Year 3
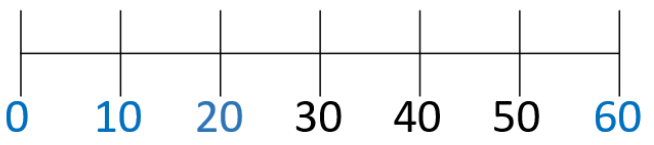# Multiplication and Division B (page 1)

Multiples of 10

There are __10__ eggs in one box.

There are __20__ eggs in two boxes.

There are __30__ eggs in three boxes.
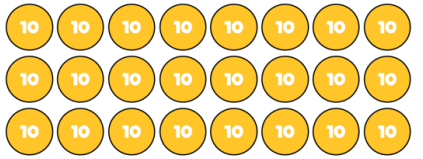
10, 20 and 30 are all multiples of __10__ .

0   10   20   30   40   50   60

Related facts

2×4 ones = 8 ones

$2 \times 4 = 8$

2×4 tens = 8 tens

$2 \times 40 = 80$
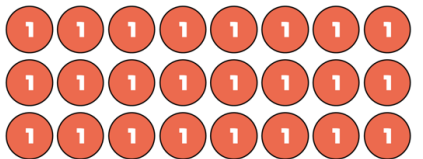
8×3 ones = 24 ones $8 \times 3 = 24$
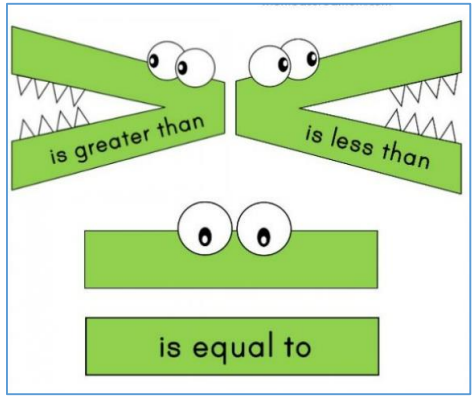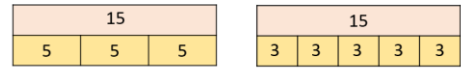3×8 ones = 24 ones $3 \times 8 = 24$

8×3 tens = 24 tens $8 \times 30 = 240$
3×8 tens = 24 tens $3 \times 80 = 240$

Use <, > or = to complete the comparison.

8×4 $\boxed{=}$ $8 \times 2 \times 2$

| 8 | 8 | 8 | 8 |

| 8 | 8 |

| 8 | 8 |
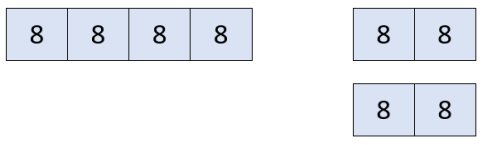
Which card has the greater value?

$15 \div 3$ > $15 \div 5$

| 15 |
| 5 | 5 | 5 |

| 15 |
| 3 | 3 | 3 | 3 | 3 |

is greater than   is less than

is equal to

Fact Family for 6 x 5

$5 \times 6 = 30$ $6 \times 5 = 30$

$30 \div 5 = 6$ $30 \div 6 = 5$

Multiplication

T	O

$31 \times 3 = 93$

__3_ tens multiplied by _3_ is equal to _90_
__1_ one multiplied by _3_ is equal to _3_
_31_ multiplied by _3_ is equal to _93_

$26 \times 3 = \underline{78}$

2 tens $\times$ 3 = _6_ tens

6 ones $\times$ 3 = _18_ ones

$26 \times 3 = \underline{60} + \underline{18} = \underline{78}$

$26 \times 3 = \underline{78}$

Tens	Ones

Division – no exchange

Tens	Ones

	2	1
4	8	4

$84 \div 4$
$80 \div 4$ $4 \div 4$
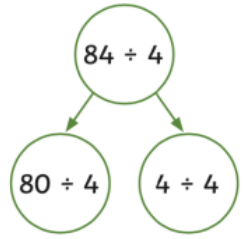
3 times table
1 x 3 =   3
2 x 3 =   6
3 x 3 =   9
4 x 3 = 12
5 x 3 = 15
6 x 3 = 18
7 x 3 = 21
8 x 3 = 24
9 x 3 = 27
10 x 3 = 30
11 x 3 = 33
12 x 3 = 36

4 times table
1 x 4 =   4
2 x 4 =   8
3 x 4 = 12
4 x 4 = 16
5 x 4 = 20
6 x 4 = 24
7 x 4 = 28
8 x 4 = 32
9 x 4 = 36
10 x 4 = 40
11 x 4 = 44
12 x 4 = 48

8 times table
1 x 8 =   8
2 x 8 = 16
3 x 8 = 24
4 x 8 = 32
5 x 8 = 40
6 x 8 = 48
7 x 8 = 56
8 x 8 = 64
9 x 8 = 72
10 x 8 = 80
11 x 8 = 88
12 x 8 = 96

Division with exchange

Tens	Ones

	1	5
3	4	$^{1}5$

$45 \div 3$
$30 \div 3$ $15 \div 3$
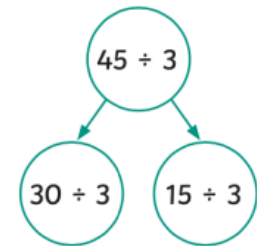
Remainders

$73 \div 3 = 24$ remainder 1   (1)

Tens	Ones
10 10	1 1 1 1
10 10	1 1 1 1
10 10	1 1 1 1

Year 3
Length and Perimeter

Measuring Length

Measuring Length

5mm   5cm

10mm = 1cm

Equivalent lengths

$1 \text{ m} = 100 \text{ cm}$ $4 \text{ m} = 400 \text{ cm}$

1 m	1 m	1 m	1 m
100 cm	100 cm	100 cm	100 cm

$200 \text{ cm} = 2 \text{ m}$ $150 \text{ cm} = 1\frac{1}{2} \text{ m}$

1 m	1 m
100 cm	100 cm

1 m	$\frac{1}{2}$ m
100 cm	50 cm

Equivalent lengths / Equal lengths

$1 \text{ cm} = 10 \text{ mm}$ $4 \text{ cm} = 40 \text{ mm}$

1 cm	1 cm	1 cm	1 cm
10 mm	10 mm	10 mm	10 mm

$20 \text{ mm} = 2 \text{ cm}$

1 cm	1 cm
10 mm	10 mm

Perimeter

Perimeter is the total length around the edge of a 2-D shape.

The perimeter of the rectangle is 22 cm.

What is the perimeter of the rectangle?

2 cm

6 cm

Opposite sides of a rectangle are equal.

The perimeter is 16 cm.

$6 \text{ cm} + 2 \text{ cm} + 6 \text{ cm} + 2 \text{ cm} = 16 \text{ cm}$

What is the perimeter of the square?

6 m

$6 \text{ m} \times 4 = 24 \text{ m}$

Do you need to measure all of the sides?

$6 \text{ m} + 6 \text{ m} + 6 \text{ m} + 6 \text{ m} = 24 \text{ m}$

70 mm   5 mm

The line is _75_ mm long.

The line is _5_ cm and _6_ mm long.

What is the length of the bar?

The bar is 8 cm long.

The bar is 80 mm long.

$8 \text{ cm} = 80 \text{ mm}$

There are __10__ _millimetres_ in one _centimetre_.

There are __100__ _centimetres_ in one ___metre___ .

Unit Fractions

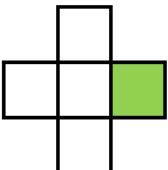is greater than   is less than

is equal to

$\frac{1}{3}$ is shaded

The shape is split into __3__ equal parts.

The denominator is __3__

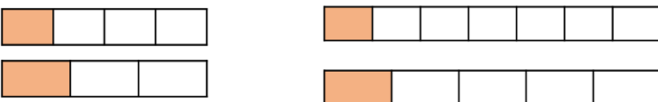The fraction that is shaded is $\frac{1}{3}$

$\frac{1}{5}$ is shaded

The shape is split into __5__ equal parts.

The denominator is __5__

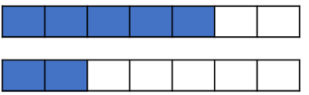The fraction that is shaded is $\frac{1}{5}$

Comparing Fractions

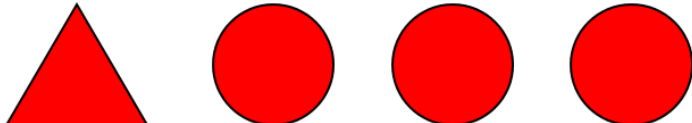$\frac{1}{4} < \frac{1}{3}$ $\frac{1}{7} < \frac{1}{5}$

What do you notice?

When the numerators are the same, the __greater__ the denominator, the __smaller__ the fraction.

$\frac{5}{7} > \frac{2}{7}$ $\frac{3}{10} < \frac{7}{10}$

What do you notice?
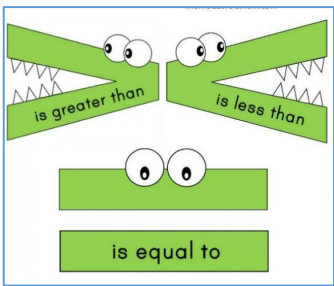
When the denominators are the same, the __greater__ the numerator, the __greater__ the fraction.

Non unit fractions

What fraction of the shape is shaded?

$\frac{2}{3}$ is shaded

There are __3__ equal parts.

So the denominator is __3__

__2__ of the equal parts are shaded.

So the numerator is __2__

The fraction that is shaded is $\frac{2}{3}$

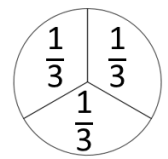**Numerator**
How many parts are we looking at?

Denominator
How many equal parts are there?

$\frac{1}{4}$ of the shapes are triangles.

The fraction that is shaded is $\frac{5}{6}$

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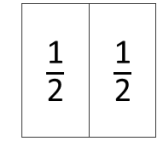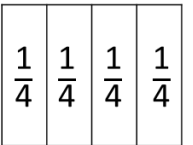
The Whole

When the numerator and the denominator are the same, the fraction is equal to one whole.

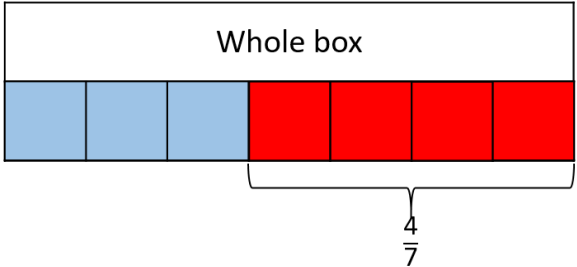$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} = \frac{3}{3}$ $\frac{3}{3} = 1$ whole

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

$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{4}{4}$ $\frac{4}{4} = 1$ whole

Fractions and Scales

The scale is split into __5__ equal parts.
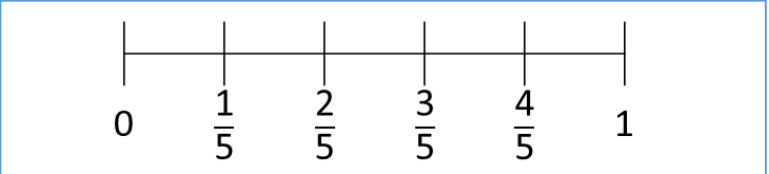
The denominator is __5__ .

Mo has a box of crayons.

The crayons are all blue or red.

$\frac{3}{7}$ of the crayons are blue.

What fraction of the crayons are red? $\frac{4}{7}$

Whole box

$\frac{4}{7}$

Fractions on a Number Line

The number line has been split into __4__ equal parts.
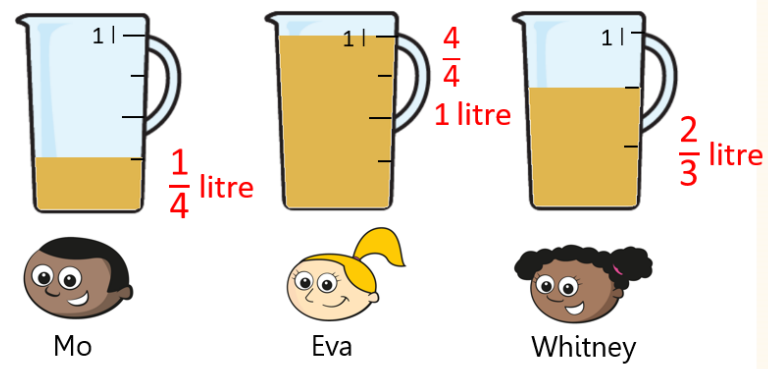
Each interval is worth $\frac{1}{4}$

Equivalent Fractions on a Number Line

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

$\frac{1}{3} = \frac{3}{9}$ $\frac{2}{3} = \frac{6}{9}$ $\frac{3}{3} = \frac{9}{9}$
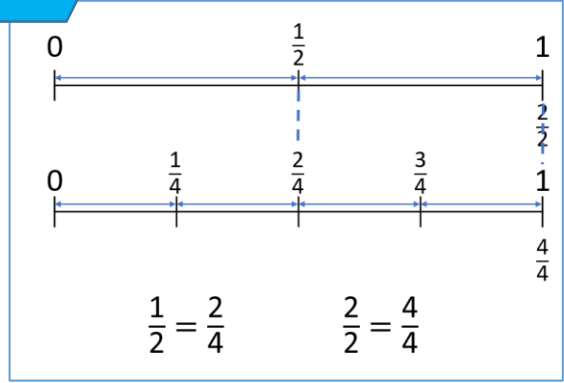
Mo, Eva and Whitney each pour some juice into a litre jug.

$\frac{1}{4}$ litre

$\frac{4}{4}$
1 litre

$\frac{2}{3}$ litre

Mo   Eva   Whitney

What fraction of a litre of juice is in each jug?

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Year 3
Mass and Capacity (page 1)

0 10 20 30 40 50 60 70 80 90 100
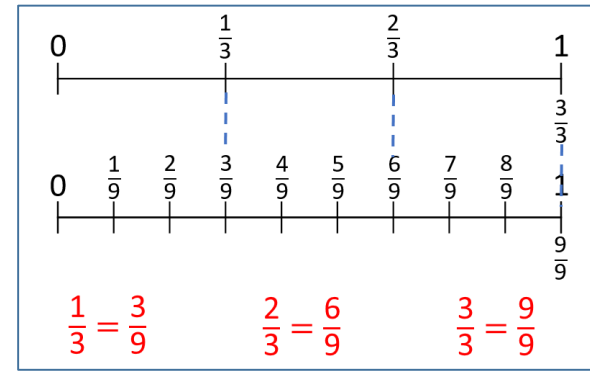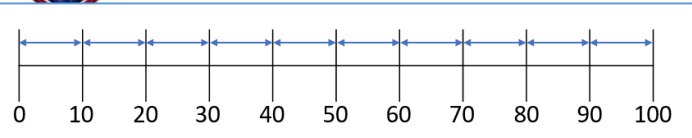
The start of the number line is __0__

The end of the number line is __100__

There are __10__ intervals.

The number line is counting up in __10__ s.

$$100 \div 10 = 10$$

What number is the arrow pointing to?

0   25   50   (75)   100

The start of the number line is __0__

The end of the number line is __100__

There are __4__ intervals.

The number line is counting up in __25__ s.

$$100 \div 4 = 25$$

Measure mass in grams

What is the **mass** of the football?

The mass of the football is 300 g.

0 g 100 g 200 g 300 g 400 g 500 g 600 g 700 g 800 g 900 g 1,000 g

What is the mass of the box?

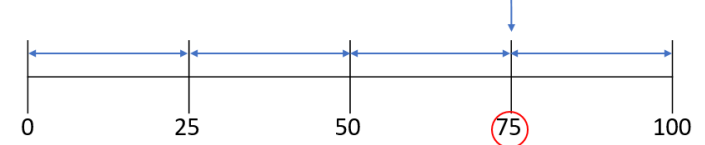**30 g**

The start point is 0 g.

The end point is 50 g.

There are 5 intervals.

The scale is going up in __10__ s.

$$50 \div 5 = 10$$

Measure mass in grams (g) and kilograms (kg)

__2__ kg and __100__ g   __4__ kg and __800__ g

$100 \text{ g} \times 10 = 1,000 \text{ g}$

1,000 g is equivalent to 1 kg

One blue box is __heavier__ than one yellow box.

3 kg is __lighter__ than 6 kg.

What is total mass of the tractor and the parcel?

2 kg and 600 g   1 kg and 300 g

2 kg + 1 kg = 3 kg   600 g + 300 g = 900 g

3 kg + 900g = 3 kg and 900 g

Vocabulary

Mass
grams g
kilograms kg
equal parts
number line
interval
equivalent
heavier
lighter
add   subtract
total
difference
capacity
volume
mililitres   ml
litres   l
interval
scale
partition

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Volume and Capacity

Equipment we use to measure volume and capacity.

We measure liquid in litres and millilitres.

Milli means thousandth.

There are 1,000 millimetres in 1 metre.

There are 1,000 millilitres in 1 litre.

1,000 ml = 1 litre

Measuring Volume and Capacity

What is the volume of water in the jug?   400 ml

The scale has been split into __10__ equal parts, so each interval represents __100__ ml.

1,000 ml

0 ml 100 200 300 400 500 ml 600 700 800 900 1 litre

What is the volume of water in this jug?   1 litre and 300 ml

1,000 ÷ 10 = 100

1 litre = 1,000 ml

1 litre 100 200 300 400 500 600 700 800 900 2 litres

Comparing Volume and Capacity

Which jug has the greatest capacity?
Which jug has the greatest volume of water?

1 litre 200 ml   <   1 litre 400 ml

Add and Subtract Volume and Capacity

A   B

300 ml   600 ml

The water from jug A is poured into jug B.
How much water will be in jug B?   900 ml

300 + 600 = 900 ml

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