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| **Year 2 pure unit 2: Functions and modelling** | **Road Map** | | | | | |
| In this unit you will learn about pure maths. The aims are as follows:  **LG1**: Knowledge  **LG2**: Application  **LG3**: Skills | Assessment Grades |  |  | | | |
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| **Themes** | **Learning Goals/Outcomes/Content** | | |  |  |  |
| **2a. Modulus function** | understand what is meant by a modulus of a linear function; | | |  |  |  |
| be able to sketch graphs of functions involving modulus functions; | | |  |  |  |
| be able to solve equations and inequalities involving modulus functions. | | |  |  |  |
| **2b. Composite and inverse** | be able to work out the domain and range of functions; | | |  |  |  |
| know the definition of a one-one and a many-one mappings; | | |  |  |  |
| be able to work out the composition of two functions; | | |  |  |  |
| be able to work out the inverse of a function and sketch its graph; | | |  |  |  |
| understand the condition for an inverse function to exist. | | |  |  |  |
| **2c. Transformations** | understand the effect of simple transformations on the graph of *y* = f(*x*) including sketching associated graphs and *combinations* of the transformations: *y* = *a*f(*x*), *y* = f(*x*) + *a*, *y* = f(*x* + *a*), *y* = f(*ax*); | | |  |  |  |
| be able to transform graphs to produce other graphs; | | |  |  |  |
| understand the effect of composite transformations on equations of curves and be able to describe them geometrically. | | |  |  |  |
| **2d. Modulus function problems** | be able to solve problems involving modulus functions and combined transformations | | |  |  |  |

**Links:**

LG1: You will learn what is meant by a modulus of a linear function, be able to sketch graphs of functions involving modulus function and be able to solve equations and inequalities involving modulus functions. You will learn how to find the domain and range for a function and find composite functions and inverse functions where they exist. You will know the effect of transformations on graphs.

LG2: You will be able to apply your knowledge of functions and their transformations to understand the effect of composite transformations on equations of curves and be able to describe them geometrically.

LG3: You will be able to solve a variety of routine and non-routine problems, by combining several Mathematical skill sets. For example, by considering the solutions to quadratic equations involving modulus functions and applying their findings to inequalities.