

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

 Literacy

 Numeracy

 Information and

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

 Literacy

 Numeracy

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](#))

 Numeracy


 Information and Communication Technology (ICT) capability

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

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

 Numeracy

Solve problems
involving addition and
subtraction of

 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

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

 Numeracy


LOCATION AND TRANSFORMATION

Investigate
combinations of

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
[\(ACMSP147\)](#)

 Literacy


 Numeracy

 Critical and creative
thinking

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


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 Communication Technology (ICT) capability

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

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


GEOMETRIC REASONING

Investigate, with and without digital technologies, angles on a straight line, angles at a point and


 Literacy

 Numeracy

 Information and Communication Technology (ICT) capability


 Critical and creative thinking

 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
[\(ACMNA129\)](#)

 Numeracy

 Information and
Communication
Technology (ICT)
capability


Multiply and divide decimals by powers of 10 [\(ACMNA130\)](#)


 Numeracy

Make connections between equivalent

vertically opposite angles. Use results to find unknown angles
[\(ACMMG141\)](#)

 Numeracy

 Information and
Communication
Technology (ICT)
capability

 Critical and creative
thinking

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.