Resource sheet 4: Strand progression

	Objective from Year 5 of the Primary Framework	*Objective from Year 6 of the Primary Framework*		Objectives from Year 7 of the Secondary Framework	Objectives from Year 8 of the Secondary Framework	Objectives from Year 9 of the Secondary Framework	Objectives from Year 10 of the Secondary Framework	Objectives from Year 11 of the Secondary Framework	Objectives from Year 11E of the Secondary Framework
Pitch	Levels 3, 4	Levels **4,** 5		Levels **4, 5**	Levels **5, 6**	Levels 5, **6**, 7	Levels 6, **7**, 8 Grades C, B	Levels 7, **8**, EP Grades B, A	Levels 8, **EP** Grades A, A*
	Read and plot coordinates in the first quadrant; recognise parallel and perpendicular lines in grids and shapes; use a set-square and ruler to draw shapes with perpendicular or parallel sides	Use coordinates in the first quadrant to draw, locate and complete shapes that meet given properties		Generate coordinate pairs that satisfy a simple linear rule; plot the graphs of simple linear functions, where y is given explicitly in terms of x, on paper and using ICT; recognise straight-line graphs parallel to the x-axis or y-axis Express simple functions in words, then using symbols; represent them in mappings Use conventions and notation for 2-D coordinates in all four quadrants; find coordinates of points determined by geometric information	Generate points in all four quadrants and plot the graphs of linear functions, where y is given explicitly in terms of x, on paper and using ICT; recognise that equations of the form $y = mx + c$ correspond to straight-line graphs Express simple functions algebraically and represent them in mappings or on a spreadsheet Find the midpoint of the line segment AB, given the coordinates of points A and B	Generate points and plot graphs of linear functions, where y is given implicitly in terms of x (e.g. $ay + bx = 0$, $y + bx + c = 0$), on paper and using ICT;find the gradient of lines given by equations of the form $y = mx + c$, given values for m and c Find the inverse of a linear function Use ICT to explore the graphical representation of algebraic equations and interpret how properties of the graph are related to features of the equation, e.g. parallel and perpendicular lines	Compare graphical, algebraic and geometrical representations, including mapping diagrams, to explain the effect of: • rotating the line $y = mx + c$ through 90° about any point • reflecting the line $y = mx + c$ in the line $y=x$ Derive properties of perpendicular lines and of the inverse function Explore graphs of functions of the form $y = x^n$ (n an integer) and recognise their characteristic shapes; vary the values of a, b and c in functions such as $y = ax^2 + c$, $y = ax^3 + c$, $y = (x + b)^2$ using a graph plotter to explain how this transforms the graph	Explore connections between the form of the equation and the resulting graphs of quadratic and cubic functions such as: • $y = (x + 2)(x – 5)$ • $y = (x – 2)(x^2 + 7x + 12)$ • $y = x^2 – 2x + 1$ • $y = x^3 + 3$ Include features such as roots of the equation, intercepts and turning points	Explore graphs of exponential and trigonometrical functions and recognise their characteristic shapes; apply to the graph $y = f(x)$ the transformations $y = f(x) + a$, $y = af(x)$, $y = f(x + a)$, $y = f(ax)$ for linear, quadratic, sine and cosine functions; use a graph plotter to explain the effect of transformations on the graph and generalise to other functions