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Mathematics Learning Goals, P-3

	Prep	Year 1	Year 2	Year 3
Number and Number Concepts	Students will demonstrate their understanding of number by representing it in different ways e.g. name numeral collections. Students will recognise that there is a set sequence of numbers and can establish a counting pattern.	Students will understand the counting process to 100 remains the same regardless of starting point both forwards and backwards. Students will partition numbers in a variety of ways to develop an understanding of the value two digit numbers.	Students will be able to recognise, model, group and partition collections of numbers up to at least 1000.	Students will be able to recognise, represent and order numbers to 10,000. Students will identify and explain odd and even numbers. Students will use place value to partition, rearrange and regroup numbers to 10,000.
Operations	Students will demonstrate their depth of understanding of the consistency of number by operating with practical situations.	Students will select develop confidence to solve simple addition & subtraction problems using a range of strategies. Students will be able to use their knowledge of numbers to 100 to manipulate numbers so that they become confident to select strategies to solve a variety of number problems.	Students will be able to model, represent and manipulate numbers to solve simple addition and subtraction problems. Students will be able to recognise and represent equal groups and arrays to solve multiplication and division problems.	Students will explain connection between addition & subtraction. Students will recall multiplication facts of 2, 3, 5, & 10 & related division facts. Students will use mental & written strategies (& digital tech) to solve multiplication & division problems.

Fractions		Students will explain that a half represents two equal portions of a whole.	Students will recognise and interpret common uses of halves, quarters and eighths.	Students will model and represent fractions (1⁄2 , 1⁄4, 1/3, 1/5) and their multiples.
Patterns and Algebra	Students will be able to sort and classify objects. Students will be able to explain that patterns have repeating attributes. Students can reproduce an existing pattern or create their own.	Students will understand that they can count more efficiently by using different number patterns. (i.e. counting in 2's, 5's & 10's).	Students will describe, continue and create number patterns, increasing and decreasing by twos, threes, fives and ten from any starting point.	Students will describe, continue and create number patterns resulting from performing addition and subtraction.
Money		Students will understand that coins represent a particular value.	Students will develop their understandings of the use of money by recognising, counting and ordering Australian coins and notes.	Students represent money values in multiple ways and give change to the nearest 5c.
Measurement	Students will recognise that objects can be compared and measured using non- standard units.	Students will describe and measure objects in uniform informal units.	Students will be able to measure and compare different objects using informal units.	Students will measure, order and compare objects using metric units of length, mass and capacity.

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Time	Students will be able to make connections between familiar patterns of time and events.	Students will develop an understanding of hours, half hours, days, weeks & months so that they can measure and organise their own time.	Students will develop their understandings of time by reading times on a clock to the quarter hour and by naming and ordering days, months and seasons.	Students will tell time to the minute and investigate the relationship between units of time. Students will investigate the relationship between units of time.
Shape	Students will recognise the attributes of basic 2D and 3D shapes and can identify these shapes in their environment.	Students will describe shapes to develop the language of shape.	Students will be able to identify and describe whole and parts of two and three dimensional shapes.	Students will make models of 3D objects. Students will describe key features of 3D objects.
Geometry				Students will identify and compare angles sizes in everyday situations.
Location & Transformation	Students will connect and demonstrate positional language to the corresponding movement or location.	Students will develop the language of direction so that they can give and follow directions.	Students will be able to identify and interpret changes in a shape or objects location.	Students will create and interpret simple grid maps to show position and pathways. Students will identify symmetry in the environment.

Statistics & Probability	Students will understand that data can be collected and represented in different ways.	Students will develop an understanding of how to accurately estimate the probability of an event happening. Students will collect information and construct and interpret simple data displays.	Students will be able to manipulate and interpret data.	Student will identify and describe possible outcomes and variables whilst conducting chance experiments. Students will plan data collection and recording whilst conducting chance experiments. Students will collect, organise and display data using lists, tables, picture graphs and simple column graphs. Students will interpret and compare data displays.

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Prep Australian Curriculum Statements

Students will demonstrate their understanding of number by representing it in different ways e.g. name numeral collections. **Students will demonstrate their depth of understanding of the consistency number by operating with practical situations.** · Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond (ACMNA002) · Subitise small collections of objects (ACMNA003) · Compare, order and make correspondences between collections, initially to 20, and explain reasoning (ACMNA289) · Represent practical situations to model addition and sharing (ACMNA004)
Students will recognise that objects can be compared and measured using non standard units. · Use direct and indirect comparisons to decide which is longer, heavier or holds more, and explain reasoning in everyday language (ACMMG006)
Students will be able to make connections between familiar patterns of time and events. · Compare and order the duration of events using the everyday language of time (ACMMG007) · Connect days of the week to familiar events and actions (ACMMG008)
Students will connect positional language to the corresponding movement or location · Describe position and movement (ACMMG010)

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Students will recognise that there is a set sequence of numbers and can establish a counting pattern. · Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point (ACMNA001)
Students will recognise the attributes of basic shapes and can identify these shapes in their environment. · Sort, describe and name familiar two dimensional shapes and three dimensional objects in the environment (ACMMG009)
Students will be able to sort and classify objects. **Students will be able to explain that patterns have repeating attributes.** **Students can reproduce an existing pattern or create their own.** · Sort and classify familiar objects and explain the basis for these classifications. Copy, continue and create patterns with objects and drawings (ACMNA005)
Students will understand that data can be collected and represented in different ways · Answer yes/no questions to collect information (ACMSP011)

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Year 1 Australian Curriculum Statements

Students will understand the counting process to 100 remains the same regardless of starting point both forwards and backwards. **Students will be able to use their knowledge of numbers to 100 to manipulate numbers so that they become confident to select strategies to solve a variety of number problems.** **Students will partition numbers in a variety of ways to develop an understanding of the value two digit numbers.** · Develop confidence with number sequences to and from 100 by ones from any starting point. (ACMNAO 12 split) · Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line (ACMNA013 · Count collections to 100 by partitioning numbers using place value (ACMNA014)
Students will understand that they can count more efficiently by using different number patterns. (i.e. counting in 2's, 5's & 10's) · Skip count by twos, fives and tens starting from zero (ACMNA012) · Investigate and describe number patterns formed by skip counting and patterns with objects (ACMNA018)
Students will select develop confidence to solve simple addition & subtraction problems using a range of strategies. · Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts (ACMNA015)

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Students will explain that a half represents two equal portions of a whole. Students will understand that coins represent a particular value. · Recognise and describe one half as one of two equal parts of a whole. (ACMNA016) · Recognise, describe and order Australian coins according to their value (ACMNA017)
Students will develop an understanding of how to accurately estimate the probability of an event happening. **Students will collect information and construct and interpret simple data displays.** · Identify outcomes of familiar events involving chance and describe them using everyday language such as 'will happen', 'won't happen' or 'might happen' (ACMSP024) · Represent data with objects and drawings where one object or drawing represents one data value. Describe the displays (ACMSP263)
Students will develop an understanding of hours, half hours, days, weeks & months so that they can measure and organise their own time. **Students will describe and measure objects in uniform informal units.** **Students will describe shapes to develop the language of shape.** **Students will develop the language of direction so that they can give and follow directions.**

- Measure and compare the lengths and capacities of pairs of objects using uniform informal units (ACMMG019)
- Describe duration using months, weeks, days and hours (ACMMG021)
- Tell time to the half hour (ACMMG020)
- Recognise and classify familiar two dimensional shapes and three dimensional objects using obvious features (ACMMG022)
- Give and follow directions to familiar locations (ACMMG023)

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Year 2 Australian Curriculum Statements

Students will be able to recognise, model, group and partition collections of numbers up to at least 1000.
Students will describe, continue and create number patterns, increasing and decreasing by twos, threes, fives and ten from any starting point.

· Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and tens from any starting point, then moving to other sequences (ACMNA026)

· Recognise, model, represent and order numbers to at least 1000 (ACMNA027)

· Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting (ACMNA027)

· Describe patterns with numbers and identify missing elements (ACMNA035)

Students will be able to model, represent and manipulate numbers to solve simple addition and subtraction problems.
Students will be able to recognise and represent equal groups and arrays to solve multiplication and division problems.

· Explore the connection between addition and subtraction (ACMNA029)

· Solve simple addition and subtraction problems using a range of efficient mental and written strategies (ACMNA030)

· Solve problems by using number sentences for addition or subtraction (ACMNA036)

· Recognise and represent multiplication as repeated addition, groups and arrays (ACMNA031)

· Recognise and represent division as grouping into equal sets and solve simple problems using these representations (ACMNA032)

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Students will develop their understandings of the use of money by recognising, counting and ordering Australian coins and notes.

· Count and order small collections of Australian coins and notes according to their value (ACMNA034)

Students will be able to identify and describe whole and parts of two and three dimensional shapes.

- Recognise and interpret common uses of halves, quarters and eighths of shapes and collections (ACMNA033)
- Describe and draw two-dimensional shapes, with and without digital technologies (ACMMG042)
- Describe the features of three-dimensional objects (ACMMG043)

Students will be able to identify and interpret changes in a shape or objects location.

- Interpret simple maps of familiar locations and identify the relative positions of key features (ACMMG044)
- Investigate the effect of one-step slides and flips with and without digital technologies (ACMMG045)
- Identify and describe half and quarter turns (ACMMG046)

Students will be able to measure and compare different objects using informal units.

Students will develop their understandings of time by reading times on a clock to the quarter hour and by naming and ordering days, months and seasons.

- Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units (ACMMG037)

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· Compare masses of objects using balance scales (ACMMG038) · Tell time to the quarter-hour, using the language of 'past' and 'to' (ACMMG039) · Name and order months and seasons (ACMMG040) · Use a calendar to identify the date and determine the number of days in each month (ACMMG041)
Students will be able to manipulate and interpret data. · Identify practical activities and everyday events that involve chance. Describe outcomes as 'likely' or 'unlikely' and identify some events as 'certain' or 'impossible' (ACMSP047) · Identify a question of interest based on one categorical variable. Gather data relevant to the question (ACMSP048) · Collect, check and classify data (ACMSP049) · Create displays of data using lists, table and picture graphs and interpret them (ACMSP050)

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Year 3 Australian Curriculum Statements

Students will identify and explain conditions for odd and even numbers.

Students will be able to calculate and solve problems by ordering numbers and applying place value (partitioning, rearranging, regrouping) to at least 10 000.

- Recognise, model, represent and order numbers to at least 10 000 (ACMNA052)
- Investigate the conditions required for a number to be odd or even and identify odd and even numbers (ACMNA051)
- Apply place value to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems (ACMNA053)

Students will develop mental computation strategies through their understanding of the relationship between addition and subtraction facts, and identify number patterns involved.

Students will use mental and written strategies (plus digital technology) to solve problems involving multiplication and division.

Students will describe, continue and create number patterns resulting from performing addition and subtraction

- Recognise and explain the connection between addition and subtraction (ACMNA054)
- Recall addition facts for single-digit Numbers and related subtraction facts to develop increasingly efficient mental strategies for computation (ACMNA055)
- Recall multiplication facts of two, three, five and ten and related division facts (ACMNA056)

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· Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies (ACMNA057) · Describe, continue, and create number patterns resulting from performing addition or subtraction (ACMNA060) · Apply place value to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems (ACMNA053)
Students will recognise the relationship between dollars and cents so that they can represent money values in multiple ways and give change. · Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents (ACMNA059)
Students will understand the relationship between units of time so that they can tell time. · Tell time to the minute and investigate the relationship between units of time (ACMMG062)
Students will understand and use common units of measurement for length, mass and capacity. · Measure, order and compare objects using familiar metric units of length, mass and capacity (ACMMG061)
Students will describe key features and make models of three-dimensional objects so that they can recognise these in everyday life. · Make models of three-dimensional objects and describe key features (ACMMG063)
Students will understand and demonstrate that fractions (1□2 , 1□4, 1/3, 1/5) are equal parts of a whole. · Model and represent unit fractions including 1/2, 1/4, 1/3, 1/5 and their multiples to a complete whole (ACMNA058)
Students will demonstrate their understanding of position by creating and interpreting a simple grid map. **Students will justify symmetry in the environment as being two identical reflected halves.**

· Create and interpret simple grid maps to show position and pathways (ACMMG065) · Identify symmetry in the environment (ACMMG066)
Students will identify and compare angles as measures of turn in order to relate these to everyday life. · Identify angles as measures of turn and compare angle sizes in everyday situations (ACMMG064)
Student demonstrates knowledge and understanding that there are defined outcomes and variations in results. **Students will explore data collection (sources, methods and issues), organise and record results, and create and compare displays.** · Conduct chance experiments, identify and describe possible outcomes and recognise variation in results (ACMSP067) · Identify questions or issues for categorical variables. Identify data sources and plan methods of data collection and recording (ACMSP068) · Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies (ACMSP069) · Interpret and compare data displays (ACMSP070)