

# Mathletics

## British Columbia Curriculum

### Understanding Practice and Fluency (UPF)



**Grades 1 – 2**

September, 2021

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# Part I

## Grade 1

### 1 Number

Number concepts to 20			
Quest: Number concepts to 20			
Learning Journey	Steps	Content	Description
Skip counting by 2s to 20	1	Using skip counting by 2s from zero up to 20	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count by 2s from zero</li> </ul>
			<ul style="list-style-type: none"> <li>• use rhythmic counting to count in 2s from zero</li> </ul>
Skip counting by 5s to 20	1	Using skip counting by 5s from zero up to 20	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count by 5s from zero</li> </ul>
			<ul style="list-style-type: none"> <li>• use rhythmic counting to count in 5s from zero</li> </ul>
	2	Counting by skip counting forward or backward by 5s from any multiple of 5 from 0 to 20	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count forward or backward by 5s from any multiple of 5 up to 20</li> </ul>
			<ul style="list-style-type: none"> <li>• skip count forward or backward by 5s from any multiple of 5 by memory and an understanding of the number sequence</li> <li>• recognize an error in the skip counting sequence</li> </ul>
Sequencing numbers to 20	1	Counting forward or backward starting from any number using models (0 to 20)	<ul style="list-style-type: none"> <li>• count forward starting from any number (0 to 20)</li> </ul>
			<ul style="list-style-type: none"> <li>• count backward starting from any number (0 to 20)</li> </ul>
	2	Identifying numbers after and before 0 to 20	<ul style="list-style-type: none"> <li>• recall and write the number that comes after a given number and describe that number as 'one more'</li> </ul>
			<ul style="list-style-type: none"> <li>• recall and write the number that comes before a given number and describe that number as 'one less'</li> </ul>
			<ul style="list-style-type: none"> <li>• recall and write the numbers that come before or after a given number and describe those numbers as 'one less' or 'one more'</li> </ul>
	3	Identifying numbers 2 after and 2 before 0 to 20	<ul style="list-style-type: none"> <li>• recall and write the numbers that come 2 before or 2 after a given number and describe those numbers as 'two less' or 'two more'</li> </ul>
Comparing & ordering numbers to 20	1	Comparing collections and numbers 0 to 20: more than, less than, the same as (focus on 11 to 20)	<ul style="list-style-type: none"> <li>• apply counting strategies to solve simple everyday problems and justify answers, e.g., 'Who has more?'</li> </ul>

Learning Journey	Step	Content	Description
			<ul style="list-style-type: none"><li>● model, compare and describe collections, e.g., 'I have fourteen counters, you have seventeen counters. So you have more counters than me'</li></ul>
			<ul style="list-style-type: none"><li>● compare numbers 0 to 20 and describe as 'more than', 'less than' or 'the same as'</li></ul>
	2	Ordering collections and numbers 0 to 20 (focus on 11 to 20)	<ul style="list-style-type: none"><li>● count and label collections with numbers 0 to 20; order from smallest to largest or largest to smallest</li></ul>
			<ul style="list-style-type: none"><li>● order numbers 0 to 20 from smallest to largest or largest to smallest (not necessarily consecutive numbers)</li></ul>
Creating collections to 20	1	Creating collections 0 to 20 (focus on 11 to 20)	<ul style="list-style-type: none"><li>● represent numbers 0 to 20 using fingers, pictures and objects</li></ul>
	2	Counting collections 0 to 20 (focus on 11 to 20)	<ul style="list-style-type: none"><li>● count everyday concrete materials using one-to-one correspondence</li></ul>
			<ul style="list-style-type: none"><li>● recognize that the last number name represents the total number in the collection when counting; answer 'how many?' questions</li></ul>
Connecting number names to 20	1	Connecting number names, numbers, and collections 0 to 20 (focus on 11 to 20)	<ul style="list-style-type: none"><li>● represent numbers 0 to 20 using fingers, pictures, objects, numbers, and words</li></ul>
			<ul style="list-style-type: none"><li>● match the collection to the number and number word or given a number or number word, create the collection</li></ul>
Quest: Place value of numbers to 20			
Understanding place value of 10s & 1s to 20	1	Representing numbers on a number line with benchmarks of 0, 5, 10 and 20	<ul style="list-style-type: none"><li>● place numbers on a number line using benchmark numbers</li></ul>
	2	Representing numbers to 20 using partitioning models	<ul style="list-style-type: none"><li>● partition numbers to 20 using models, eg part-whole models, dominoes, beads</li></ul>

Ways to make 10			
<b>Quest: Ways to make 10</b>			
Learning Journey	Steps	Content	Description
Ways to make 10	1	Recognizing and recalling bonds to 10	<ul style="list-style-type: none"> <li>recognize pairs of numbers that add to 10</li> </ul>
			<ul style="list-style-type: none"> <li>find the missing number to add to 10 given one number</li> </ul>
			<ul style="list-style-type: none"> <li>recall and record the bonds that add to 10</li> </ul>
	2	Recognizing and recalling bonds to 10 using a tens frame	<ul style="list-style-type: none"> <li>find the missing number to add to 10 given one number</li> </ul>

## 2 Computational fluency

Addition and subtraction to 20 (understanding of operation and process)			
Quest: Addition & subtraction within 10			
Learning Journey	Steps	Content	Description
Adding & subtracting within 10	1	Adding and subtracting within 10 fluently	<ul style="list-style-type: none"> <li>recall addition and subtraction facts within 10</li> </ul>
Quest: Addition & subtraction to 20			
Adding single numbers	1	Adding using compatible numbers and manipulatives for support	<ul style="list-style-type: none"> <li>combine numbers that add to 10 eg <math>4 + 7 + 8 + 6 + 3</math>, first combine 4 and 6, and 7 and 3, then add 8</li> <li>find compatible numbers (bonds to 10 or doubles) to add a list of 1-digit numbers, eg <math>6 + 3 + 4 + 3</math></li> </ul>
	2	Adding 3 or more single-digit numbers	<ul style="list-style-type: none"> <li>use appropriate strategies to add 3 or more single-digit numbers; including changing the order, doubles if appropriate, bridging to a ten</li> <li>explain and justify strategies used</li> </ul>
Adding within 20	1	Modelling and recording combinations that add to numbers from 11 to 20	<ul style="list-style-type: none"> <li>model and recognize the relationship between numbers to 10 and numbers to 20 using models eg tens frames eg <math>5 + 4 = 9</math> and <math>15 + 4 = 19</math></li> <li>use the additions to 10 to record the combinations of numbers that add to between 11 and 20</li> </ul>
	2	Recalling number bonds to 20	<ul style="list-style-type: none"> <li>use known facts and number patterns to recall bonds to 20 eg <math>8 + 2 = 10</math> so <math>18 + 2 = 20</math></li> </ul>
Subtracting within 20	1	Finding the difference between 2 numbers (up to 20)	<ul style="list-style-type: none"> <li>represent two numbers using concrete materials and a number line eg place value equipment and a number line; compare the materials and count from the smaller number to find the difference</li> <li>find the missing number in an addition problem eg <math>4 + ? = 9</math></li> <li>solve word problems which involve finding the difference between two numbers</li> </ul>
Adding & subtracting within 20	1	Describing and using mental strategies for basic addition and related subtraction facts to 18	<ul style="list-style-type: none"> <li>describe and use mental strategies to solve addition and subtraction facts to 18</li> </ul>
	2	Adding and subtracting within 20 fluently	<ul style="list-style-type: none"> <li>use known mental strategies to add and subtract fluently within 20</li> </ul>
Recalling doubles to 20	1	Recalling doubles up to 10	<ul style="list-style-type: none"> <li>recall doubles and add doubles to 10 fluently</li> </ul>
Adding doubles & near doubles	1	Adding doubles up to 20	<ul style="list-style-type: none"> <li>add doubles with and without using models (up to 20)</li> </ul>

Learning Journey	Step	Content	Description
	2	Adding doubles or near doubles	<ul style="list-style-type: none"> <li>• solve addition problems using doubles, eg <math>4 + 3 + 4</math> as <math>4 + 4 + 3</math></li> </ul>
			<ul style="list-style-type: none"> <li>• model and solve addition problems with near doubles, eg <math>5 + 7</math> as <math>5 + 5 + 2 = 12</math></li> </ul>
Introducing commutative property of addition	1	Introducing the commutative property of addition	<ul style="list-style-type: none"> <li>• represent and solve an addition problem both ways using concrete materials and models eg <math>5 + 4</math> or <math>4 + 5</math></li> </ul>
			<ul style="list-style-type: none"> <li>• swap an addition problem around so the larger number comes first and add by counting on (within 20)</li> </ul>
			<ul style="list-style-type: none"> <li>• determine, through investigation, that the order in which numbers are subtracted may affect the difference</li> </ul>
Relationship of addition & subtraction	1	Finding fact families for addition and subtraction (between 10 and 20)	<ul style="list-style-type: none"> <li>• model and investigate the relationship between addition and subtraction using concrete models and or a number line</li> </ul>
			<ul style="list-style-type: none"> <li>• find the other three facts given one fact, eg <math>12 + 5 = 17</math></li> </ul>
	2	Using the commutative property of addition to find missing numbers (up to 20)	<ul style="list-style-type: none"> <li>• develop an understanding of the commutative property of addition and complete number sentences in addition and subtraction fact families, eg <math>9 + 6 = 15</math>, <math>6 + 9 = 15</math>, <math>15 - 6 = 9</math>, <math>15 - 9 = 6</math></li> </ul>
			<ul style="list-style-type: none"> <li>• describe how the missing number was calculated and check using the opposite operation</li> <li>• explain the purpose of the symbol used to represent the unknown number</li> </ul>
Missing numbers in calculations	1	Finding the missing number to make an addition or subtraction number sentence true (up to 18)	<ul style="list-style-type: none"> <li>• complete number sentences involving 1 operation of addition or subtraction by finding the missing number using a variety of tools, equipment and strategies, eg using guess and check, eg <math>5 + [ ] = 13</math> or <math>15 - [ ] = 9</math></li> </ul>
Creating word problems for addition & subtraction	1	Creating and solving simple addition and subtraction word problems in context (within 20)	<ul style="list-style-type: none"> <li>• represent a word problem as an addition or subtraction number sentence</li> </ul>
			<ul style="list-style-type: none"> <li>• solve a variety of simple addition and subtraction word problems in context, eg find the difference, find the sum, change unknown, start unknown simple addition and subtraction word problems</li> </ul>
			<ul style="list-style-type: none"> <li>• explain and compare strategies used to solve addition and subtraction word problems</li> </ul>

Learning Journey	Step	Content	Description
Using a bar model	1	Introducing the bar model for addition and subtraction (within 20)	<ul style="list-style-type: none"> <li>• represent addition problems where the result is unknown using a bar model (whole unknown)</li> </ul>
			<ul style="list-style-type: none"> <li>• represent subtraction problems where the result is unknown using a bar model (part unknown)</li> </ul>
			<ul style="list-style-type: none"> <li>• solve addition and subtraction problems where the result is unknown using a bar model</li> </ul>
Adding zero to a number	1	Adding zero to a number (up to 20)	<ul style="list-style-type: none"> <li>• investigate and recognize the effect of adding zero to a number; generalize that adding zero does not change the number</li> </ul>
Subtracting zero from a number	1	Subtracting zero from a number (up to 20)	<ul style="list-style-type: none"> <li>• investigate and recognize the effect of subtracting zero from a number; generalize that subtracting zero does not change the number</li> </ul>

Change in quantity to 20, concretely and verbally			
Quest: Change in quantity to 20			
Learning Journey	Steps	Content	Description
Exploring change in quantity to 20	1	Exploring equality and inequality (up to 10)	<ul style="list-style-type: none"> <li>• create a set in which the number of objects is greater than, less than or equal to the number of objects in a given set</li> </ul>
			<ul style="list-style-type: none"> <li>• demonstrate examples of equality through investigation, using a balance model; describe equality as balance and inequality as imbalance, concretely and pictorially</li> </ul>
			<ul style="list-style-type: none"> <li>• determine through investigation using a balance model and whole numbers to 10, the number of identical objects that must be added or subtracted to establish equality</li> </ul>
			<ul style="list-style-type: none"> <li>• determine if 2 given concrete sets are equal or unequal and explain the process used</li> </ul>
	2	Exploring equality and inequality (up to 20)	<ul style="list-style-type: none"> <li>• create a set in which the number of objects is greater than, less than or equal to the number of objects in a given set</li> </ul>
			<ul style="list-style-type: none"> <li>• demonstrate examples of equality and inequality through investigation, using a balance model; describe equality as balance and inequality as imbalance, concretely and pictorially</li> </ul>



Learning Journey	Step	Content	Description
			<ul style="list-style-type: none"> <li>determine through investigation using a balance model and whole numbers to 20 the number of identical objects that must be added or subtracted to establish equality</li> </ul>
			<ul style="list-style-type: none"> <li>determine if 2 given concrete sets are equal or unequal and explain the process used</li> </ul>
	3	Exploring change in quantity using models (up to 20)	<ul style="list-style-type: none"> <li>explore change in quantity using models (up to 20), eg using a tens frame, building blocks</li> </ul>

Meaning of equality and inequality			
Quest: Equality & inequality			
Learning Journey	Steps	Content	Description
Equality & inequality	1	Representing equality and inequality of number and objects using = and $\neq$ within 20	<ul style="list-style-type: none"> <li>represent equality and inequality of number and objects using = and <math>\neq</math> eg 9 objects = 9 but 8 objects <math>\neq</math> 9</li> </ul>
	2	Recording equations symbolically, using = and $\neq$ within 20	<ul style="list-style-type: none"> <li>record equations symbolically using = and <math>\neq</math> to make the number sentence true</li> </ul>
	3	Representing equality and inequality in addition and/or subtraction including models (0 to 20)	<ul style="list-style-type: none"> <li>represent equality in addition and/or subtraction including models, eg <math>3 + 4 = 9 - 2</math> where students must balance the pan balance</li> </ul>
	4	Recognizing equality in addition and subtraction number sentences using objects and models for support	<ul style="list-style-type: none"> <li>understand the meaning of the equal sign</li> <li>determine if equations involving addition or subtraction are true or false, eg <math>6 = 6</math>, <math>7 = 8 - 1</math>, <math>5 + 2 = 2</math></li> </ul>

### 3 Patterning

Repeating patterns with multiple elements and attributes			
Quest: Repeating patterns			
Learning Journey	Steps	Content	Description
Identifying sorting rules	1	Grouping simple data using 1 attribute	<ul style="list-style-type: none"> <li>• sort concrete objects (data) into groups according to physical attributes (max number 10); explain the groups that have been made using their own language</li> </ul>
			<ul style="list-style-type: none"> <li>• sort concrete objects into given category groups (max number 10)</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize the purpose and use of sorting objects (data)</li> </ul>
			<ul style="list-style-type: none"> <li>• use sorting circles to sort</li> </ul>
Recognizing repeating patterns	1	Recognizing repeating patterns with 1 attribute change and 2 or 3 elements	<ul style="list-style-type: none"> <li>• recognize repeating patterns that repeat in their everyday world, in designs, songs and the environment</li> </ul>
			<ul style="list-style-type: none"> <li>• understand that patterns are predictable</li> </ul>
			<ul style="list-style-type: none"> <li>• identify patterns from sequences of shapes, symbols, objects that do not form patterns</li> </ul>
	2	Recognizing repeating patterns with 1 attribute change and 3 or 4 elements	<ul style="list-style-type: none"> <li>• recognize repeating patterns that repeat in their everyday world, in designs, songs and the environment</li> </ul>
			<ul style="list-style-type: none"> <li>• understand that patterns are predictable</li> </ul>
			<ul style="list-style-type: none"> <li>• identify patterns from sequences of shapes, symbols, objects that do not form patterns</li> </ul>
	3	Recognizing repeating patterns with 1 attribute change and 4 or 5 elements	<ul style="list-style-type: none"> <li>• recognize repeating patterns that repeat in their everyday world, in designs, songs and the environment</li> </ul>
			<ul style="list-style-type: none"> <li>• understand that patterns are predictable</li> </ul>
			<ul style="list-style-type: none"> <li>• identify patterns from sequences of shapes, symbols, objects that do not form patterns</li> </ul>
	4	Identifying the structure of repeating patterns with 1 attribute change	<ul style="list-style-type: none"> <li>• identify the smallest unit (the core) of a pattern</li> </ul>
			<ul style="list-style-type: none"> <li>• identify a rule for a repeating pattern, eg 'we are lining up girl, boy, girl, boy'</li> </ul>
	5	Describing repeating patterns with 1 attribute change	<ul style="list-style-type: none"> <li>• copy and describe repeating patterns (only 1 attribute change) using language such as 'goes before', 'goes after', 'repeats'</li> </ul>

Learning Journey	Step	Content	Description
Creating repeating patterns	1	Creating repeating patterns with 1 attribute change and 2 or 3 elements	• create and describe a repeating visual pattern using drawings, or concrete materials (only 1 attribute change)
			• create and describe the rule for a repeating pattern that includes sounds or actions
	2	Creating repeating patterns with 1 attribute change and 3 or 4 elements	• create and describe a repeating visual pattern using drawings, or concrete materials (only 1 attribute change)
			• create and describe the rule for a repeating pattern that includes sounds or actions
	3	Creating repeating patterns with 1 attribute change and 4 or 5 elements	• create and describe a repeating visual pattern using drawings, or concrete materials (only 1 attribute change)
			• create and describe the rule for a repeating pattern that includes sounds or actions
Predicting a pattern	1	Continuing repeating patterns with objects and symbols	• continue repeating patterns using objects and symbols
	2	Creating repeating patterns with 1 attribute change	• create and describe a repeating visual pattern using drawings, or concrete materials (only 1 attribute change)
			• create and describe the rule for a repeating pattern that includes sounds or actions
	3	Extending a simple repeating pattern with 1 attribute change	• continue a repeating pattern (only 1 attribute change)
	4	Extending repeating patterns with more than 1 attribute change	• continue and describe the rule for a repeating pattern (can include more than 1 attribute change)
	5	Identifying, extending and describing repeating numeric patterns	• identify and extend through investigation, numeric repeating patterns, eg 1, 2, 1, 2, 1, 2,
			• describe numeric repeating patterns
Copying a repeating pattern	1	Translating patterns from 1 representation to another (1 attribute change)	• replicate a repeating pattern with 2 or 3 elements
Translating patterns from one to another	1	Translating patterns from 1 representation to another (1 attribute change)	• create and translate patterns, eg represent a 'red - blue - blue' pattern as 'circle - square - square'
	2	Copying repeating patterns using objects and symbols	• copy repeating patterns using objects and symbols

Learning Journey	Step	Content	Description
	3	Recognizing and describing additive and subtractive number patterns (within 5)	<ul style="list-style-type: none"> <li>recognize and describe given number patterns that increase or decrease, eg 'the numbers are going up'</li> </ul>

## 4 Geometry and measurement

Direct measurement with non-standard units (non-uniform and uniform)			
Quest: Measuring with non-standard units			
Learning Journey	Steps	Content	Description
Non-uniform length	1	Exploring uniform informal units of length and distance	<ul style="list-style-type: none"> <li>identify appropriate uniform informal units to measure lengths and distances, e.g., paper clips instead of craft sticks to measure a pencil; explain the relationship between the size of a unit and the number of units needed, eg, more paper clips than craft sticks will be needed to measure the length of the desk</li> </ul>
			<ul style="list-style-type: none"> <li>record lengths using informal units, eg, the pencil is __ units long</li> </ul>
			<ul style="list-style-type: none"> <li>recognize the need for uniform units and the need to place the units end-to-end without gaps or overlaps</li> </ul>
			<ul style="list-style-type: none"> <li>recognize that the length of an object remains the same even when the units are rearranged</li> </ul>
			<ul style="list-style-type: none"> <li>recognize that the length of an object remains the same even when the orientation changes</li> </ul>
			<ul style="list-style-type: none"> <li>investigate different informal units of length used in various cultures</li> </ul>
	2	Comparing and ordering the lengths of shapes and objects using uniform informal units	<ul style="list-style-type: none"> <li>identify the length of an object or shape</li> </ul>
			<ul style="list-style-type: none"> <li>compare and order 2 or more shapes or objects that cannot be moved or aligned, according to their lengths, using an appropriate uniform informal unit</li> </ul>
			<ul style="list-style-type: none"> <li>record length comparisons informally using drawings, numerals and words, and by referring to the uniform informal unit used</li> </ul>
	3	Measuring length using unit iteration	<ul style="list-style-type: none"> <li>measure lengths and distances with an informal unit by using the 'make, mark and move' strategy</li> </ul>
		Comparing lengths using an informal tape measure and the symbols $>$ , $=$ , $<$	<ul style="list-style-type: none"> <li>record lengths and distances by referring to the number and type of uniform informal unit used</li> </ul>
	4	Measuring lengths and distances with uniform informal units	<ul style="list-style-type: none"> <li>compare 2 lengths and record the comparison using symbols <math>&gt;</math>, <math>=</math>, <math>&lt;</math></li> </ul>
	4	Measuring lengths and distances with uniform informal units	<ul style="list-style-type: none"> <li>identify the length of an object or shape</li> </ul>

Learning Journey	Step	Content	Description
			<ul style="list-style-type: none"> <li>estimate linear dimensions and curves and use uniform informal units to measure, eg handprints</li> </ul>
			<ul style="list-style-type: none"> <li>record lengths and distances by referring to the number and type of uniform informal unit used</li> </ul>
	5	Measuring lengths with uniform informal units (linking blocks)	<ul style="list-style-type: none"> <li>measure lengths with uniform informal units (linking blocks)</li> </ul>
Non-uniform area/tiling	1	Comparing areas using direct comparison	<ul style="list-style-type: none"> <li>compare areas by positioning one area over another area</li> </ul>
			<ul style="list-style-type: none"> <li>compare areas by tracing one area and placing it over the top of another area</li> </ul>
			<ul style="list-style-type: none"> <li>describe one area as larger than, the same as (about the same as), or smaller than another area</li> </ul>
	2	Measuring area using informal units	<ul style="list-style-type: none"> <li>compare use of non-uniform units with uniform units to measure area</li> </ul>
			<ul style="list-style-type: none"> <li>tile units to completely cover an area</li> </ul>
			<ul style="list-style-type: none"> <li>consider effect of gaps and overlaps when measuring area</li> </ul>
			<ul style="list-style-type: none"> <li>recognize iteration and structure in arrangement of uniform informal units to measure the area</li> </ul>
			<ul style="list-style-type: none"> <li>identify features that determine whether chosen units will be good units to measure area; ie, units must be the same size, units need to tile without gaps or overlaps</li> </ul>
			<ul style="list-style-type: none"> <li>estimate areas in uniform informal units</li> </ul>
	3	Comparing and ordering areas using uniform informal units (indirect comparison)	<ul style="list-style-type: none"> <li>compare two areas by measuring using uniform informal units</li> </ul>
			<ul style="list-style-type: none"> <li>order three or more areas by measuring using uniform informal units</li> </ul>
	4	Measuring and estimating areas of rectangles using a square unit	<ul style="list-style-type: none"> <li>make statements of comparison about the relative size of three areas, eg if A is larger than B and B is larger than C, then A is larger than C</li> </ul>
			<ul style="list-style-type: none"> <li>establish usefulness of using a square unit to find an area as it allows for an array structure and does not have gaps or overlaps</li> </ul>
			<ul style="list-style-type: none"> <li>compare the same area measured using different sized square unit</li> </ul>

Learning Journey	Step	Content	Description
			<ul style="list-style-type: none"> <li>understand that the larger the unit square, the smaller the number of units needed and likewise the smaller the square unit, the larger the number of units needed</li> </ul>

Comparison of 2D shapes and 3D objects			
Quest: 2D shapes			
Learning Journey	Steps	Content	Description
Naming 2D shapes	1	Identifying and naming two-dimensional shapes	<ul style="list-style-type: none"> <li>identify and name two-dimensional shapes including octagons, pentagons, circles, hexagons, triangles and quadrilaterals by their number of sides</li> </ul>
			<ul style="list-style-type: none"> <li>select a shape from a description of its features, eg number of sides or vertices</li> </ul>
			<ul style="list-style-type: none"> <li>measure and describe the side properties of the special quadrilaterals, including parallelograms, rectangles, rhombuses, squares, trapezoids and kites</li> </ul>
			<ul style="list-style-type: none"> <li>identify and name shapes in pictures, designs and the environment</li> </ul>
Sorting 2D shapes (1 attribute)	1	Sorting basic two-dimensional shapes by 1 attribute	<ul style="list-style-type: none"> <li>recognize and explain how a group of two-dimensional shapes as been sorted, e.g., size or shape</li> </ul>
			<ul style="list-style-type: none"> <li>sort a group of two-dimensional shapes by 1 attribute, e.g., size, colour, shape</li> </ul>
			<ul style="list-style-type: none"> <li>compare similarities and differences using informal language</li> </ul>
	2	Sorting two-dimensional shapes	<ul style="list-style-type: none"> <li>sort regular and irregular two-dimensional shapes in various orientations including octagons, pentagons, circles, hexagons, triangles, quadrilaterals; explain the attribute used to sort, eg size</li> <li>sort regular and irregular two-dimensional shapes in various orientations including octagons, pentagons, circles, hexagons, triangles, quadrilaterals using a given attribute, eg number of sides or vertices</li> </ul>
Comparing 2D shapes	1	Comparing 1 shape with another: squares, rectangles, circles and triangles	<ul style="list-style-type: none"> <li>describe similarities and differences in terms of number of sides, side lengths and corners</li> </ul>

Learning Journey	Step	Content	Description
	2	Comparing and describing two-dimensional shapes	<ul style="list-style-type: none"> <li>manipulate, compare and describe similarities and differences between two-dimensional shapes including octagons, pentagons, circles, hexagons, triangles and quadrilaterals</li> </ul>
<b>Quest: 3D objects</b>			
Sorting 3D objects (1 attribute)	1	Sorting three-dimensional objects using 1 attribute	<ul style="list-style-type: none"> <li>sort basic three-dimensional objects by 1 attribute and explain the attribute used to sort, e.g., shape, colour, size, function</li> <li>recognize and explain how a group of objects has been sorted (1 attribute only)</li> </ul>
	2	Sorting familiar three-dimensional objects — cones, cubes, spheres, cylinders, prisms	<ul style="list-style-type: none"> <li>sort familiar three-dimensional objects using given attributes</li> <li>sort familiar three-dimensional objects and explain the attribute(s) used</li> </ul>
Comparing 3D objects	1	Comparing three-dimensional objects including pyramids, prisms, cones, spheres, and cylinders	<ul style="list-style-type: none"> <li>describe similarities and differences between prisms (including cubes), pyramids, cylinders, cones and spheres, e.g., surfaces, faces, edges, and vertices</li> <li>recognize and describe the use of three-dimensional objects in a variety of contexts, e.g., buildings, packaging</li> <li>identify and name three-dimensional objects as prisms (including cubes), pyramids, cylinders, cones and spheres</li> </ul>
Replicating & building 3D objects	1	Building three-dimensional structures	<ul style="list-style-type: none"> <li>build three-dimensional structures using concrete materials</li> <li>describe the two-dimensional shapes that the structure contains</li> </ul>
Finding shapes in the environment	1	Identifying and naming shapes embedded in pictures, designs and the environment	<ul style="list-style-type: none"> <li>identify simple shapes embedded in pictures</li> <li>use computer drawing tools to outline shapes embedded in a digital picture or design</li> </ul>
	2	Comparing three-dimensional objects to everyday objects	<ul style="list-style-type: none"> <li>describe similarities and differences between an everyday object and a three-dimensional figure</li> <li>identify common three-dimensional objects in everyday objects, eg, cans, balls, boxes</li> </ul>
<b>Quest: Position &amp; movement</b>			
Describing position & movement	1	Describing position and movement using everyday language	<ul style="list-style-type: none"> <li>describe the position of stationary objects/people in relation to themselves using everyday language</li> </ul>



Learning Journey	Step	Content	Description
			<ul style="list-style-type: none"> <li>• describe the position of stationary objects/people in relation to other objects/people and structures using everyday language</li> </ul>
			<ul style="list-style-type: none"> <li>• interpret the everyday language of position to move themselves</li> </ul>
			<ul style="list-style-type: none"> <li>• interpret the everyday language of position to move objects</li> </ul>
	2	Distinguishing between left and right from own perspective	<ul style="list-style-type: none"> <li>• distinguish between left and right from their own perspective</li> </ul>
			<ul style="list-style-type: none"> <li>• describe the position of an object as to the left or right of themselves</li> </ul>
			<ul style="list-style-type: none"> <li>• describe the position of an object as to the left or right of another object from their own perspective</li> </ul>
			<ul style="list-style-type: none"> <li>• move themselves to the left or right as instructed</li> </ul>
			<ul style="list-style-type: none"> <li>• move objects to the left or right as instructed</li> </ul>

## 5 Data and probability

Concrete graphs, using one-to-one correspondence			
Quest: Using graphs			
Learning Journey	Steps	Content	Description
Graphs with one-to-one correspondence	1	Introducing arranged data displays	<ul style="list-style-type: none"> <li>• use prepared templates to record and present category data using, eg objects, pictures, stickers</li> </ul>
			<ul style="list-style-type: none"> <li>• count and compare the objects in each category; use the language of 'more', 'less', 'same' to describe category data; is able to make statements such as 'there are 3 boys who have red lunchboxes'</li> </ul>

Likelihood of familiar life events, using comparative language			
Quest: Language of probability			
Learning Journey	Steps	Content	Description
Using the language of probability	1	Using the basic language of probability: impossible, unlikely, less likely, more likely, certain	<ul style="list-style-type: none"> <li>• identify practical activities and everyday events that involve chance, eg 'I might or might not win the game'</li> </ul>
			<ul style="list-style-type: none"> <li>• make predictions about what might happen when discussing practical activities and everyday events that involve chance</li> </ul>
			<ul style="list-style-type: none"> <li>• describe outcomes in everyday activities and events as being 'impossible', 'unlikely', 'less likely', 'more likely', 'certain'</li> </ul>
	2	Exploring possible outcomes of familiar events and activities	<ul style="list-style-type: none"> <li>• identify possible outcomes of familiar activities and events, eg the activities that might happen if the class is asked to sit on the floor in a circle</li> <li>• use everyday language to describe the possible outcomes of familiar activities and events, eg 'will happen', 'might/could happen', 'won't happen', 'probably'</li> <li>• explore the concept of chance; things we think might happen don't always happen</li> </ul>

Financial literacy — values of coins, and monetary exchanges			
Quest: Financial literacy			
Learning Journey	Steps	Content	Description
Using money	1	Recognizing coins	<ul style="list-style-type: none"> <li>• describe features of Canadian coins (color, size, shape, pictures)</li> </ul>

Learning Journey	Step	Content	Description
			<ul style="list-style-type: none"> <li>• recognize and name Canadian coins by their common names: penny, nickel, dime, quarter, half dollar, loonie, toonie</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize the monetary value of Canadian coins and relate these values to their common names</li> </ul>
			<ul style="list-style-type: none"> <li>• understand that the value of coins is not related to their size</li> </ul>
			<ul style="list-style-type: none"> <li>• order Canadian coins by value</li> </ul>
			<ul style="list-style-type: none"> <li>• sort coins into groups of the same denomination</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize that countries have different coins and describe similarities and differences between Canadian coins and coins from other countries</li> </ul>
	2	Counting in multiples of the same denomination of coin up to a total of 100¢	<ul style="list-style-type: none"> <li>• determine the total amount of money by counting the value of coins of the same denomination</li> </ul>

## Part II

# Grade 1 – Big Ideas

## 6 Number

Big Idea - Number: Numbers to 20 represent quantities that can be decomposed into 10s and 1s.			
Quest: Place value of numbers to 20			
Learning Journey	Steps	Content	Description
Understanding place value of 10s and 1s to 20	1	Representing numbers on a number line with benchmarks of 0, 5, 10 and 20	<ul style="list-style-type: none"> <li>place numbers on a number line using benchmark numbers</li> </ul>
	2	Representing numbers to 20 using partitioning models	<ul style="list-style-type: none"> <li>partition numbers to 20 using models, eg part-whole models, dominoes, beads</li> </ul>

Big Idea - Number: Addition and subtraction with numbers to 10 can be modelled concretely, pictorially, and symbolically to develop computational fluency.			
Quest: Ways to make 10			
Learning Journey	Steps	Content	Description
Ways to make 10	1	Recognizing and recalling bonds to 10	<ul style="list-style-type: none"> <li>recognize pairs of numbers that add to 10</li> <li>find the missing number to add to 10 given one number</li> <li>recall and record the bonds that add to 10</li> </ul>
	2	Recognizing and recalling bonds to 10 using a tens frame	<ul style="list-style-type: none"> <li>find the missing number to add to 10 given one number</li> </ul>

## 7 Computational fluency

Big Idea - Computational Fluency			
Quest: Addition and subtraction within 10			
Learning Journey	Steps	Content	Description
Adding & subtracting within 10	1	Adding and subtracting within 10 fluently	<ul style="list-style-type: none"><li>● recall addition and subtraction facts within 10</li></ul>

## 8 Patterning

Big Idea - Patterning: Repeating elements in patterns can be identified.			
Quest: Repeating patterns			
Learning Journey	Steps	Content	Description
Identifying sorting rules	1	Grouping simple data using 1 attribute	<ul style="list-style-type: none"> <li>• sort concrete objects (data) into groups according to physical attributes (max number 10); explain the groups that have been made using their own language</li> </ul>
			<ul style="list-style-type: none"> <li>• sort concrete objects into given category groups (max number 10)</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize the purpose and use of sorting objects (data)</li> </ul>
			<ul style="list-style-type: none"> <li>• use sorting circles to sort</li> </ul>
Recognizing repeating patterns	1	Recognizing repeating patterns with 1 attribute change and 2 or 3 elements	<ul style="list-style-type: none"> <li>• recognize repeating patterns that repeat in their everyday world, in designs, songs and the environment</li> </ul>
			<ul style="list-style-type: none"> <li>• understand that patterns are predictable</li> </ul>
			<ul style="list-style-type: none"> <li>• identify patterns from sequences of shapes, symbols, objects that do not form patterns</li> </ul>
	2	Recognizing repeating patterns with 1 attribute change and 3 or 4 elements	<ul style="list-style-type: none"> <li>• recognize repeating patterns that repeat in their everyday world, in designs, songs and the environment</li> </ul>
			<ul style="list-style-type: none"> <li>• understand that patterns are predictable</li> </ul>
			<ul style="list-style-type: none"> <li>• identify patterns from sequences of shapes, symbols, objects that do not form patterns</li> </ul>
	3	Recognizing repeating patterns with 1 attribute change and 4 or 5 elements	<ul style="list-style-type: none"> <li>• recognize repeating patterns that repeat in their everyday world, in designs, songs and the environment</li> </ul>
			<ul style="list-style-type: none"> <li>• understand that patterns are predictable</li> </ul>
			<ul style="list-style-type: none"> <li>• identify patterns from sequences of shapes, symbols, objects that do not form patterns</li> </ul>
	4	Identifying the structure of repeating patterns with 1 attribute change	<ul style="list-style-type: none"> <li>• identify the smallest unit (the core) of a pattern</li> </ul>
			<ul style="list-style-type: none"> <li>• identify a rule for a repeating pattern, eg 'we are lining up girl, boy, girl, boy'</li> </ul>
	5	Describing repeating patterns with 1 attribute change	<ul style="list-style-type: none"> <li>• copy and describe repeating patterns (only 1 attribute change) using language such as 'goes before', 'goes after', 'repeats'</li> </ul>

Learning Journey	Step	Content	Description
Creating repeating patterns	1	Creating repeating patterns with 1 attribute change and 2 or 3 elements	• create and describe a repeating visual pattern using drawings, or concrete materials (only 1 attribute change)
			• create and describe the rule for a repeating pattern that includes sounds or actions
	2	Creating repeating patterns with 1 attribute change and 3 or 4 elements	• create and describe a repeating visual pattern using drawings, or concrete materials (only 1 attribute change)
			• create and describe the rule for a repeating pattern that includes sounds or actions
	3	Creating repeating patterns with 1 attribute change and 4 or 5 elements	• create and describe a repeating visual pattern using drawings, or concrete materials (only 1 attribute change)
			• create and describe the rule for a repeating pattern that includes sounds or actions
Predicting a pattern	1	Continuing repeating patterns with objects and symbols	• continue repeating patterns using objects and symbols
	2	Creating repeating patterns with 1 attribute change	• create and describe a repeating visual pattern using drawings, or concrete materials (only 1 attribute change)
			• create and describe the rule for a repeating pattern that includes sounds or actions
	3	Extending a simple repeating pattern with 1 attribute change	• continue a repeating pattern (only 1 attribute change)
	4	Extending repeating patterns with more than 1 attribute change	• continue and describe the rule for a repeating pattern (can include more than 1 attribute change)
	5	Identifying, extending and describing repeating numeric patterns	• identify and extend through investigation, numeric repeating patterns, eg 1, 2, 1, 2, 1, 2,
			• describe numeric repeating patterns
Copying a repeating pattern	1	Translating patterns from 1 representation to another (1 attribute change)	• replicate a repeating pattern with 2 or 3 elements
Translating patterns from one to another	1	Translating patterns from 1 representation to another (1 attribute change)	• create and translate patterns, eg represent a 'red - blue - blue' pattern as 'circle - square - square'
	2	Copying repeating patterns using objects and symbols	• copy repeating patterns using objects and symbols

Learning Journey	Step	Content	Description
	3	Recognizing and describing additive and subtractive number patterns (within 5)	<ul style="list-style-type: none"> <li>recognize and describe given number patterns that increase or decrease, eg 'the numbers are going up'</li> </ul>



## 9 Geometry and measurement

Big Idea - Geo and Measurement: Objects and shapes have attributes that can be described, measured, and compared.			
Quest: Measuring with non-standard units			
Learning Journey	Steps	Content	Description
Non-uniform length	1	Exploring uniform informal units of length and distance	<ul style="list-style-type: none"> <li>• identify appropriate uniform informal units to measure lengths and distances, e.g., paper clips instead of craft sticks to measure a pencil; explain the relationship between the size of a unit and the number of units needed, eg, more paper clips than craft sticks will be needed to measure the length of the desk</li> </ul>
			<ul style="list-style-type: none"> <li>• record lengths using informal units, eg, the pencil is __ units long</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize the need for uniform units and the need to place the units end-to-end without gaps or overlaps</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize that the length of an object remains the same even when the units are rearranged</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize that the length of an object remains the same even when the orientation changes</li> </ul>
			<ul style="list-style-type: none"> <li>• investigate different informal units of length used in various cultures</li> </ul>
	2	Comparing and ordering the lengths of shapes and objects using uniform informal units	<ul style="list-style-type: none"> <li>• identify the length of an object or shape</li> </ul>
			<ul style="list-style-type: none"> <li>• compare and order 2 or more shapes or objects that cannot be moved or aligned, according to their lengths, using an appropriate uniform informal unit</li> </ul>
			<ul style="list-style-type: none"> <li>• record length comparisons informally using drawings, numerals and words, and by referring to the uniform informal unit used</li> </ul>
	3	Measuring length using unit iteration	<ul style="list-style-type: none"> <li>• measure lengths and distances with an informal unit by using the 'make, mark and move' strategy</li> </ul>
		Comparing lengths using an informal tape measure and the symbols $>$ , $=$ , $<$	<ul style="list-style-type: none"> <li>• record lengths and distances by referring to the number and type of uniform informal unit used</li> </ul>
	4	Measuring lengths and distances with uniform informal units	<ul style="list-style-type: none"> <li>• compare 2 lengths and record the comparison using symbols <math>&gt;</math>, <math>=</math>, <math>&lt;</math></li> </ul>
			<ul style="list-style-type: none"> <li>• identify the length of an object or shape</li> </ul>

Learning Journey	Step	Content	Description
			<ul style="list-style-type: none"> <li>estimate linear dimensions and curves and use uniform informal units to measure, eg handprints</li> </ul>
			<ul style="list-style-type: none"> <li>record lengths and distances by referring to the number and type of uniform informal unit used</li> </ul>
	5	Measuring lengths with uniform informal units (linking blocks)	<ul style="list-style-type: none"> <li>measure lengths with uniform informal units (linking blocks)</li> </ul>
Non-uniform area/tiling	1	Comparing areas using direct comparison	<ul style="list-style-type: none"> <li>compare areas by positioning one area over another area</li> </ul>
			<ul style="list-style-type: none"> <li>compare areas by tracing one area and placing it over the top of another area</li> </ul>
			<ul style="list-style-type: none"> <li>describe one area as larger than, the same as (about the same as), or smaller than another area</li> </ul>
	2	Measuring area using informal units	<ul style="list-style-type: none"> <li>compare use of non-uniform units with uniform units to measure area</li> </ul>
			<ul style="list-style-type: none"> <li>tile units to completely cover an area</li> </ul>
			<ul style="list-style-type: none"> <li>consider effect of gaps and overlaps when measuring area</li> </ul>
			<ul style="list-style-type: none"> <li>recognize iteration and structure in arrangement of uniform informal units to measure the area</li> </ul>
			<ul style="list-style-type: none"> <li>identify features that determine whether chosen units will be good units to measure area; ie, units must be the same size, units need to tile without gaps or overlaps</li> </ul>
			<ul style="list-style-type: none"> <li>estimate areas in uniform informal units</li> </ul>
	3	Comparing and ordering areas using uniform informal units (indirect comparison)	<ul style="list-style-type: none"> <li>compare two areas by measuring using uniform informal units</li> </ul>
			<ul style="list-style-type: none"> <li>order three or more areas by measuring using uniform informal units</li> </ul>
			<ul style="list-style-type: none"> <li>make statements of comparison about the relative size of three areas, eg if A is larger than B and B is larger than C, then A is larger than C</li> </ul>
	4	Measuring and estimating areas of rectangles using a square unit	<ul style="list-style-type: none"> <li>establish usefulness of using a square unit to find an area as it allows for an array structure and does not have gaps or overlaps</li> </ul>
			<ul style="list-style-type: none"> <li>compare the same area measured using different sized square unit</li> </ul>

Learning Journey	Step	Content	Description
			<ul style="list-style-type: none"> <li>understand that the larger the unit square, the smaller the number of units needed and likewise the smaller the square unit, the larger the number of units needed</li> </ul>
Quest: 2D shapes			
Naming 2D shapes	1	Identifying and naming two-dimensional shapes	<ul style="list-style-type: none"> <li>identify and name two-dimensional shapes including octagons, pentagons, circles, hexagons, triangles and quadrilaterals by their number of sides</li> </ul>
			<ul style="list-style-type: none"> <li>select a shape from a description of its features, eg number of sides or vertices</li> </ul>
			<ul style="list-style-type: none"> <li>measure and describe the side properties of the special quadrilaterals, including parallelograms, rectangles, rhombuses, squares, trapezoids and kites</li> </ul>
			<ul style="list-style-type: none"> <li>identify and name shapes in pictures, designs and the environment</li> </ul>
Sorting 2D shape (1 attribute)	1	Sorting basic two-dimensional shapes by 1 attribute	<ul style="list-style-type: none"> <li>recognize and explain how a group of two-dimensional shapes as been sorted, e.g., size or shape</li> </ul>
			<ul style="list-style-type: none"> <li>sort a group of two-dimensional shapes by 1 attribute, e.g., size, colour, shape</li> </ul>
			<ul style="list-style-type: none"> <li>compare similarities and differences using informal language</li> </ul>
	2	Sorting two-dimensional shapes	<ul style="list-style-type: none"> <li>sort regular and irregular two-dimensional shapes in various orientations including octagons, pentagons, circles, hexagons, triangles, quadrilaterals; explain the attribute used to sort, eg size</li> <li>sort regular and irregular two-dimensional shapes in various orientations including octagons, pentagons, circles, hexagons, triangles, quadrilaterals using a given attribute, eg number of sides or vertices</li> </ul>
Comparing 2D shape	1	Comparing 1 shape with another: squares, rectangles, circles and triangles	<ul style="list-style-type: none"> <li>describe similarities and differences in terms of number of sides, side lengths and corners</li> </ul>
	2	Comparing and describing two-dimensional shapes	<ul style="list-style-type: none"> <li>manipulate, compare and describe similarities and differences between two-dimensional shapes including octagons, pentagons, circles, hexagons, triangles and quadrilaterals</li> </ul>

Learning Journey	Step	Content	Description
Quest: 3D objects			
Sorting 3D objects (1 attribute)	1	Sorting three-dimensional objects using 1 attribute	● sort basic three-dimensional objects by 1 attribute and explain the attribute used to sort, e.g., shape, colour, size, function
			● recognize and explain how a group of objects has been sorted (1 attribute only)
	2	Sorting familiar three-dimensional objects — cones, cubes, spheres, cylinders, prisms	● sort familiar three-dimensional objects using given attributes
			● sort familiar three-dimensional objects and explain the attribute(s) used
Comparing 3D objects	1	Comparing three-dimensional objects including pyramids, prisms, cones, spheres, and cylinders	● describe similarities and differences between prisms (including cubes), pyramids, cylinders, cones and spheres, e.g., surfaces, faces, edges, and vertices
			● recognize and describe the use of three-dimensional objects in a variety of contexts, e.g., buildings, packaging
			● identify and name three-dimensional objects as prisms (including cubes), pyramids, cylinders, cones and spheres
Replicating & building 3D objects	1	Building three-dimensional structures	● build three-dimensional structures using concrete materials
			● describe the two-dimensional shapes that the structure contains
Finding shape in the environment	1	Identifying and naming shapes embedded in pictures, designs and the environment	● identify simple shapes embedded in pictures
			● use computer drawing tools to outline shapes embedded in a digital picture or design
	2	Comparing three-dimensional objects to everyday objects	● describe similarities and differences between an everyday object and a three-dimensional figure
			● identify common three-dimensional objects in everyday objects, eg, cans, balls, boxes
Quest: Position & movement			
Describing position & movement	1	Describing position and movement using everyday language	● describe the position of stationary objects/people in relation to themselves using everyday language
			● describe the position of stationary objects/people in relation to other objects/people and structures using everyday language
			● interpret the everyday language of position to move themselves

Learning Journey	Step	Content	Description
			<ul style="list-style-type: none"> <li>• interpret the everyday language of position to move objects</li> </ul>
	2	Distinguishing between left and right from own perspective	<ul style="list-style-type: none"> <li>• distinguish between left and right from their own perspective</li> </ul>
			<ul style="list-style-type: none"> <li>• describe the position of an object as to the left or right of themselves</li> </ul>
			<ul style="list-style-type: none"> <li>• describe the position of an object as to the left or right of another object from their own perspective</li> </ul>
			<ul style="list-style-type: none"> <li>• move themselves to the left or right as instructed</li> </ul>
			<ul style="list-style-type: none"> <li>• move objects to the left or right as instructed</li> </ul>

## 10 Data and probability

Big Idea - Data: Concrete graphs help us to compare and interpret data and show one-to-one correspondence.			
Quest: Using graphs			
Learning Journey	Steps	Content	Description
Graphs with one-to-one correspondence	1	Introducing arranged data displays	<ul style="list-style-type: none"> <li>• use prepared templates to record and present category data using, eg objects, pictures, stickers</li> </ul>
			<ul style="list-style-type: none"> <li>• count and compare the objects in each category; use the language of 'more', 'less', 'same' to describe category data; is able to make statements such as 'there are 3 boys who have red lunchboxes'</li> </ul>

## Part III

# Grade 2

## 11 Number

Number concepts to 100			
Quest: Number concepts to 100			
Learning Journey	Steps	Content	Description
Skip counting by 2s to 100	1	Counting by skip counting forward by 2s from any multiple of 2 to 100	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count forward by 2s from any multiple of 2 up to 100</li> </ul>
			<ul style="list-style-type: none"> <li>• skip count forward by 2s from any multiple of 2 by memory and an understanding of the number sequence</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize an error in the skip counting sequence</li> </ul>
	2	Counting by skip counting backward by 2s from any multiple of 2 up to 100	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count backward by 2s from any multiple of 2 up to 100</li> </ul>
			<ul style="list-style-type: none"> <li>• skip count backward by 2s from any multiple of 2 by memory and an understanding of the number sequence</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize an error in the skip counting sequence</li> </ul>
	3	Counting by skip counting forward or backward by 2s from any multiple of 2 up to 100	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count forward or backward by 2s from any multiple of 2 up to 100</li> </ul>
			<ul style="list-style-type: none"> <li>• skip count forward or backward by 2s from any multiple of 2 by memory and an understanding of the number sequence</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize an error in the skip counting sequence</li> </ul>
	4	Counting by skip counting forward or backward in 2s from any number up to 100	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count forward or backward in 2s from any number up to 100</li> </ul>
			<ul style="list-style-type: none"> <li>• skip count by 2s forward and backward by memory and an understanding of the number sequence</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize an error in the skip counting sequence</li> </ul>
Skip counting by 5s to 100	1	Counting by skip counting forward by 5s from any multiple of 5 to 100	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count forward by 5s from any multiple of 5 up to 100</li> </ul>

Learning Journey	Step	Content	Description
			<ul style="list-style-type: none"> <li>• skip count forward by 5s from any multiple of 5 by memory and an understanding of the number sequence</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize an error in the skip counting sequence</li> </ul>
	2	Counting by skip counting backward by 5s from any multiple of 5 up to 100	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count backward by 5s from any multiple of 5 up to 100</li> </ul>
			<ul style="list-style-type: none"> <li>• skip count backward by 5s from any multiple of 5 by memory and an understanding of the number sequence</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize an error in the skip counting sequence</li> </ul>
	3	Counting by skip counting forward or backward by 5s from any multiple of 5 up to 100	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count forward or backward by 5s from any multiple of 5 up to 100</li> </ul>
			<ul style="list-style-type: none"> <li>• skip count forward or backward by 5s from any multiple of 5 by memory and an understanding of the number sequence</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize an error in the skip counting sequence</li> </ul>
Skip counting by 10s to 100	1	Counting by skip counting forward by 10s from zero up to 100	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count by 10s from zero</li> </ul>
			<ul style="list-style-type: none"> <li>• use rhythmic counting to count in 10s from zero</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize an error in the skip counting sequence</li> </ul>
	2	Counting by skip counting backward by 10s from up to 100	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count backward by 10s</li> </ul>
			<ul style="list-style-type: none"> <li>• use rhythmic counting to count in 10s from zero</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize an error in the skip counting sequence</li> </ul>
	3	Counting by skip counting forward or backward by 10s from zero up to 100	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count forward and backward by 10s from zero</li> </ul>
			<ul style="list-style-type: none"> <li>• use rhythmic counting to count in 10s forward and backward</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize an error in the skip counting sequence</li> </ul>
	4	Counting by skip counting forward or backward by 10s from any number up to 100	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count forward or backward by 10s from any number up to 100</li> </ul>



Learning Journey	Step	Content	Description
Skip counting by 2s, 5s & 10s to 100			<ul style="list-style-type: none"> <li>• skip count forward or backward by 10s from any number up to 100 using place value understanding</li> </ul>
			<ul style="list-style-type: none"> <li>• recognize an error in the skip counting sequence</li> </ul>
	1	Counting by skip counting in 2s, 5s, 10s from zero to 100	<ul style="list-style-type: none"> <li>• use concrete materials, models, drawings, number lines/charts to skip count by 2s, 5s, 10s from zero</li> </ul>
			<ul style="list-style-type: none"> <li>• use rhythmic counting to count in 2s, 5s or 10s from zero</li> </ul>
	2	Finding 'how many' objects using skip counting by 2, 5 or 10 up to 100	<ul style="list-style-type: none"> <li>• use skip counting by 2, 5 or 10 to determine 'how many' when objects are grouped or shared equally</li> </ul>
		Skip counting forward or backward by 2s, 5s, 10s or 3s off the multiple up to 100 using a model	<ul style="list-style-type: none"> <li>• count forward or backward by 2s off the multiple up to 100 using a 100 chart</li> </ul>
			<ul style="list-style-type: none"> <li>• count forward or backward by 5s off the multiple up to 100 using a 100 chart</li> </ul>
			<ul style="list-style-type: none"> <li>• count forward or backward by 10s off the multiple up to 100 using a 100 chart</li> </ul>
Sequencing numbers to 100	1	Identifying numbers before and after up to 100	<ul style="list-style-type: none"> <li>• count forward or backward by 3s off the multiple up to 100 using a 100 chart</li> </ul>
			<ul style="list-style-type: none"> <li>• identify the number that comes after a given number up to 100; describe this number as 'one more than'</li> </ul>
			<ul style="list-style-type: none"> <li>• identify the number that comes before a given number up to 100; describe this number as 'one less than'</li> </ul>
Comparing & ordering numbers to 100	1	Ordering numbers to 100	<ul style="list-style-type: none"> <li>• identify the number that comes before or after a given number up to 100; describe this number as 'one more than' or 'one less than'</li> </ul>
			<ul style="list-style-type: none"> <li>• order up to 4 consecutive numbers within 100 from smallest to largest or largest to smallest; explain the reason for the order given</li> </ul>
			<ul style="list-style-type: none"> <li>• order up to 4 non-consecutive numbers within 100 from smallest to largest or largest to smallest; explain the reason for the order given</li> </ul>
			<ul style="list-style-type: none"> <li>• model and compare two 2-digit numbers using place value equipment</li> </ul>
	2	Comparing numbers to 100	<ul style="list-style-type: none"> <li>• compare two 2-digit numbers</li> </ul>
			<ul style="list-style-type: none"> <li>• order numbers on benchmarked number lines (0, 25, 50, 100)</li> </ul>
Comparing & ordering numbers to 100	3	Ordering and comparing numbers on benchmarked number lines (using benchmarks of 0, 25, 50, 100)	<ul style="list-style-type: none"> <li>• compare numbers on benchmarked number lines (0, 25, 50, 100)</li> </ul>
			<ul style="list-style-type: none"> <li>• compare numbers on benchmarked number lines (0, 25, 50, 100)</li> </ul>

Learning Journey	Step	Content	Description
Counting to 100	1	Connecting number names, numbers, and collections 0 to 50 (focus on 21 to 50)	● represent numbers 0 to 50 using fingers, pictures, objects, numbers, and words
			● match the collection to the number and number word or given a number or number word, create the collection
			● represent quantities from 1 to 50 using concrete materials and visual representations
	2	Counting collections 0 to 100	● count everyday concrete materials using one-to-one correspondence
● recognize that the last number name represents the total number in the collection when counting ; answer 'how many?' questions			
Using words & numbers for 2-digit numbers	1	Reading and writing 2-digit numbers using words and numerals	● write a given 2-digit number in words, eg 67 as sixty-seven
			● write the numerals for a 2-digit number given in words
	2	Representing 2-digit numbers using words, numerals and objects	● model a given 2-digit number using concrete materials, pictures or drawings
			● write the numbers and words, eg 'fifty-three' for a 2-digit number represented using place value equipment or using pictures, drawings
Investigating even & odd numbers	1	Modelling odd and even number patterns up to 20	● model odd and even numbers using objects such as counters paired in 2 rows
			● describe the pattern created using the terms 'odd' or 'even' numbers
	2	Investigating odd and even numbers using models (up to 20)	● recognize odd or even numbers using tens frames, decide if the number shown is odd or even
			● model odd and even numbers using tens frames
	3	Investigating odd and even numbers (up to 100)	● identify odd and even numbers up to 100
			● sort numbers into odd or even sets
Quest: Place value of numbers to 100			
Using place value: 10s and 1s	1	Using place value to partition 2-digit numbers up to 50	● use place value equipment and models, eg tens frames, to partition a given 2-digit number (up to 50) into tens and ones
	2	Using place value to partition 2-digit numbers	● use place value equipment and models, eg tens frames, to partition a given 2-digit number into tens and ones
			● model and describe a 2-digit number in both words and numerals, eg 53 as '5 tens and 3 ones' or '50 and 3'

Learning Journey	Step	Content	Description
Non-standard place value			<ul style="list-style-type: none"> <li>model a number expressed in words, eg '6 tens and 2 ones'</li> </ul>
	1	Partitioning 2-digit numbers up to 50 using non-standard partitioning	<ul style="list-style-type: none"> <li>use place value equipment and models, eg tens frames, to partition a given 2-digit number (up to 50) using non-standard partitioning, eg 35 as 2 tens and 15 ones</li> </ul>
	2	Recognizing non-standard partitioning of 2-digit numbers using words	<ul style="list-style-type: none"> <li>recognize non-standard partitioning of 2-digit numbers using words, eg 34 is 3 tens and 4 ones or 3 tens and 14 ones</li> </ul>
	3	Identifying the place value of digits in 2-digit numbers	<ul style="list-style-type: none"> <li>write the numeral for a 2-digit number modelled using place value equipment</li> </ul>
			<ul style="list-style-type: none"> <li>identify the digit in the tens or ones column for a given 2-digit number</li> </ul>
	4	Partitioning 2-digit numbers using non-standard partitioning	<ul style="list-style-type: none"> <li>use place value equipment and models, eg tens frames, to partition a given 2-digit number using non-standard partitioning, eg, 35 as 2 tens and 15 ones</li> </ul>
			<ul style="list-style-type: none"> <li>model and identify a number from non-standard partitioning, eg, recognize 4 tens and 13 ones as 53</li> </ul>

## 12 Computational fluency

Addition and subtraction facts to 20 (introduction of computational strategies)			
Quest: Addition & subtraction facts to 20			
Learning Journey	Steps	Content	Description
Using doubles & near doubles to 20	1	Adding doubles up to 20	<ul style="list-style-type: none"> <li>add doubles with and without using models (up to 20)</li> </ul>
	2	Adding doubles or near doubles	<ul style="list-style-type: none"> <li>solve addition problems using doubles, eg <math>4 + 3 + 4</math> as <math>4 + 4 + 3</math></li> <li>model and solve addition problems with near doubles, eg <math>5 + 7</math> as <math>5 + 5 + 2 = 12</math></li> </ul>
	3	Subtracting using doubles	<ul style="list-style-type: none"> <li>model and solve subtraction problems using doubles, eg <math>14 - 7</math> as <math>7 + 7 = 14</math> or <math>15 - 8</math> as <math>7 + 7 + 1 = 15</math></li> </ul>
Solving number problems using near doubles	1	Adding near doubles including where both addends change	<ul style="list-style-type: none"> <li>model and solve addition problems with near doubles, eg <math>5 + 7</math> as <math>5 + 5 + 2 = 12</math></li> <li>model and solve addition problems using near doubles where both addends change, eg <math>5 + 7</math> as <math>6 + 6 = 12</math></li> </ul>
Adding to 20	1	Modelling and recording combinations that add to numbers from 11 to 20	<ul style="list-style-type: none"> <li>model and recognize the relationship between numbers to 10 and numbers to 20 using models eg tens frames eg <math>5 + 4 = 9</math> and <math>15 + 4 = 19</math></li> <li>use the additions to 10 to record the combinations of numbers that add to between 11 and 20</li> </ul>
	2	Recalling number bonds to 20	<ul style="list-style-type: none"> <li>use known facts and number patterns to recall bonds to 20 eg <math>8 + 2 = 10</math> so <math>18 + 2 = 20</math></li> </ul>
	3	Solving addition problems with start and change unknown (within 20)	<ul style="list-style-type: none"> <li>solve and recall addition facts within 20 with start and change unknown ; include problems where the operation is on the right side of the equation</li> </ul>
Subtracting to 20	1	Finding the difference between 2 numbers (up to 20)	<ul style="list-style-type: none"> <li>represent two numbers using concrete materials and a number line eg place value equipment and a number line; compare the materials and count from the smaller number to find the difference</li> <li>find the missing number in an addition problem eg <math>4 + ? = 9</math></li> <li>solve word problems which involve finding the difference between two numbers</li> </ul>
	2	Describing and using mental strategies for basic addition and related subtraction facts to 18	<ul style="list-style-type: none"> <li>describe and use mental strategies to solve addition and subtraction facts to 18</li> </ul>

Learning Journey	Step	Content	Description
	3	Adding and subtracting within 20 fluently	<ul style="list-style-type: none"> <li>• use known mental strategies to add and subtract fluently within 20</li> </ul>
	4	Solving subtraction problems with start and change unknown (within 20)	<ul style="list-style-type: none"> <li>• solve and recall subtraction facts within 20 with start and change unknown; include problems where the operation is on the right side of the equation</li> </ul>
Adding & subtracting to 20	1	Finding fact families for addition and subtraction (between 10 and 20)	<ul style="list-style-type: none"> <li>• model and investigate the relationship between addition and subtraction using concrete models and or a number line</li> </ul>
			<ul style="list-style-type: none"> <li>• find the other three facts given one fact, eg <math>12 + 5 = 17</math></li> </ul>
Using the commutative property of addition	1	Using the commutative property of addition to find missing numbers (up to 20)	<ul style="list-style-type: none"> <li>• develop an understanding of the commutative property of addition and complete number sentences in addition and subtraction fact families, eg <math>9 + 6 = 15</math>, <math>6 + 9 = 15</math>, <math>15 - 6 = 9</math>, <math>15 - 9 = 6</math></li> </ul>
			<ul style="list-style-type: none"> <li>• describe how the missing number was calculated and check using the opposite operation</li> </ul>
			<ul style="list-style-type: none"> <li>• explain the purpose of the symbol used to represent the unknown number</li> </ul>
Counting on by bridging to 10	1	Bridging to ten to add a 1-digit and 1-digit number using models and diagrams	<ul style="list-style-type: none"> <li>• add to the nearest ten first then add the rest, using models for support, e.g., <math>8 + 7</math> as <math>8 + 2 = 10</math> and <math>10 + 5 = 15</math></li> </ul>
			<ul style="list-style-type: none"> <li>• recognize the best time to use this strategy is when one number is close to a ten</li> </ul>
			<ul style="list-style-type: none"> <li>• record the strategy of bridging to ten using numbers and/or models, eg, number lines</li> </ul>
Creating word problems	1	Creating and solving simple addition and subtraction word problems in context (within 20)	<ul style="list-style-type: none"> <li>• represent a word problem as an addition or subtraction number sentence</li> </ul>
			<ul style="list-style-type: none"> <li>• solve a variety of simple addition and subtraction word problems in context, eg find the difference, find the sum, change unknown, start unknown simple addition and subtraction word problems</li> </ul>
			<ul style="list-style-type: none"> <li>• explain and compare strategies used to solve addition and subtraction word problems</li> </ul>

Addition and subtraction to 100			
Quest: Addition within 100			
Learning Journey	Steps	Content	Description
Adding 2-digit & 1-digit numbers using place value	1	Adding 2-digit and 1-digit numbers using place value partitioning with models (split strategy)	<ul style="list-style-type: none"> <li>model and solve the addition of a 2-digit and 1-digit number using place value equipment, eg use base 10 blocks to show <math>25 + 8</math> as <math>20 + 5 + 8</math> and then <math>20 + 13 = 33</math></li> </ul>
			<ul style="list-style-type: none"> <li>record and explain the use of the strategy</li> </ul>
	2	Adding 2-digit and 1-digit numbers using place value understanding (split strategy)	<ul style="list-style-type: none"> <li>mentally solve the addition of a 2-digit and 1-digit number using place value partitioning</li> </ul>
			<ul style="list-style-type: none"> <li>record and explain the use of the strategy</li> </ul>
	3	Adding 2-digit and 1-digit numbers using place value understanding and a 100 chart	<ul style="list-style-type: none"> <li>use a 100 chart to help solve 2-digit and 1-digit addition</li> </ul>
			<ul style="list-style-type: none"> <li>use an empty number line to model and solve the addition of a 2-digit number and 10s, eg use a number line to model <math>32 + 30</math> as 32, 42, 52, [62]</li> </ul>
			<ul style="list-style-type: none"> <li>record and explain the use of the strategy</li> </ul>
	4	Adding with 1 digit to/from 2-digit numbers using efficient mental strategies (max sum 100)	<ul style="list-style-type: none"> <li>select, use and record an efficient strategy to solve an addition problem, eg counting on, bridging to ten, split strategy, jump strategy, place value</li> </ul>
			<ul style="list-style-type: none"> <li>check the solution to an addition problem using a different strategy</li> </ul>
			<ul style="list-style-type: none"> <li>recognize the most efficient strategy and explain why</li> </ul>
Adding by bridging to 10 with 2- & 1-digit numbers	1	Bridging to ten to add a 2-digit and 1-digit number using models and diagrams	<ul style="list-style-type: none"> <li>add to the nearest ten first then add the rest, using models for support, e.g., <math>28 + 7</math> as <math>28 + 2 = 30</math> and <math>30 + 5 = 35</math></li> </ul>
			<ul style="list-style-type: none"> <li>recognize the best time to use this strategy is when one number is close to a ten</li> </ul>
			<ul style="list-style-type: none"> <li>record the strategy of bridging to ten using numbers and/or models, eg number lines</li> </ul>
Adding tens to a 2-digit number using models	1	Adding tens to a 2-digit number using models and/or equipment for support	<ul style="list-style-type: none"> <li>add ten and multiples of ten to a given 2-digit number, eg <math>36 + 20 = 56</math> (max sum 100)</li> </ul>
	2	Adding 2-digit numbers and 10s using place value understanding and a 100 chart	<ul style="list-style-type: none"> <li>use a 100 chart to help solve 2-digit and 1-digit addition</li> </ul>

Learning Journey	Step	Content	Description	
Adding two 2-digit numbers using place value	1	Adding tens and ones using place value equipment and a split strategy (no crossing tens)	● model and solve the addition of two 2-digit numbers represented horizontally using place value equipment (not crossing ten), eg use base 10 blocks to model $34 + 12$ as $30 + 10$ and $4 + 2$ (max sum 100)	
			● record and explain the use of the strategy	
	2	Adding two 2-digit numbers using place value models (split strategy)	● use place value equipment to model and solve the addition of two 2-digit numbers using standard partitioning, eg $37 + 45$ as $30 + 40$ and $5 + 7$	
			● explain the use of a split strategy using informal recordings	
	3	Adding two 2-digit numbers using place value understanding and a 100 chart	● use a 100 chart to help add two 2-digit numbers	
Adding two 2-digit numbers using a number line	1	Introducing the addition of two 2-digit numbers using place value partitioning on a number line (jump strategy)	● use an empty number line to model and solve the addition of two 2-digit numbers, eg solve $35 + 43$ as $35 + 10 + 10 + 10 + 10 = 75$ then $75 + 1 + 1 + 1 = 78$ (max sum 100)	
			● record and explain the use of the strategy	
	2	Adding two 2-digit numbers using place value partitioning on a number line (jump strategy)	● use an empty number line to model and solve the addition of two 2-digit numbers, eg solve $35 + 43$ as $35 + 40 = 75$ then $75 + 3 = 78$	
			● record and explain the use of the strategy	
	Adding by compensating	1	Adding 10 then compensating to add a single digit (7, 8 or 9) to a 1- or 2-digit number	● add 10 first then subtract to compensate using models for support, eg, $6 + 9$ as $6 + 10 = 16$ then $16 - 1 = 15$
				● record the strategy adding 10 then compensating to add a single digit (7, 8 or 9) using numbers and/or models, eg, number lines
Using number bonds to 100	1	Using number bonds to 100 (multiples of 10)	● use knowledge of number bonds to 10 to relate to number bonds to 100, eg $4 + 6 = 10$ so $40 + 60 = 100$	
			● combine numbers that add to 100, eg $40 + 70 + 60 + 30$ , first combine 40 and 60, and 70 and 30	
Quest: Subtraction within 100				
Subtracting by bridging to 10	1	Bridging to ten to mentally add or subtract a 1-digit and 2-digit number	● use bridging to ten to solve addition and subtraction problems with 1- and 2-digit numbers	
			● use bridging to ten to solve addition and subtraction problems with 1- and 2-digit numbers where the change is unknown, eg $25 + ? = 32$	

Learning Journey	Step	Content	Description
Subtracting 2- & 1-digit numbers using place value	1	Bridging to ten to subtract a 1-digit number from a 2-digit number using models and diagrams	<ul style="list-style-type: none"> <li>• subtract to the nearest ten first then subtract the rest, using models for support, e.g., <math>32 - 6</math> as <math>32 - 2 = 30</math> and <math>30 - 4 = 26</math></li> <li>• recognize the best time to use this strategy is when one number is close to a ten</li> <li>• record the strategy of bridging to ten using numbers and/or models eg number lines</li> </ul>
	2	Subtracting a 1-digit from a 2-digit number using place value understanding and a 100 chart	<ul style="list-style-type: none"> <li>• use a 100 chart to help solve 2-digit and 1-digit subtraction</li> </ul>
Subtracting using mixed strategies	1	Subtracting with 1 digit to/from 2-digit numbers using efficient strategies	<ul style="list-style-type: none"> <li>• select, use and record an efficient strategy to solve the subtraction of a 1-digit number from a 2-digit number, eg counting back, bridging to ten, inverse relationship with addition, jump strategy (max sum 100)</li> <li>• check the solution to a subtraction problem using a different strategy, eg, an addition strategy</li> <li>• recognize the most efficient strategy and explain why</li> </ul>
	2	Subtracting tens from a 2-digit number	<ul style="list-style-type: none"> <li>• subtract ten and multiples of ten to a give 2-digit number, eg <math>36 - 20 = 16</math> (max sum 100)</li> </ul>
Subtracting tens from a 2-digit number	2	Subtracting 2-digit numbers and tens using place value partitioning on a number line (jump strategy)	<ul style="list-style-type: none"> <li>• use an empty number line to model and solve the subtraction of tens from 2-digit numbers</li> <li>• record and explain the use of a jump strategy</li> </ul>
	3	Subtracting 10s from a 2-digit numbers using place value understanding and a 100 chart	<ul style="list-style-type: none"> <li>• use a 100 chart to help subtract 10s from a 2-digit number</li> </ul>
Subtracting two 2-digit numbers using place value	1	Subtracting tens and ones using place value equipment and a split strategy (no crossing tens)	<ul style="list-style-type: none"> <li>• model and solve the subtraction of two 2-digit numbers represented horizontally using place value equipment (not crossing ten), eg use base 10 blocks to model <math>34 - 12</math> as <math>30 - 10</math> and <math>4 - 2</math></li> <li>• record and explain the use of the strategy</li> </ul>
	2	Subtracting two 2-digit numbers using place value understanding and a 100 chart	<ul style="list-style-type: none"> <li>• use a 100 chart to subtract two 2-digit numbers</li> </ul>



Learning Journey	Step	Content	Description
Subtracting two 2-digit numbers on a number line	1	Introducing subtraction of two 2-digit numbers using place value partitioning on a number line (jump strategy)	<ul style="list-style-type: none"><li>● use an empty number line to model and solve the subtraction of two 2-digit numbers by counting back, eg solve <math>52 - 23</math> as <math>52 - 10 - 10 = 32</math> then <math>32 - 1 - 1 - 1 = 29</math> (max sum 100)</li></ul>
			<ul style="list-style-type: none"><li>● record and explain the use of the strategy</li></ul>
	2	Subtracting two 2-digit numbers using place value partitioning on a number line (jump strategy)	<ul style="list-style-type: none"><li>● use an empty number line to model and solve the subtraction of two 2-digit numbers by counting back, eg solve <math>52 - 23</math> as <math>52 - 20 = 32</math> then <math>32 - 3 = 29</math> (max sum 100)</li></ul>
			<ul style="list-style-type: none"><li>● record and explain the use of the strategy</li></ul>
Subtracting by compensating	2	Subtracting 10 then compensating to subtract a single digit (7, 8 or 9) from a 2-digit number	<ul style="list-style-type: none"><li>● subtract 10 first then add to compensate using models for support, eg, <math>15 - 9</math> as <math>15 - 10 = 5</math> then <math>5 + 1 = 6</math></li></ul>
			<ul style="list-style-type: none"><li>● record the strategy subtracting 10 then compensating to subtract a single digit (7, 8 or 9) using numbers and/or models, eg, number lines</li></ul>
Quest: Addition & subtraction within 100			
Adding up to find the difference	1	Subtracting two 2-digit numbers using addition	<ul style="list-style-type: none"><li>● recognize and model the inverse relationship between addition and subtraction</li><li>● rearrange a subtraction problem into an addition problem with change unknown and then use an effective addition strategy to solve, eg using a jump strategy to solve <math>54 - 38</math> as <math>38 + ? = 54</math> on a number line</li></ul>
	2	Introducing the mental addition and subtraction of two 2-digit numbers using place value understanding (jump strategy)	<ul style="list-style-type: none"><li>● mentally solve the addition or subtraction of two 2-digit numbers using place value partitioning (max sum 100)</li></ul>
Solving add/sub problems with place value	1	Applying place value and patterns to solve addition and subtraction problems within 100	<ul style="list-style-type: none"><li>● apply place value and patterns to solve addition and subtraction problems within 100, eg <math>3 + 5 = 8</math>, so <math>13 + 5 = 18</math> and <math>23 + 5 = 28</math></li></ul>
Adding/subtracting using mixed strategies	1	Adding and subtracting 1 digit to/from 2-digit numbers using efficient strategies (max sum 100)	<ul style="list-style-type: none"><li>● select, use and record an efficient strategy to solve an addition or subtraction problem (max sum 100)</li></ul>
			<ul style="list-style-type: none"><li>● check the solution to an addition or subtraction problem using a different strategy</li></ul>
			<ul style="list-style-type: none"><li>● recognize the most efficient strategy and explain why</li></ul>

Learning Journey	Step	Content	Description
Add/subtract two 2-digit numbers using place value	1	Adding and subtracting two 2-digit numbers mentally using place value understanding	<ul style="list-style-type: none"> <li>mentally solve the addition or subtraction of two 2-digit numbers using a jump strategy, eg solve <math>35 + 43</math> as <math>35 + 40 = 75</math> then <math>75 + 3 = 78</math> (max sum 100)</li> <li>check calculations by doing the inverse operation</li> </ul>
Using the relationship of addition & subtraction	1	Adding and subtracting tens and ones mentally using place value understanding (no crossing tens)	<ul style="list-style-type: none"> <li>solve the addition or subtraction of two 2-digit numbers represented horizontally (no crossing ten)</li> <li>check calculations by doing the inverse operation</li> </ul>
Solving addition & subtraction word problems	1	Solving addition and subtraction word problems where either the start or the change is unknown (1-digit and 2-digit numbers)	<ul style="list-style-type: none"> <li>solve word problems where the start is unknown, eg 'Anna had some plums. Sam gave her 5 more. Now she has 13 plums. How many did she have to start with?'</li> <li>solve word problems where the change is unknown, eg 'Anna has 5 plums. How many more does she need to have 13?' or 'Anna had 13 plums. She gave some to Sam. Now she has 7 plums. How many plums did she give to Sam?'</li> <li>solve word problems involving comparisons, eg Anna has 13 plums. Sam has 7 plums. How many more plums does Anna have? or Anna has 7 more plums than Sam. Sam has 5 plums. How many plums does Anna have?</li> </ul>
			<ul style="list-style-type: none"> <li>represent a word problem as an addition or subtraction number sentence</li> <li>solve simple addition and subtraction word problems in context including find the difference, find the sum, change unknown, start unknown; no regrouping needed</li> <li>explain and compare strategies used to solve addition and subtraction word problems</li> </ul>
	2	Creating and solving one step addition and subtraction word problems (within 99 with no regrouping)	
Writing number sentences to solve word problems	1	Writing number sentences to solve word problems (1-digit and 2-digit addition and subtraction)	<ul style="list-style-type: none"> <li>represent a word problem as an addition or subtraction number sentence</li> <li>solve and check the appropriateness of the answer against the word problem</li> <li>pose an addition or subtraction word problem using a given number sentence</li> </ul>

Learning Journey	Step	Content	Description
Estimating sums & differences	1	Estimating addition and subtraction of two 2-digit numbers in a problem solving context	<ul style="list-style-type: none"> <li>round numbers to the nearest 10 to estimate addition in a problem solving context, eg <math>46 + 38</math> as <math>50 + 40</math> in a problem solving context</li> </ul>
			<ul style="list-style-type: none"> <li>round numbers to the nearest 10 to estimate subtraction in a problem solving context eg <math>86 - 38</math> as <math>90 - 40</math> in a problem solving context</li> </ul>

Change in quantity, using pictorial and symbolic representation			
Quest: Explore change in quantity			
Learning Journey	Steps	Content	Description
Exploring change in quantity	1	Exploring equality and inequality (up to 20)	<ul style="list-style-type: none"> <li>create a set in which the number of objects is greater than, less than or equal to the number of objects in a given set</li> <li>demonstrate examples of equality and inequality through investigation, using a balance model; describe equality as balance and inequality as imbalance, concretely and pictorially</li> <li>determine through investigation using a balance model and whole numbers to 20 the number of identical objects that must be added or subtracted to establish equality</li> <li>determine if 2 given concrete sets are equal or unequal and explain the process used</li> </ul>
	2	Exploring change in quantity using models (up to 100)	<ul style="list-style-type: none"> <li>explore change in quantity using models (up to 100)</li> </ul>

Symbolic representation of equality and inequality			
Quest: Equality & inequality			
Learning Journey	Steps	Content	Description
Equality in number sentences to 20 using models	1	Recognizing the concept of equality in numbers up to 18	<ul style="list-style-type: none"> <li>partition whole numbers to 18 in a variety of ways using concrete materials</li> <li>recognize equality, eg starting with 9 tiles and adding 6 more gives the same result as starting with 10 tiles and adding 5 more</li> <li>represent with concrete materials and pictures, 2 number sentences that are equal, using the equal sign</li> </ul>
			<ul style="list-style-type: none"> <li>understand the meaning of the equal sign</li> </ul>
Recognizing equality in number sentences to 20	1	Recognizing equality in addition and subtraction number sentences using objects and models for support	<ul style="list-style-type: none"> <li>understand the meaning of the equal sign</li> </ul>

Learning Journey	Step	Content	Description
			<ul style="list-style-type: none"> <li>determine if equations involving addition or subtraction are true or false, eg <math>6 = 6</math>, <math>7 = 8 - 1</math>, <math>5 + 2 = 2</math></li> </ul>
Recognizing equality in number sentences to 50	1	Recognizing the concept of equality in numbers up to 50	<ul style="list-style-type: none"> <li>partition whole numbers to 50 in a variety of ways using concrete materials</li> <li>recognize equality, eg starting with 12 tiles and adding 20 more yields the same result as starting with 30 tiles and adding 2 more</li> <li>find the missing number to make an addition or subtraction number sentence true (up to 50)</li> </ul>
Using the inequality symbol	1	Representing equality and inequality of number and objects using = and $\neq$ within 100	<ul style="list-style-type: none"> <li>represent equality and inequality of number and objects using = and <math>\neq</math> eg 9 objects = 9 object but 8 objects <math>\neq</math> 9 objects</li> <li>record equations symbolically using = and <math>\neq</math> to make the number sentence true</li> </ul>
Equality & inequality in number sentences to 100	1	Representing equality and inequality in addition and/or subtraction using models (0 to 100)	<ul style="list-style-type: none"> <li>represent equality in addition and/or subtraction using models, eg <math>3+4 = 9-2</math> where students must balance the pan balance</li> <li>represent inequality in addition and/or subtraction using models, eg <math>3+4 \neq 9-2</math> where students must balance the pan balance</li> </ul>
Writing equivalent number sentences	1	Recognizing and recording equivalent addition and subtraction number sentences (1-digit and 2-digit addition and subtraction)	<ul style="list-style-type: none"> <li>determine, through investigation using models and objects for support, whether the 2 sides of a given addition or subtraction number sentence are equal or not equal using symbols; justify the answer</li> <li>model equal number sentences using a variety of concrete and/or pictorial representations and record the equalities symbolically</li> <li>justify solutions when completing number sentences</li> </ul>

## 13 Patterning

Repeating and increasing patterns			
Quest: Repeating patterns			
Learning Journey	Steps	Content	Description
Identifying repeating patterns	1	Exploring simple patterns with transformations	• identify a pattern involving simple transformations
			• copy and continue patterns involving transformations
			• create simple patterns involving transformations and demonstrate an understanding that a pattern can result from repeating transformations
Extending repeating patterns	1	Continuing repeating patterns with objects and symbols	• continue repeating patterns using objects and symbols
	2	Creating, extending and describing repeating patterns	• extend and describe repeating patterns involving more than 1 attribute change, eg transformation and size
			• create repeating patterns involving more than 1 attribute change, eg transformation and size
			• predict the next element in a repeating pattern; justify
Creating repeating patterns	1	Copying repeating patterns using objects and symbols	• copy repeating patterns using objects and symbols
	2	Creating repeating patterns using a given criteria, eg using 3 colours and 2 shapes	• create repeating patterns using a given criteria, eg using 3 colours and 2 shapes
			• predict the next element in a repeating element; justify
Identifying errors in repeating patterns	1	Manipulating repeating patterns with 1 attribute change and 2 or 3 elements	• identify errors in simple patterns with 1 attribute change
			• identify the missing element in a simple pattern
			• identify the element required to complete a simple given pattern
	2	Manipulating repeating patterns with 1 attribute change and 3 or 4 elements	• identify errors in simple patterns with 1 attribute change
			• identify the missing element in a simple pattern
• identify the element required to complete a simple given pattern			
Quest: Repeating number patterns			
Repeating numerical patterns	1	Identifying, extending and describing repeating numeric patterns	• identify and extend through investigation, numeric repeating patterns, eg 1, 2, 1, 2, 1, 2,
			• describe numeric repeating patterns

Learning Journey	Step	Content	Description
	2	Representing and describing number patterns (2s, 5s or 10s)	● represent number patterns (skip counting in multiples of 1s, 2s, 5s or 10s from any number) on a number line or number chart
			● describe the number pattern represented, eg ‘this number pattern goes up in 5s’
Identifying & describing number patterns to 100	1	Identifying and describing number patterns (1s, 2s, 5s, 10s, 25s) up to 100	● identify and describe growing and shrinking patterns generated by the repeated addition or subtraction of 1s, 2s, 5s, 10s or 25s on a number line or number chart
	2	Extending additive and subtractive number patterns (within 5)	● continue given number patterns that increase or decrease, eg 1, 2, 3, 4, ... 20, 18, 16, 14, ...
	3	Extending, completing and describing simple additive or subtractive number patterns with 1 operation (within 10) up to 100	● determine a missing number in a number pattern, eg 3, 7, 11, __, 19
			● explain how a solution was determined and check solutions by repeating the pattern
● describe a number pattern in words, eg ‘It goes up by 3s’			
			● continue a number pattern, eg ‘3, 7, 11, __, __’
Relating repeating patterns to number patterns	1	Relating patterns with objects and symbols to number patterns	● describe and relate a pattern to the corresponding number pattern, eg circle, square, circle, square ... is a ‘two pattern’
			● skip count to count the total objects in a pattern, eg count the total number of objects in a ‘two pattern’ by skip counting the groups of objects in 2s
Quest: Repeating and increasing patterns			
Increasing & growing patterns	1	Exploring growing number patterns up to 100	● identify and describe growing number patterns involving addition
			● create growing patterns and demonstrate an understanding that a pattern results from repeating an operation (addition)
	2	Exploring and representing growing visual patterns using addition	● identify growing patterns found in visual patterns including real-life contexts (eg wallpaper pattern, music) and create the next step in the sequence
	3	Exploring and representing growing patterns	● represent a given growing pattern in a variety of ways, eg represent a letter pattern A, AA, AAA, AAAA using shapes

## 14 Geometry and measurement

Direct linear measurement, introducing standard metric units			
Quest: Measure length			
Learning Journey	Steps	Content	Description
Measuring in centimetres	1	Introducing formal units for length: centimetres	• recognize the need for a formal unit smaller than the metre
			• develop a personal reference for the approximate length of 1 cm
			• recognize and model that there are 100 cm in 1 m ie $100\text{ cm} = 1\text{ m}$
			• estimate and use the centimetre as a unit to measure lengths, to the nearest centimetre, using a device with 1 cm markings, eg use a paper strip of length 10 cm
			• record lengths and distances using the abbreviation for centimetres (cm)
			• compare lengths with the same standard unit
	2	Measuring in centimetres	• measure lengths using a centimetre ruler
Estimating length	1	Estimating and measuring to the nearest centimetre	• estimate lengths and check by measuring; explain strategies used to estimate lengths and distances, such as by referring to a known length, eg 'My handspan is 10 cm and my desk is 8 handspans long, so my desk is about 80 cm long'
			• measure lengths and distances to the nearest centimetre using a centimetre ruler
			• record lengths and distances using the abbreviation for centimetres (cm)
Selecting appropriate units of measure (m & cm)	1	Selecting appropriate units of measurement: cm and m	• select and justify the most appropriate metric unit to measure given mass (centimetres and metres)
	2	Selecting appropriate units of measurement: metres, centimetres	• select and justify the most appropriate metric unit to measure given lengths and distances (metres and centimetres)

Multiple attributes of 2D shapes and 3D objects			
Quest: 2D shapes			
Learning Journey	Steps	Content	Description
Sorting 2D shapes	1	Sorting basic two-dimensional shapes by more than 1 attribute	• recognize and explain how a group of two-dimensional shapes as been sorted, e.g., size or shape

Learning Journey	Step	Content	Description
Comparing 2D shape	1	Comparing and describing two-dimensional shapes	● sort a group of two-dimensional shapes by attributes such as size, colour, shape
			● compare similarities and differences using informal language
			● manipulate, compare and describe similarities and differences between two-dimensional shapes including octagons, pentagons, circles, hexagons, triangles and quadrilaterals
			● identify and describe the number of sides
Quest: 3D objects			
Sorting 3D objects	1	Sorting three-dimensional objects using more than 1 basic attributes	● sort three-dimensional objects and explain the attribute used to sort, eg shape, colour, size, function
			● recognize and explain how a group of objects has been sorted
	2	Sorting familiar three-dimensional objects — cones, cubes, spheres, cylinders, prisms	● sort familiar three-dimensional objects using given attributes
			● sort familiar three-dimensional objects and explain the attribute(s) used
	3	Sorting three-dimensional objects (cubes, prisms, spheres, cylinders)	● sort three-dimensional objects according to particular attributes, eg the shape of the surfaces or number of edges
			● explain the attribute or multiple attributes used
			● distinguish between the attributes of objects that are geometric properties and the attributes that are not, eg colour, size, texture
2D shapes as part of 3D objects	1	Recognizing and naming three-dimensional objects	● recognise common three-dimensional objects in the environment and drawings, including different orientations
			● name common three-dimensional objects
	2	Building three-dimensional structures	● build three-dimensional structures using concrete materials
			● describe the two-dimensional shapes that the structure contains



## 15 Data and probability

Pictorial representation of concrete graphs, using one-to-one correspondence			
Quest: Explore graphs			
Learning Journey	Steps	Content	Description
Pictographs	1	Representing and reading category data in a pictograph	<ul style="list-style-type: none"> <li>• represent category data in a pictograph using a baseline, equal spacing, same-sized symbols and a key indicating one-to-one correspondence</li> <li>• read and interpret data represented in a pictograph; pose and answer simple summative and comparative questions, eg 'Which is the least favourite season?'</li> </ul>
	2	Introducing and reading pictographs with one-to-one correspondence	<ul style="list-style-type: none"> <li>• become familiar with the structure and layout of a basic pictograph including title, labels on each axis, equal spacing</li> <li>• read and interpret pictographs; answer one-step questions, eg, 'How many more students like reading than art?'; identify basic similarities and differences between categories in pictographs; make simple conclusions</li> </ul>
Tally charts	1	Introducing and completing tally tables	<ul style="list-style-type: none"> <li>• collect and sort data using a simple given tally table</li> <li>• answer yes, no or quantity questions; agree or disagree with statements made by others; make basic statements regarding the number of items in a data category, eg '3 more children prefer the colour red to the colour blue'</li> </ul>
	2	Introducing and reading data in basic tables	<ul style="list-style-type: none"> <li>• read data in tables; become familiar with the structure of tables</li> <li>• compare category data in a tally chart and use the language of 'more', 'most', 'fewer', 'least'; identify basic similarities and differences between categories</li> </ul>
Interpreting & creating basic data displays	1	Ordering category data from greatest to least frequency for various data sets	<ul style="list-style-type: none"> <li>• order category data from greatest to least frequency for various data sets displayed in tally tables, concrete graphs and pictographs</li> </ul>
	2	Conducting a well-supported and basic statistical investigation using category data	<ul style="list-style-type: none"> <li>• ask a simple question to gather category or discrete data, eg 'How many letters are in our names?'</li> <li>• collect and record data using concrete objects, pictures or symbols</li> </ul>

Learning Journey	Step	Content	Description
			<ul style="list-style-type: none"> <li>display data in simple displays or using graphic organizers, eg tables, lists, using concrete objects, simple block diagrams, pictographs</li> </ul>
			<ul style="list-style-type: none"> <li>answer questions and make simple statements related to the data gathered</li> </ul>
	3	Representing category or discrete data using simple displays	<ul style="list-style-type: none"> <li>use concrete materials or pictures of objects as symbols to create data displays where 1 object or picture represents 1 data value (one-to-one correspondence), e.g., use different-coloured blocks to represent different-coloured cars</li> </ul>
			<ul style="list-style-type: none"> <li>record data in prepared graphic organizers such as simple bar graphs, pictographs or other diagrams</li> </ul>
	4	Introducing the statistical investigation process (tables, lists, pictographs or bar graphs)	<ul style="list-style-type: none"> <li>determine what data to gather in order to investigate a question of interest, eg colour, mode of transport, gender, type of animal, sport</li> </ul>
			<ul style="list-style-type: none"> <li>collect data through questioning and record the data using tally marks</li> </ul>
			<ul style="list-style-type: none"> <li>identify categories of data and use them to sort data, eg sort data collected on attendance by day of the week and into boys and girls present</li> </ul>
			<ul style="list-style-type: none"> <li>represent category data in a table, list, bar graph or pictograph (one-to-one correspondence)</li> </ul>
			<ul style="list-style-type: none"> <li>record observations and answer simple summary questions based on data collected and displayed in a list, table, pictograph, or simple bar graph</li> </ul>

Likelihood of familiar life events, using comparative language			
Quest: Comparative language			
Learning Journey	Steps	Content	Description
Using possible & impossible	1	Using the language of probability: possible and impossible	<ul style="list-style-type: none"> <li>identify and distinguish between 'possible' and 'impossible' events</li> </ul>
			<ul style="list-style-type: none"> <li>describe familiar events as being 'possible' or 'impossible', eg 'It is possible that it will rain today', 'It is impossible to roll a standard six-sided dice and get a 7'</li> </ul>
Using likely & unlikely	1	Using the language of probability: likely and unlikely	<ul style="list-style-type: none"> <li>describe possible outcomes in everyday activities and events as being 'likely' or 'unlikely' to happen</li> </ul>
			<ul style="list-style-type: none"> <li>compare familiar activities and events and describe them as being 'likely' or 'unlikely' to happen</li> </ul>

Learning Journey	Step	Content	Description
Using certain & uncertain	1	Using the language of probability: certain and uncertain	<ul style="list-style-type: none"> <li>• identify and distinguish between 'certain' and 'uncertain' events</li> <li>• describe familiar situations as being certain or uncertain, eg 'It is uncertain what the weather will be like tomorrow', 'It is certain that tomorrow is Saturday'</li> </ul>
Using comparative language	1	Using the basic language of probability: impossible, possible, likely, unlikely	<ul style="list-style-type: none"> <li>• identify practical activities and everyday events that involve chance, eg 'I might play with my friend after school'</li> <li>• make predictions about what might happen when discussing practical activities and everyday events that involve chance</li> <li>• describe outcomes in everyday activities and events as being 'possible', 'impossible', 'likely' or 'unlikely' to happen</li> </ul>
	2	Using the language of probability, including the terms "impossible", "possible", and "certain", to describe the likelihood of complementary events happening	<ul style="list-style-type: none"> <li>• use the language of probability, including the terms "impossible", "possible", and "certain", to describe the likelihood of complementary events happening</li> </ul>
	3	Using the language of probability: equally likely, less likely and more likely	<ul style="list-style-type: none"> <li>• identify and distinguish between 'equally likely', 'less likely' and 'more likely' events</li> <li>• compare familiar activities and events and describe them as being 'equally likely', 'more likely' or 'less likely' to happen</li> </ul>
	4	Using the basic language of probability: impossible, unlikely, less likely, equally likely, more likely, certain	<ul style="list-style-type: none"> <li>• Identify practical activities and everyday events that involve chance, eg 'I might or might not win the game'</li> <li>• make predictions about what might happen when discussing practical activities and everyday events that involve chance</li> <li>• describe outcomes in everyday activities and events as being 'impossible', 'unlikely', 'less likely', 'equally likely', 'more likely', 'certain'</li> </ul>

Financial literacy – coin combinations to 100 cents, and spending and saving			
Quest: Financial literacy			
Learning Journey	Steps	Content	Description
Using coin combinations to 100¢	1	Using coins to make amounts (up to 100¢)	• combine amounts of coins to make a given amount of money shown in cents (no decimals)
			• calculate the total value of a group of coins and record this value in cents
			• generate and recognize different combinations of coins that have the same value
	2	Calculating change within 100¢	• calculate the change when using coins within 100¢

## Part IV

# Grade 2 – Big Ideas

## 16 Number

Big Idea - Number: Numbers to 100 represent quantities that can be decomposed into 10s and 1s.			
Quest: Place value of numbers to 100			
Learning Journey	Steps	Content	Description
Place value - 10s & 1s	1	Using place value to partition 2-digit numbers up to 50	<ul style="list-style-type: none"> <li>• use place value equipment and models, eg tens frames, to partition a given 2-digit number (up to 50) into tens and ones</li> </ul>
	2	Using place value to partition 2-digit numbers	<ul style="list-style-type: none"> <li>• use place value equipment and models, eg tens frames, to partition a given 2-digit number into tens and ones</li> </ul>
			<ul style="list-style-type: none"> <li>• model and describe a 2-digit number in both words and numerals, eg 53 as '5 tens and 3 ones' or '50 and 3'</li> </ul>
			<ul style="list-style-type: none"> <li>• model a number expressed in words, eg '6 tens and 2 ones'</li> </ul>
Non-standard place value	1	Partitioning 2-digit numbers up to 50 using non-standard partitioning	<ul style="list-style-type: none"> <li>• use place value equipment and models, eg tens frames, to partition a given 2-digit number (up to 50) using non-standard partitioning, eg 35 as 2 tens and 15 ones</li> </ul>
	2	Recognizing non-standard partitioning of 2-digit numbers using words	<ul style="list-style-type: none"> <li>• recognize non-standard partitioning of 2-digit numbers using words, eg 34 is 3 tens and 4 ones or 3 tens and 14 ones</li> </ul>
	3	Identifying the place value of digits in 2-digit numbers	<ul style="list-style-type: none"> <li>• write the numeral for a 2-digit number modelled using place value equipment</li> </ul>
			<ul style="list-style-type: none"> <li>• identify the digit in the tens or ones column for a given 2-digit number</li> </ul>
	4	Partitioning 2-digit numbers using non-standard partitioning	<ul style="list-style-type: none"> <li>• use place value equipment and models, eg tens frames, to partition a given 2-digit number using non-standard partitioning, eg, 35 as 2 tens and 15 ones</li> </ul>
			<ul style="list-style-type: none"> <li>• model and identify a number from non-standard partitioning, eg, recognize 4 tens and 13 ones as 53</li> </ul>

## 17 Computational fluency

Big Idea - Comp fluency: Development of computational fluency in addition and subtraction with numbers to 100 requires an understanding of place value.			
Quest: Addition within 100			
Learning Journey	Steps	Content	Description
Adding 2-digit & 1-digit numbers using place value	1	Adding 2-digit and 1-digit numbers using place value partitioning with models (split strategy)	<ul style="list-style-type: none"> <li>model and solve the addition of a 2-digit and 1-digit number using place value equipment, eg use base 10 blocks to show <math>25 + 8</math> as <math>20 + 5 + 8</math> and then <math>20 + 13 = 33</math></li> </ul>
			<ul style="list-style-type: none"> <li>record and explain the use of the strategy</li> </ul>
	2	Adding 2-digit and 1-digit numbers using place value understanding (split strategy)	<ul style="list-style-type: none"> <li>mentally solve the addition of a 2-digit and 1-digit number using place value partitioning</li> </ul>
			<ul style="list-style-type: none"> <li>record and explain the use of the strategy</li> </ul>
	3	Adding 2-digit and 1-digit numbers using place value understanding and a 100 chart	<ul style="list-style-type: none"> <li>use a 100 chart to help solve 2-digit and 1-digit addition</li> </ul>
			<ul style="list-style-type: none"> <li>use an empty number line to model and solve the addition of a 2-digit number and 10s, eg use a number line to model <math>32 + 30</math> as 32, 42, 52, [62]</li> </ul>
			<ul style="list-style-type: none"> <li>record and explain the use of the strategy</li> </ul>
	4	Adding with 1 digit to/from 2-digit numbers using efficient mental strategies (max sum 100)	<ul style="list-style-type: none"> <li>select, use and record an efficient strategy to solve an addition problem, eg counting on, bridging to ten, split strategy, jump strategy, place value</li> </ul>
			<ul style="list-style-type: none"> <li>check the solution to an addition problem using a different strategy</li> </ul>
			<ul style="list-style-type: none"> <li>recognize the most efficient strategy and explain why</li> </ul>
Adding by bridging to 10 with 2- & 1-digit numbers	1	Bridging to ten to add a 2-digit and 1-digit number using models and diagrams	<ul style="list-style-type: none"> <li>add to the nearest ten first then add the rest, using models for support, e.g., <math>28 + 7</math> as <math>28 + 2 = 30</math> and <math>30 + 5 = 35</math></li> </ul>
			<ul style="list-style-type: none"> <li>recognize the best time to use this strategy is when one number is close to a ten</li> </ul>
			<ul style="list-style-type: none"> <li>record the strategy of bridging to ten using numbers and/or models, eg number lines</li> </ul>
Adding tens to a 2-digit number using models	1	Adding tens to a 2-digit number using models and/or equipment for support	<ul style="list-style-type: none"> <li>add ten and multiples of ten to a give 2-digit number, eg <math>36 + 20 = 56</math> (max sum 100)</li> </ul>
	2	Adding 2-digit numbers and 10s using place value understanding and a 100 chart	<ul style="list-style-type: none"> <li>use a 100 chart to help solve 2-digit and 1-digit addition</li> </ul>

Learning Journey	Step	Content	Description	
Adding two 2-digit numbers using place value	1	Adding tens and ones using place value equipment and a split strategy (no crossing tens)	● model and solve the addition of two 2-digit numbers represented horizontally using place value equipment (not crossing ten), eg use base 10 blocks to model $34 + 12$ as $30 + 10$ and $4 + 2$ (max sum 100)	
			● record and explain the use of the strategy	
	2	Adding two 2-digit numbers using place value models (split strategy)	● use place value equipment to model and solve the addition of two 2-digit numbers using standard partitioning, eg $37 + 45$ as $30 + 40$ and $5 + 7$	
			● explain the use of a split strategy using informal recordings	
	3	Adding two 2-digit numbers using place value understanding and a 100 chart	● use a 100 chart to help add two 2-digit numbers	
Adding two 2-digit numbers using a number line	1	Introducing the addition of two 2-digit numbers using place value partitioning on a number line (jump strategy)	● use an empty number line to model and solve the addition of two 2-digit numbers, eg solve $35 + 43$ as $35 + 10 + 10 + 10 + 10 = 75$ then $75 + 1 + 1 + 1 = 78$ (max sum 100)	
			● record and explain the use of the strategy	
	2	Adding two 2-digit numbers using place value partitioning on a number line (jump strategy)	● use an empty number line to model and solve the addition of two 2-digit numbers, eg solve $35 + 43$ as $35 + 40 = 75$ then $75 + 3 = 78$	
			● record and explain the use of the strategy	
Adding by compensating	1	Adding 10 then compensating to add a single digit (7, 8 or 9) to a 1- or 2-digit number	● add 10 first then subtract to compensate using models for support, eg, $6 + 9$ as $6 + 10 = 16$ then $16 - 1 = 15$	
			● record the strategy adding 10 then compensating to add a single digit (7, 8 or 9) using numbers and/or models, eg, number lines	
Using number bonds to 100	1	Using number bonds to 100 (multiples of 10)	● use knowledge of number bonds to 10 to relate to number bonds to 100, eg $4 + 6 = 10$ so $40 + 60 = 100$	
			● combine numbers that add to 100, eg $40 + 70 + 60 + 30$ , first combine 40 and 60, and 70 and 30	
Quest: Subtraction within 100				
Subtracting by bridging to 10	1	Bridging to ten to mentally add or subtract a 1-digit and 2-digit number	● use bridging to ten to solve addition and subtraction problems with 1- and 2-digit numbers	
			● use bridging to ten to solve addition and subtraction problems with 1- and 2-digit numbers where the change is unknown, eg $25 + ? = 32$	

Learning Journey	Step	Content	Description
Subtracting 2- & 1-digit numbers using place value	1	Bridging to ten to subtract a 1-digit number from a 2-digit number using models and diagrams	<ul style="list-style-type: none"> <li>• subtract to the nearest ten first then subtract the rest, using models for support, e.g., <math>32 - 6</math> as <math>32 - 2 = 30</math> and <math>30 - 4 = 26</math></li> <li>• recognize the best time to use this strategy is when one number is close to a ten</li> <li>• record the strategy of bridging to ten using numbers and/or models eg number lines</li> </ul>
	2	Subtracting a 1-digit from a 2-digit number using place value understanding and a 100 chart	<ul style="list-style-type: none"> <li>• use a 100 chart to help solve 2-digit and 1-digit subtraction</li> </ul>
Subtracting using mixed strategies	1	Subtracting with 1 digit to/from 2-digit numbers using efficient strategies	<ul style="list-style-type: none"> <li>• select, use and record an efficient strategy to solve the subtraction of a 1-digit number from a 2-digit number, eg counting back, bridging to ten, inverse relationship with addition, jump strategy (max sum 100)</li> <li>• check the solution to a subtraction problem using a different strategy, eg, an addition strategy</li> <li>• recognize the most efficient strategy and explain why</li> </ul>
Subtracting tens from a 2-digit number	1	Subtracting tens from a 2-digit number using models and/or equipment for support	<ul style="list-style-type: none"> <li>• subtract ten and multiples of ten to a give 2-digit number, eg <math>36 - 20 = 16</math> (max sum 100)</li> </ul>
	2	Subtracting 2-digit numbers and tens using place value partitioning on a number line (jump strategy)	<ul style="list-style-type: none"> <li>• use an empty number line to model and solve the subtraction of tens from 2-digit numbers</li> <li>• record and explain the use of a jump strategy</li> </ul>
	3	Subtracting 10s from a 2-digit numbers using place value understanding and a 100 square	<ul style="list-style-type: none"> <li>• use a 100 square to help subtract 10s from a 2-digit number</li> </ul>
Subtracting two 2-digit numbers using place value	1	Subtracting tens and ones using place value equipment and a split strategy (no crossing tens)	<ul style="list-style-type: none"> <li>• model and solve the subtraction of two 2-digit numbers represented horizontally using place value equipment (not crossing ten), eg use base 10 blocks to model <math>34 - 12</math> as <math>30 - 10</math> and <math>4 - 2</math></li> <li>• record and explain the use of the strategy</li> </ul>
	2	Subtracting two 2-digit numbers using place value understanding and a 100 chart	<ul style="list-style-type: none"> <li>• use a 100 chart to subtract two 2-digit numbers</li> </ul>



Learning Journey	Step	Content	Description
Subtracting two 2-digit numbers, number line	1	Introducing subtraction of two 2-digit numbers using place value partitioning on a number line (jump strategy)	● use an empty number line to model and solve the subtraction of two 2-digit numbers by counting back, eg solve $52 - 23$ as $52 - 10 - 10 = 32$ then $32 - 1 - 1 - 1 = 29$ (max sum 100)
			● record and explain the use of the strategy
	2	Subtracting two 2-digit numbers using place value partitioning on a number line (jump strategy)	● use an empty number line to model and solve the subtraction of two 2-digit numbers by counting back, eg solve $52 - 23$ as $52 - 20 = 32$ then $32 - 3 = 29$ (max sum 100)
			● record and explain the use of the strategy
Subtracting by compensating	2	Subtracting 10 then compensating to subtract a single digit (7, 8 or 9) from a 2-digit number	● subtract 10 first then add to compensate using models for support, eg, $15 - 9$ as $15 - 10 = 5$ then $5 + 1 = 6$
			● record the strategy subtracting 10 then compensating to subtract a single digit (7, 8 or 9) using numbers and/or models, eg, number lines
Quest: Addition & subtraction within 100			
Adding up to find the difference	1	Subtracting two 2-digit numbers using addition	● recognize and model the inverse relationship between addition and subtraction
			● rearrange a subtraction problem into an addition problem with change unknown and then use an effective addition strategy to solve, eg using a jump strategy to solve $54 - 38$ as $38 + ? = 54$ on a number line
	2	Introducing the mental addition and subtraction of two 2-digit numbers using place value understanding (jump strategy)	● mentally solve the addition or subtraction of two 2-digit numbers using place value partitioning (max sum 100)
Solving add/sub problems with place value	1	Applying place value and patterns to solve addition and subtraction problems within 100	● apply place value and patterns to solve addition and subtraction problems within 100, eg $3 + 5 = 8$ , so $13 + 5 = 18$ and $23 + 5 = 28$
Adding/subtracting using mixed strategies	1	Adding and subtracting 1 digit to/from 2-digit numbers using efficient strategies (max sum 100)	● select, use and record an efficient strategy to solve an addition or subtraction problem (max sum 100)
			● check the solution to an addition or subtraction problem using a different strategy
			● recognize the most efficient strategy and explain why

Learning Journey	Step	Content	Description
Add/subtract two 2-digit numbers using place value	1	Adding and subtracting two 2-digit numbers mentally using place value understanding	<ul style="list-style-type: none"> <li>mentally solve the addition or subtraction of two 2-digit numbers using a jump strategy, eg solve <math>35 + 43</math> as <math>35 + 40 = 75</math> then <math>75 + 3 = 78</math> (max sum 100)</li> <li>check calculations by doing the inverse operation</li> </ul>
Using the relationship of addition & subtraction	1	Adding and subtracting tens and ones mentally using place value understanding (no crossing tens)	<ul style="list-style-type: none"> <li>solve the addition or subtraction of two 2-digit numbers represented horizontally (no crossing ten)</li> <li>check calculations by doing the inverse operation</li> </ul>
Solving addition & subtraction word problems	1	Solving addition and subtraction word problems where either the start or the change is unknown (1-digit and 2-digit numbers)	<ul style="list-style-type: none"> <li>solve word problems where the start is unknown, eg 'Anna had some plums. Sam gave her 5 more. Now she has 13 plums. How many did she have to start with?'</li> <li>solve word problems where the change is unknown, eg 'Anna has 5 plums. How many more does she need to have 13?' or 'Anna had 13 plums. She gave some to Sam. Now she has 7 plums. How many plums did she give to Sam?'</li> <li>solve word problems involving comparisons, eg Anna has 13 plums. Sam has 7 plums. How many more plums does Anna have? or Anna has 7 more plums than Sam. Sam has 5 plums. How many plums does Anna have?</li> </ul>
			<ul style="list-style-type: none"> <li>represent a word problem as an addition or subtraction number sentence</li> <li>solve simple addition and subtraction word problems in context including find the difference, find the sum, change unknown, start unknown; no regrouping needed</li> <li>explain and compare strategies used to solve addition and subtraction word problems</li> </ul>
	2	Creating and solving one step addition and subtraction word problems (within 99 with no regrouping)	
Writing number sentences to solve word problems	1	Writing number sentences to solve word problems (1-digit and 2-digit addition and subtraction)	<ul style="list-style-type: none"> <li>represent a word problem as an addition or subtraction number sentence</li> <li>solve and check the appropriateness of the answer against the word problem</li> <li>pose an addition or subtraction word problem using a given number sentence</li> </ul>

Learning Journey	Step	Content	Description
Estimating sums & differences	1	Estimating addition and subtraction of two 2-digit numbers in a problem solving context	<ul style="list-style-type: none"> <li>● round numbers to the nearest 10 to estimate addition in a problem solving context, eg <math>46 + 38</math> as <math>50 + 40</math> in a problem solving context</li> </ul>
			<ul style="list-style-type: none"> <li>● round numbers to the nearest 10 to estimate subtraction in a problem solving context eg <math>86 - 38</math> as <math>90 - 40</math> in a problem solving context</li> </ul>

## 18 Patterning

Big Idea - Patterning: The regular change in increasing patterns can be identified and used to make generalizations.			
Quest: Repeating patterns			
Learning Journey	Steps	Content	Description
Identifying repeating patterns	1	Exploring simple patterns with transformations	● identify a pattern involving simple transformations
			● copy and continue patterns involving transformations
			● create simple patterns involving transformations and demonstrate an understanding that a pattern can result from repeating transformations
Extending repeating patterns	1	Continuing repeating patterns with objects and symbols	● continue repeating patterns using objects and symbols
	2	Creating, extending and describing repeating patterns	● extend and describe repeating patterns involving more than 1 attribute change, eg transformation and size
			● create repeating patterns involving more than 1 attribute change, eg transformation and size
			● predict the next element in a repeating pattern; justify
Creating repeating patterns	1	Copying repeating patterns using objects and symbols	● copy repeating patterns using objects and symbols
	2	Creating repeating patterns using a given criteria, eg using 3 colours and 2 shapes	● create repeating patterns using a given criteria, eg using 3 colours and 2 shapes
			● predict the next element in a repeating element; justify
Identifying errors in repeating patterns	1	Manipulating repeating patterns with 1 attribute change and 2 or 3 elements	● identify errors in simple patterns with 1 attribute change
			● identify the missing element in a simple pattern
			● identify the element required to complete a simple given pattern
	2	Manipulating repeating patterns with 1 attribute change and 3 or 4 elements	● identify errors in simple patterns with 1 attribute change
			● identify the missing element in a simple pattern
			● identify the element required to complete a simple given pattern
Quest: Repeating number patterns			
Repeating numerical patterns	1	Identifying, extending and describing repeating numeric patterns	● identify and extend through investigation, numeric repeating patterns, eg 1, 2, 1, 2, 1, 2,
			● describe numeric repeating patterns

Learning Journey	Step	Content	Description
	2	Representing and describing number patterns (2s, 5s or 10s)	● represent number patterns (skip counting in multiples of 1s, 2s, 5s or 10s from any number) on a number line or number chart
			● describe the number pattern represented, eg ‘this number pattern goes up in 5s’
Identifying & describing number patterns to 100	1	Identifying and describing number patterns (1s, 2s, 5s, 10s, 25s) up to 100	● identify and describe growing and shrinking patterns generated by the repeated addition or subtraction of 1s, 2s, 5s, 10s or 25s on a number line or number chart
	2	Extending additive and subtractive number patterns (within 5)	● continue given number patterns that increase or decrease, eg 1, 2, 3, 4, ... 20, 18, 16, 14, ...
	3	Extending, completing and describing simple additive or subtractive number patterns with 1 operation (within 10) up to 100	● determine a missing number in a number pattern, eg 3, 7, 11, __, 19
			● explain how a solution was determined and check solutions by repeating the pattern
			● describe a number pattern in words, eg ‘It goes up by 3s’
● continue a number pattern, eg ‘3, 7, 11, __, __’			
Relating repeating patterns to number patterns	1	Relating patterns with objects and symbols to number patterns	● describe and relate a pattern to the corresponding number pattern, eg circle, square, circle, square ... is a ‘two pattern’
			● skip count to count the total objects in a pattern, eg count the total number of objects in a ‘two pattern’ by skip counting the groups of objects in 2s
Quest: Repeating and increasing patterns			
Increasing & growing patterns	1	Exploring growing number patterns up to 100	● identify and describe growing number patterns involving addition
			● create growing patterns and demonstrate an understanding that a pattern results from repeating an operation (addition)
	2	Exploring and representing growing visual patterns using addition	● identify growing patterns found in visual patterns including real-life contexts (eg wallpaper pattern, music) and create the next step in the sequence
	3	Exploring and representing growing patterns	● represent a given growing pattern in a variety of ways, eg represent a letter pattern A, AA, AAA, AAAA using shapes

## 19 Geometry and measurement

Big Idea - Geo and measurement: Objects and shapes have attributes that can be described, measured, and compared.			
Quest: Measure length			
Learning Journey	Steps	Content	Description
Measuring in centimetres	1	Introducing formal units for length: centimetres	• recognize the need for a formal unit smaller than the metre
			• develop a personal reference for the approximate length of 1 cm
			• recognize and model that there are 100 cm in 1 m ie $100\text{ cm} = 1\text{ m}$
			• estimate and use the centimetre as a unit to measure lengths, to the nearest centimetre, using a device with 1 cm markings, eg use a paper strip of length 10 cm
			• record lengths and distances using the abbreviation for centimetres (cm)
			• compare lengths with the same standard unit
	2	Measuring in centimetres	• measure lengths using a centimetre ruler
Estimating length	1	Estimating and measuring to the nearest centimetre	• estimate lengths and check by measuring; explain strategies used to estimate lengths and distances, such as by referring to a known length, eg 'My handspan is 10 cm and my desk is 8 handspans long, so my desk is about 80 cm long'
			• measure lengths and distances to the nearest centimetre using a centimetre ruler
			• record lengths and distances using the abbreviation for centimetres (cm)
Selecting appropriate units of measure (m & cm)	1	Selecting appropriate units of measurement: cm and m	• select and justify the most appropriate metric unit to measure given mass (centimetres and metres)
	2	Selecting appropriate units of measurement: metres, centimetres	• select and justify the most appropriate metric unit to measure given lengths and distances (metres and centimetres)
Quest: 2D shapes			
Sorting 2D shapes	1	Sorting basic two-dimensional shapes by more than 1 attribute	• recognize and explain how a group of two-dimensional shapes as been sorted, e.g., size or shape
			• sort a group of two-dimensional shapes by attributes such as size, colour, shape
			• compare similarities and differences using informal language

Learning Journey	Step	Content	Description
Comparing 2D shape	1	Comparing and describing two-dimensional shapes	<ul style="list-style-type: none"><li>manipulate, compare and describe similarities and differences between two-dimensional shapes including octagons, pentagons, circles, hexagons, triangles and quadrilaterals</li></ul>
			<ul style="list-style-type: none"><li>identify and describe the number of sides</li></ul>
Quest: 3D objects			
Sorting 3D objects	1	Sorting three-dimensional objects using more than 1 basic attributes	<ul style="list-style-type: none"><li>sort three-dimensional objects and explain the attribute used to sort, eg shape, colour, size, function</li></ul>
			<ul style="list-style-type: none"><li>recognize and explain how a group of objects has been sorted</li></ul>
	2	Sorting familiar three-dimensional objects — cones, cubes, spheres, cylinders, prisms	<ul style="list-style-type: none"><li>sort familiar three-dimensional objects using given attributes</li></ul>
			<ul style="list-style-type: none"><li>sort familiar three-dimensional objects and explain the attribute(s) used</li></ul>
	3	Sorting three-dimensional objects (cubes, prisms, spheres, cylinders)	<ul style="list-style-type: none"><li>sort three-dimensional objects according to particular attributes, eg the shape of the surfaces or number of edges</li></ul>
			<ul style="list-style-type: none"><li>explain the attribute or multiple attributes used</li></ul>
			<ul style="list-style-type: none"><li>distinguish between the attributes of objects that are geometric properties and the attributes that are not, eg colour, size, texture</li></ul>
2D shapes as part of 3D objects	1	Recognizing and naming three-dimensional objects	<ul style="list-style-type: none"><li>recognise common three-dimensional objects in the environment and drawings, including different orientations</li></ul>
			<ul style="list-style-type: none"><li>name common three-dimensional objects</li></ul>
	2	Building three-dimensional structures	<ul style="list-style-type: none"><li>build three-dimensional structures using concrete materials</li></ul>
<ul style="list-style-type: none"><li>describe the two-dimensional shapes that the structure contains</li></ul>			

## 20 Data and probability

Big Idea - Data & probability: Concrete items can be represented, compared, and interpreted pictorially in graphs.			
Quest: Exploring graphs			
Learning Journey	Steps	Content	Description
Pictographs	1	Representing and reading category data in a pictograph	<ul style="list-style-type: none"> <li>represent category data in a pictograph using a baseline, equal spacing, same-sized symbols and a key indicating one-to-one correspondence</li> </ul>
			<ul style="list-style-type: none"> <li>read and interpret data represented in a pictograph; pose and answer simple summative and comparative questions, eg 'Which is the least favourite season?'</li> </ul>
	2	Introducing and reading pictographs with one-to-one correspondence	<ul style="list-style-type: none"> <li>become familiar with the structure and layout of a basic pictograph including title, labels on each axis, equal spacing</li> </ul>
			<ul style="list-style-type: none"> <li>read and interpret pictographs; answer one-step questions, eg, 'How many more students like reading than art?'; identify basic similarities and differences between categories in pictographs; make simple conclusions</li> </ul>
Tally charts	1	Introducing and completing tally tables	<ul style="list-style-type: none"> <li>collect and sort data using a simple given tally table</li> </ul>
			<ul style="list-style-type: none"> <li>answer yes, no or quantity questions; agree or disagree with statements made by others; make basic statements regarding the number of items in a data category, eg '3 more children prefer the colour red to the colour blue'</li> </ul>
	2	Introducing and reading data in basic tables	<ul style="list-style-type: none"> <li>read data in tables; become familiar with the structure of tables</li> </ul>
			<ul style="list-style-type: none"> <li>compare category data in a tally chart and use the language of 'more', 'most', 'fewer', 'least'; identify basic similarities and differences between categories</li> </ul>
Interpreting & creating basic data displays	1	Ordering category data from greatest to least frequency for various data sets	<ul style="list-style-type: none"> <li>order category data from greatest to least frequency for various data sets displayed in tally tables, concrete graphs and pictographs</li> </ul>
	2	Conducting a well-supported and basic statistical investigation using category data	<ul style="list-style-type: none"> <li>ask a simple question to gather category or discrete data, eg 'How many letters are in our names?'</li> </ul>
			<ul style="list-style-type: none"> <li>collect and record data using concrete objects, pictures or symbols</li> </ul>



Learning Journey	Step	Content	Description
			<ul style="list-style-type: none"> <li>display data in simple displays or using graphic organizers, eg tables, lists, using concrete objects, simple block diagrams, pictographs</li> </ul>
			<ul style="list-style-type: none"> <li>answer questions and make simple statements related to the data gathered</li> </ul>
	3	Representing category or discrete data using simple displays	<ul style="list-style-type: none"> <li>use concrete materials or pictures of objects as symbols to create data displays where 1 object or picture represents 1 data value (one-to-one correspondence), e.g., use different-coloured blocks to represent different-coloured cars</li> </ul>
			<ul style="list-style-type: none"> <li>record data in prepared graphic organizers such as simple bar graphs, pictographs or other diagrams</li> </ul>
	4	Introducing the statistical investigation process (tables, lists, pictographs or bar graphs)	<ul style="list-style-type: none"> <li>determine what data to gather in order to investigate a question of interest, eg colour, mode of transport, gender, type of animal, sport</li> </ul>
			<ul style="list-style-type: none"> <li>collect data through questioning and record the data using tally marks</li> </ul>
			<ul style="list-style-type: none"> <li>identify categories of data and use them to sort data, eg sort data collected on attendance by day of the week and into boys and girls present</li> </ul>
			<ul style="list-style-type: none"> <li>represent category data in a table, list, bar graph or pictograph (one-to-one correspondence)</li> </ul>
			<ul style="list-style-type: none"> <li>record observations and answer simple summary questions based on data collected and displayed in a list, table, pictograph, or simple bar graph</li> </ul>



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