### Number and Algebra

#### Early Stage 1

**Whole Numbers**
- Count forwards to 30 from a given number
- Count backwards from a given number in the range 0 to 20
- Compare, order, read and represent numbers to at least 20
- Read and use the ordinal names to at least ‘tenth’
- Subitise small collections of objects
- Use the term ‘is the same as’ to express equality of groups
- Use the language of money

**Addition and Subtraction**
- Combine two or more groups of objects to model addition
- Take part of a group away to model subtraction
- Compare two groups to determine ‘how many more’
- Record addition and subtraction informally

**Multiplication and Division**
- Investigate and model equal groups
- Record using drawings, words and numerals
- Model multiplication
- Model division by sharing a collection equally into a given number of groups to determine the number in each group
- Recognise and recall multiplication facts for twos, threes, fives and tens
- Use and record a range of mental strategies for multiplication and division on one- and two-digit numbers
- Use the formal written algorithm for addition and subtraction
- Solve word problems involving addition and subtraction

**Fractions and Decimals**
- Record halves of objects using drawings

**Patterns and Algebra**
- Sort and classify objects into groups
- Recognise, copy, continue, create and describe repeating patterns of objects and drawings

#### Stage 1

**Whole Numbers**
- Count forwards and backwards by ones from a two-digit number
- Partition two-digit numbers using place value
- Read, write and order two-digit numbers
- Read and use ordinal names to at least ‘thirty-first’
- Recognise, describe and order Australian coins according to their value
- Count forwards and backwards by twos, threes, fives and tens from any starting point
- Partition numbers of up to three digits using place value
- Read, write and order three-digit numbers
- Recognise, count and order Australian coins and notes according to their value

**Addition and Subtraction**
- Model addition and subtraction using concrete materials
- Recognise and recall combinations of numbers that add to numbers up to 20
- Model and apply the commutative property for addition
- Record number sentences using drawings, words, numerals and the symbols +, = and −
- Use and record a range of mental strategies for addition and subtraction of one- and two-digit numbers
- Use the equal sign to record equivalent number sentences
- Make connections between addition and subtraction
- Use and record a range of mental strategies for addition and subtraction of two-digit numbers
- Solve word problems involving addition and subtraction

**Multiplication and Division**
- Rhythmic and skip count by two, fives and tens from zero
- Model and use equal ‘groups’ of objects as a strategy for multiplication
- Model division by sharing a collection equally into a given number of groups to determine the number in each group
- Model division by sharing a collection equally into groups of a given size to determine the number of groups
- Model and use repeated addition as a strategy for multiplication
- Model and use arrays described in terms of ‘rows’ and ‘columns’ as a strategy for multiplication
- Model and use groups, arrays and repeated subtraction as strategies for division
- Record using drawings, words and numerals

**Fractions and Decimals**
- Recognise, describe and represent one-half as one of two equal parts of whole objects, shapes and collections
- Use fraction notation
- Recognise, describe and represent halves, quarters and eighths of whole objects, shapes and collections
- Use fraction notation

**Patterns and Algebra**
- Recognise, copy, continue, create and describe increasing and decreasing number patterns
- Recognise, copy, create, continue and describe repeating patterns of objects or symbols
- Model and describe odd and even numbers
- Describe patterns with numbers and identify missing elements
- Find missing numbers in number sentences involving one operation of addition or subtraction

#### Stage 2

**Whole Numbers**
- Count forwards and backwards by tens and hundreds from any position
- Partition numbers of up to six digits
- State the place value of digits in numbers of up to four digits
- Read, write and order numbers of up to four digits
- State the place value of digits in numbers of up to five digits
- Read, write and order numbers of up to five digits
- Record numbers of up to five digits using expanded notation

**Addition and Subtraction**
- Model and apply the associative property for addition
- Use and record a range of mental strategies for addition and subtraction of three-, four- and five-digit numbers
- Perform calculations with money, including calculating equivalent amounts using different denominations
- Use the equals sign to record equivalent number sentences
- Use the inverse operation to check addition and subtraction calculations
- Use and record a range of mental strategies for addition and subtraction of two-, three-, four- and five-digit numbers

**Multiplication and Division**
- Rhythmic and skip count by two, three, fives and tens
- Read, write and use the symbols × and ÷
- Link multiplication and division using arrays
- Model and apply to commutative property for multiplication
- Use mental strategies to multiply one-digit numbers by multiples of 10
- Use and record a range of mental strategies for multiplication of two single-digit numbers
- Reuse and use multiplication facts up to 9 × 9 with fluency
- Relate multiplication facts to the inverse division facts
- Determine multiples and factors of whole numbers
- Use the equal sign to record equivalent number relationships involving multiplication
- Use and record a range of mental and informal written strategies for multiplication and division of two-digit numbers by a one-digit operator
- Use mental strategies and informal recording methods for division with remainders

**Fractions and Decimals**
- Model and represent fractions with denominators 2, 3, 4, 5 and 8
- Count by halves, quarters and thirds, including with mixed numerals
- Represent fractions on number lines, including number lines that extend beyond 1
- Model and find equivalence between fractions with denominators 4, 5 and 6
- Apply the place value system to represent tenths and hundredths as decimals
- Make connections between fractions and decimal notation
- Model, compare and represent decimals with one and two decimal places
- Represent decimals on number lines

**Patterns and Algebra**
- Identify, continue, create, describe and record increasing and decreasing number patterns
- Identify odd and even numbers of up to four-digits
- Find missing numbers in number sentences involving addition or subtraction on one or both sides of the equals sign
- Investigate and use the properties of odd and even numbers
- Recognise, describe and continue number patterns resulting from performing multiplication
- Find missing numbers in number sentences involving one operation of multiplication or division

#### Stage 3

**Whole Numbers**
- Read, write and order numbers of any size
- State the place value of digits in numbers of any size
- Record numbers of any size using expanded notation
- Determine factors and multiples of whole numbers
- Recognise the location of negative numbers in relation to zero on a number line
- Identify and describe prime and composite numbers
- Model and describe square and triangular numbers

**Addition and Subtraction**
- Select and apply efficient mental, written and calculator strategies for addition and subtraction of numbers of any size
- Use estimation to check answers to calculations
- Solve word problems and record the strategy used, including record the coordinates with up to five digits by a one-digit operator, including problems that result in a remainder
- Solve word problems and record the strategy used
- Interpret remainders in division problems
- Use estimation to check answers to calculations
- Select and apply efficient mental, written and calculator strategies to solve word problems and record the strategy used
- Recognise and use grouping symbols
- Apply the order of operations in calculations

**Multiplication and Division**
- Use and record a range of mental and written strategies to multiply by one- and two-digit operators
- Use the formal algorithm for multiplication by one- and two-digit operators
- Use and record a range of mental and written strategies to divide numbers with three or more digits by a one-digit operator, including problems that result in a remainder
- Solve word problems and record the strategy used
- Express mixed numerals as improper fractions and vice versa
- Model and represent strategies to add and subtract fractions with the same denominator
- Apply the place value system to represent thousandths as decimals
- Compare, order and represent decimals with up to three decimal places
- Represent, compare and order fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12 and 100
- Express mixed numerals as improper fractions and vice versa
- Use mental, written and calculator strategies to add and subtract decimals with up to three decimal places
- Use mental, written and calculator strategies to multiply decimals by one- and two-digit whole numbers
- Use mental, written and calculator strategies to divide decimals by one-digit whole numbers
- Multiply and divide decimals by 10, 100 and 1000
- Solve word problems involving fractions and decimals, including money problems
- Make connections between equivalent percentages, fractions and decimals
- Use mental, written and calculator strategies to calculate 10%, 25% and 50% of quantities, including as discounts

**Fractions and Decimals**
- Compare and order unit fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12 and 100
- Express mixed numerals as improper fractions and vice versa
- Model and represent strategies to add and subtract fractions with the same denominator
- Apply the place value system to represent thousandths as decimals
- Compare, order and represent decimals with up to three decimal places
- Represent, compare and order fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12 and 100
- Determine, generate and record equivalent fractions
- Write fractions in ‘their simplest form’
- Add and subtract fractions, including mixed numerals, with the same or related denominators
- Multiply fractions by whole numbers
- Find a simple fraction of a quantity
- Use mental, written and calculator strategies to add and subtract decimals with up to three decimal places
- Use mental, written and calculator strategies to multiply decimals by one- and two-digit whole numbers
- Use mental, written and calculator strategies to divide decimals by one-digit whole numbers
- Multiply and divide decimals by 10, 100 and 1000
- Solve word problems involving fractions and decimals, including money problems
- Make connections between equivalent percentages, fractions and decimals
- Use mental, written and calculator strategies to calculate 10%, 25% and 50% of quantities, including as discounts

**Patterns and Algebra**
- Identify, continue, create and describe increasing and decreasing number patterns with fractions, decimals and whole numbers
- Find missing numbers in number sentences involving multiplication or division on one or both sides of the equals sign
- Continue, create, record and describe geometric and number patterns in words
- Determine the rule for geometric and number patterns in words and use the rule to calculate values
- Locate and record the coordinates of points in all four quadrants of the Cartesian plane

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<table>
<thead>
<tr>
<th>Early Stage 1</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong></td>
<td><strong>Angles</strong></td>
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<td><strong>Angles</strong></td>
</tr>
<tr>
<td>Give and follow simple directions</td>
<td>Identify and describe angles as measures of turn</td>
<td>Recognise the need for formal units to measure angles</td>
<td></td>
</tr>
<tr>
<td>Describe position using everyday language</td>
<td>Compare angle sizes in everyday situations</td>
<td>Measure, compare and estimate angles in degrees (up to 360°)</td>
<td></td>
</tr>
<tr>
<td>Use the terms ‘left’ and ‘right’ to describe position in relation to self</td>
<td>Identify ‘perpendicular’ lines and ‘right angles’</td>
<td>Record angle measurements using the symbol for degrees (°)</td>
<td></td>
</tr>
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<td><strong>Position</strong></td>
<td><strong>Angles</strong></td>
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</tr>
<tr>
<td>Give and follow directions to move to familiar locations and to position objects</td>
<td>Draw and classify angles as acute, obtuse, straight, reflex, or a revolution</td>
<td>Construct angles using a protractor (up to 360°)</td>
<td></td>
</tr>
<tr>
<td>Use the terms ‘left’ and ‘right’ to describe position in relation to self and from the perspective of a person facing in the opposite direction</td>
<td></td>
<td>Describe angle size in degrees for each angle classification</td>
<td></td>
</tr>
<tr>
<td>Describe a path from one location to another</td>
<td></td>
<td>Identify and name angle types formed by the intersection of straight lines, including ‘angles on a straight line’, ‘angles at a point’ and ‘vertically opposite angles’</td>
<td></td>
</tr>
<tr>
<td>Interpret simple maps of familiar locations</td>
<td>Use grid-referenced maps to locate and describe positions and pathways</td>
<td>Use known angle results to find unknown angles in diagrams</td>
<td></td>
</tr>
<tr>
<td>Represent the position of objects in models, photographs and drawings</td>
<td>Determine directions N, E, S, W and NE, SE, SW, NW given one of the directions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use grid-referenced maps to locate and describe positions and pathways</td>
<td>Interpret legends and directions on maps</td>
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</tr>
<tr>
<td>Draw simple maps, with and without a grid</td>
<td>Use the scale to calculate the distance between two points on maps</td>
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</tr>
<tr>
<td>Note: There is only one part in the Position substrand in Stage 3.</td>
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</tbody>
</table>
### Statistics and Probability

<table>
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<tbody>
<tr>
<td><strong>Data</strong></td>
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<td><strong>Data</strong></td>
</tr>
<tr>
<td>Collect information about themselves and their environment</td>
<td>Collect data and track what has been counted</td>
<td>Plan methods for data collection</td>
<td>Collect categorical and numerical data by observation and by survey</td>
</tr>
<tr>
<td>Organise actual objects into data displays</td>
<td>Create data displays using objects and pictures (one-to-one correspondence) and interpret them</td>
<td>Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs (one-to-one correspondence)</td>
<td>Construct data displays, including tables, column graphs, dot plots and line graphs, appropriate for the data type</td>
</tr>
<tr>
<td>Interpret data displays made from objects</td>
<td>Pose questions and collect categorical data</td>
<td>Interpret and compare data displays</td>
<td>Interpret and create two-way tables</td>
</tr>
<tr>
<td></td>
<td>Create data displays using lists, tables and picture graphs (one-to-one correspondence) and interpret them</td>
<td>Select, trial and refine methods for data collection, including survey questions and recording sheets</td>
<td>Interpret side-by-side column graphs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Construct data displays including tables, and column graphs and picture graphs of many-to-one correspondence</td>
<td>Compare a range of data displays to determine the most appropriate display for particular sets of data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Evaluate the effectiveness of different displays</td>
<td>Interpret and critically evaluate data presented in digital media and elsewhere</td>
</tr>
<tr>
<td><strong>Chance</strong></td>
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</tr>
<tr>
<td>Recognise the element of chance in familiar situations</td>
<td>Identify and describe possible ‘outcomes’ of chance experiments</td>
<td>List outcomes of chance experiments involving equally likely outcomes</td>
<td>Recognise that probabilities range from 0 to 1</td>
</tr>
<tr>
<td>Describe chance events using everyday language</td>
<td>Predict and record all possible combinations in a chance situation</td>
<td>Represent probabilities using fractions</td>
<td>Compare observed frequencies in chance experiments with expected frequencies</td>
</tr>
<tr>
<td>Identify practical activities and everyday events that involve chance</td>
<td>Conduct chance experiments and compare predicted with actual results</td>
<td>Represent probabilities using fractions, decimals and percentages</td>
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</tr>
<tr>
<td>Describe events as ‘likely’ or ‘unlikely’</td>
<td>Describe possible everyday events and order their chances of occurring</td>
<td>Conduct chance experiments with both small and large numbers of trials</td>
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</tr>
<tr>
<td>Distinguish between ‘possible’ and ‘impossible’ events</td>
<td>Identify everyday events where one occurring cannot happen if the other happens</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify some events as ‘certain’ or ‘impossible’</td>
<td>Identify events where the chance of one occurring will not be affected by the occurrence of the other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>