorizing squares. This matters because the same visual model later helps them understand algebra. When they see $(a + b)^2$, they can picture one large square made up of four parts: a^2, b^2, and two rectangles of area ab. That is where the extra 2ab comes from. So the goal is not just to remember formulas. The goal is to help the child see why the formula is true. **HSA-APR.C.4** **A Square Number Is an Actual Square**  $11^2 = 100 + 10 + 10 + 1 = 121$ $(a + b)^2 = a^2 + 2ab + b^2$
02	**Fraction Operations** • Divide whole numbers by fractions & fractions by whole numbers • **Divide fractions by fractions** • Solve word problems on division of fractions • Solve word problems on mixed operations with fractions	Divide ¾ by ½ and the answer is bigger than ¾ - a surprise, since multiplying by fractions had always shrunk them. How many halves fit inside three-quarters? On a number line, count the halves in ¾: one full half fits, plus a quarter more. That quarter is half of another half. Total: 1½ halves. So ¾ ÷ ½ = 1½. The child who draws this watches the rule emerge from the picture. In Grade 7, the same picture divides any rational numbers, even negative ones. **7.NS.A.2** **How Many ½s Fit in ¾?**  *¾ ÷ ½ = 1½ (one full half, plus half of another)*
03	**Decimals** • Convert decimals to fractions & back • Add & subtract decimals • Multiply decimals • **Divide decimals**	2.4 ÷ 0.6 - the decimal in the divisor stops most students. But multiply both numbers by 10 and the problem becomes 24 ÷ 6, which any Grade 5 student solves at once. The answer is 4 either way. Decimal arithmetic is whole-number arithmetic with a place-value tracking step; the operation stays the same. The decimal point moves; the math doesn't. In Grade 7, the same tracking handles every rational number - decimals, fractions, and negatives together. **7.NS.A.3** **Multiply Both by 10** 2.4 ÷ 0.6 ×10 → 24 ÷ 6 = 4 *same ratio, same answer - only the bookkeeping moves*

#	Chapters	What the child unlocks

04 Ratios and Rates

- Write & identify equivalent ratios
- Use ratio tables to solve problems
- **Graph & compare ratio relationships**
- Find & apply unit rates
- Convert units using rates & conversion factors
- Solve real-world problems with ratios & rates

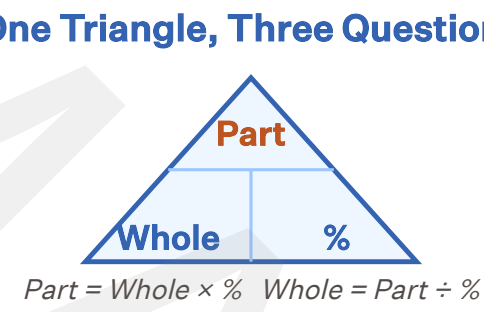
Car A travels 60 km in an hour; car B travels 90 km in 1.5 hours. Which is faster? A table makes it hard to see. Graph both ratios and it is immediate - the steeper line is the faster car, the ratio with the greater unit rate. Chapter 4 moves ratios from numbers to tables to graphs, and the child who makes that journey compares any proportional relationship at a glance. In Grade 7, that steepness earns a formal name - the constant of proportionality - and stays the central idea of every linear relationship that follows. **7.RP.A.2**



05 Percents

- Interpret the meaning of percents
- Express percents as fractions & ratios
- Convert fractions & ratios to percents
- Relate fractions, decimals, ratios & percents
- **Find part, whole & percent of a quantity**
- Apply percents to discount, tax & decisions

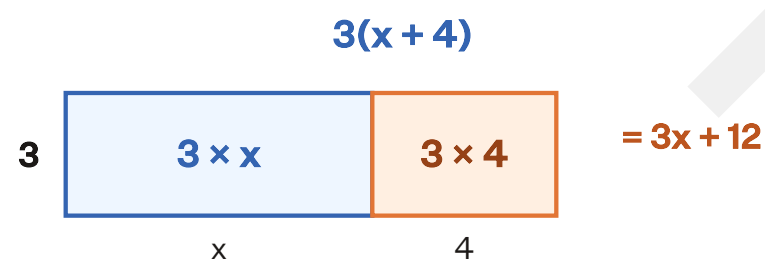
A jacket costs $80 at 20% off; most students find the discount, $16. The harder question comes next: a jacket now costs $64 after 20% off - what was the original price? Both run on the one relationship between part, whole, and percent. The child who builds that triangle once can drive it in either direction - find the part, the whole, or the percent. In Grade 7, the same relationship runs tax, tip, markup, and interest, however the tool is drawn. **7.RP.A.3**



06 Intro to Algebra & Algebraic Expressions

- Identify patterns & parts of expressions
- Evaluate algebraic expressions
- Write expressions from verbal descriptions
- Apply properties of operations to simplify
- **Apply the distributive property to simplify**
- Factor expressions using the GCF

3(x + 4) - most students either freeze or write 3x + 4. An area model settles it: a rectangle 3 tall and (x + 4) wide splits into two pieces, one 3 × x and one 3 × 4. The total is 3x + 12. The distributive property the child used in Grade 3 with numbers works identically when one of the numbers is a letter - the 'x' is a placeholder for a number the child doesn't know yet. In Grade 7, expanding and factoring linear expressions this way becomes routine. **7.EE.A.1**

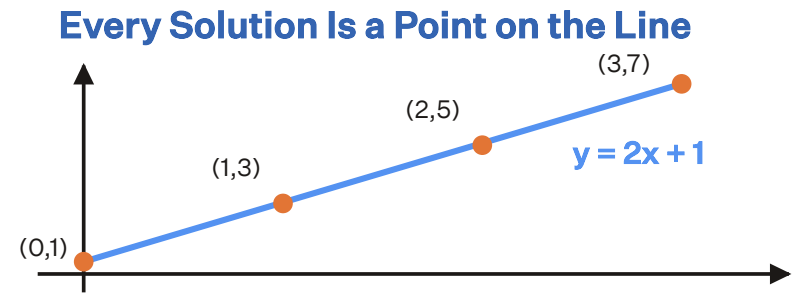


#	Chapters	What the child unlocks

07 Linear Equations

- Write linear equations in one variable
- Solve equations using addition & subtraction
- Solve equations using multiplication & division
- Frame & solve equations from real-life contexts
- Write linear equations in two variables
- **Graph linear equations in two variables**

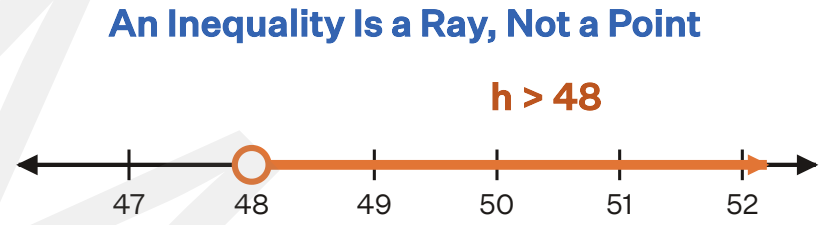
y = 2x + 1. Substitute x = 0, 1, 2, 3 and the points (0,1), (1,3), (2,5), (3,7) appear. Plot them and they fall on a straight line. Every point on the line solves the equation, and every solution sits on the line. The equation and the graph are two views of one object. Grade 6 students who see this are ready to graph any proportional relationship and read its steepness as the constant of proportionality - the idea that becomes slope in Grade 8. **7.RP.A.2**



08 Inequalities

- Write inequalities of the form x > c or x < c
- Represent real-world constraints as inequalities
- Recognize that an inequality has infinitely many solutions
- **Graph inequality solutions on a number line**
- Interpret inequality solutions in context

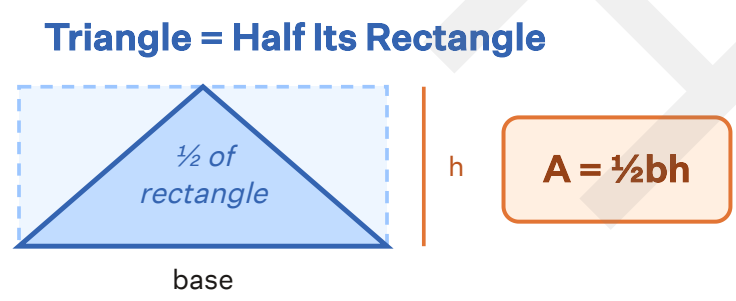
A ride's sign reads: you must be taller than 48 inches. One number, but the heights it allows never end - 49, 50, 48.5, every height past 48. The child writes h > 48 and draws it: an open circle at 48, the line shaded onward with no last point. An equation marks one spot; an inequality claims a whole ray. The child who pictures that endless set looks for a range of answers. In Grade 7, this same shaded ray solves and graphs every inequality a word problem can pose. **7.EE.B.4**



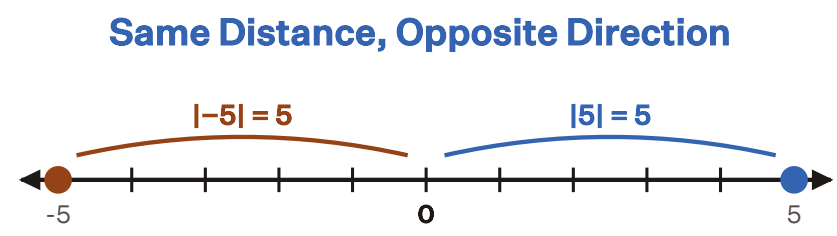
09 Area of 2D Shapes

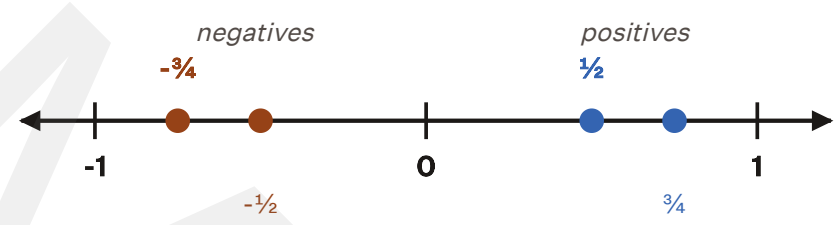
- Find the area of parallelograms
- **Find the area of triangles**
- Find the area of trapezoids & kites
- Find the area of composite figures

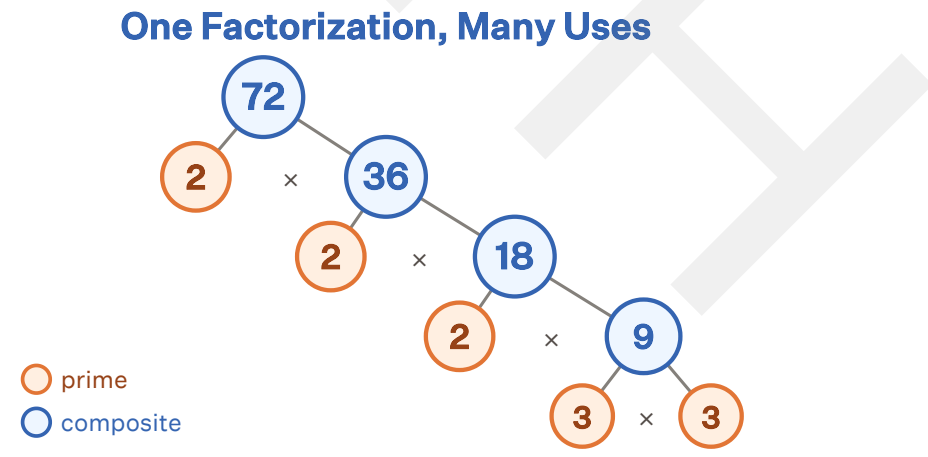
A triangle is exactly half a rectangle. Any triangle - acute, obtuse, or right - fits inside a bounding rectangle and covers precisely half of it. The child who sees this rebuilds A = ½bh from the picture every time. Chapter 9 carries the insight outward: a parallelogram has the area of its matching rectangle, and a trapezoid averages its two parallel sides. In Grade 7, these area ideas extend to every polygon and to the surfaces of solids. **7.G.B.6**



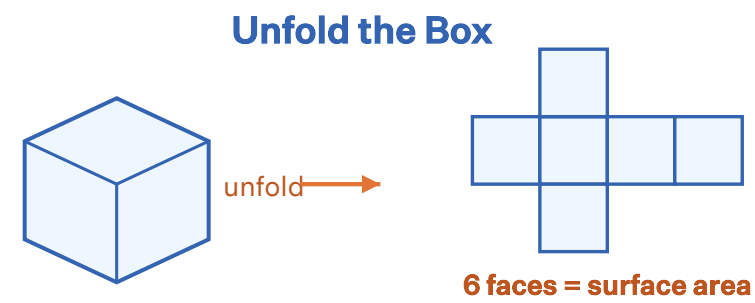
#	Chapters	What the child unlocks
10	**Integers** • Plot integers on a number line • **Identify opposites & absolute values** • Compare integers • Order integers	−5 and 5 sit the same distance from zero, just in opposite directions. Seen on a number line, absolute value is a measurement - distance from the origin. Both −5 and 5 are 5 units away, so |−5| = |5| = 5. Chapter 10 plants integers firmly on the line before any operation begins. Every integer operation is a move along it. In Grade 7, every integer sum and difference is a move on this very line. **7.NS.A.1**
11	**Rational Numbers** • Classify rational numbers & the number system • **Locate rational numbers on the number line** • Find opposites & absolute values of rationals • Compare & order rational numbers	−¾ sits between −1 and 0, three-quarters of the way from zero toward −1. The child who places it precisely sees that rational numbers fill the line in every direction - leftward past zero, and into every gap between the integers. Every fraction, every decimal, every negative finds its address. This chapter completes the number line that began in Grade 5. In Grade 7, the child adds, subtracts, multiplies, and divides each of these numbers in real-world problems. **7.NS.A.3**
12	**Factors and Multiples** • Apply divisibility rules (2, 3, 5, 6, 9, 10) • Apply divisibility rules (4 & 8) • **Find the prime factorization of numbers** • Find the greatest common factor (GCF) • Find the least common multiple (LCM) • Solve applied problems with GCF & LCM	$72 = 2^3 \times 3^2$. Every whole number breaks into primes in exactly one way - a fact named the Fundamental Theorem of Arithmetic, presented to Grade 6 children in workable form. The child who factor-trees 72 and 48 reads their GCF (24) and LCM (144) straight off the factorizations. Prime factorization is the single key behind GCF, LCM, and reducing fractions. In Grade 7, that very GCF factors an algebraic expression - 6x + 9 becomes 3(2x + 3). **7.EE.A.1**

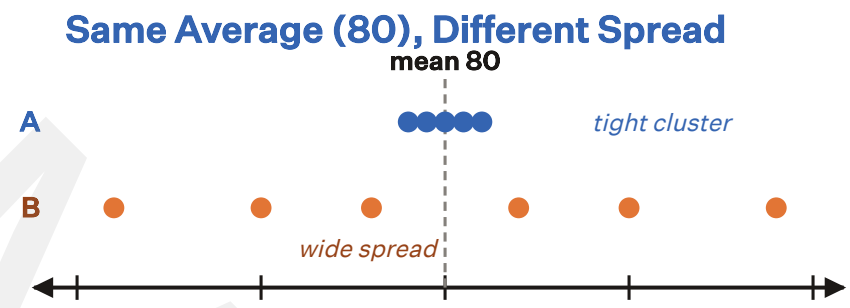


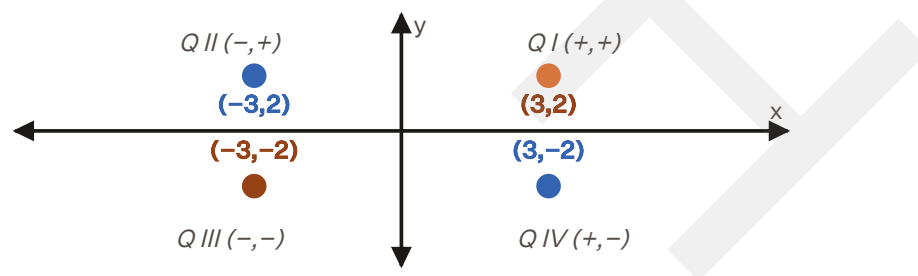




#	Chapters	What the child unlocks
13	**Surface Area and Volume** • **Find the surface area of prisms using nets** • Find the surface area of pyramids using nets • Find the volume of a right rectangular prism with fractional edge lengths • Solve real-world problems involving volume	Unwrap a box and six rectangles appear, two of each size. Their combined area is the surface area. The child who unfolds before computing sees the surface and the inside as separate questions. The chapter asks a new question - how much wrapping does a solid need? - and the flat net turns a three-dimensional problem into a two-dimensional one, for prisms and pyramids alike. In Grade 7, this net thinking finds the surface area and volume of any prism. **7.G.B.6**
14	**Statistics** • Recognize statistical questions that anticipate variability • **Describe a distribution by its center, spread & shape** • Distinguish measures of center from measures of variation • Display data in dot plots, histograms & box plots • Summarize data using median, mean, IQR & MAD • Relate the choice of measure to the data's shape & context	Two classes average exactly 80 on a test - the same center. But one clusters tightly from 78 to 82, while the other splits between the 60s and the high 90s. Identical average, opposite stories. The mean told only half the story; the spread completed it. A child who asks "what's typical?" and also "how much do the values vary?" is reading a whole distribution - center, spread, and shape together. In Grade 7, that is exactly how two groups are compared. **7.SP.B.4**
15	**Coordinate Geometry** • Identify points in different quadrants • **Plot points in all four quadrants** • Solve real-world problems on the coordinate plane • Draw polygons on the coordinate plane • Find area & perimeter of polygons on the plane	Grade 5 coordinate geometry lived in the first quadrant - positive numbers only. Grade 6 opens the plane to all four. The point (−3, 2) is three left and two up; (2, −3) is two right and three down. Each quadrant carries its own sign pattern - one positive and one negative, or both negative - and the child who masters all four can pin down any location in the plane. It is the groundwork for graphing relationships in Grade 7, and for the linear functions and slope that arrive in Grade 8. **Reasoning foundation**







Common Core standards in gold show how this Grade 6 content prepares for Grade 7 and beyond.

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Making Kids MathFit™

Schedule a free evaluation with an expert tutor who identifies the exact learning gaps and strengths and builds a tailored learning plan for your child from the very first session.

Schedule an Evaluation