Early Level 1: Stage 2—3
Counting All

Proportions and Ratios

I know doubles to 10.
I know halves to 10.
I can read $\frac{1}{2}$ and $\frac{1}{4}$

I can fair share a set using materials.

e.g. Share 6 marbles between 2 people.

I can find halves and quarters of shapes and objects.

e.g. Share the licorice strap between you and your friend.

Reference: Ministry of Education (2008). The Number Framework—Book 1. Created by Julie Roberts, 2011.

Level 1—Stage 4

Advanced Counting

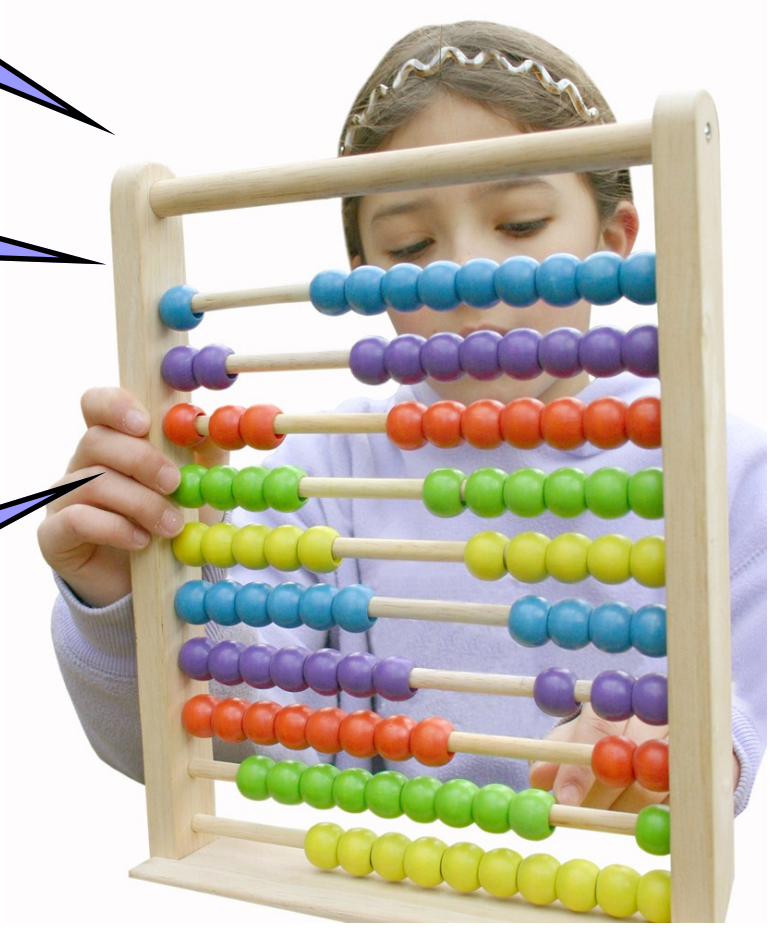
Proportions & Ratios

I can find a fraction of a set by equal sharing. I can use skip counting, known doubles or halves to help solve problems.

I can read $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{5}$

I know doubles to 20 and matching halves to 20.

I can share a shape into equal parts for halves, quarters, thirds and fifths.



I can find fraction of a shape or object using symmetry to create halves, quarters and eighths.

Reference: Ministry of Education (2008). The Number Framework—Book 1. Created by Julie Roberts, 2011.

Level 2—Stage 5 Early Additive

Proportions & Ratios

I can find a fraction of a number using halving, known addition facts or some simple multiplication facts.

e.g. 1/3 of 12 is 4 because
3 + 3 + 3 = 9 so 4 + 4 + 4 =12

I can solve division problems with remainders using halving, known addition facts or some simple multiplication facts.

e.g. 7 pies shared with 4 people
(7 ÷ 4) by giving each person 1 pie, and 1/2 pie, then 1/4 pie

I know the symbols for halves, thirds, quarters, fifths and tenths.

I can order fractions with the same denominators, e.g. $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$

I know the symbols for improper fractions.

Reference: Ministry of Education (2008). The Number Framework—Book 1. Created by Julie Roberts, 2011.

Level 3—Stage 6 Advanced Additive Proportions & Ratios

I use repeated halving or known multiplication and division facts to solve problems that involve...

I use repeated copying to solve simple problems involving ratios and rates.
e.g. 2:3 → 4:6 →8:12

Finding fractions of a set or region.

e.g. $\frac{3}{4}$ of 24, $\frac{1}{2}$ of 24 = 12,

$\frac{1}{2}$ of 12 = 6 so 3 x 6 = 18

Division with remainders

8 pies shared with 3 people by giving each person 2 pies and dividing the remaining 2 pies into thirds.
2 + 1/3 + 1/3 = 2 2/3

Renaming improper fractions

e.g. 16/3 = 5 1/3 (using 5 x 3 = 15)

Reference: Ministry of Education (2008). The Number Framework—Book 1. Created by Julie Roberts, 2011.

Level 4—Stage 7 Advanced Multiplicative Proportions & Ratios

I can use a range of multiplication and division strategies to estimate and solve problems with fractions, proportions, and ratios.

I can find equivalent fractions and rename common fractions as decimals and percentages.

e.g. $\frac{3}{4}$ = 75/100 = 75% = 0.75

Fraction example;

Sam is 16 and is 2/3's of my age.
How old am I?
1/3 is 8 so 3 x 8 = 24

Ratio example;

3:5 as ☐:40, 8 x 5 = 40,
8 x 3 = 24, so ☐ = 24

Fractional answers using division example;

13 pies to share with 5 people.
13 ÷ 5 = (10 ÷ 5) + (3 ÷ 5) = 2 3/5

Percentages example;
I got 36/50 goals and Sera got 16/20.
Who was the better shot?

36/50 = 2 x 36 so 72%, while 16/20 = 4/5
and 4/5 = 80% - Sera is a better shot.

Reference: Ministry of Education (2008). The Number Framework—Book 1. Created by Julie Roberts, 2011.

Level 5—Stage 8 Advanced Proportional Proportions and Ratios

I can choose appropriately from a range of mental strategies to estimate and solve problems involving fractions, proportions and ratios. I can use strategies that involve common factors, re-unitising of fractions, decimals, percentages, and finding relationships between and within ratios and rates.

65% of $24 = ☐
50% is 12, 10% is 2.4 so 5% is 1.2,
$12 + $3.60 = $15.60

It takes 10 balls of wool to make 15 beanies. How many balls of wool does it take to make 6 beanies?

10 □ 15 so 1□ 1.5 so 4 □ 6 (unit fractions),
or 6 x 2½ = 15 so □ x 2½ = 10 (relationships within the same unit)

I can solve problems like this;

A computer technician charges $60 and hour, plus GST. GST is 15% of the total bill. If the technician comes for 2 hours, how much will he charge in total?

Reference: Ministry of Education (2008). The Number Framework—Book 1. Created by Julie Roberts, 2011.