The Australian
Curriculum

Subjects	Mathematics
Year levels	Year 6

ACARA — AUSTRALIAN CURRICULUM, ASSESSMENT AND REPORTING AUTHORITY

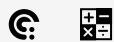# Year 6 Content Descriptions

Number and Algebra

Number and place value

Identify and describe properties of prime, composite, square and triangular numbers (ACMNA122 - Scootle ↗)
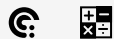
Elaborations

> understanding that some numbers have special properties and that these properties can be used to solve problems

> representing composite numbers as a product of their prime factors and using this form to simplify calculations by cancelling common primes

> understanding that if a number is divisible by a composite number then it is also divisible by the prime factors of that number (for example 216 is divisible by 8 because the number represented by the last three digits is divisible by 8, and hence 216 is also divisible by 2 and 4)

Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers (ACMNA123 - Scootle ↗)

Elaborations

> applying strategies already developed for solving problems involving small numbers to those involving large numbers

> applying a range of strategies to solve realistic problems and commenting on the efficiency of different strategies

Investigate everyday situations that use integers. Locate and represent these numbers on a number line (ACMNA124 - Scootle ↗)
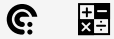
Elaborations

understanding that integers are ...-3, -2, -1, 0, 1, 2, 3,.....

solving everyday additive problems using a number line

investigating everyday situations that use integers, such as temperatures

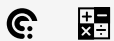using number lines to position and order integers around zero

Fractions and decimals

Compare fractions with related denominators and locate and represent them on a number line (ACMNA125 - Scootle ↗)

Elaborations

demonstrating equivalence between fractions using drawings and models

Solve problems involving addition and subtraction of fractions with the same or related denominators (ACMNA126 - Scootle ↗)
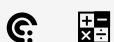
Elaborations

understanding the processes for adding and subtracting fractions with related denominators and fractions as an operator, in preparation for calculating with all fractions

solving realistic additive (addition and subtraction) problems involving fractions to develop understanding of equivalent fractions and the use of fractions as operators
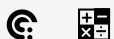
modelling and solving additive problems involving fractions by using methods such as jumps on a number line, or by making diagrams of fractions as parts of shapes

Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies (ACMNA127 - Scootle ↗)

Elaborations

recognising that finding one third of a quantity is the same as dividing by 3

Add and subtract decimals, with and without digital technologies, and use estimation and rounding to check the reasonableness of answers (ACMNA128 - Scootle ↗)

Elaborations

extending whole-number strategies to explore and develop meaningful written strategies for addition and subtraction of decimal numbers to thousandths

exploring and practising efficient methods for solving problems requiring operations on decimals, to gain fluency with calculating with decimals and with recognising appropriate operations

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 - Scootle ↗)

Elaborations

interpreting the results of calculations to provide an answer appropriate to the context

Multiply and divide decimals by powers of 10 (ACMNA130 - Scootle ↗)

Elaborations

multiplying and dividing decimals by multiples of powers of 10

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

Elaborations

connecting fractions, decimals and percentages as different representations of the same number, moving fluently between representations and choosing the appropriate one for the problem being solved

Money and financial mathematics

Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies (ACMNA132 - Scootle ↗)

Elaborations

using authentic information to calculate prices on sale goods

Patterns and algebra

Continue and create sequences involving whole numbers, fractions and decimals. Describe the rule used to create the sequence (ACMNA133 - Scootle ↗)
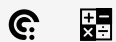
Elaborations

identifying and generalising number patterns

investigating additive and multiplicative patterns such as the number of tiles in a geometric pattern, or the number of dots or other shapes in successive repeats of a strip or border pattern looking for patterns in the way the numbers increase/decrease

Explore the use of brackets and order of operations to write number sentences (ACMNA134 - Scootle ↗)

Elaborations

appreciating the need for rules to complete multiple operations within the same number sentence

Measurement and Geometry

Using units of measurement

Connect decimal representations to the metric system (ACMMG135 - Scootle ↗)

Elaborations

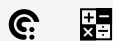recognising the equivalence of measurements such as 1.25 metres and 125 centimetres

Convert between common metric units of length, mass and capacity (ACMMG136 - Scootle ↗)

Elaborations

identifying and using the correct operations when converting units including millimetres, centimetres, metres, kilometres, milligrams, grams, kilograms, tonnes, millilitres, litres, kilolitres and megalitres

recognising the significance of the prefixes in units of measurement

Solve problems involving the comparison of lengths and areas using appropriate units (ACMMG137 - Scootle ↗)

Elaborations

recognising and investigating familiar objects using concrete materials and digital technologies

Connect volume and capacity and their units of measurement (ACMMG138 - Scootle ↗)

Elaborations

recognising that 1ml is equivalent to $1cm^3$

Interpret and use timetables (ACMMG139 - Scootle ↗)

Elaborations

planning a trip involving one or more modes of public transport

developing a timetable of daily activities

Shape

Construct simple prisms and pyramids (ACMMG140 - Scootle ↗)

Elaborations

considering the history and significance of pyramids from a range of cultural perspectives including those structures found in China, Korea and Indonesia

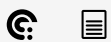constructing prisms and pyramids from nets, and skeletal models

Location and transformation

Investigate combinations of translations, reflections and rotations, with and without the use of digital technologies (ACMMG142 - Scootle ↗)

Elaborations

designing a school or brand logo using transformation of one or more shapes

understanding that translations, rotations and reflections can change the position and orientation but not shape or size
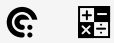
Introduce the Cartesian coordinate system using all four quadrants (ACMMG143 - Scootle ↗)

Elaborations

understanding that the Cartesian plane provides a graphical or visual way of describing location

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 - Scootle ↗)

Elaborations

identifying the size of a right angle as 90° and defining acute, obtuse, straight and reflex angles
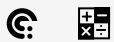
measuring, estimating and comparing angles in degrees and classifying angles according to their sizes

investigating the use of rotation and symmetry in the diagrammatic representations of kinship relationships of Central and Western Desert people

recognising and using the two alternate conventions for naming angles

Statistics and Probability

Chance

Describe probabilities using fractions, decimals and percentages (ACMSP144 - Scootle ↗)

Elaborations

investigating games of chance popular in different cultures and evaluating the relative benefits to the organisers and participants (for example Pachinko)
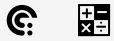
Conduct chance experiments with both small and large numbers of trials using appropriate digital technologies (ACMSP145 - Scootle ↗)

Elaborations

conducting repeated trials of chance experiments, identifying the variation between trials and
realising that the results tend to the prediction with larger numbers of trials

Compare observed frequencies across experiments with expected frequencies
(ACMSP146 - Scootle ↗)

Elaborations

predicting likely outcomes from a run of chance events and distinguishing these from surprising
results

Data representation and interpretation

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

Elaborations

comparing different student-generated diagrams, tables and graphs, describing their similarities and
differences and commenting on the usefulness of each representation for interpreting the data
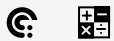
understanding that data can be represented in different ways, sometimes with one symbol
representing more than one piece of data, and that it is important to read all information about a
representation before making judgments

Interpret secondary data presented in digital media and elsewhere (ACMSP148 - Scootle ↗)
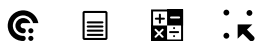
Elaborations

investigating data representations in the media and discussing what they illustrate and the messages
the people who created them might want to convey

identifying potentially misleading data representations in the media, such as graphs with broken axes
or non-linear scales, graphics not drawn to scale, data not related to the population about which the

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claims are made, and pie charts in which the whole pie does not represent the entire population about which the claims are made