



NAPARIMA COLLEGE

MATHEMATICS DEPARTMENT

SCHEME OF WORK

ADDITIONAL MATHEMATICS

FORM 4

TERM 3

WEEK	TOPIC	OBJECTIVE	TEACHING STRATEGY	RESOURCES
1		<ul style="list-style-type: none"> ➤ Review of examination scripts (Term II 2018) 		
2 – 4	TRIGONOMETRY	<ul style="list-style-type: none"> ➤ Ratios of Special Angles <ul style="list-style-type: none"> ○ 45° ○ $30^\circ/60^\circ$ ➤ Radian Measure ➤ Compound Angle Formulae <ul style="list-style-type: none"> ○ $\sin(A \pm B)$ ○ $\cos(A \pm B)$ ○ $\tan(A \pm B)$ ➤ Double Angle Formulae <ul style="list-style-type: none"> ○ $\sin 2A \equiv 2 \sin A \cos A$ ○ $\cos 2A \equiv \cos^2 A - \sin^2 A \equiv 2 \cos^2 A - 1 \equiv 1 - 2 \sin^2 A$ ○ $\tan 2A \equiv \frac{2 \tan A}{1 - \tan^2 A}$ ➤ Further Trigonometric Identities 	<ul style="list-style-type: none"> ➤ Questioning ➤ Notes ➤ Student/Teacher interaction ➤ Application to real-life 	Text books Worksheets Educational videos
5 – 8	CALCULUS	<ul style="list-style-type: none"> ➤ Concept of a Derivative as a Limit <ul style="list-style-type: none"> ○ $\frac{dy}{dx} = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$ ○ Differential Operator $\frac{d}{dx}$ ➤ Introductory Differentiation <ul style="list-style-type: none"> ○ $\frac{d}{dx} [x^n] = nx^{n-1}, n \in \mathbb{Q}$ ○ Differentiation of Polynomials ➤ The Chain Rule <ul style="list-style-type: none"> ○ $\frac{d}{dx} [y(u(x))] = \frac{dy}{du} \cdot \frac{du}{dx}$ ○ Special Case: $\frac{d}{dx} [(ax + b)^n] = an(ax + b)^{n-1}$ ➤ The Product Rule <ul style="list-style-type: none"> ○ $\frac{d}{dx} [u(x) \cdot v(x)] = v \frac{du}{dx} + u \frac{dv}{dx}$ ➤ The Quotient Rule <ul style="list-style-type: none"> ○ $\frac{d}{dx} \left[\frac{u(x)}{v(x)} \right] = \frac{v \frac{du}{dx} - u \frac{dv}{dx}}{v^2}$ ➤ Applications of Differentiation <ul style="list-style-type: none"> ○ $\frac{dy}{dx}$ as the Gradient Function ○ Tangents and Normals to Curves ○ Connected Rates of Change 	<ul style="list-style-type: none"> ➤ Questioning ➤ Notes ➤ Student/Teacher interaction ➤ Application to real-life 	Text books Worksheets Educational videos

9 – 10	LOGARITHMS	<ul style="list-style-type: none"> ➤ Concept of a Logarithm $\log_a b = c \Leftrightarrow b = a^c : b, c \in \mathbb{Z}^+$ ➤ Laws of Logarithms <ul style="list-style-type: none"> ○ $\log_a(PQ) = \log_a(P) + \log_a(Q)$ ○ $\log_a\left(\frac{P}{Q}\right) = \log_a(P) - \log_a(Q)$ ○ $\log_a(P^n) = n \log_a(P)$ ○ $\log_a a = 1$ ○ $\log_a 1 = 0$ ➤ Solving Logarithmic Equations ➤ Solving Exponential Equations <ul style="list-style-type: none"> ○ $a^x = b$ 	<ul style="list-style-type: none"> ➤ Questioning ➤ Notes ➤ Student/Teacher interaction ➤ Application to real-life 	Text books Worksheets Educational videos
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