

	Personalised Learning Checklist			Red	Amber	Green	How do you know?
Partners in excellence							
<b>-1. Algebra and Functions</b>							
Understand the definition of a function, and the associated language of domain and range							
Know how to find a composite function, $gf(x)$							
Know the conditions necessary for the inverse of a function to exist and how to find it (algebraically and graphically).							
Be able to solve problems involving the modulus function, and sketch the associated graphs.							
Know the effect of combined transformations on a graph and be able to form the equation of the new graph.							
Be able, given the graph of $y = f(x)$ , to sketch related graphs							
Be able to apply transformations to the basic trigonometrical functions.							
<b>-2. Trigonometry</b>							
Know the definitions of the sec, cosec and cot functions.							
Understand the relationship between the graphs of the sin, cos, tan, cosec, sec and cot functions.							
Understand the functions arcsin, arcos and arctan, their graphs and appropriate restricted domains.							
Know the relationships $\tan^2(\theta) + 1 = \sec^2(\theta)$ and $\cot^2(\theta) + 1 = \operatorname{cosec}^2(\theta)$							
Be able to solve simple trigonometrical equations within a given range including the use of trigonometrical identities.							
<b>-3. Exponentials and Logarithms</b>							
Be able to use the simple properties of exponential and logarithmic functions including the functions $e^x$ and $\ln(x)$							
Know the relationship between $\ln(x)$ and $e^x$							
Know the relationship between the graphs of $y = \ln(x)$ and $y = e^x$							
Be able to solve equations involving logarithmic and exponential functions							
<b>-4. Differentiation</b>							
Be able to differentiate the product of two functions.							
Be able to differentiate the quotient of two functions.							
Be able to differentiate composite functions using the chain rule.							
Be able to differentiate using $dy/dx = 1/(dx/dy)$ .							
Be able to differentiate $e^{ax}$ and $\ln(x)$							
Be able to differentiate the trigonometrical functions: $\sin x$ , $\cos x$ and $\tan x$							
<b>-5. Integration</b>							
Be able to integrate $1/x$ and $e^{ax}$							
Be able to integrate $\sin x$ and $\cos x$							
Be able to calculate the volumes of solids generated by rotating a plane region about the $x$ -axis or the $y$ -axis.							
Be able to use integration by substitution in cases where the process is the reverse of the chain rule.							
Be able to use the method of integration by parts where the process is the reverse of the product rule.							
<b>-6. Numerical Methods</b>							

