

Grade 6 math syllabus (USA): the domains and every skill

The Common Core grade 6 year in the order schools teach it. Tick a skill when the child can do it without help. Ratios and expressions decide next year's Algebra 1 placement.

Domain	Skills	Done
1. Number system, part 1 (6 weeks)	Multi-digit division, standard algorithm; all four operations with decimals; GCF to 100 and LCM to 12; distributive property to factor a sum; dividing a fraction by a fraction, with the reason	[]
2. Ratios and proportional relationships (7)	Ratio language; unit rates; tables of equivalent ratios and graphs; tape diagrams and double number lines; percent as a rate per 100, part and whole; unit conversion by ratio	[]
3. Expressions and equations (7)	Whole-number exponents; expressions with variables; term, coefficient, factor; equivalent expressions (distributive, like terms); one-step equations $x + p = q$, $px = q$; inequalities $x > c$; dependent and independent variables	[]
4. Number system, part 2 (3)	Negative numbers in context; the number line both ways; ordering; absolute value; four-quadrant coordinate plane; distances on a horizontal or vertical line	[]
5. Geometry (5)	Area of triangles, quadrilaterals and polygons by decomposition; volume with fractional edges ($V = lwh$, $V = Bh$); polygons on the coordinate plane; nets and surface area	[]
6. Statistics (4)	Statistical questions; centre, spread, shape; mean, median, range, MAD, IQR; dot plots, histograms, box plots; the effect of an outlier	[]

The year, the test, and the end-of-year check

Month by month

Months	Domain	Check at home
Aug to Sep	Division, decimals, GCF/LCM, dividing fractions	$7,344 \div 16 = 459$; $3.6 \times 2.5 = 9$; $\text{GCF}(24, 36) = 12$; $3/4 \div 1/8 = 6$ with a reason
Oct to Nov	Ratios, rates, percent	240 miles in 4 h is 60 mph; 15% of 80 = 12; 12 is 30% of 40
Dec to Jan	Expressions and equations	$2^3 = 8$; $3(x + 4) = 3x + 12$; $x + 7 = 15$ solved and checked; $y = 4x$ as table and graph
February	Negative numbers; coordinate plane	$-8 < -3$ on the number line; $ -6 = 6$; plots $(-3, 2)$
March	Geometry	Triangle base 10 height 7: area 35; 2 by $1\frac{1}{2}$ by 3 box: 9; net of a cube
Apr to May	Statistics; review; state test	Mean and median of 4, 7, 7, 9, 13; reads a box plot; says what MAD measures

The state test

Test	Note
Every state, spring	Grades 3 to 8 are tested every year
Texas STAAR grade 6 math	43 points: 16 to pass (Approaches), 25 for Meets, 34 for Masters
Accelerated 6/7 placement	Decided at the end of grade 5 or during grade 6 by a test and recommendation; it is the door to Algebra 1 in 8th

Twelve questions, no calculator, fifteen minutes

- $8,352 \div 24$
- 4.8×3.5 and $7.2 \div 0.9$
- GCF of 42 and 56; LCM of 6 and 8
- $5/6 \div 2/3$
- 3 cups flour per 2 cups sugar: sugar for 12 cups flour?
- 35% of 120; 18 is 40% of what?
- $4 \times 4 \times 4$ with an exponent; simplify $5(2x + 3) - 4x$
- Solve $x + 9 = 23$ and $6y = 42$; describe $x > 4$ on a number line
- Order $-4, 3, -7, 0, 2$; what is $|-9|$?
- $(-5, 3)$: which quadrant; distance to $(-5, -2)$?
- Triangle base 12 cm height 5 cm: area; box 3 by $2\frac{1}{2}$ by 4 ft: volume
- 6, 9, 9, 12, 14: mean and median; which changes more if 14 becomes 44?

Answers

- 1) 348 2) 16.8; 8 3) 14; 24 4) $1\frac{1}{4}$ 5) 8 cups 6) 42; 45 7) $4^3 = 64$; $6x + 15$ 8) 14; 7; everything right of 4, open circle 9) $-7, -4, 0, 2, 3$; 9 10) Quadrant II; 5 11) 30 cm^2 ; 30 cu ft 12) mean 10, median 9; the mean
- 10 or more: ready for grade 7, a reasonable candidate for acceleration. 7 to 9: the missed questions name the summer work. 6 or fewer, or 4 to 6 wrong: fractions and ratios are the gap.

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