Module 1: Tiling Patterns

Investigation 1

Investigation	Activity	Activity description / Learning Intention
1 **Moving, Turning, Stamping**	**1.1.1 Drag & Stamp**	Stamp a symmetrical pattern
	1.1.2 Drag, Turn & Stamp	Explore translation and rotation by dragging, turning and stamping blocks to create a pattern
	1.1.3 Move, Turn, and Stamp	Explore rotations and angles within geometric patterns by creating move, turn and stamp blocks
	1.1.4 Simple Scripts	Compare and contrast Scratch block scripts to identify potential patterns, eg: repetition and simplification

Investigation 2

Investigation	Activity	Activity description / Learning Intention
2 **Repeating and Alternating Patterns**	**1.2.1 Repeating Flowers**	Investigate and create patterns with rotation and repetition of shapes
	1.2.2 Calculating Angles	Calculate angles within shape rotations and identify changes in patterns generated as a result
	1.2.3 Alternating Flowers	Remix stamps using new costumes to create alternating patterns
	1.2.4 Repeating and Alternating	Remix stamps to create new variations on repeated shape patterns

Investigation 3

Investigation	Activity	Activity description / Learning Intention
3 Creating Circular Rose Patterns	**1.3.1 Moving Forwards and**	Ceate circular rose patterns using a **move-stamp-move back-turn** algorithm.
	1.3.2 Predicting Patterns	Identify and create scripts that will create set patterns
	1.3.3 Creating Different	Remix stamps using new Scratch costumes to create new patterns

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Stage 2 Content

Mathematics
MA2-15MG manipulates, identifies and sketches two-dimensional shapes, including special quadrilaterals, and describes their features
Create symmetrical patterns with and without digital technology
- use digital technologies to create designs by copying, pasting, reflecting, translating and rotating common shapes (Communicating, Problem Solving)
-apply and describe amounts of rotation, in both 'clockwise' and 'anti-clockwise' directions, including half-turns, quarter-turns and three-quarter-turns, when creating designs (Communicating, Problem Solving)
MA2-16MG identifies, describes, compares and classifies angles
Identify angles as measures of turn and compare angle sizes in everyday situations
-identify 'angles' with two arms in practical situations, eg the angle between the arms of a clock
MA2-1WM uses appropriate terminology to describe, and symbols to represent, mathematical ideas
MA2-2WM selects and uses appropriate mental or written strategies, or technology, to solve problems
MA2-3WM checks the accuracy of a statement and explains the reasoning used

Digital Technologies
ST2-3DP-T defines problems, describes and follows algorithms to develop solutions
- develop a sequence of steps and decisions (algorithms) to solve a problem (ACTDIP010)

Stage 3 Content

Mathematics
MA3-8NA analyses and creates geometric and number patterns, constructs and completes number sentences, and locates points on the Cartesian plane
Create simple geometric patterns using concrete materials, eg △△△△△△△△△ …
MA3-15MG manipulates, classifies and draws two-dimensional shapes, including equilateral, isosceles and scalene triangles, and describes their properties
Describe translations, reflections and rotations of two-dimensional shapes
- use the terms 'translate', 'reflect' and 'rotate' to describe the movement of two-dimensional shapes
MA3-1WM describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions
MA3-2WM selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations
MA3-3WM gives a valid reason for supporting one possible solution over another

Digital Technologies
ST3-3DP-T defines problems, and designs, modifies and follows algorithms to develop solutions
- design, modify and follow simple algorithms
- extend sequences of steps to provide a series of possibilities through branching

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Stage 4 Content

Mathematics
MA4-17MG classifies, describes and uses the properties of triangles and quadrilaterals, and determines congruent triangles to find unknown side lengths and angles
Define congruence of plane shapes using transformations
-identify congruent figures by superimposing them through a combination of rotations, reflections and translations
MA4-18MG identifies and uses angle relationships, including those related to transversals on sets of parallel lines
Recognise the geometrical properties of angles at a point
- identify and name right angles, straight angles, angles of complete revolution and vertically opposite angles embedded in diagrams
MA4-1WM communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols
MA4-2WM applies appropriate mathematical techniques to solve problems
MA4-3WM recognises and explains mathematical relationships using reasoning

Digital Technologies
TE4-4DP designs algorithms for digital solutions and implements them in a general-purpose programming language
- trace algorithms to predict output for a given input and to identify errors (ACTDIP029)

Module 2: Beetle Geometry

Investigation 1 | Investigation 2 | Investigation 3 | Investigation 4

Investigation	Activity	Activity description / Learning Intention	Investigation	Activity	Activity description / Learning Intention	Investigation	Activity	Activity description / Learning Intention	Investigation	Activity	Activity description / Learning Intention
1 Exploring Pen	2.1.1 Drawing Numerals	Use the pen and script blocks to write numbers.	2 Drawing Polygons	2.2.1 Drawing Polygons	Using the pen tool and repeat blocks to draw 2D shapes	3 Discovering Dots	2.3.1 Dots and Dashes	Using the pen tool to create morse code	3 Pen Project: Nature Scenes	2.4.1 Drawing Trees	Create a custom "tree" block
	2.1.2 Swapping Blocks	Renaming blocks to create your script		2.2.2 Polygon Scripts	Completing and matching scripts to drawings		2.3.2 Picture Predictions	Predicting the outcome of scripts		2.4.2 Reading Scripts	Q & A: what's the outcome?
	2.1.3 I Am Beetle	Use knowledge of angles and the pen tool to play a drawing game		2.2.3 Using and Defining More Blocks	Creating custom blocks		2.3.3 Swarming Dots	Using random and repeat blocks to create moving dots		2.4.3 A Walk in The Woods	Remix your forest script using new blocks
	2.1.4 Different Drawing Algorithms	Do it in reverse: build a script to match a given drawing		2.2.4 Combining New Blocks	Using custom blocks		2.3.4 A Sky Full of Stars	Remix your script using new random blocks		2.4.4 On The Beach	Remix your script using new background and drawings

Stage 2 Content

Mathematics
MA2-16MG identifies, describes, compares and classifies angles
Identify angles as measures of turn and compare angle sizes in everyday situations
-identify 'angles' with two arms in practical situations, eg the angle between the arms of a clock
MA2-1WM uses appropriate terminology to describe, and symbols to represent, mathematical ideas
MA2-2WM selects and uses appropriate mental or written strategies, or technology, to solve problems
MA2-3WM checks the accuracy of a statement and explains the reasoning used

Digital Technologies
ST2-3DP-T defines problems, describes and follows algorithms to develop solutions
- develop a sequence of steps and decisions (algorithms) to solve a problem (ACTDIP010)

Stage 3 Content

Mathematics
MA3-15MG manipulates, classifies and draws two-dimensional shapes, including equilateral, isosceles and scalene triangles, and describes their properties
Describe translations, reflections and rotations of two-dimensional shapes
- use the terms 'translate', 'reflect' and 'rotate' to describe the movement of two-dimensional shapes
- classify two-dimensional shapes and describe their features
- manipulate, identify and name right-angled, equilateral, isosceles and scalene triangles
Identify and draw regular and irregular two-dimensional shapes from descriptions of their side and angle properties
-use computer drawing tools to construct a shape from a description of its side and angle properties (Communicating, Problem Solving)
MA3-1WM describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions
MA3-2WM selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations
MA3-3WM gives a valid reason for supporting one possible solution over another

Digital Technologies
ST3-3DP-T defines problems, and designs, modifies and follows algorithms to develop solutions
- design, modify and follow simple algorithms
- extend sequences of steps to provide a series of possibilities through branching

Stage 4 Content

Mathematics
MA4-17MG classifies, describes and uses the properties of triangles and quadrilaterals, and determines congruent triangles to find unknown side lengths and angles
Investigate the properties of special quadrilaterals (parallelograms, rectangles, rhombuses, squares, trapeziums and kites)
- use techniques such as paper folding or measurement, or dynamic geometry software, to investigate the properties of quadrilaterals (Problem Solving, Reasoning)Information and communication technology capability Critical and creative thinking)
- sketch and label quadrilaterals from a worded or verbal description (Communicating)
MA4-18MG identifies and uses angle relationships, including those related to transversals on sets of parallel lines
Recognise the geometrical properties of angles at a point
- identify and name right angles, straight angles, angles of complete revolution and vertically opposite angles embedded in diagrams
MA4-1WM communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols
MA4-2WM applies appropriate mathematical techniques to solve problems
MA4-3WM recognises and explains mathematical relationships using reasoning

Digital Technologies
TE4-4DP designs algorithms for digital solutions and implements them in a general-purpose programming language
- trace algorithms to predict output for a given input and to identify errors (ACTDIP029)

Module 3: Animating Sprites

	Investigation 1			Investigation 2			Investigation 3			Investigation 4	
Investigation	**Activity**	**Activity description / Learning Intention**	**Investigation**	**Activity**	**Activity description / Learning Intention**	**Investigation**	**Activity**	**Activity description / Learning Intention**	**Investigation**	**Activity**	**Activity description / Learning Intention**
1 Animating Sprites	3.1.1 Multiple Sprites	Making sprites react	2 Meeting Conditions	3.2.1 Repeat until…	Repeated movement	3 Broadcasting Messages	3.3.1 Broadcast and Receive	Role play with event blocks	3 Interactive Stories	3.4.1 Reading Scripts	Predicting outcomes from scripts
	3.1.2 Teleporting Nano	Using the hide, show and switch blocks		3.2.2 Touching Colour	Using direction and degrees with conditional blocks		3.3.2 Introductions: One to One	Conversations between two sprites		3.4.2 Extension: The Story of the Sprites	Create interactions between your sprites using time, position, event and conditional blocks
	3.1.3 Jumping Tera	Using time and the Cartesian plane to move sprites		3.2.3 Walking in The Air	Controlling position using the x and y axes		3.3.3 Come to Tera: One To Many	Conversations with multiple sprites			
	3.1.4 Walking Pico	Using costumes to create sprite movement		3.2.4 Unplugged: True or False?	Testing knowledge of position						

Stage 2 Content

Mathematics
MA2-17MG uses simple maps and grids to represent position and follow routes, including using compass directions
Draw and describe routes or paths on grid-referenced maps and plans
- use digital technologies involving maps, position and paths (Communicating)
- use grid references on maps to describe position, eg 'The lion cage is at B3'
- use grid references in games (Communicating)
Identify and mark particular locations on maps and plans, given their grid references
MA2-13MG reads and records time in one-minute intervals and converts between hours, minutes and seconds
Convert between units of time
- convert between units of time and recall time facts, eg 60 seconds = 1 minute, 60 minutes = 1 hour, 24 hours = 1 day
MA2-16MG identifies, describes, compares and classifies angles
Identify angles as measures of turn and compare angle sizes in everyday situations
- identify 'angles' with two arms in practical situations, eg the angle between the arms of a clock
MA2-1WM uses appropriate terminology to describe, and symbols to represent, mathematical ideas
MA2-2WM selects and uses appropriate mental or written strategies, or technology, to solve problems
MA2-3WM checks the accuracy of a statement and explains the reasoning used

Digital Technologies
ST2-3DP-T defines problems, describes and follows algorithms to develop solutions
- develop a sequence of steps and decisions (algorithms) to solve a problem (ACTDIP010)

Stage 3 Content

Mathematics
MA3-8NA analyses and creates geometric and number patterns, constructs and completes number sentences, and locates points on the Cartesian plane
Introduce the Cartesian coordinate system using all four quadrants (ACMMG143)
- recognise that the number plane (Cartesian plane) is a visual way of describing location on a grid
- recognise that the number plane consists of a horizontal axis (x-axis) and a vertical axis (y-axis), creating four quadrants
- identify the point of intersection of the two axes as the origin, having coordinates (0, 0)
- plot and label points, given coordinates, in all four quadrants of the number plane
MA3-15MG manipulates, classifies and draws two-dimensional shapes, including equilateral, isosceles and scalene triangles, and describes their properties
Describe translations, reflections and rotations of two-dimensional shapes
- use the terms 'translate', 'reflect' and 'rotate' to describe the movement of two-dimensional shapes
MA3-13MG uses 24-hour time and am and pm notation in real-life situations, and constructs timelines
Determine and compare the duration of events
- select an appropriate unit to measure a particular period of time
MA3-1WM describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions
MA3-2WM selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations
MA3-3WM gives a valid reason for supporting one possible solution over another

Digital Technologies
ST3-3DP-T defines problems, and designs, modifies and follows algorithms to develop solutions
- design, modify and follow simple algorithms
- extend sequences of steps to provide a series of possibilities through branching

Stage 4 Content

Mathematics
MA4-11NA creates and displays number patterns; graphs and analyses linear relationships; and performs transformations on the Cartesian plane
Given coordinates, plot points on the Cartesian plane, and find coordinates for a given point
- plot and label points on the Cartesian plane, given coordinates, including those with coordinates that are not whole numbers
- identify and record the coordinates of given points on the Cartesian plane, including those with coordinates that are not whole numbers
Plot linear relationships on the Cartesian plane, with and without the use of digital technologies
MA4-18MG identifies and uses angle relationships, including those related to transversals on sets of parallel lines
Recognise the geometrical properties of angles at a point
- identify and name right angles, straight angles, angles of complete revolution and vertically opposite angles embedded in diagrams
MA4-1WM communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols
MA4-2WM applies appropriate mathematical techniques to solve problems
MA4-3WM recognises and explains mathematical relationships using reasoning

Digital Technologies
TE4-4DP designs algorithms for digital solutions and implements them in a general-purpose programming language
- trace algorithms to predict output for a given input and to identify errors (ACTDIP029)

8 7 3 Module 4: Building with Numbers

Investigation 1			Investigation 2			Investigation 3			Investigation 4		
Investigation	Activity	Activity description / Learning Intention	Investigation	Activity	Activity description / Learning Intention	Investigation	Activity	Activity description / Learning Intention	Investigation	Activity	Activity description / Learning Intention
8 7 3 1 Place Value Models	4.1.1 Digits Up, Digits Down	Using costumes to model addition and subtraction	5·52 2 Timers and Stopwatches	4.2.1 Build a Stopwatch	Build a stopwatch using block script	7 8 3 The Conversion Game	4.3.1 Playing the Conversion Game	Make the target number using random number generators	2 5 3 Exploring Conversions	4.4.1 Converting Length	Make the target length in kilometres using numbered sprites in metres
	4.1.2 Playing with Place Value	Understanding place value to thousands		4.2.2 Countdown Conundrum	Using duplication of script to countdown with time					4.4.2 Converting Mass	Make the target mass in kilograms using numbered sprites in grams
				4.2.3 Dizzy Dials	Using analogue clock sprites to create active timers					4.4.3 Converting Time	Make the target digital time using analogue sprites

Stage 2 Content

Mathematics
MA2-4NA applies place value to order, read and represent numbers of up to five digits
Recognise, model, represent and order numbers to at least 10 000 (ACMNA052)
- represent numbers of up to four digits using objects, words, numerals and digital displays
- make the largest and smallest number from four given digits (Communicating)   MA2-
5NA uses mental and written strategies for addition and subtraction involving two-, three-, four and five-digit numbers
Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation
- apply known single-digit addition and subtraction facts to mental strategies for addition and subtraction of two-, three- and four-digit numbers
Apply place value to partition, rearrange and regroup numbers to at least tens of thousands to assist calculations and solve problems
- pose simple addition and subtraction problems and apply appropriate strategies to solve them (Communicating, Problem Solving)
MA2-9MG measures, records, compares and estimates lengths, distances and perimeters in metres, centimetres and millimetres, and measures, compares and records temperatures
Measure, order and compare objects using familiar metric units of length
- compare and order lengths and distances using metres and centimetres
Use scaled instruments to measure and compare lengths
- record lengths and distances using decimal notation to two decimal places
MA2-12MG measures, records, compares and estimates the masses of objects using kilograms and grams
Use scaled instruments to measure and compare masses
- recognise that there are 1000 grams in one kilogram, ie 1000 grams = 1 kilogram
MA2-13MG reads and records time in one-minute intervals and converts between hours, minutes and seconds
Convert between units of time
- convert between units of time and recall time facts, eg 60 seconds = 1 minute, 60 minutes = 1 hour, 24 hours = 1 day
- recognise the coordinated movements of the hands on an analog clock
- read analog and digital clocks to the minute, including using the terms 'past' and 'to', eg 7:35 is read as 'seven thirty-five' or 'twenty-five to eight'
MA2-1WM uses appropriate terminology to describe, and symbols to represent, mathematical ideas
MA2-2WM selects and uses appropriate mental or written strategies, or technology, to solve problems

Digital Technologies
ST2-3DP-T defines problems, describes and follows algorithms to develop solutions
- develop a sequence of steps and decisions (algorithms) to solve a problem (ACTDIP010)

Stage 3 Content

Mathematics
MA3-4NA orders, reads and represents integers of any size and describes properties of whole numbers
Recognise, represent and order numbers to at least tens of millions
- apply an understanding of place value and the role of zero to read and write numbers of any size
MA3-5NA selects and applies appropriate strategies for addition and subtraction with counting numbers of any size   Use
efficient mental and written strategies and apply appropriate digital technologies to solve problems
- add three or more numbers with different numbers of digits, with and without the use of digital technologies, eg 42 000 + 5123 + 246
MA3-9MG selects and uses the appropriate unit and device to measure lengths and distances, calculates perimeters, and converts between units of length
Choose appropriate units of measurement for length
- recognise that there are 1000 metres in one kilometre, ie 1000 metres = 1 kilometre   - recognise
Connect decimal representations to the metric system
the equivalence of whole-number and decimal representations of measurements of length, eg 165 cm is the same as 1.65 m
MA3-12MG selects and uses the appropriate unit and device to measure the masses of objects, and converts between units of mass
Connect decimal representations to the metric system
- recognise the equivalence of whole-number and decimal representations of measurements of mass, eg 3 kg 250 g is the same as 3.25 kg
MA3-13MG uses 24-hour time and am and pm notation in real-life situations, and constructs timelines
Determine and compare the duration of events
- use a stopwatch to measure and compare the duration of events
MA3-1WM describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions
MA3-2WM selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations
MA3-3WM gives a valid reason for supporting one possible solution over another

Digital Technologies
ST3-3DP-T defines problems, and designs, modifies and follows algorithms to develop solutions
- design, modify and follow simple algorithms
- extend sequences of steps to provide a series of possibilities through branching

Stage 4 Content

Mathematics
MA4-1WM communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols
MA4-2WM applies appropriate mathematical techniques to solve problems
MA4-3WM recognises and explains mathematical relationships using reasoning

Digital Technologies
TE4-4DP designs algorithms for digital solutions and implements them in a general-purpose programming language
- trace algorithms to predict output for a given input and to identify errors (ACTDIP029)

Module 5: Exploring Mathematical Relationships

Investigation 1			Investigation 2			Investigation 3			Investigation 4		
Investigation	Activity	Activity description / Learning Intention	Investigation	Activity	Activity description / Learning Intention	Investigation	Activity	Activity description / Learning Intention	Investigation	Activity	Activity description / Learning Intention
1 Polygon Fireworks Night Skyline	**5.1.1 Ask and Answer**	Using conversation blocks to draw different polygons	**2 Mathematically Similar Rectangles**	**5.2.1 A Sequence of Squares**	Creating squares with ascending side lengths	**3 Grid World: For Exploring Similarity**	**5.3.1 Enter the Grid World**	Drawing shapes with variable blocks'	**3 Using the Grid World**	**5.4.1 Using the Grid World**	Relationships between and within rectangles
	5.1.2 Unplugged: Polygon Predictions	Use scripts to predict what polygons will be created		**5.2.2 Altering Rectangles**	Using custom blocks to create rectangles with ascending side lengths		**5.3.2 Unplugged: Module 5 Assessment**	Identifying and applying Module 5 concepts		**5.4.2 BridgEing and Solving Problems**	Problem Solving questions
	5.1.3 Naming Values	Creating scripts to draw polygons using conversations		**5.2.3 Exploring Mathematical Similarity**	Using height and base values to create rectangles with ascending side lengths							
	5.1.4 The Sky at Night	Drawing repeated polygons		**5.2.4 Unplugged: Rectangle Jumble**	Using scale to identify rectangles							

Stage 2 Content

Mathematics
MA2-15MG manipulates, identifies and sketches two-dimensional shapes, including special quadrilaterals, and describes their features
Compare and describe features of two-dimensional shapes, including the special quadrilaterals
- manipulate, compare and describe features of two-dimensional shapes, including the special quadrilaterals: parallelograms, rectangles, rhombuses, squares, trapeziums and kites
- draw representations of regular and irregular two-dimensional shapes in different orientations
Create symmetrical patterns, pictures and shapes, with and without the use of digital technologies
- create symmetrical patterns, designs, pictures and shapes by translating (sliding), reflecting (flipping) and rotating (turning) one or more common shapes
MA2-1WM uses appropriate terminology to describe, and symbols to represent, mathematical ideas
MA2-2WM selects and uses appropriate mental or written strategies, or technology, to solve problems
MA2-3WM checks the accuracy of a statement and explains the reasoning used

Digital Technologies
ST2-3DP-T defines problems, describes and follows algorithms to develop solutions
- develop a sequence of steps and decisions (algorithms) to solve a problem (ACTDIP010)

Stage 3 Content

Mathematics
MA3-15MG manipulates, classifies and draws two-dimensional shapes, including equilateral, isosceles and scalene triangles, and describes their properties
Classify two-dimensional shapes and describe their features
- recognise that two-dimensional shapes can be classified in more than one way, eg a rhombus can be more simply classified as a parallelogram (Communicating, Reasoning)
- identify and draw regular and irregular two-dimensional shapes from descriptions of their side and angle properties
- use computer drawing tools to construct a shape from a description of its side and angle properties (Communicating, Problem Solving)
MA3-1WM describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions
MA3-2WM selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations
MA3-3WM gives a valid reason for supporting one possible solution over another

Digital Technologies
ST3-3DP-T defines problems, and designs, modifies and follows algorithms to develop solutions
- design, modify and follow simple algorithms
- extend sequences of steps to provide a series of possibilities through branching

Stage 4 Content

Mathematics
MA4-17MG classifies, describes and uses the properties of triangles and quadrilaterals, and determines congruent triangles to find unknown side lengths and angles
Investigate the properties of special quadrilaterals (parallelograms, rectangles, rhombuses, squares, trapeziums and kites)
- use techniques such as paper folding or measurement, or dynamic geometry software, to investigate the properties of quadrilaterals (Problem Solving, Reasoning)Information and communication technology capability Critical and creative thinking
- sketch and label quadrilaterals from a worded or verbal description (Communicating)
- classify special quadrilaterals on the basis of their properties Literacy Critical and creative thinking
- describe a quadrilateral in sufficient detail for it to be sketched (Communicating)
MA4-1WM communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols
MA4-2WM applies appropriate mathematical techniques to solve problems
MA4-3WM recognises and explains mathematical relationships using reasoning

Digital Technologies
TE4-4DP designs algorithms for digital solutions and implements them in a general-purpose programming language
- trace algorithms to predict output for a given input and to identify errors (ACTDIP029)

Module 6: Coordinates and Geometry

	Investigation 1			Investigation 2	
Investigation	**Activity**	**Activity description / Learning Intention**	**Investigation**	**Activity**	**Activity description / Learning Intention**
1 Emerging Shapes	6.1.1 Restless Fleeee	Using more complex script algorithms with the Cartesian plane	**2 Coordinate Shapes**	6.2.1 Letters and Coordinates	Games with coordinates
	6.1.2 Unplugged & Hands On: Envisage and Explain	Using Cartesian Plane coordinates to complete regular and irregular 2D shapes		6.2.2 Busy Fleeee and Clever Points	Coordinates and drag mode
	6.1.3 Introducing Scale	Using scaled dots to produce 2D shapes		6.2.3 Tricky Triangles	Creating triangles using coordinates
	6.1.4 Dotty Patterns	Using coordinates to create irregular 2D shapes		6.2.4 Quirky Quadrilaterals	Creating quadrilaterals using coordinates

Stage 2 Content

Mathematics
MA2-17MG uses simple maps and grids to represent position and follow routes, including using compass directions
Draw and describe routes or paths on grid-referenced maps and plans
- use digital technologies involving maps, position and paths (Communicating)
- use grid references on maps to describe position, eg 'The lion cage is at B3'
- use grid references in games (Communicating)
Identify and mark particular locations on maps and plans, given their grid references
MA2-15MG manipulates, identifies and sketches two-dimensional shapes, including special quadrilaterals, and describes their features
Compare and describe features of two-dimensional shapes, including the special quadrilaterals
- manipulate, compare and describe features of two-dimensional shapes, including the special quadrilaterals: parallelograms, rectangles, rhombuses, squares, trapeziums and kites
- draw representations of regular and irregular two-dimensional shapes in different orientations
Create symmetrical patterns, pictures and shapes, with and without the use of digital technologies
- create symmetrical patterns, designs, pictures and shapes by translating (sliding), reflecting (flipping) and rotating (turning) one or more common shapes
MA2-1WM uses appropriate terminology to describe, and symbols to represent, mathematical ideas
MA2-2WM selects and uses appropriate mental or written strategies, or technology, to solve problems
MA2-3WM checks the accuracy of a statement and explains the reasoning used

Digital Technologies
ST2-3DP-T defines problems, describes and follows algorithms to develop solutions
- develop a sequence of steps and decisions (algorithms) to solve a problem (ACTDIP010)

Stage 3 Content

Mathematics
MA3-8NA analyses and creates geometric and number patterns, constructs and completes number sentences, and locates points on the Cartesian plane
Introduce the Cartesian coordinate system using all four quadrants
- recognise that the number plane (Cartesian plane) is a visual way of describing location on a grid
- recognise that the number plane consists of a horizontal axis (x-axis) and a vertical axis (y-axis), creating four quadrants
- identify the point of intersection of the two axes as the origin, having coordinates (0, 0)
- plot and label points, given coordinates, in all four quadrants of the number plane
- plot a sequence of coordinates to create a picture (Communicating)
MA3-15MG manipulates, classifies and draws two-dimensional shapes, including equilateral, isosceles and scalene triangles, and describes their properties
Classify two-dimensional shapes and describe their features
- identify and draw regular and irregular two-dimensional shapes from descriptions of their side and angle properties
- use computer drawing tools to construct a shape from a description of its side and angle properties (Communicating, Problem Solving)
- manipulate, identify and name right-angled, equilateral, isosceles and scalene triangles
Apply the enlargement transformation to familiar two-dimensional shapes and explore the properties of the resulting image compared with the original
- make enlargements of two-dimensional shapes, pictures and maps, with and without the use of digital technologies
- investigate and use functions of digital technologies that allow shapes and images to be
enlarged without losing the relative proportions of the image (Problem Solving)
MA3-1WM describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions
MA3-2WM selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations
MA3-3WM gives a valid reason for supporting one possible solution over another

Digital Technologies
ST3-3DP-T defines problems, and designs, modifies and follows algorithms to develop solutions
- design, modify and follow simple algorithms
- extend sequences of steps to provide a series of possibilities through branching

Stage 4 Content

Mathematics
MA4-11NA creates and displays number patterns; graphs and analyses linear relationships; and performs transformations on the Cartesian plane
Given coordinates, plot points on the Cartesian plane, and find coordinates for a given point
- plot and label points on the Cartesian plane, given coordinates, including those with coordinates that are not whole numbers
- identify and record the coordinates of given points on the Cartesian plane, including those with coordinates that are not whole numbers
Plot linear relationships on the Cartesian plane, with and without the use of digital technologies
MA4-17MG classifies, describes and uses the properties of triangles and quadrilaterals, and determines congruent triangles to find unknown side lengths and angles
Investigate the properties of special quadrilaterals (parallelograms, rectangles, rhombuses, squares, trapeziums and kites)
- use techniques such as paper folding or measurement, or dynamic geometry software, to investigate the properties of quadrilaterals (Problem Solving, Reasoning)Information and communication technology capability Critical and creative thinking
- sketch and label quadrilaterals from a worded or verbal description (Communicating)
- classify special quadrilaterals on the basis of their properties Literacy Critical and creative thinking
- describe a quadrilateral in sufficient detail for it to be sketched (Communicating)
MA4-1WM communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols
MA4-2WM applies appropriate mathematical techniques to solve problems
MA4-3WM recognises and explains mathematical relationships using reasoning

Digital Technologies
TE4-4DP designs algorithms for digital solutions and implements them in a general-purpose programming language
- trace algorithms to predict output for a given input and to identify errors (ACTDIP029)