Fractions

Number Milestones: Understanding fractions: models, diagrams, order, estimate, join, separate, compare, add, subtract, multiply, divide

NZC Early Level 1	NZC Level 1	NZC Early Level 2	NZC Level 2	NZC Early Level 3	NZC Level 3	NZC Early Level 4	NZC Level 4	NZC Level 5
Year 1: 5 -6 year olds Numeracy Stage 1/2/3	Year 2: 6–7 year olds Numeracy Stage 4	Year 3: 7– 8 year olds Numeracy Early Stage 5	Year 4: 8 -9 year olds Numeracy Stage 5	Year 5: 9 –10 year olds Numeracy Early Stage 6	Year 6: 10–11 year olds Numeracy Stage 6	Year 7: 11–12 year olds Numeracy Early Stage 7	Year 8: 12–13 year olds Numeracy Stage 7	Year 9/10: 14+ year olds Numeracy Stage 8

Represent fractions using length models, area models and group models with diagrams, objects and equipment including whole to part and part to whole, and fractions greater than one

Read and write fractions

Halves | Halves and quarters | Halves, thirds and quarters | Halves, thirds, quarters, fifths | Fractions with denominators up to 10 | Any fractions

Solve problems involving fractions

Add and subtract fractions

Solve problems using part-whole thinking, whole to part and part to whole, fractional, multiplicative and proportional thinking, number facts ...

Halves

$2 + 1\frac{1}{2} = \square$

7 halves - $\square$ = 3 halves

Fractions with the same denominator

$1\frac{3}{7} + \frac{2}{7} = \square$ $1\frac{3}{9} - \frac{4}{9} = \square$

Halves and quarters

$\frac{3}{4} + \frac{1}{2} = \square$ $2\frac{1}{4} - 1\frac{1}{2} = \square$

$\frac{1}{2}$ 1

$\frac{1}{2}$ $\frac{3}{4}$ 1 $1\frac{1}{4}$ $1\frac{1}{2}$ $1\frac{3}{4}$ 2 $2\frac{1}{4}$ $2\frac{1}{2}$

Related fractions from doubling and halving

halves, quarters and eighths
thirds and sixths
fifths and tenths

$3\frac{1}{3} + 1\frac{1}{6} = \square$

Halves, thirds, quarters, fifths

$10\frac{1}{2} - \frac{3}{5} = \square$ $\frac{1}{3} + \frac{3}{4} = \square$

Fractions with denominators up to 10

$6\frac{3}{7} + 1\frac{3}{8} = \square$

Any fractions

Multiply and divide fractions

Solve problems by finding fractions of numbers using part-whole thinking, fractional, additive, multiplicative and proportional thinking, number facts ...

Sort objects into groups

Describe same and different

Equal sharing one at a time

Halves of groups of objects and lengths

Equal sharing more than one at a time

Halves and quarters of objects, lengths, areas and numbers up to 20

Find half of 14 coins.

How long is one quarter of this length?

Share these 3 rods between you and a friend evenly.

Halves and quarters of objects, lengths, areas and numbers up to 100

One quarter of 60 is ...

Cut $\frac{3}{4}$ off this length 40cm

To run one and a half laps, where would you start?

Finish line

Colour 3 quarters of this shape

One half of 2, 4, 6, 8 and 10
One third of 3, 6, 9, 12 and 15
One quarter of 4, 8, 12, 16, 20
One fifths of 5, 10, 15, 20, 25

One fifth of 15 is ...

$\frac{1}{3}$ x 12 = $\square$

1 third of 12

12 ÷ 3 = $\square$

From start to finish is 12 km. How far from the start is $\frac{1}{4}$ from the end?

Start Finish

One half, one third and one quarter of numbers up to 100

$\frac{1}{3}$ x 27 = $\square$

1 third of 27

5 4 5 4 5 4

Halves, thirds, quarters, fifths, tenths of numbers up to 100

$1\frac{3}{10}$ of 50?

0 10 20 30 40 50 60 70 80 90 100

0 $\frac{1}{10}$ $\frac{2}{10}$ $\frac{3}{10}$ $\frac{4}{10}$ $\frac{1}{2}$ $\frac{6}{10}$ $\frac{7}{10}$ $\frac{8}{10}$ $\frac{9}{10}$ 1 $1\frac{3}{10}$ $1\frac{1}{2}$ 2

$\frac{4}{5}$ x $\square$ = 20

$\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$

5 5 5 5 5

20

Fractions with denominators up to 10 of any whole number

$\frac{3}{7}$ x 63 = $\square$ $1\frac{2}{9}$ of 36

36 4 4 4 4 4 4 4 4 4 $\frac{2}{9}$

$\frac{3}{7}$ x 63 = 27

63 ÷ 7 = 9 → $\frac{1}{7}$ of 63 is 9

3 x 9 = 27 → $\frac{3}{7}$ is 3 lots of 9

Fractions of any whole number

Solve problems by multiplying a fraction by a fraction using multiplicative and proportional thinking ...

Multiply any fraction by one half

$\frac{2}{3}$ x $\frac{1}{2}$ = $\square$ Half of 2 thirds

Multiply any fraction by a unit fraction denominators to 10

$\frac{1}{4}$ x $\frac{1}{3}$ = $\square$

one third of a quarter

Multiply any fraction by a fraction, denominators to 10

$\frac{4}{7}$ x $\frac{2}{3}$ = $\square$

Multiply any fractions

Solve problems by dividing a fraction by a fraction

Divide numbers and halves by half

How many halves in $3\frac{1}{2}$?

$3\frac{1}{2} \div \frac{1}{2} = \square$

Divide any fraction by one half

How many halves in $\frac{3}{4}$?

$\frac{3}{4} \div \frac{1}{2} = \square$

0 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ 1

$\frac{1}{2}$ $\frac{1}{2}$ of a $\frac{1}{2}$

Divide any fraction

Order, round and estimate fractions

Halves and quarters | Fractions with the same denominator
Unit fractions | Related fractions from doubling and halving
halves, quarters, eighths, 16ths
thirds, sixths, twelveths, 24ths | Fractions with denominators up to 10 | Any fractions | Any fractions, decimal and percentage

Equivalent fractions

5 halves = $2\frac{1}{2}$

Halves and quarters

$1\frac{1}{2}$ = $\square$ quarters

Equivalent fractions from doubling and halving

halves and quarters
quarters and eighths
thirds and sixths
fifths and tenths

Equivalent fractions from multiplication and division facts, including simplifying

halves, quarters, 6ths, 8ths, 10ths ...
thirds, sixths, 9ths, 12ths, 15ths ..

Equivalent fractions of fractions with denominators up to 10, including simplifying

Any fractions

Converstions

Convert between mixed numbers and improper fractions →

Halves, quarters and tenths into decimals

Halves, quarters and tenths into decimals and percentages

Halves, quarters, fifths, tenths and hundreths into decimals and percentages

Convert between fractions, decimals, percentages, rates and ratios