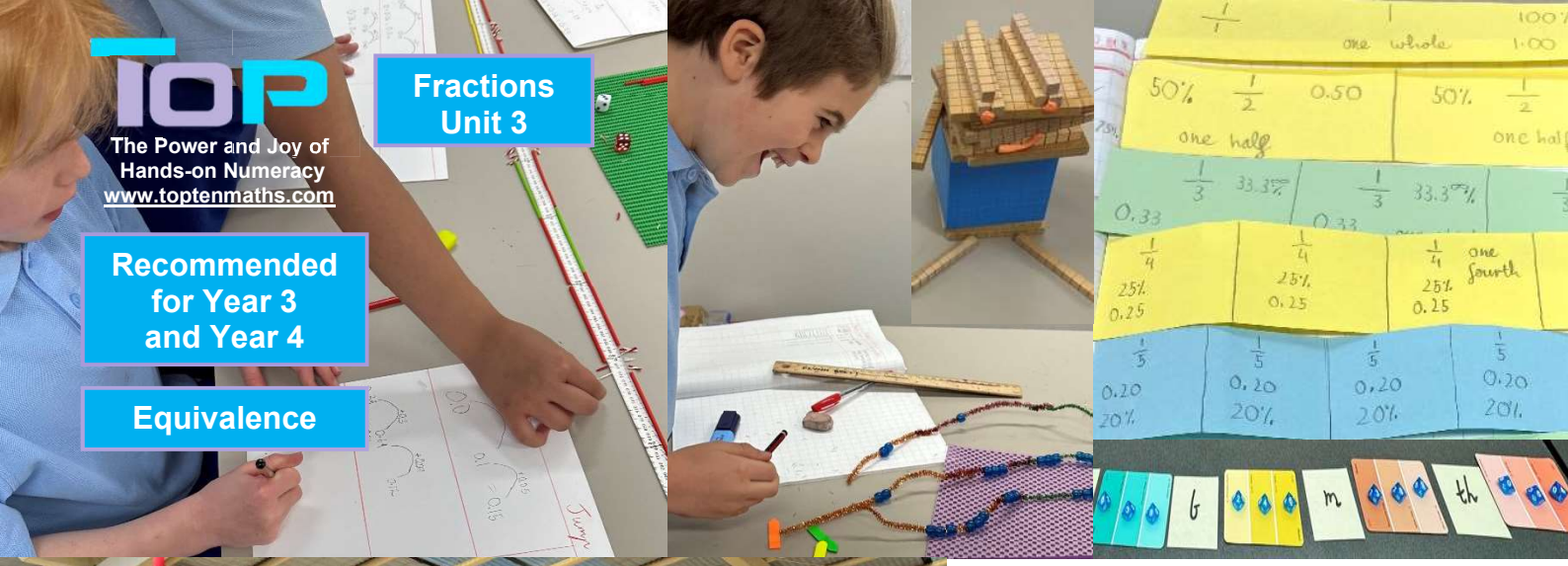


**Recommended
for Year 3
and Year 4**

Equivalence



Real-Life Numeracy Years 3-6 Planning Package

Sequential units with hands-on, real-life numeracy for Year 3, Year 4, Year 5 and Year 6 students

Ten years of development time in Australian classrooms.

Genuinely high engagement and conceptual understanding in middle to upper primary numeracy.

Comprehensive differentiation for wide ranges: Pre-planned and workable enabling and extending prompts for every lesson.

High-impact, high-relevance professional learning on a daily basis to support planning.

Comprehensive diagnostic and formative assessments to target each sequential point-of-need.



Please note: It is not intended for teachers to attempt to deliver every lesson in this sequence, nor read the unit in full.

Units are designed as **a menu of options**, depending on the points-of-need for each class, with enabling and extending prompts included for every lesson.

Please choose lesson options based on assessed points-of-need (units are directly linked to the assessments), using either Top Ten's or other **strategy-focused diagnostic pre-assessments**. We recommend avoiding multiple-choice/click-the-answer tests, as numeracy as a discipline grows students' reasoning and thinking skills, ability to explain and show strategies, as well as deep conceptual understanding – answers alone are not the ultimate goal, or a worthy aspiration without student reasoning.

Please also select lessons that best suit students' interests and your own creativity and passion. Units are designed to share the wisdom of practice, while respecting and safeguarding the professional role of the teacher as the ultimate best judge of what students need.

Adjust how many lessons you deliver based on student progress throughout the unit, which can be tracked using the [formative assessment folder](#).

Fractions Unit for Year 3 and Year 4

Unit 3 Equivalent Fractions

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Curriculum Links
for Year 3
and Year 4
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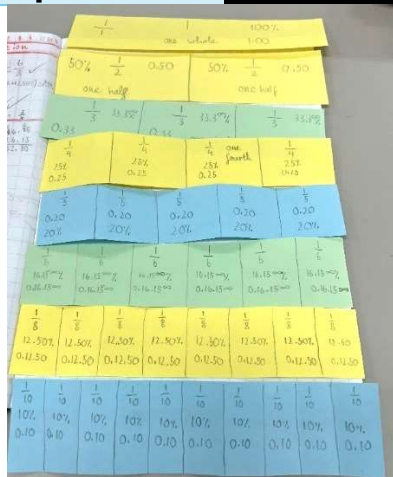
Reflection Journals [Page 10](#)

Teaching Tips [Pages 11-24](#)

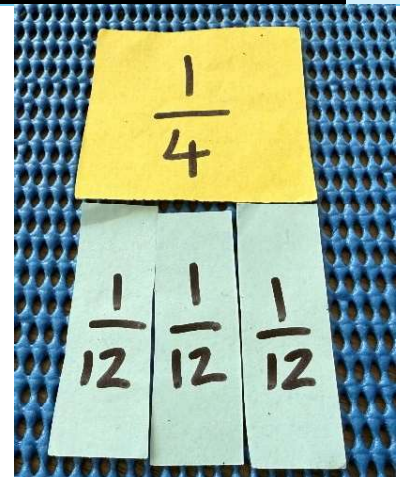
Warm-up Games: Race to 3 Wholes, Chocolate Bar Fractions, 12 Pack, Equivalence Snap, Equivalence Bingo, Fair or Unfair Game
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Lesson Sequence Underlined lessons are highly recommended

Every year
Lesson 1 –
Part A
Construct your own
Fraction
Wall
[Pages](#)
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Lesson 1 –
Part B
Notice
Equivalence
within your
Fraction
Wall
[Pages](#)
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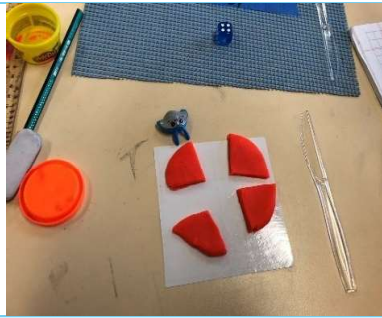


Lesson 1 – Part C



Fraction Stackers – one of the highest impact and visually clear representations of fractions that exists [Pages 73-78](#)

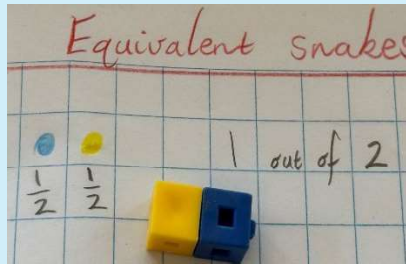
Lesson 2A
Equivalence
with the
Circle Model
[Pages 79-99](#)



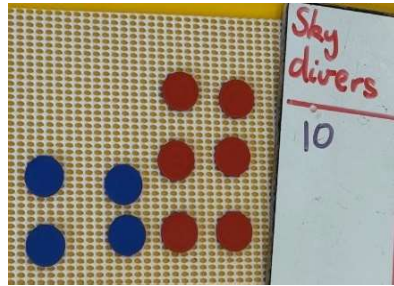
Lesson 2B
Slice of
Bread
Challenge
[Pages 100-105](#)



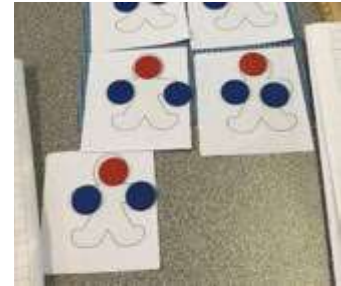
Lesson 3
Equivalent
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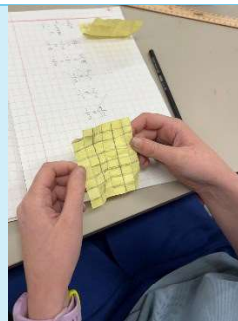
Lesson 4A
Fraction
Skydivers
[Pages 117-133](#)



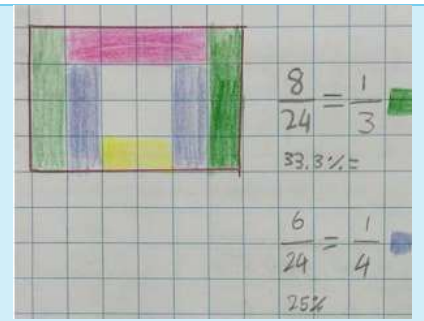
Lesson 4B
Critical
Suit up your
Skydiver!
[Pages 134-145](#)



Lesson 5
I like to
FOLD IT!
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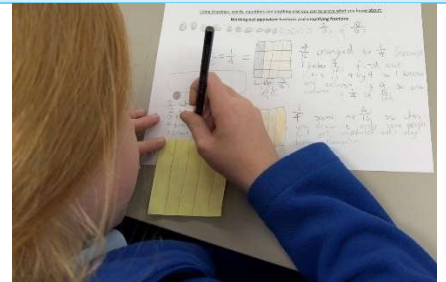
Lesson 6
Equivalent
Fraction
Flags
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Lesson 7
Lego
Equivalence
[Pages 176-182](#)



**Reflection
Journals**
[Pages 183-185](#)



Fractions Unit for Year 3 and Year 4

Equivalent Fractions – Unit 3

Curriculum Links for the following lessons

This unit is recommended for Year 3 and Year 4 students.

Australian Curriculum V9 [AC9M3N02](#) and Victorian Curriculum Version 2.0 [\(VC2M3N03\)](#)

Number – Level 3: Recognise and represent unit fractions including $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$ and their multiples in different ways; combine fractions with the same denominator to complete the whole

- recognising that unit fractions represent equal parts of a whole; for example, one-third is one of 3 equal parts of a whole
- representing unit fractions and their multiples in different ways; for example, using a Think Board to represent three-quarters using a diagram, concrete materials, a situation and fraction notation
- cutting objects such as oranges, sandwiches or playdough into halves, quarters or fifths and reassembling them to demonstrate (for example, two-halves make a whole, four-quarters make a whole), counting the fractions as they go
- sharing collections of objects, such as icy pole sticks or counters, between 3, 4 and 5 people and connecting division with fractions; for example, sharing equally between 3 people gives $\frac{1}{3}$ of the collection to each and sharing equally between 5 people gives $\frac{1}{5}$ of the collection to each

Australian Curriculum V9 [AC9M4N03](#) and Victorian Curriculum Version 2.0 [\(VC2M4N03\)](#)

Number – Level 4: Find equivalent representations of fractions using related denominators and make connections between fractions and decimal notation

- extending fraction families within collections of materials, for example, by seeing $\frac{3}{4}$ as 3 in each 4, showing this within related fractions like $\frac{6}{8}$ or seeing that $\frac{2}{5}$ means 2 in each 5 so it can be shown within $\frac{4}{10}$
- creating models of equivalent fractions by subdividing capacity measures into smaller fractions; for example, half a cup of flour could be shown as two-quarters or four-eighths of a cup of flour
- folding paper to show equivalence between different fractions; for example, folding A4 paper in half and half again, repeating to form eighths and demonstrating that $\frac{4}{8} = \frac{2}{4} = \frac{1}{2}$; or folding paper strips into fifths and tenths, and recording as both fractions and decimals

- identifying and using the connection between fractions of metres and decimals; for example, finding $\frac{1}{4}$ of a metre and connecting this to 0.25 metres or 25 centimetres, or finding $\frac{1}{10}$ of a metre and connecting this with 0.10 metres or 10 centimetres
- using array diagrams to show the relationship between fractions and division and multiplication of natural numbers, for example, $3 \times 4 = 12$, $12 \div 4 = 3$, $\frac{1}{4}$ of 12 is 3, $\frac{1}{3}$ of 12 is 4

Australian Curriculum V9 [AC9M4N04](#) and Victorian Curriculum Version 2.0 [\(VC2M4N04\)](#)

Number – Level 4: Count by multiples of quarters, halves and thirds, including mixed numerals; locate and represent these fractions as numbers on number lines

- cutting objects such as oranges or sandwiches into quarters and counting by quarters to find the total number, and saying the counting sequence ‘one-quarter, two-quarters, three-quarters, four-quarters or one-whole, five-quarters or one-and-one-quarter, six-quarters or one-and-two-quarters ... eight-quarters or two-wholes ...’
- subdividing the sections between whole numbers on parallel number lines so that one shows halves, another shows quarters and one other shows thirds; and counting the fractions by jumping along the number lines, and noticing when the count is at the same position on the parallel lines
- converting mixed numerals into improper fractions and vice versa, and representing mixed numerals on a number line
- using a number line to represent and count in tenths, recognising that 10 tenths is equivalent to one

Western Australian Curriculum Number and Algebra – Level 3: 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 ([ACMNA058](#))

- partitioning areas, lengths and collections to create halves, thirds, quarters and fifths, such as folding the same sized sheets of paper to illustrate different unit fractions and comparing the number of parts with their sizes
- locating unit fractions on a number line
- recognising that in English the term ‘one third’ is used (order: numerator, denominator) but that in other languages this concept may be expressed as ‘three parts, one of them’ (order: denominator, numerator) for example Japanese

Western Australian Curriculum Number and Algebra – Level 4: Investigate [equivalent fractions](#) used in contexts ([ACMNA077](#))

- **exploring the relationship between families of fractions (halves, quarters and eighths or thirds and sixths) by folding a series of paper strips to construct a fraction wall**

Western Australian Curriculum Number and Algebra – Level 4: Count by quarters halves and thirds, including with mixed numerals. Locate and represent these fractions on a [number line](#) ([ACMNA078](#))

- **converting mixed numbers to improper fractions and vice versa**
- investigating the use of fractions and sharing as a way of managing Country: for example taking no more than half the eggs from a nest to protect future bird populations

Western Australian Curriculum Number and Algebra – Level 5: Compare and order common unit fractions and locate and represent them on a [number line](#) ([ACMNA102](#))

- recognising the connection between the order of unit fractions and their denominators

Western Australian Curriculum Number and Algebra – Level 6: Compare fractions with [related denominators](#) and locate and represent them on a [number line](#) ([ACMNA125](#))

- **demonstrating equivalence between fractions using drawings and models**

Western Australian Curriculum Number and Algebra – Level 7: Compare fractions using equivalence. Locate and represent positive and negative fractions and mixed numbers on a [number line](#) ([ACMNA152](#))

- **exploring equivalence among families of fractions by using a fraction wall or a number line (for example by using a fraction wall to show that $\frac{2}{3}$ is the same as $\frac{4}{6}$ and $\frac{6}{9}$)**

NSW Maths Syllabus – Stage 2 – Partitioned Fractions B

Partitioned fractions B

Model equivalent fractions as lengths

- Represent the equivalence of fractions with related denominators as lengths, using concrete materials, diagrams and number lines
- Recognise the need to have equal wholes to compare partitioned fractions (Reasoning about relations)
- Represent fractions with the same-size whole to make valid comparisons (denominators of 2, 4 and 8; 3 and 6; 5 and 10)

Represent fractional quantities equal to and greater than one

- Rename 2 halves, 3 thirds, 4 quarters, 5 fifths, 6 sixths, 8 eighths and 10 tenths as one whole
- Regroup fractional parts beyond one
- Represent totals of halves, thirds, quarters and fifths that extend beyond one
- Determine the relative location of one-quarter and one-half when a number line extends beyond one

Formative Assessment

A [formative assessment cross-check](#) is available in this unit’s folder, including progressive learning goals and success criteria to keep track of growth for each unit.

This includes a [grid template](#) or a [notes template](#), whichever the teacher prefers.

Formative Assessment – Ongoing Cross-Check – Years 3-6 Fractions Units 1-10																		
Students	'out of language L2-L4 3-6 UNIT 1	Halves, quarters eighths L2 EARLY YEARS UNIT 2	See and name in real-life L3 3-6 UNIT 2	Count by fractions L4 UNIT 2	Place on number lines L4 UNIT 2	Equivalence to one whole L3 UNIT 3	Equivalence to half L4 UNIT 3	Improper to mixed, mixed to improper L4 UNIT 4	Connect fractions to division L5 UNIT 5	Comparing fractions strategies L5 L6 L7 UNIT 5	+ and - same denom L5 UNIT 6	+ and - related denom L5 UNIT 6	Connect fractions to decimals and % L5 and L6 UNIT 7	Fraction of a quantity L6 UNIT 8	Common discounts (50%, 25%, 10%) L6 UNIT 8	Any % discount or increase L7 UNIT 8	x L7 U9	÷ L7 U10

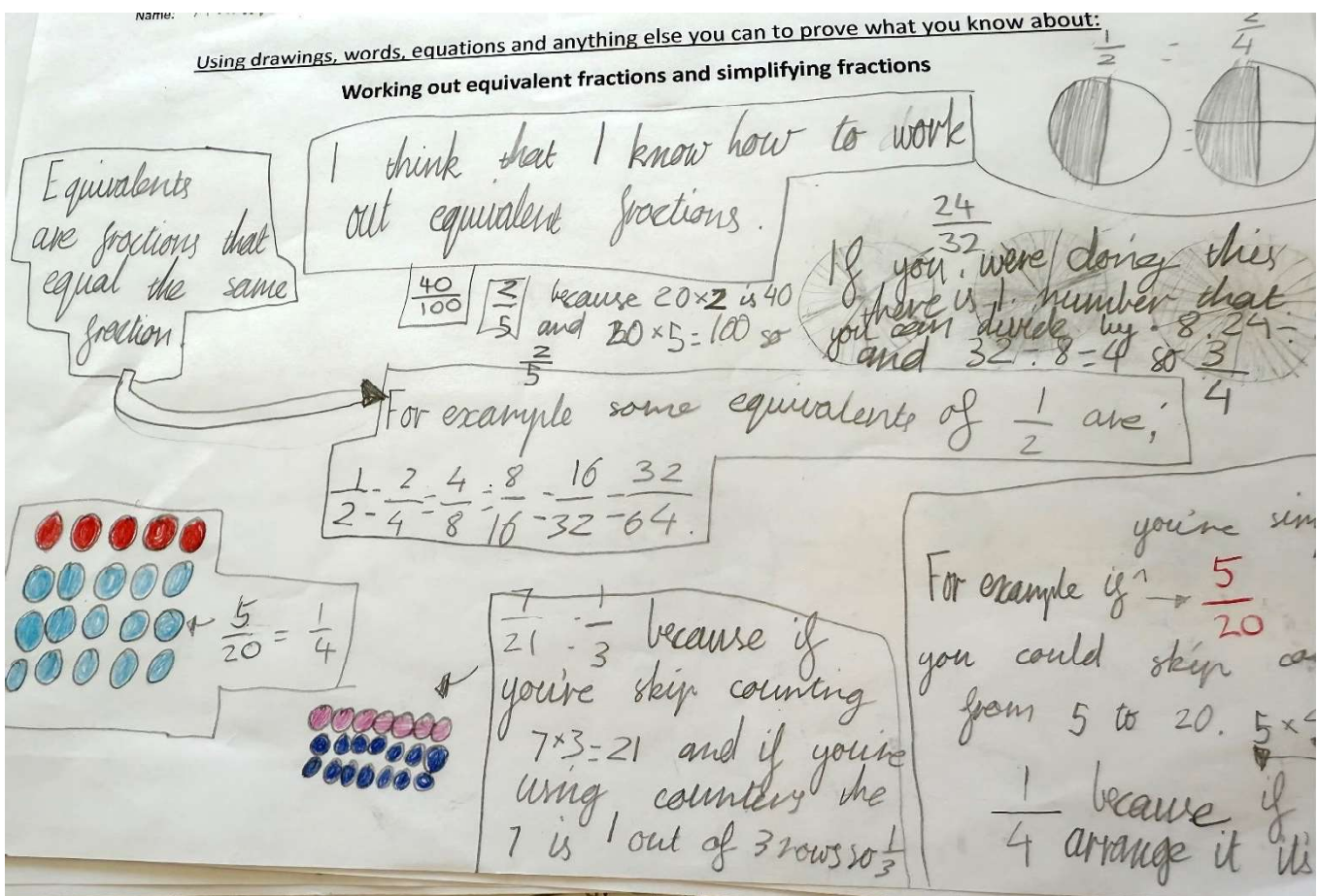
Focus: Visualising, explaining and making sense of fractions		Term ____ Weeks ____		CODES: Record these codes when you see a student applying this skill: OUT OF: 'Out of language NUMLINE: Placing on number line COUNT BY: Counting by fractions, including above one whole = 1 Equivalence to one whole = ½ Equivalence to half MIX/IMPROP: Convert improper fractions and mixed numbers COMPARE: Visualises, uses benchmarks (½), reasoning to compare +/- SAME DENOM +/- REL DENOM: Add related denominators CONVERT TO % AND DECIMALS: Think \$1 strategy FRAC QUANT: Calculate a fraction of a quantity % discounts x Multiply fractions ÷ Divide fractions	
Student	Student	Student	Student	Student	Student
Student	Student	Student	Student	Student	Student

Reflection Journals

A [fractions reflection journal](#) set of templates is also available, although we most highly recommend students using their **own maths reflection journals on an ongoing basis.**

These are used as notes to their future forgetful self during reflections, as well as glossary pages at the start of units.

Ideally, students start their maths journal in a small, plain paper (no lines, no grids) neatly presented notebook in year 3, and carry it along every year (handed over to the next teacher) up to year 6, then graduate with it, taking it across to secondary school.



See more examples within the [final reflection section](#) of this unit plan.