

Victorian Curriculum: An overview and the expected outcome levels for Number

End of Year outcomes for Foundation

Number and Algebra

Students connect number names and numerals with sets of up to 20 elements, estimate the size of these sets, and use counting strategies to solve problems that involve comparing, combining and separating these sets. They match individual objects with counting sequences up to and back from 20. Students order the first 10 elements of a set. They represent, continue and create simple patterns.

Number:

Number and Place Value

- Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point
- Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond
- Subitise small collections of objects
- Compare, order and make correspondences between collections, initially to 20, and explain reasoning
- Represent practical situations to model addition and subtraction
- Represent practical situations to model sharing

Money and Financial Mathematics

Represent simple, everyday financial situations involving money

Patterns and Algebra

- Sort and classify familiar objects and explain the basis for these classifications, and copy, continue and create patterns with objects and
- Follow a short sequence of instructions





End of Year outcomes for Year One (Level One)

Number and Algebra

Students count to and from 100 and locate these numbers on a number line. They partition numbers using place value and carry out simple additions and subtractions, using counting strategies. Students recognise Australian coins according to their value. They identify representations of one half. Students describe number sequences resulting from skip counting by 2s, 5s and 10s. They continue simple patterns involving numbers and objects with and without the use of digital technology.

Number:

Number and Place Value

- Develop confidence with number sequences to and from 100 by ones from any starting point. Skip count by twos, fives and tens starting from zero
- Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line
- Count collections to 100 by partitioning numbers using place value
- Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts
- Represent practical situations that model sharing

Fractions and Decimals

- Recognise and describe one-half as one of two equal parts of a whole

Money and Financial Mathematics

- Recognise, describe and order Australian coins according to their value

Patterns and Algebra

- Investigate and describe number patterns formed by skip counting and patterns with objects
- Recognise the importance of repetition of a process in solving problems

Number and Algebra

Students count to and from, and order numbers up to 1000. They perform simple addition and subtraction calculations, using a range of strategies. They find the total value of simple collections of Australian notes and coins. Students represent multiplication and division by grouping into sets and divide collections and shapes into halves, quarters and eighths. They recognise increasing and decreasing number sequences involving 2s, 3s, 5s and 10s, identify the missing element in a number sequence, and use digital technology to produce sequences by constant addition.

Number:

Number and Place Value

- Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and ten from any starting point, then moving to other sequences
- Recognise, model, represent and order numbers to at least 1000
- Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting
- Explore the connection between addition and subtraction
- Solve simple addition and subtraction problems using a range of efficient mental and written strategies
- Recognise and represent multiplication as repeated addition, groups and arrays
- Recognise and represent division as grouping into equal sets and solve simple problems using these representations

Fractions and Decimals

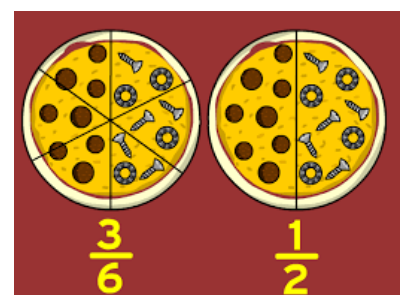
- Recognise and interpret common uses of halves, quarters and eighths of shapes and collections

Money and Financial Mathematics

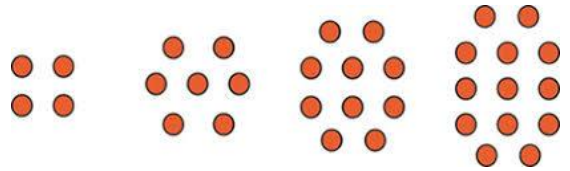
- Count and order small collections of Australian coins and notes according to their value

Patterns and Algebra

- Describe patterns with numbers and identify missing elements
- Solve problems by using number sentences for addition or subtraction
- Apply repetition in arithmetic operations, including multiplication as repeated addition and division as repeated subtraction



End of Year outcomes for Year Three (Level Three)



Number and Algebra

Students count and order numbers to and from 10 000. They recognise the connection between addition and subtraction, and solve problems using efficient strategies for multiplication with and without the use of digital technology. Students recall addition and multiplication facts for single-digit numbers. They represent money values in various ways and correctly count out change from financial transactions. Students model and represent unit fractions for halves, thirds, quarters, fifths and eighths, and multiples of these up to one. They classify numbers as either odd or even, continue number patterns involving addition or subtraction, and explore simple number sequences based on multiples.

Number:

Number and Place Value

- Investigate the conditions required for a number to be odd or even and identify odd and even numbers
- Recognise, model, represent and order numbers to at least 10 000
- Apply place value to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems
- Recognise and explain the connection between addition and subtraction
- Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation
- Recall multiplication facts of two, three, five and ten and related division facts
- Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies

Fractions and Decimals

- Model and represent unit fractions including $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{5}$ and their multiples to a complete whole

Money and Financial Mathematics

- Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents

Patterns and Algebra

- Describe, continue, and create number patterns resulting from performing addition or subtraction
- Use a function machine and the inverse machine as a model to apply mathematical rules to numbers or shapes

End of Year outcomes for Year Four (Level Four)

Number and Algebra

Students recall multiplication facts to 10×10 and related division facts. They choose appropriate strategies for calculations involving multiplication and division, with and without the use of digital technology, and estimate answers accurately enough for the context. Students solve simple purchasing problems with and without the use of digital technology. They locate familiar fractions on a number line, recognise common equivalent fractions in familiar contexts and make connections between fractions and decimal notations up to two decimal places. Students identify unknown quantities in number sentences. They use the properties of odd and even numbers and describe number patterns resulting from multiplication. Students continue number sequences involving multiples of single-digit numbers and unit fractions, and locate them on a number line.

Number:

Number and Place Value

- Investigate and use the properties of odd and even numbers
- Recognise, represent and order numbers to at least tens of thousands
- Apply place value to partition, rearrange and regroup numbers to at least tens of thousands to assist calculations and solve problems
- Investigate number sequences involving multiples of 3, 4, 6, 7, 8, and 9
- Recall multiplication facts up to 10×10 and related division facts
- Develop efficient mental and written strategies and use appropriate digital technologies for multiplication and for division where there is no remainder



Fractions and Decimals

- Investigate equivalent fractions used in contexts
- Count by quarters, halves and thirds, including with mixed numerals. Locate and represent these fractions on a number line
- Recognise that the place value system can be extended to tenths and hundredths. Make connections between fractions and decimal notation

Money and Financial Mathematics

- Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies

Patterns and Algebra

- Explore and describe number patterns resulting from performing multiplication
- Solve word problems by using number sentences involving multiplication or division where there is no remainder
- Use equivalent number sentences involving addition and subtraction to find unknown quantities
- Define a simple class of problems and solve them using an effective algorithm that involves a short sequence of steps and decisions

End of Year outcomes for Year Five (Level Five)

Number and Algebra

Students solve simple problems involving the four operations using a range of strategies including digital technology. They estimate to check the reasonableness of answers and approximate answers by rounding. Students identify and describe factors and multiples. They explain plans for simple budgets. Students order decimals and unit fractions and locate them on a number line. Students add and subtract fractions with the same denominator. They find unknown quantities in number sentences and continue patterns by adding or subtracting fractions and decimals.

Number:

Number and Place Value

- Identify and describe factors and multiples of whole numbers and use them to solve problems
- Use estimation and rounding to check the reasonableness of answers to calculations
- Solve problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental, written strategies and appropriate digital technologies
- Solve problems involving division by a one digit number, including those that result in a remainder
- Use efficient mental and written strategies and apply appropriate digital technologies to solve problems
- Recognise, represent and order numbers to at least hundreds of thousands

Fractions and Decimals

- Compare and order common unit fractions and locate and represent them on a number line
- Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator
- Recognise that the place value system can be extended beyond hundredths
- Compare, order and represent decimals

Money and Financial Mathematics

- Create simple financial plans

Patterns and Algebra

- Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction
- Use equivalent number sentences involving multiplication and division to find unknown quantities
- Follow a mathematical algorithm involving branching and repetition



End of Year outcomes for Year Six (Level Six)

Number and Algebra



Students recognise the properties of prime, composite, square and triangular numbers and determine sets of these numbers. They solve problems that involve all four operations with whole numbers and describe the use of integers in everyday contexts. Students locate fractions and integers on a number line and connect fractions, decimals and percentages as different representations of the same number. They solve problems involving the addition and subtraction of related fractions. Students calculate a simple fraction of a quantity and calculate common percentage discounts on sale items, with and without the use of digital technology. 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. Students write number sentences using brackets and order of operations, and specify rules used to generate sequences involving whole numbers, fractions and decimals. They use ordered pairs of integers to represent coordinates of points and locate a point in any one of the four quadrants on the Cartesian plane.

Number:

Number and Place Value

- Identify and describe properties of prime, composite, square and triangular numbers
- Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers and make estimates for these computations
- Investigate everyday situations that use integers. Locate and represent these numbers on a number line

Fractions and Decimals

- Compare fractions with related denominators and locate and represent them on a number line
- Solve problems involving addition and subtraction of fractions with the same or related denominators
- Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies
- Add and subtract decimals, with and without digital technologies, and use estimation and rounding to check the reasonableness of answers
- Multiply decimals by whole numbers and perform divisions by non-zero whole numbers where the results are terminating decimals, with and without digital technologies
- Multiply and divide decimals by powers of 10
- Make connections between equivalent fractions, decimals and percentages

Money and Financial Mathematics

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

Patterns and Algebra

- Continue and create sequences involving whole numbers, fractions and decimals. Describe the rule used to create the sequence
- Explore the use of brackets and order of operations to write number sentences
- Design algorithms involving branching and iteration to solve specific classes of mathematical problems