**Student Assessment Sheet – Sequences, Functions and Graphs**

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| **Objective** | **Before teaching** | **Date of lesson/s** | **After teaching** |
| **Limited** | **Developing** | **Secure** | **Extending** | **Limited** | **Developing** | **Secure** | **Extending** |
| Generate a number sequence from a pattern |  |  |  |  |  |  |  |  |  |
| Use coordinates in all four quadrants |  |  |  |  |  |  |  |  |  |
| Find the nth term of an arithmetic sequence. |  |  |  |  |  |  |  |  |  |
| Complete a table of values for equations such as y = 3x + 3 and draw the graph |  |  |  |  |  |  |  |  |  |
| Solve simultaneous equations graphically |  |  |  |  |  |  |  |  |  |
| Use y = mx + c to identify parallel lines |  |  |  |  |  |  |  |  |  |
| Find the equation of a line through two points or one point with a given gradient |  |  |  |  |  |  |  |  |  |
| Sketch graphs of quadratic, cubic and reciprocal functions from a table of values |  |  |  |  |  |  |  |  |  |
| Explore the gradients of perpendicular straight-line graphs |  |  |  |  |  |  |  |  |  |
| Transform the graphs of y = f(x), such as linear, quadratic, cubic, sine and cosine functions, using the transformations y = f(x) + a, y = f(x + a), y = f (ax) and y = af(x) |  |  |  |  |  |  |  |  |  |
| Recognise and use the equation of a circle centred at the origin |  |  |  |  |  |  |  |  |  |
| Calculate the nth term of a quadratic sequence |  |  |  |  |  |  |  |  |  |
| Complete the square of a quadratic to calculate its turning point |  |  |  |  |  |  |  |  |  |
| Recognise and use geometric sequences where the common ratio may be a surd |  |  |  |  |  |  |  |  |  |
| Interpret the reverse process as the ‘inverse function’ |  |  |  |  |  |  |  |  |  |
| Interpret the succession of two functions as a ‘composite function’ |  |  |  |  |  |  |  |  |  |
| Estimate gradients of graphs by drawing the tangent and calculating its gradient |  |  |  |  |  |  |  |  |  |
| Estimate the area under a graph by calculating the area of the trapezium bounded by a chord |  |  |  |  |  |  |  |  |  |
| Find an equation of a tangent to a circle at a given point, using the fact that it is perpendicular to the radius. |  |  |  |  |  |  |  |  |  |