



The Sutton Academy

Knowledge Rich Curriculum Plan

Year 7 Core – Sequences and Graphs

Lesson Objective	Intended Knowledge: <i>Students will know that...</i>	Tiered Vocabulary	Prior Knowledge: <i>In order to know this, students need to already know that...</i>	Assessment
<p>To learn how to continue sequences of diagrams and numbers and identify the term-to-term rule</p>	<ul style="list-style-type: none"> • Students will know how to find the next terms in pattern sequences • Students will know how to continue linear sequences to find subsequent terms • Students will know how to continue geometric sequences to find subsequent terms • Students will know how to continue other simple sequences • Students will know how to identify the term to term rule for an arithmetic sequence • Students will know how to identify the term to term rule for a geometric sequence • Students will know how to use ascending/descending to describe sequences. • Students will know that triangular numbers are numbers that make a triangular dot pattern. E.g. 1,3,6,10,15 • Students will know how to recognise and continue Fibonacci sequences 	<p>Sequence - a particular order in which related things follow each other. Ascending – going up Descending – going down Linear or Arithmetic Sequence – a number pattern which increases (or decreases) by the same amount each time Geometric Sequence – a sequence made by multiplying by the same value each time Fibonacci Sequence – a sequence of numbers in which each number is the sum of the two preceding numbers. The simplest is the series 1, 1, 2, 3, 5, 8, etc. Triangular Numbers – any of the series of numbers (1, 3, 6, 10, 15, etc.) obtained by continued adding of the natural numbers 1, 2, 3, 4, 5, etc.</p>	<ul style="list-style-type: none"> • Students should already know how to continue a numerical, linear sequence 	<p>Mini-Assessment 6</p>
<p>To learn how to find missing terms in sequences given the term-to-term rule</p>	<ul style="list-style-type: none"> • Students will know how to find missing terms in a sequence given the term-to-term rule • Students will know how to find missing terms within a sequence by first finding the term-to-term rule 		<ul style="list-style-type: none"> • Students need to know how to add and subtract 	<p>Mini-Assessment 6</p>
<p>To learn how to generate a sequence from the nth term</p>	<ul style="list-style-type: none"> • Students will know how to generate a linear sequence using the nth term • Students will understand the relationship between the nth term of a sequence and the terms in a sequence, for example a '2n' sequence goes up in 2s etc 	<p>Generate – produce or create. Substitute – use or add in place of</p>	<ul style="list-style-type: none"> • Students will need to know how to substitute numbers into linear formulae 	<p>Mini-Assessment 6</p>
<p>To learn how to find the nth term of a linear sequence</p>	<ul style="list-style-type: none"> • Students will know how to find the nth term of a linear sequence. <p>Opportunity for Challenge:</p> <ul style="list-style-type: none"> • Students will know how to find the nth term of a pattern sequence. • Students will know how to solve problems involving sequences from real life situations. 	<p>Linear or Arithmetic Sequence – a number pattern which increases (or decreases) by the same amount each time</p>	<ul style="list-style-type: none"> • Students will need to know how to describe the term-to-term rule for a sequence 	<p>Mini-Assessment 6</p>

Lesson Objective	Intended Knowledge: <i>Students will know that...</i>	Tiered Vocabulary	Prior Knowledge: <i>In order to know this, students need to already know that...</i>	Assessment
<p>To learn how to write and plot coordinates in all four quadrants</p>	<ul style="list-style-type: none"> • Students will need to know that the horizontal axis is the x-axis and that the vertical axis is the y-axis. • Students will know how to plot coordinates in all four quadrants. • Students will know how to write the coordinates of a point plotted in any of the four quadrants <p>Opportunity for challenge:</p> <ul style="list-style-type: none"> • Students will know how to solve shape problems involving plotting coordinates 	<p>Coordinate – two numbers or sometimes a letter and a number, that locate a specific point on a grid. They are written in the form (x, y) most commonly.</p> <p>Vertical – something that is vertical stands or points straight up</p> <p>Horizontal – something that is arranged sideways, parallel to the horizon, like a person lying down</p> <p>Quadrant – one of the four quarters of the coordinate plane</p>	<ul style="list-style-type: none"> • Students will need to know how to read from a number line 	<p>Mini-Assessment 6</p>
<p>To learn how to draw straight line graphs</p>	<ul style="list-style-type: none"> • Students will know how to plot and draw graphs that are parallel to either the x- or y-axis (equations in the form $y = a$, $x = a$) • Students will know how to plot the graphs of $y = x$ and $y = -x$ <p>Opportunity for challenge:</p> <ul style="list-style-type: none"> • Students will know how to plot graphs in the form $y = x + c$ or $y = x - c$ 		<ul style="list-style-type: none"> • Students will need to know how to plot coordinates 	<p>Mini-Assessment 6</p>
<p>To learn how to draw straight line graphs</p>	<ul style="list-style-type: none"> • Students will know how to plot graphs in the form $y = x + c$ or $y = x - c$ • Students will know how to plot graphs in the form $y = mx$ • Students will know how to plot straight line graphs in the form $y = mx + c$ by first completing a given table of values 	<p>Substitute – use or add in place of</p>	<ul style="list-style-type: none"> • Students will know how to plot and draw graphs of $y = a$, $x = a$, $y = x$ and $y = -x$, drawing and recognising lines parallel to axes. • Students will know how to draw $y = x$ and $y = -x$ 	<p>Mini-Assessment 6</p>