

Year 5 Syllabus

Year 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.

Number and Algebra


NUMBER AND PLACE VALUE

Identify and describe factors and multiples of whole numbers and use them to solve problems

[\(ACMNA098\)](#)

 Literacy

 Numeracy

 Critical and creative thinking

Use estimation and rounding to check the reasonableness of answers to calculations

[\(ACMNA099\)](#)

 Numeracy

Solve problems involving multiplication of large numbers by one- or

Measurement and Geometry

USING UNITS OF MEASUREMENT

Choose appropriate units of measurement for length, area, volume, capacity and mass [\(ACMMG108\)](#)

 Numeracy

Calculate perimeter and area of rectangles using familiar metric units [\(ACMMG109\)](#)

 Numeracy

Compare 12- and 24-hour time systems and convert between them [\(ACMMG110\)](#)

 Numeracy

SHAPE

Connect three-

Statistics and Probability

CHANCE

List outcomes of chance experiments involving equally likely outcomes and represent probabilities of those outcomes using fractions

[\(ACMSP116\)](#)

 Literacy

 Numeracy

Recognise that probabilities range from 0 to 1

[\(ACMSP117\)](#)

 Numeracy


DATA REPRESENTATION AND INTERPRETATION


Pose questions and collect categorical or numerical data by observation or survey [\(ACMSP118\)](#)

two-digit numbers using efficient mental, written strategies and appropriate digital technologies
[\(ACMNA100\)](#)

 Literacy

 Numeracy


 Information and Communication Technology (ICT) capability

 Critical and creative thinking

Solve problems involving division by a one digit number, including those that result in a remainder
[\(ACMNA101\)](#)

 Literacy

 Numeracy

 Critical and creative thinking

Use efficient mental and written strategies and apply appropriate

dimensional objects with their nets and other two-dimensional representations
[\(ACMMG111\)](#)

 Numeracy

LOCATION AND TRANSFORMATION

Use a grid reference system to describe locations. Describe routes using landmarks and directional language
[\(ACMMG113\)](#)

 Literacy

 Numeracy


Describe translations, reflections and rotations of two-dimensional shapes. Identify line and rotational symmetries
[\(ACMMG114\)](#)

 Literacy

 Numeracy

 Literacy


 Numeracy

 Critical and creative thinking

Construct displays, including column graphs, dot plots and tables, appropriate for data type, with and without the use of digital technologies
[\(ACMSP119\)](#)

 Literacy


 Numeracy

 Information and Communication Technology (ICT) capability

Describe and interpret different data sets in context
[\(ACMSP120\)](#)

 Literacy

 Numeracy


 Critical and creative thinking

digital technologies to solve problems

[\(ACMNA291\)](#)

 Literacy

 Numeracy

 Critical and creative thinking

FRACTIONS AND DECIMALS

Compare and order common unit fractions and locate and represent them on a number line

[\(ACMNA102\)](#)

 Numeracy

Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator

[\(ACMNA103\)](#)

 Literacy

 Numeracy

 Critical and creative

Apply the enlargement transformation to familiar two dimensional shapes and explore the properties of the resulting image compared with the original [\(ACMMG115\)](#)

 Numeracy

GEOMETRIC REASONING

Estimate, measure and compare angles using degrees.

Construct angles using a protractor

[\(ACMMG112\)](#)

 Numeracy

thinking

Recognise that the
place value system
can be extended
beyond hundredths
[\(ACMNA104\)](#)

 Numeracy

Compare, order and
represent decimals
[\(ACMNA105\)](#)


 Numeracy

MONEY AND FINANCIAL MATHEMATICS

Create simple
financial plans
[\(ACMNA106\)](#)

 Literacy

 Numeracy

 Critical and creative
thinking

PATTERNS AND ALGEBRA


Describe, continue
and create patterns
with fractions,

decimals and whole numbers resulting from addition and subtraction

[\(ACMNA107\)](#)

 Literacy

 Numeracy

 Critical and creative thinking

Find unknown quantities in number sentences involving multiplication and division and identify equivalent number sentences involving multiplication and division [\(ACMNA121\)](#)

 Numeracy

Year 5 Achievement Standard

Number and Algebra

At Standard, students identify and describe factors and multiples. They solve simple problems involving the four operations using a range of strategies. Students check the reasonableness of answers using estimation and rounding. They order decimals and unit fractions and locate them on

number lines. Students add and subtract fractions with the same denominator. They explain plans for simple budgets. Students continue patterns by adding and subtracting fractions and decimals. They identify and explain strategies for finding unknown quantities in number sentences involving the four operations.

Measurement and Geometry

Students use appropriate units of measurement for length, area, volume, capacity and mass, and calculate perimeter and area of rectangles. They convert between 12 and 24 hour time. Students connect three-dimensional objects with their two-dimensional representations. They describe transformations of two-dimensional shapes and identify line and rotational symmetry. Students use a grid reference system to locate landmarks. They measure and construct different angles.

Statistics and Probability

Students interpret different data sets. They list outcomes of chance experiments with equally likely outcomes and assign probabilities between 0 and 1. Students pose questions to gather data, and construct data displays appropriate for the data.

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- **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.