Australian Curriculum: Mathematics — Year 5
Year level plan-2023

Year 5 Level Description

The proficiency strands **understanding, fluency, problem-solving** and **reasoning** are an integral part of mathematics content across the three content strands: number and algebra, measurement and geometry, and statistics and probability. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics. The achievement standards reflect the content and encompass the proficiencies.

At this year level:

- **understanding** includes making connections between representations of numbers, using fractions to represent probabilities, comparing and ordering fractions and decimals and representing them in various ways, describing transformations and identifying line and rotational symmetry
- **fluency** includes choosing appropriate units of measurement for calculation of perimeter and area, using estimation to check the reasonableness of answers to calculations and using instruments to measure angles
- **problem-solving** includes formulating and solving authentic problems using whole numbers and measurements and creating financial plans
- **reasoning** includes investigating strategies to perform calculations efficiently, continuing patterns involving fractions and decimals, interpreting results of chance experiments, posing appropriate questions for data investigations and interpreting data sets.

CURRICULUM	SEMESTER 1		SEMESTER 2	
	Term 1	Term 2	Term 3	Term 4
Unit description	Students develop understandings of: • **Number and place value** — make connections between factors and multiples, identify numbers that have 2, 3, 5 or 10 as factors, represent multiplication using the split and compensate strategy, choose appropriate procedures to represent the split and compensate strategy of multiplication, use a written strategy for addition and subtraction, round and estimate to check the reasonableness of answers, explore mental computation strategies for division, solve problems using mental computation strategies and informal recording methods, compare and evaluate strategies that are appropriate to different problems, make generalisations • **Fractions and decimals** — use models to represent fractions, count on and count back using unit fractions, identify and compare unit fractions using a range of representations and solve problems using unit fractions. Add and subtract simple fractions with the same denominator • **Using units of measurement** — investigate time concepts and the measurement of time, read and represent 24-hour time, measure dimensions, estimate and measure the perimeters of rectangles, investigate metric units of area measurement, estimate and calculate area of rectangles • **Chance** — identify and describe possible outcomes, describe equally likely outcomes, represent probabilities of outcomes using fractions, conduct a chance experiment and apply understandings of probability and data collection to investigate the fairness of a game • **Data representation and interpretation** — build an understanding of data, develop the skill of defining numerical and categorical data, generate sample questions, explain why data is either numerical or categorical, develop an understanding of why data is collected, choose appropriate methods to record data, interpret data, generalise by composing summary statements about data.	Students develop understandings of: • **Number and place value** — round and estimate to check the reasonableness of answers, explore and apply mental computation strategies for multiplication and division, solve multiplication and division problems with no remainders, solve problems using mental computation strategies and informal recording methods, compare and evaluate strategies that are appropriate to different problems and explore and identify factors and multiples • **Fractions and decimals** — make connections between fractional numbers and the place value system and represent, compare and order decimals • **Patterns and algebra** — create and continue patterns involving whole numbers, fractions and decimals; explore strategies to find unknown quantities • **Shape** — apply the properties of three-dimensional objects to make connections with a variety of two-dimensional representations of three-dimensional objects, represent three-dimensional objects with two-dimensional representations • **Location and transformation** — investigate and create reflection and rotation symmetry, describe and create transformations using symmetry, transform shapes through enlargement and describe the features of transformed shapes • Geometric reasoning — identify the components of angles, compare and estimate the size of angles to establish benchmarks, construct and measure angles • **Data representation and interpretation** — explore methods of data representations to construct and interpret data displays, reason with data. • **Chance** — list possible outcomes of chance experiments, describe and order chance events, express probability on a numerical continuum, compare predictions with actual data, apply probability to games of chance, make predictions in chance experiments	Students develop understandings of: • **Number and place value** — round and estimate to check an answer is reasonable, use written strategies to add and subtract, use an array to multiply one-digit and two-digit numbers, use divisibility rules to divide, solve problems involving computation and apply computation to money problems, add and subtract using mental and written strategies including the right-to-left strategy, multiply whole numbers and divide by a one-digit whole number with and without remainders • **Fractions and decimals** — make connections between fractions and decimals, compare and order decimals • **Money and financial mathematics** — investigate income and expenditure, calculate costs, investigate savings and spending plans, develop and explain simple financial plans • **Patterns and algebra** — create, continue and identify the rule for patterns involving the addition and subtraction of fractions; use number sentences to find unknown quantities involving multiplication and division • **Using units of measurement** — choose appropriate units for length, area, capacity and mass; measure length, area, capacity and mass; problem-solve and reason when applying measurement to answer a question • **Location and transformation** — explore mapping conventions, interpret simple maps, use alphanumeric grids to locate landmarks and plot points, describe symmetry, create symmetrical designs and enlarge shapes.	Students develop understandings of: • **Number and place value** — apply mental and written strategies to solve addition, subtraction, multiplication and division problems; identify and use factors and multiples; apply computation skills; use estimation and rounding to check reasonableness; solve problems involving addition, subtraction, multiplication and division; use efficient mental and written strategies to solve problems • **Fractions and decimals** — apply decimal skills, recognise that the place value system can be extended beyond hundredths, compare order and represent decimals, locate decimals on a number line, extend the number system to thousandths and beyond • **Money and financial mathematics** — create simple budgets, calculate with money, identify the GST component of invoices and receipts, make financial decisions • **Using units of measurement** — read and represent 24-hour time, convert between 12-hour and 24-hour time • **Location and transformation** — explore maps and grids, use a grid to locate and describe locations, describe positions using landmarks and directional language • **Geometric reasoning** — estimate and measure angles, construct angles using a protractor • **Data representation and interpretation** — explore types of data, investigate an issue (design data-collection questions and tools, collect data, represent as a column graph or dot plot, interpret and describe data to draw a conclusion).

ASSESSMENT	SEMESTER 1		SEMESTER 2	
	Term 1	Term 2	Term 3	Term 4

		Solving simple & fraction problems-AT1	Digging into data- AT2	Apply shape, angle, transform- AT3	Chance and probability- AT4	Investigating involving data- AT5	Calculating measurements- AT6	Patterns, money & numbers- AT7	Time, factors, multiples- AT8	Measurement & mapping- AT9
Range and balance of summative assessment conventions	**Technique**	Test	Test	Test	Test	Investigation MGI	Test	Test	Test	Test
	Type of text	Short answer	Short answer	Short answer	Short answer	Practical Project	Short answer	Short answer	Short answer	Short answer
	Mode	Written	Written	Written	Written	Written	Written	Written	Written	Written
	Conditions	Individual	Individual	Individual	Individual, pairs or small groups	Individual, pairs or small groups	Individual	Individual	Individual	Individual
Aspects of the achievement standard										
solve simple problems involving the four operations using a range of strategies		✓						✓		
check the reasonableness of answers using estimation and rounding		✓						✓		
identify and describe factors and multiples									✓	
identify and explain strategies for finding unknown quantities in number sentences involving the four operations								✓		
explain plans for simple budgets								✓		
connect three-dimensional objects with their two-dimensional representations				✓						
describe transformations of two-dimensional shapes and identify line and rotational symmetry				✓						
interpret different data sets			✓			✓				
order decimals and unit fractions and locate them on number lines		✓						✓		
add and subtract fractions with the same denominator		✓								
continue patterns by adding and subtracting fractions and decimals								✓		
use appropriate units of measurement for length, area, volume, capacity and mass, and calculate perimeter and area of rectangles							✓			
convert between 12- and 24-hour time									✓	
use a grid reference system to locate landmarks										✓
measure and construct different angles				✓						
list outcomes of chance experiments with equally likely outcomes and assign probabilities between 0 and 1					✓					
pose questions to gather data, and construct data displays appropriate for the data			✓			✓				

Term 1 Term 2 Term 3 Term 4 ✓ indicates opportunities that summative assessments provide for students to demonstrate evidence against aspects of the achievement standard