

Syllabus for XPERTSTEM Mathematics



XPERT-STEM

	Chapter 1	Chapter 2	Chapter 3
Mathematics Grade 2-3&4 (Division 1)	Place Value (up to 6-digit numbers)	Fractions (equivalent, comparing, adding & subtracting like denominators)	Lines, Angles, and Symmetry
	Comparing and Ordering Numbers	Introduction to Decimals (tenths & hundredths)	2D Shapes (triangles, quadrilaterals, circles)
	Addition and Subtraction of Large Numbers	Time (reading clocks, elapsed time, calendars)	3D Shapes (cubes, cuboids, spheres, cones, prisms)
	Multiplication Facts and Multi-digit Multiplication	Money (adding, subtracting, simple word problems)	Perimeter and Area of Simple Figures
	Division Facts and Long Division	Length, Mass, and Capacity (metric units, conversions within units)	Data Handling (tables, pictographs, bar graphs, simple charts)

	Chapter 1	Chapter 2	Chapter 3
Mathematics Grade 5 & 6 (Division 2)	• Divisibility by 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 13	• Simple statistics	• Area of triangles
	• Mathematical logic	• Percentage	• Properties of squares, rectangles, triangles, parallelograms, and trapeziums
	• Prime numbers	• Ratio	• Angles (acute, right, and obtuse)
	• Arithmetic operations with decimals, fractions, mixed fractions, and improper fractions	• Linear equations	• Volume of cubes and cuboids
	• Factor and multiples	• Perimeter of polygons	• Line of symmetry
	• LCM and GDF		

	Chapter 1	Chapter 2	Chapter 3
Mathematics Grade 7 & 8 (Division 3)	• Advanced topics in fractions	• System of equations	• Regular polygons
	• Squares and square roots	• Linear functions	• Area and circumference of a circle
	• Rational numbers	• Simple combinatorics and probability	• Pythagorean Theorem
	• Equalities and inequalities	• Ratio and proportion	• Congruence and similarity
	• Simple algebraic expressions		• Volume and surface area of prisms and cylinders

	Chapter 1	Chapter 2	Chapter 3
Mathematics Grade 9 & 10 (Division 4)	• Real numbers	• Polynomials	• Law of sines and cosines
	• Advanced topics in exponentiation	• Logarithms	• Properties of circles
	• Quadratic functions	• Graph interpretation	• Volume and surface area of pyramids, cones, and spheres
		• Mean, median, and mode	• Coordinate geometry



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	Chapter 1	Chapter 2	Chapter 3
Mathematics Grade 11 & 12 (Division 5)	• Advanced topics in algebra	• Advanced topics in logarithms	• Summation of series
	• Advanced topics in inequalities	• Complex numbers	• Advanced topics in combinatorics and probability
	• Remainder theorem	• Binomial theorem	• Advanced topics in trigonometry
	• Factor theorem	• Non-linear equations	• Advanced topics in coordinate geometry



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