

# Scheme of Learning: Year 11 Foundation Spring Term

## Topic Sequence: Reasoning

1	2	
<b>Multiplicative Reasoning</b>	<b>Geometric Reasoning</b>	<b>Algebraic Reasoning</b>

## Topic Overview: Algebraic Reasoning

As well as introducing formal function notation, this topic builds on previous work looking at functions. Content includes interpreting simple expressions as functions with inputs and outputs and interpreting the reverse process as the 'inverse function' and interpreting the succession of two functions as 'composite functions'. Students build on previous work looking at solving equations and simultaneous equations. Looking at the difference between equations and inequalities, students establish the difference between a solution and a solution set or range of solutions. Students solve linear inequalities in one or two variables, representing the solution set on a number. Students recap their work on sequences,

## Learning Sequence:

### Use function notation

Students are introduced to formal function notation such as  $f(x)$  which is a function applied to  $x$ . Students should be aware that other letters can be used, with different letters used to distinguish between different functions within the same question.

### Composite functions and inverse functions

Students learn that a composite function is a function made from other functions, where the output of one is the input of the other. Students are introduced to inverse functions and make the link to inverse operations, ensuring they are secure with rearranging formula in advance

### Simplify complex expressions

Students revise algebraic notation and rules for collecting like terms and indices, particularly with algebraic fractions

### Sequences

Students revise finding the  $n$ th term of a linear sequence and investigate other sequences

### Simultaneous Equations

Students recap simultaneous equations from year 10

### Solving inequalities

Students study inequalities both on a number line and algebraically.

Sequence of Learning:		Topic Resources:	
<b>1</b>	Using function notation	<b>Knowledge Map:</b>	Algebraic proof and functions Algebraic manipulation and notation Functions Sequences Iteration
<b>2</b>	Composite and inverse functions		
<b>Assessment:</b>			
<b>3</b>	Simplify complex expressions	<b>Knowledge:</b>	End of Topic Test
<b>4</b>	Sequences	<b>Application of Knowledge:</b>	Termly Summative Assessments
<b>Supportive Reading:</b>			
<b>5</b>	Simultaneous equations	<b>Any supported reading listed here</b>	Sparx maths: <a href="http://www.sparxmaths.co.uk">www.sparxmaths.co.uk</a>
<b>6</b>	Inequalities		Corbett Maths: <a href="http://www.corbettmaths.com">www.corbettmaths.com</a>
			AQA Revision guide