

Year 6 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 describing properties of different sets of numbers, using fractions and decimals to describe probabilities, representing fractions and decimals in various ways and describing connections between them, and making reasonable estimations
- **fluency** includes representing integers on a number line, calculating simple percentages, using brackets appropriately, converting between fractions and decimals, using operations with fractions, decimals and percentages, measuring using metric units and interpreting timetables
- **problem-solving** includes formulating and solving authentic problems using fractions, decimals, percentages and measurements, interpreting secondary data displays and finding the

size of unknown angles

- **reasoning** includes explaining mental strategies for performing calculations, describing results for continuing number sequences, explaining the transformation of one shape into another and explaining why the actual results of chance experiments may differ from expected results.

Number and Algebra

NUMBER AND PLACE VALUE

Identify and describe properties of prime, composite, square and triangular numbers

[\(ACMNA122\)](#)

 Literacy

 Numeracy

Select and apply efficient mental and written strategies and appropriate digital technologies

Measurement and Geometry

USING UNITS OF MEASUREMENT

Connect decimal representations to the metric system

[\(ACMMG135\)](#)

 Numeracy

Convert between common metric units of length, mass and capacity

[\(ACMMG136\)](#)

 Numeracy

Solve problems

Statistics and Probability

CHANCE

Describe probabilities using fractions, decimals and percentages

[\(ACMSP144\)](#)

 Literacy

 Numeracy


Conduct chance experiments with both small and large numbers of trials using appropriate digital technologies

[\(ACMSP145\)](#)


to solve problems involving all four operations with whole numbers ([ACMNA123](#))

 Literacy

 Numeracy


 Information and Communication

Technology (ICT) capability

 Critical and creative thinking

Investigate everyday situations that use integers. Locate and represent these numbers on a number line ([ACMNA124](#))

 Numeracy


 Critical and creative thinking

FRACTIONS AND DECIMALS

involving the comparison of lengths and areas using appropriate units ([ACMMG137](#))

 Literacy

 Numeracy

 Critical and creative thinking

Connect volume and capacity and their units of measurement ([ACMMG138](#))


 Literacy

 Numeracy

Interpret and use timetables ([ACMMG139](#))


 Literacy

 Numeracy

 Critical and creative thinking

SHAPE


 Numeracy

 Information and Communication Technology (ICT) capability

Compare observed frequencies across experiments with expected frequencies ([ACMSP146](#))

 Literacy

 Numeracy

 Critical and creative thinking

DATA REPRESENTATION AND INTERPRETATION


Interpret and compare a range of data displays, including side-by-side column graphs for two categorical variables ([ACMSP147](#))

Compare fractions with related denominators and locate and represent them on a number line ([ACMNA125](#))

 Numeracy

Solve problems involving addition and subtraction of fractions with the same or related denominators ([ACMNA126](#))

 Numeracy

 Critical and creative thinking

Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies ([ACMNA127](#))

 Numeracy

 Information and


Construct simple prisms and pyramids ([ACMMG140](#))

 Numeracy


LOCATION AND TRANSFORMATION

Investigate combinations of translations, reflections and rotations, with and without the use of digital technologies ([ACMMG142](#))

 Numeracy

 Information and Communication Technology (ICT)


capability

 Critical and creative thinking

Introduce the Cartesian coordinate system using all four quadrants ([ACMMG143](#))

 Literacy


 Numeracy

 Critical and creative thinking

Interpret secondary data presented in digital media and elsewhere ([ACMSP148](#))


 Literacy

 Numeracy

 Information and Communication

Technology (ICT)

capability


 Critical and creative thinking

Communication

Technology (ICT)
capability

Add and subtract
decimals, with and
without digital
technologies, and
use estimation and
rounding to check
the reasonableness
of answers
([ACMNA128](#))

 Numeracy

 Information and
Communication
Technology (ICT)
capability

Multiply decimals by
whole numbers and
perform divisions by
non-zero whole
numbers where the
results are
terminating
decimals, with and
without digital
technologies


 Literacy


 Numeracy

GEOMETRIC REASONING

Investigate, with and
without digital
technologies, angles
on a straight line,
angles at a point and
vertically opposite
angles. Use results
to find unknown
angles ([ACMMG141](#))

 Numeracy

 Information and
Communication
Technology (ICT)
capability

 Critical and creative
thinking

(ACMNA129)

 Numeracy

 Information and

Communication

Technology (ICT)

capability

Multiply and divide
decimals by powers
of 10 (ACMNA130)

 Numeracy

Make connections
between equivalent
fractions, decimals
and percentages
(ACMNA131)

 Numeracy


MONEY AND FINANCIAL MATHEMATICS

Investigate and
calculate percentage
discounts of 10%,
25% and 50% on sale
items, with and
without digital

technologies ([ACMNA132](#))


 Literacy

 Numeracy

 Information and
Communication

Technology (ICT)

capability


 Critical and creative
thinking

PATTERNS AND ALGEBRA

Continue and create
sequences involving
whole numbers,
fractions and
decimals. Describe
the rule used to
create the sequence
([ACMNA133](#))

 Literacy

 Numeracy

 Critical and creative
thinking

Explore the use of

brackets and order of
operations to write
number sentences
([ACMNA134](#))

 Numeracy

Year 6 Achievement Standard

Number and Algebra

At Standard, students recognise the properties of prime, composite, square and triangular numbers. They describe the use of integers in everyday contexts. Students solve problems involving all four operations with whole numbers. They locate fractions and integers on a number line. Students solve problems involving the addition and subtraction of related fractions. They calculate a simple fraction of a quantity. Students connect fractions, decimals and percentages as different representations of the same number. They make connections between the powers of 10 and the multiplication and division of decimals. Students add, subtract and multiply decimals and divide decimals where the result is rational. They calculate common percentage discounts on sale items. Students describe rules used in sequences involving whole numbers, fractions and decimals. They write correct number sentences using brackets and order of operations.

Measurement and Geometry

Students connect decimal representations to the metric system and choose appropriate units of measurement to perform a calculation.

They make connections between capacity and volume. Students solve problems involving length and area. They interpret timetables. Students construct simple prisms and pyramids. They describe combinations of transformations. Students solve problems using the properties of angles. They locate an ordered pair in any one of the four quadrants on the Cartesian plane.

Statistics and Probability

Students compare observed and expected frequencies. They describe probabilities using simple fractions, decimals and percentages. Students interpret and compare a variety of data displays including those displays for two categorical variables. They interpret secondary data displayed in the media.

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 describing properties of different sets of numbers, using fractions and decimals to describe probabilities,

representing fractions and decimals in various ways and describing connections between them, and making reasonable estimations

- **fluency** includes representing integers on a number line, calculating simple percentages, using brackets appropriately, converting between fractions and decimals, using operations with fractions, decimals and percentages, measuring using metric units and interpreting timetables
- **problem-solving** includes formulating and solving authentic problems using fractions, decimals, percentages and measurements, interpreting secondary data displays and finding the size of unknown angles
- **reasoning** includes explaining mental strategies for performing calculations, describing results for continuing number sequences, explaining the transformation of one shape into another and explaining why the actual results of chance experiments may differ from expected results.