



*Dr. Bbosa Science*

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**Senior 5 Principal maths syllabus**

Term	Topic	Sub-topics	Periods
Term 1	1. Numerical concepts	1.1 Indices	10
		1.2 Logarithms	
		1.3 Surds	
	2. Equations and inequalities	2.1 Linear and simultaneous equations	26
		2.2 Quadratic equations	
		2.3 Quadratic inequalities	
		2.4 Polynomials	
	3. Coordinate geometry	3.1 Straight lines	12
	4. Partial fractions	4.1 Linear factor	08
		4.2 Quadratic factor	
		4.3 Repeated factor	
		4.4 Improper fraction	
	5. Trigonometry	5.1 Trigonometrical ratios	25
		5.2 Clockwise and anti-clockwise angles	
		5.3 Graphs of $\sin\theta$ , $\cos\theta$ , $\tan\theta$	
		5.4 Compound angle formulae and derived identities	
		5.5 Solution of triangles	
	6. Descriptive statistics	6.1 Measures of dispersion	15
		6.2 Measures of relative positions	
Total			96

### Senior 5 Principal maths yllabus

Term	Topic	Sub-topics	Periods		
Term 2	7.	Correlation and scatter diagrams	7.1	Scatter diagram	08
			7.2	Correlation	
		8. Dynamics 1	8.1	Resultant and components of forces	20
			8.2	Friction	
			8.3	Connected particles	
	9.	Probability theory	9.1	Probability theorems	16
			9.2	Applications of probability in real life	
	10.	Differentiation 1	10.1	Gradient of a curve	20
			10.2	Gradient functions	
			10.3	Composite functions	
			10.4	Implicit functions	
			10.5	Products and quotients of functions	
			10.6	Applications of differentiation1 (Nature of turning points, curve sketching, small changes, rates of change and velocity and acceleration)	
	11.	Integration 1	11.1	Indefinite integral	22
			11.2	Definite integral	
11.3			Applications of integration (Area enclosed in stated boundaries and volume of solids of revolution)		
11.4			Mean value of a function		
12.	Permutations and combinations	12.1	Permutations and combinations	10	
Total			96		

### Senior 5 Principal maths yllabus

Term	Topic	Sub-topics	Periods		
Term 3	13.	Series	13.1	Arithmetic Progression (A.P)	20
			13.2	Geometric Progression (G.P)	
			13.3	Proof by induction	
			13.4	Binomial expansion	
	14.	Random variables	14.1	Discrete random variables	30
			14.2	Continuous random variables	
		15. Probability distributions	15.1	Binomial distribution	30
			15.2	Uniform rectangular distribution.	
			15.3	Normal distribution	
			15.4	Normal approximation to the binomial distribution for $n > 20$	
	16.	Error analysis	16.1	Errors	16
			16.2	Propagation of errors using simple interval arithmetic method	
			16.3	Errors in functions	
	Total			96	

### Senior 6 Principal maths yllabus

Term	Topic	Sub-topics	Periods
Term 1	17. Vectors	17.1 Vectors in three dimensions	22
		17.2 Lines in two and three dimensions	
		17.3 Planes	
	18. Differentiation 2	18.1 Trigonometric functions	40
		18.2 Exponential, logarithmic and inverse trigonometric functions	
		18.3 Maclaurin's theory	
		18.4 Further curve sketching	
	19. Integration 2	19.1 Function and its derivative (change of variables)	34
		19.2 Exponential and logarithmic functions	
		19.3 Trigonometric functions (Even and odd powers of $\sin\theta$ , $\cos\theta$ , etc, Factor formulae, Inverse trigonometric functions and t-substitution)	
		19.4 Partial fractions	
		19.5 Integration by parts	
	Total		

### Senior 6 Principal maths syllabus

Term	Topic	Sub-topics	Periods	
Term 2	20. Dynamics 2	20.1 Resultant velocity	28	
		20.2 Relative motion		
		20.3 Projectiles		
	21. Trapezium rule	21.1 Estimating an Integral	06	
		21.2 Percentage error		
	22. Sampling distribution	22.1 Distribution of sampling mean	12	
		22.2 Point estimation		
		22.3 Interval estimation		
	23. Iterative methods	23.1 Interpolation and extrapolation	22	
		23.2 Location of roots		
		23.3 Newton Raphson method		
		23.4 Further linear interpolation		
	24. Coordinate geometry 2	24.1 Locus	28	
		24.2 The circle		
		24.3 Parabola		
		24.4 Ellipse		
	Total			96

### Senior 6 Principal maths syllabus

Term	Topic	Sub-topics	Periods	
Term 3	25. Complex numbers	25.1	Imaginary numbers	28
		25.2	Algebra of complex numbers	
		25.3	Argand diagram and polar form	
		25.4	Locus	
		25.5	De Moivre' s theorem	
	26. Differential equations	26.1	Differential equations	26
		26.2	Solving first order differential equations	
		26.3	Application of differential equations	
	27. Flow charts	27.1	Algorithms and presenting them on flow charts	16
		27.2	Performing dry runs	
	Total			70

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