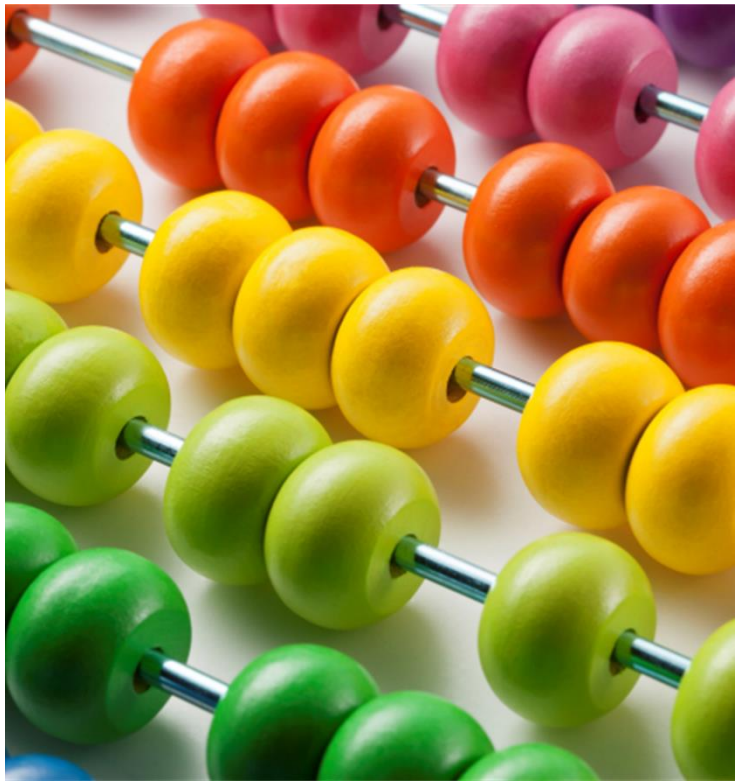
BAR MODELLING GUIDANCE

Maths Knowledge and Skills Progression

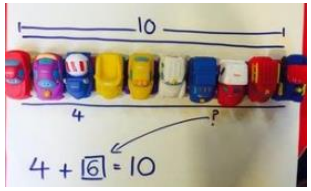
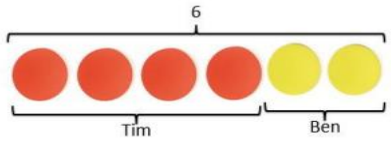
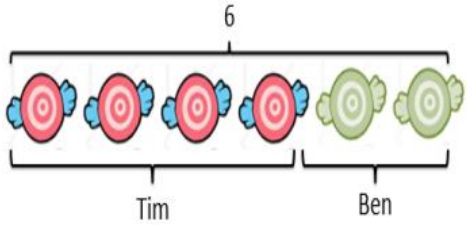
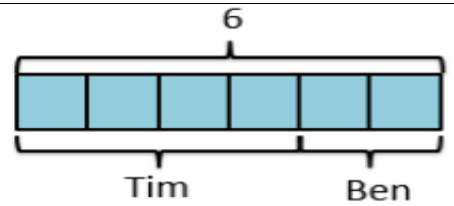
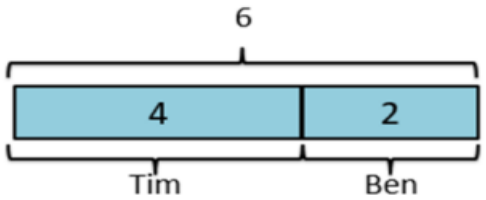


At Our Lady and St. Hubert's, home, school and parish work together, knowing that God is with us in all we do.

OUR LADY AND ST HUBERT'S CATHOLIC PRIMARY SCHOOL

Contents Page

Single bar model

1. Concrete resources		EYFS and Y1
2. Substituted concrete resources (counters, cubes, multi-link cubes)		EYFS and Y1
3. Pictorial representation		Y1
4. Discrete bar model		Y1 and Y2
5. Continuous bar model		Y2 and KS2

Addition

Part whole bar models

Jack has 6 red cars, Ellie has 2 blue cars. How many scoops do they have altogether?

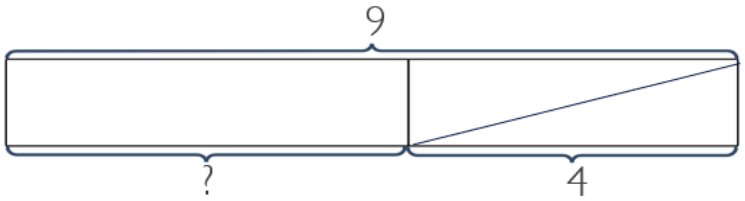
Discrete bar model

Continuous bar model

Subtraction

Reduction – take away

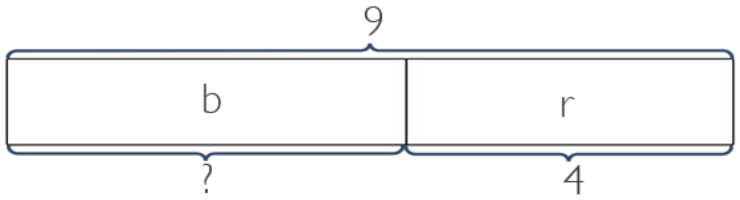
Jack has 9 cards and sells 4. How many does he have left?



9 – 4 = 5

Partitioning – part whole

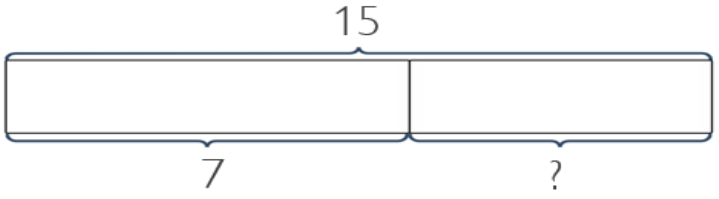
Jack has 9 cards, 4 of them are red, the rest are blue. How many are blue?



9 – 4 = 5

Completion

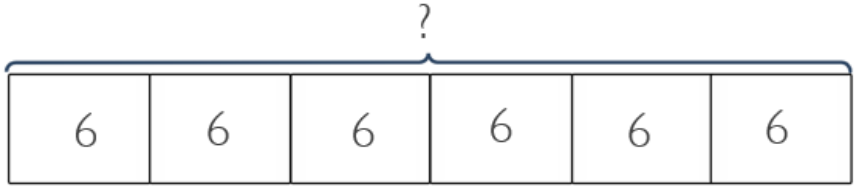
A jar contains 15 marbles. Jack has 7 marbles. How many more does he need to collect to complete the jar?



15 – 7 = 8

Multiplication

Eggs come in boxes of 6, Jack buys 6 boxes. How many eggs does Alex have?

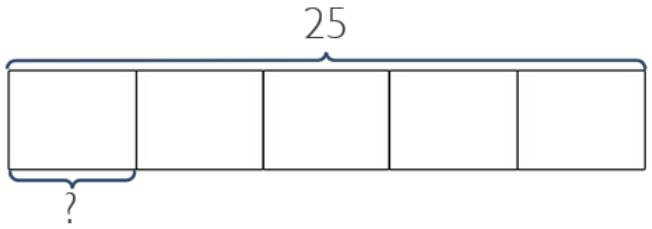


6 x 6 = 26

Division

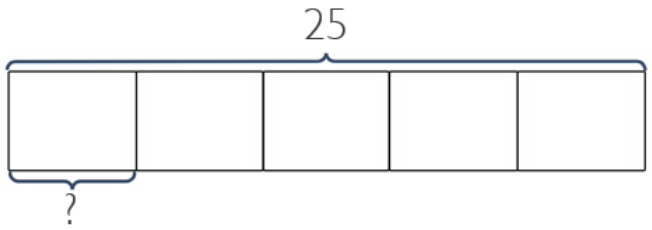
Sharing

Ellie has 25 stickers. She shares them between 5 friends. How many stickers will each friend receive?

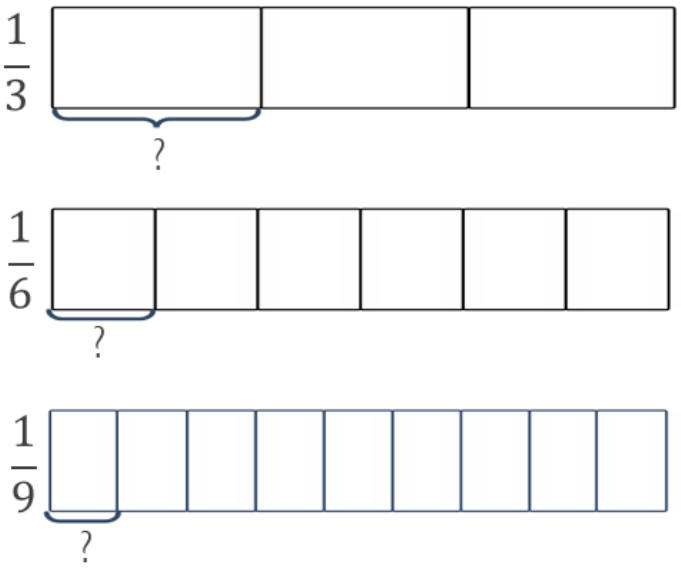


Grouping

Ellie has 25 tennis balls. Each tube holds 5 tennis balls. How many tubes are needed to hold all the tennis balls?

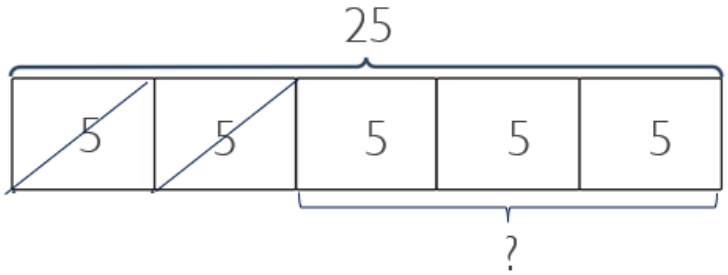


Unit fractions



Fractions of a quantity

Ellie has 25 marbles. She gives away $\frac{2}{5}$ of her marbles. How many does she have left?

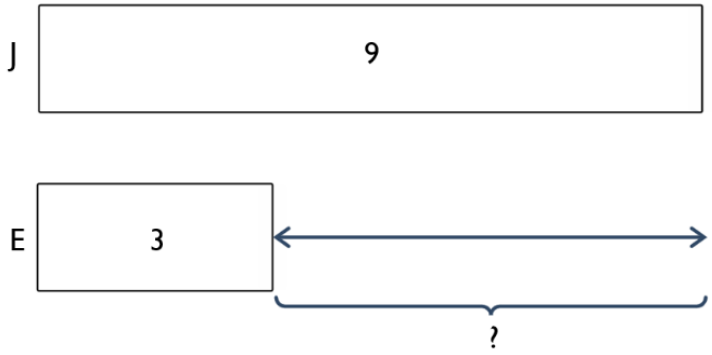


25 – 10 = 15 15/3 = 5

Comparison bar model

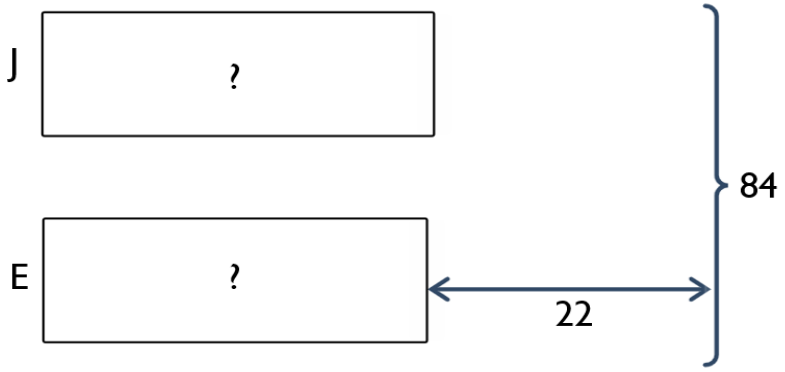
Difference

Jack has 9 pizza slices, Ellie has 3. How many more cupcakes does Jack have then Ellie?



Total problems

Ellie buys a pair of shoes and a coat. The shoes cost £22 more than the coat. The total cost of the shoes and coat is £84. How much does each item cost?

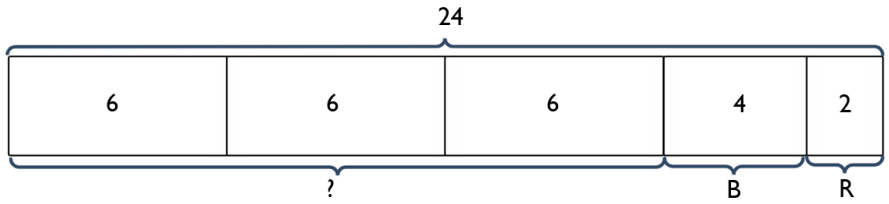


Problems

Fraction problems

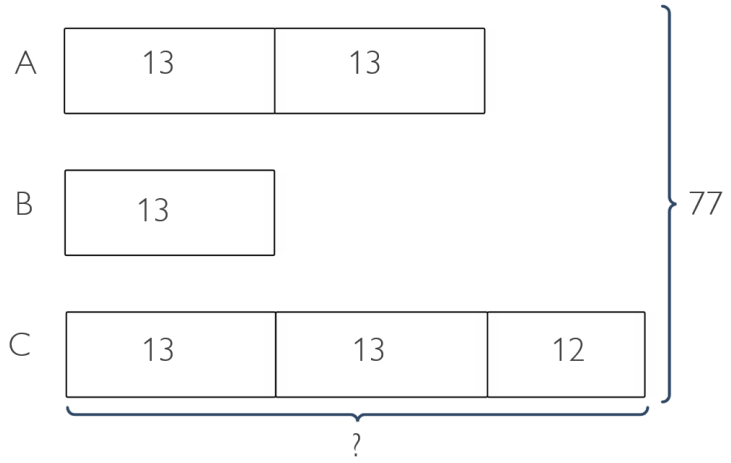
There are 24 coloured cubes in a box. Three quarters of the cubes are red, four of the cubes are blue and the rest are green.

How many green cubes are in the box?



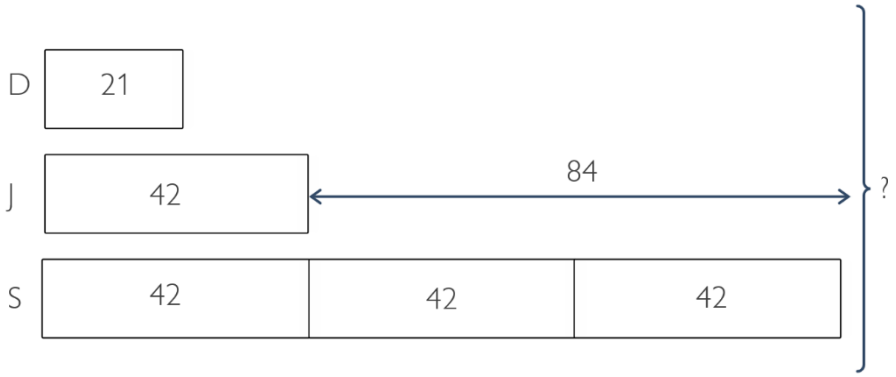
Multiplication problems

Jack has 3 cars. Car A weighs twice as much as car B. Car C weighs 12g more than car A. The total weight of all 3 boxes is 77g. What does car C weigh?



Complex problems

David has half as many pens as Jack. Jack has 1/3 as many pens as Sarah. Sarah has 84 more pens than Jack. How many pens are there in total?

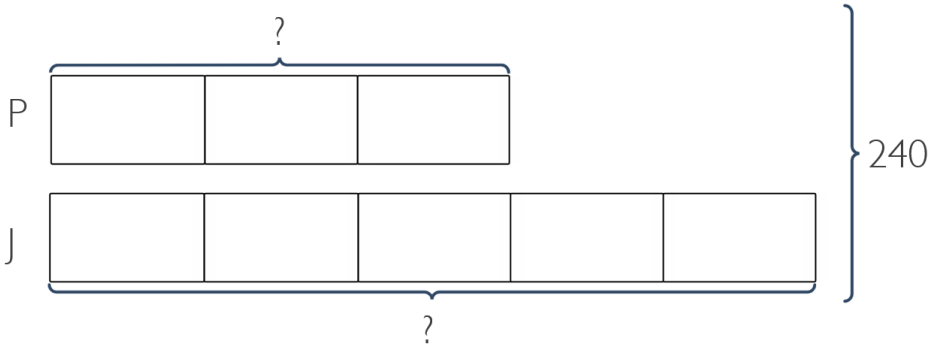


Ratio

For every 2 scoops of strawberry, there are 3 scoops of vanilla.

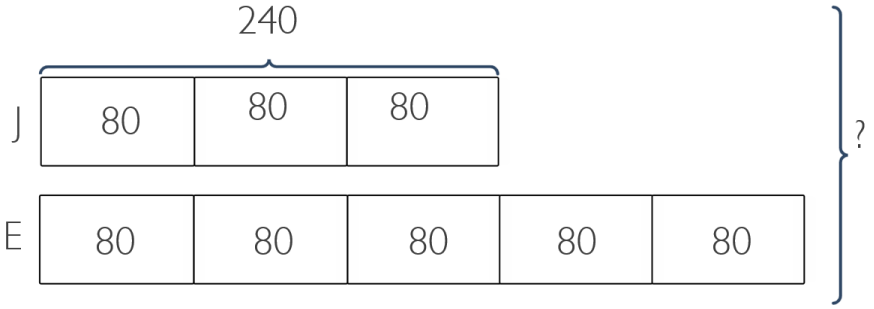
Ratio – sharing

Peter and Jane share £240 in the ratio 3:5. How much do they each get?



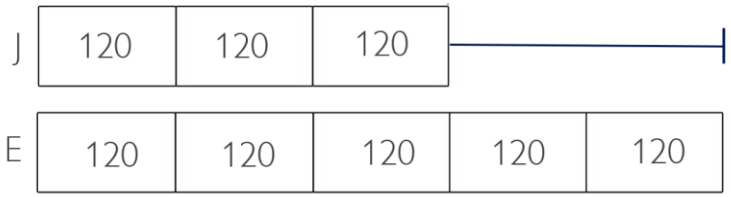
Ratio – given a part

Jack and Ellie share the money in the ratio 3:5. Peter gets £240. How much did they each share?



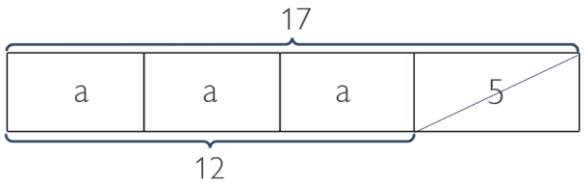
Ratio – given the difference

Ellie and Jack share the money in the ratio 3:5. Ellie gets £240 more than Jack. How much did Ellie get?



Solving equations

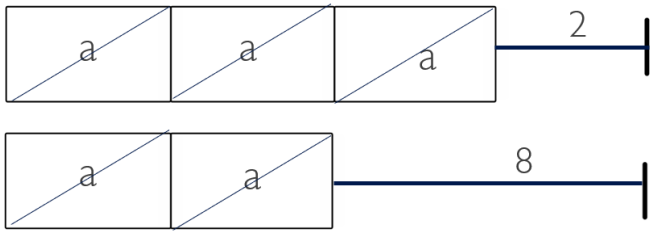
3a + 5 = 17



17 – 5 = 12

3a = 12 a = 4

3a + 2 = 2a + 8



3a = 2a + 6 a = 6