100,000s	10,000s	1000s	100s	10s	1s
100,000 100,000 100,000 100,000 100,000 100,000	10,000 10,000 10,000	1000 1000 1000	100	10 10 10 10	1 1 1 1 1
6	2	3	1	4	5

In order from smallest to largest

543,241   564,406   570,540

six hundred and twenty-three thousand, one hundred and forty-five

6 hundred thousands, 2 ten thousands, 3 thousands, 1 hundred, 4 tens and 5 ones
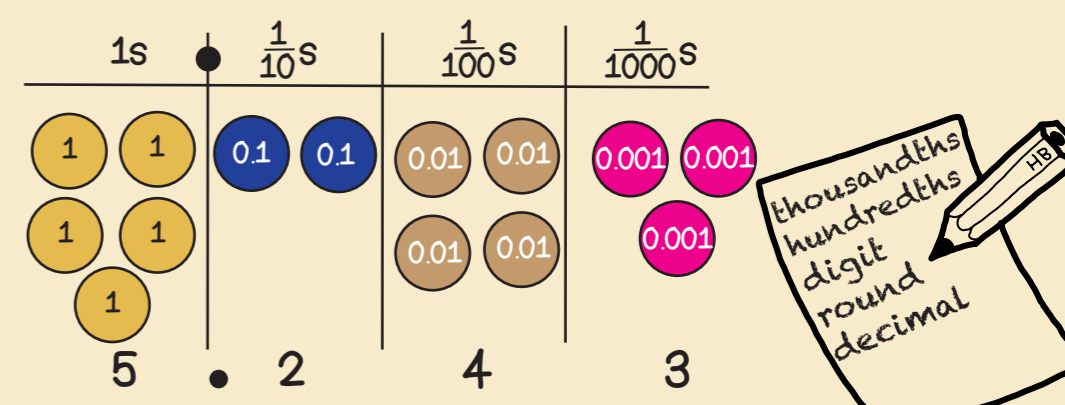
Stop and look. What do you notice?

thousands digit round multiple positive negative

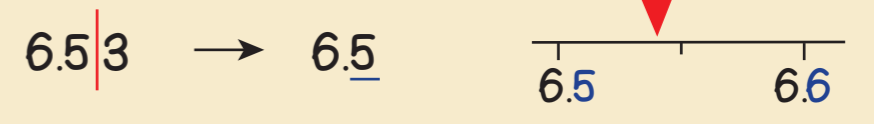| 1s	.	$\frac{1}{10}$s	$\frac{1}{100}$s	$\frac{1}{1000}$s
1 1 1 1 1	.	0.1 0.1	0.01 0.01 0.01 0.01	0.001 0.001 0.001
5	.	2	4	3

thousandths hundredths digit round decimal

five point two, four, three

5 ones, 2 tenths, 4 hundredths, 3 thousandths

Compare decimals

2.345 > 2.343   2.455 > 2.343   2.3 > 2.299

3 steps forwards from – 2 is 1

–10   0   10

negative   positive

100,000 less   100,000 more

224,100   324,100   424,100

200,000   300,000   400,000   500,000

5 or more - round up
4 or less - round down

5 or more - round up
4 or less - round down

Round to the nearest tenth.

6.5|3 → 6.5

6.5   6.6

Round to the nearest whole number

6|53 → 7

6   7

Round to the nearest ten thousand

65,727 → 70,000

60,000   70,000
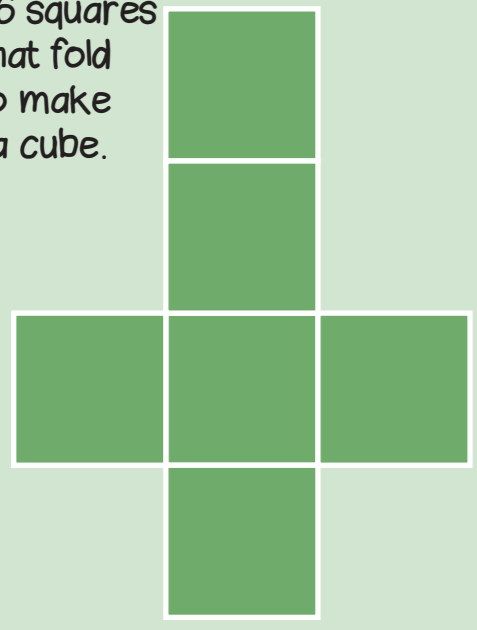
Round to the nearest hundred thousand
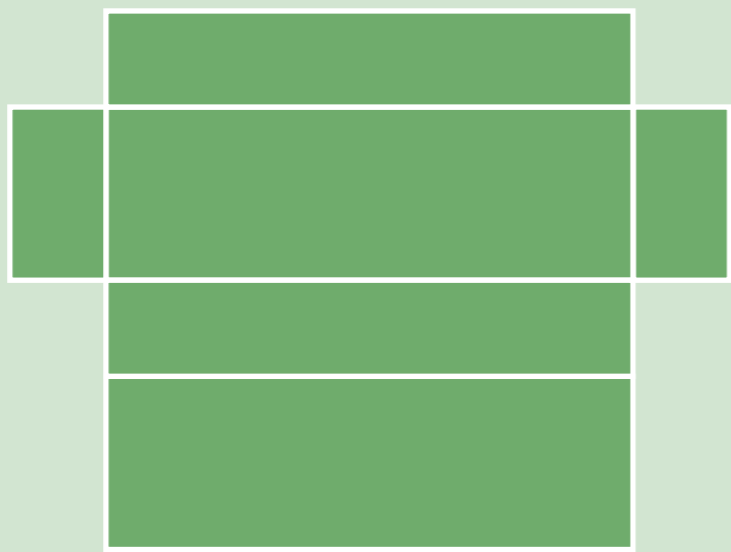
643,278 → 600,000

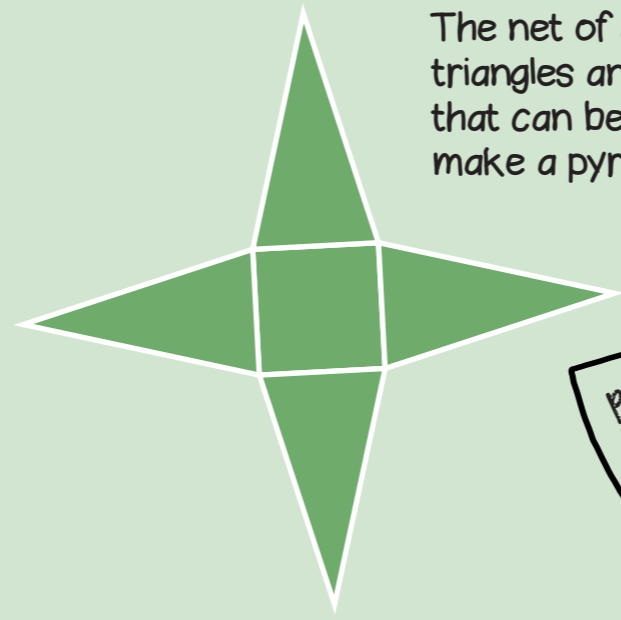600,000   700,000

Year 5 Term 1

The net of a cube has 6 squares that fold to make a cube.

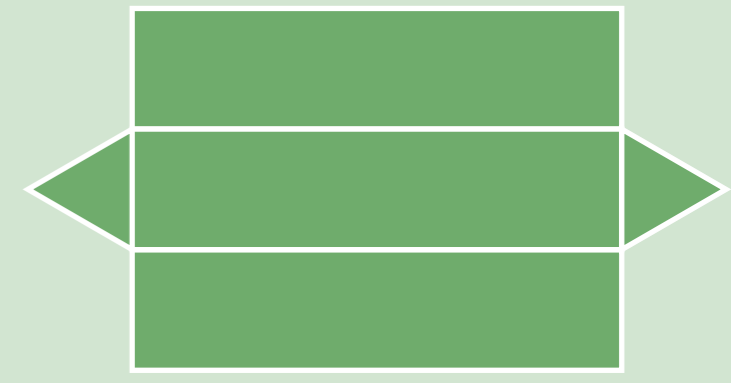The net of a cuboid has 6 rectangles that fold to make a cuboid.

The net of a pyramid has triangles and a polygon that can be folded to make a pyramid.

The net of a prism has rectangles and two identical polygons that can be folded to make a prism.

prism pyramid net polygon

Multiplying and dividing by 10, 100 and 1000

M	HTh	TTh	Th	100s	10s	1s	.	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
					1	3	.	6		
				1	3	6				
			1	3	6	0		0		
				2	4	7				
					2	4	.	7		
						0	.	2	4	7

Each digit is ten times greater.

Each digit is ten times smaller.

13.6 x 10
move digits 1 column left

13.6 x 1000
move digits 3 columns left

24.7 ÷ 10
move digits 1 column right

24.7 ÷ 100
move digits 2 columns right

Number facts

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

A prime number has exactly 2 factors: 2, 3, 5, 7, 11, 13, 17, 19...

A composite number has more than 2 factors: 4, 6, 8, 9, 10, 12...

If I know... then I also know... because...

Factors of 15 = {1, 3, 5, 15}
Factors of 21 = {1, 3, 7, 21}
1 and 3 are common factors of 15 and 21

Multiples of 3 are 3, 6, 9, 12
Multiples of 4 are 4, 8, 12, 16
12 is a common multiple of 3 and 4
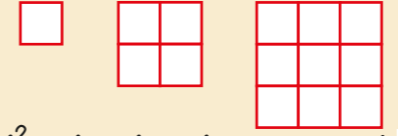
$1^2 = 1 \times 1 = 1$
$2^2 = 2 \times 2 = 4$
$3^2 = 3 \times 3 = 9$

A square number is the result of multiplying a number by itself.

$1^3 = 1 \times 1 \times 1 = 1$
$2^3 = 2 \times 2 \times 2 = 8$
$3^3 = 3 \times 3 \times 3 = 27$

A cube number is the result of multiplying a whole number by itself, then by itself again.

Year 5 Term 2

63,452 + 19,999
Round then adjust

10,000s	1000s	100s	10s	1s

Add 20,000 then subtract 1

+20,000
-1
63,452   83,451 83,452
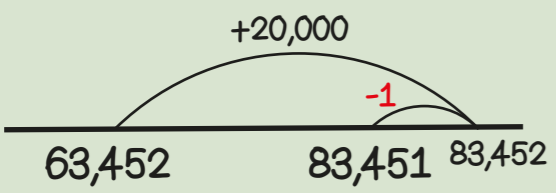
2.452 – 0.999
Round then adjust

1s	.	$\frac{1}{10}$s	$\frac{1}{100}$s	$\frac{1}{1000}$s

Take away 1 then add 1 thousandth

– 1
+0.001
1.452 1.453   2.452
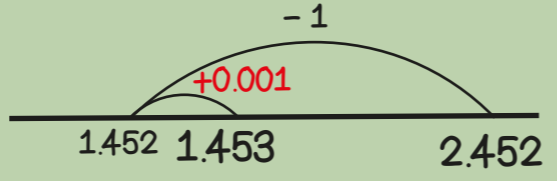
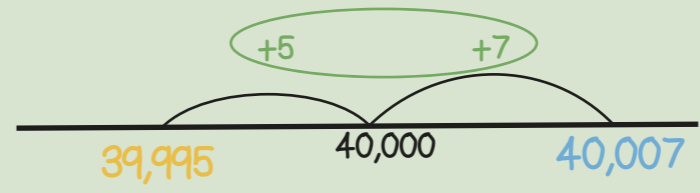## 40,007 – 39,995
Find the difference between two numbers

40,007
39,995   12

Count on 5 from 39,995 to 40,000, then 7 more so the difference between them is 12

+5   +7
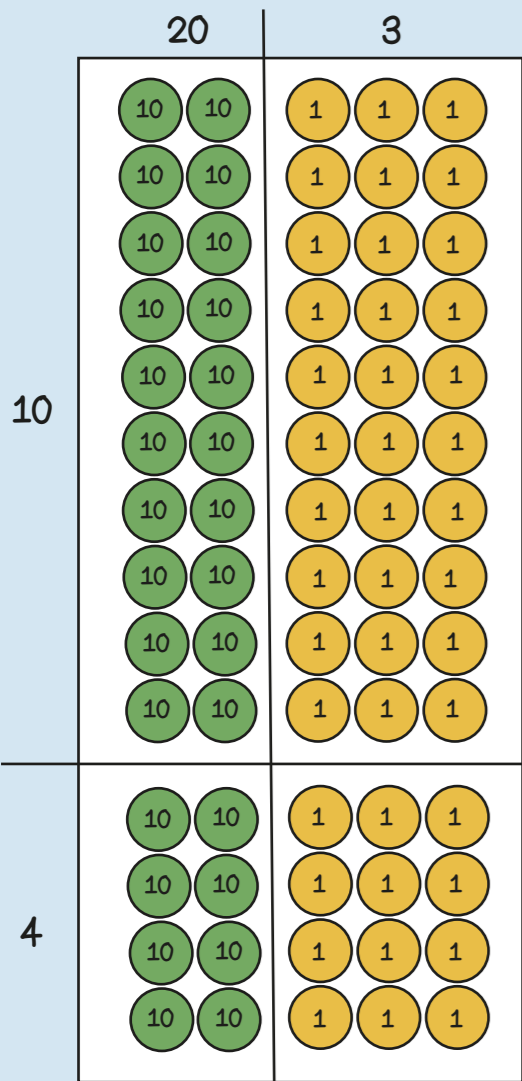39,995   40,000   40,007

Written methods

```
  25,648
+ 42,524
  68,172
   1  1
```

```
  45,748
- 26,374
  19,374
```

```
  25.648
+ 42.524
  68.172
   1  1
```

```
  45.748
- 26.374
  19.374
```

23 x 14

20 3

10

4

	20	3
10	200	30
4	80	12

2 3
x 1 4
9 2
2 3 0
3 2 2

When I multiply the multiplicand by the tens digit of the multiplier I put a zero in the ones column.

6 2 3
x 6 7
4 3 6 1
3 7 3 8 0
4 1 7 4 1

In my head?
With jottings?
Formal written method?

426 x 50 = 426 x 100 ÷ 2
= 42600 ÷ 2
= 21300

30 x 99 = 30 x 100 – 30 x 1
= 3000 – 30
= 2970

0.4 x 7 = ?
If I know 4 x 7 = 28
then I also know that 0.4 x 7 = 2.8
because it is ten times smaller.

2.4 x 3 = ?
If I know 24 x 3 = 72
then I also know 2.4 x 3 = 7.2
because it is ten times smaller.

2 4
x 3
7 2

9423 ÷ 3

3 1 4 1
3) 9 4 2 3

1000s	100s	10s	1s

divisor
dividend
quotient
remainder
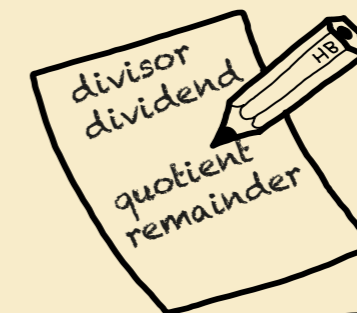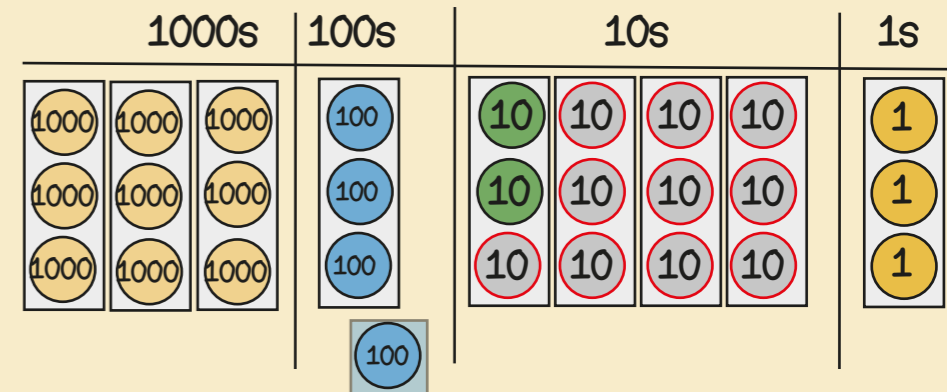
If I know…
then I also know…
because…

0 5 7 6 r 1
6) 3 4 3 7

1	6
2	12
4	24
5	30
8	48
10	60

Year 5 Term 3

Congruent shapes are exactly the same shape and size.
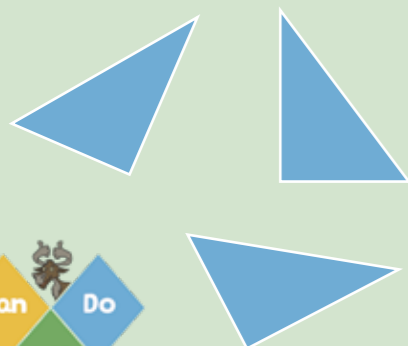
Translate the triangle
3 squares left and
2 squares down.

congruent
object
image
reflect
translate
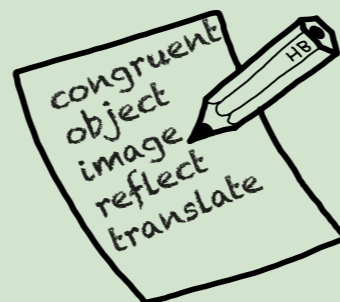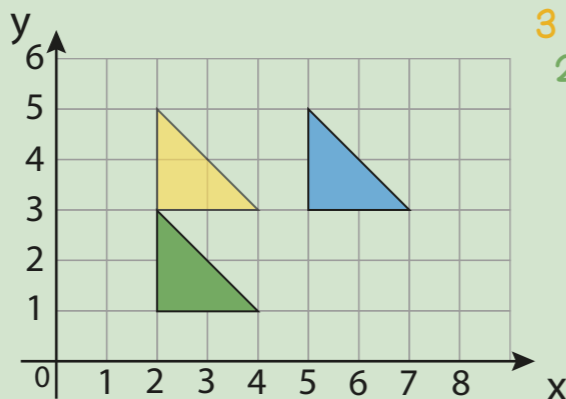
Reflect the triangle in the horizontal line.
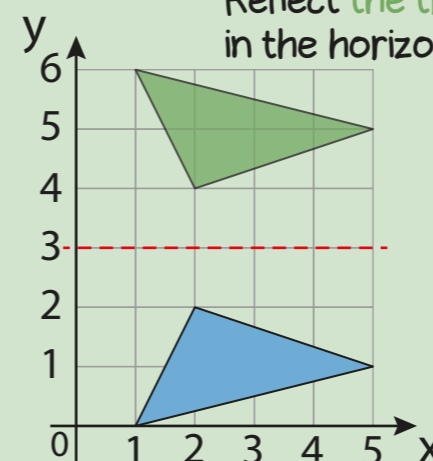
The image is the same distance from the mirror line as the object.

Reflect the triangle in the vertical line.

Can Do Maths
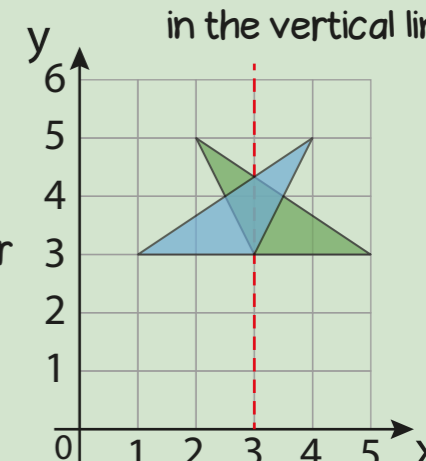
Use equivalence to compare $\frac{5}{8}$ $\frac{3}{4}$ $\frac{1}{2}$
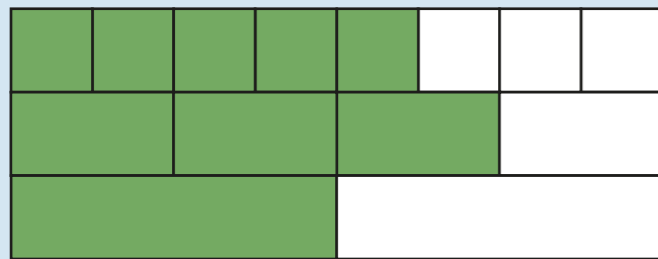
$\frac{3}{4} = \frac{6}{8}$

$\frac{1}{2} = \frac{4}{8}$
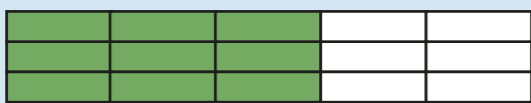
$\frac{1}{2} < \frac{3}{4} < \frac{5}{8}$

$\frac{3}{5}$

If there are 2 times as many equal parts, then there are 2 times as many shaded parts
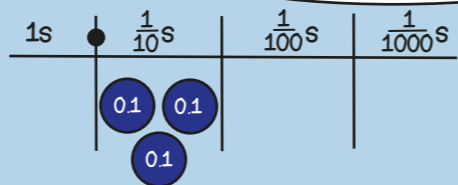
$\frac{3}{5} = \frac{6}{10}$
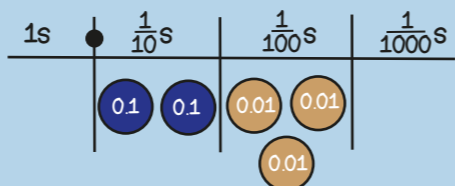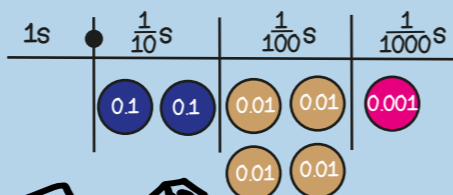
$\frac{3}{5} = \frac{9}{15}$

Decimals as fractions

1s · $\frac{1}{10}$s $\frac{1}{100}$s $\frac{1}{1000}$s

$0.3 = \frac{3}{10}$

$0.23 = \frac{23}{100}$

$0.241 = \frac{241}{1000}$

denominator numerator equivalence thousandths percentage
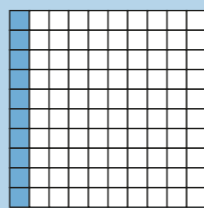
$\frac{10}{100} = \frac{1}{10}$

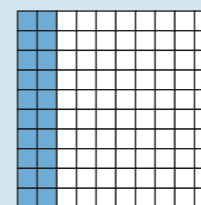**Percentage, decimal, fraction equivalence**
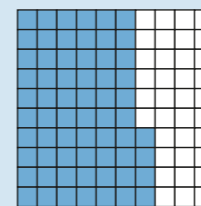
$\frac{64}{100} = 0.64 = 64\%$
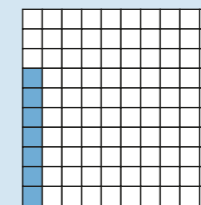
$\frac{7}{100} = 0.07 = 7\%$
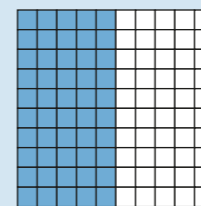
$\frac{1}{2} = \frac{50}{100} = 0.5 = 50\%$
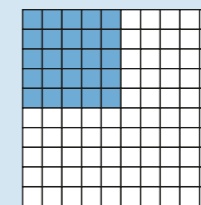
$\frac{1}{4} = \frac{25}{100} = 0.25 = 25\%$

$\frac{1}{5} = \frac{20}{100} = 0.2 = 20\%$

If I know $\frac{1}{5} = 20\%$ then I also know… because…

Converting units by multiplying and dividing by 10, 100 and 1000

M	HTh	TTh	Th	100s	10s	1s	·	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
					1	3	·	6		
				1	3	6	←			
		1	3	6	0	0	←			
						1	·	3	6	
						0	·	1	3	6

Ten times greater

Ten times smaller

13.6×10
move digits 1 place left

13.6×1000
move digits 3 places left

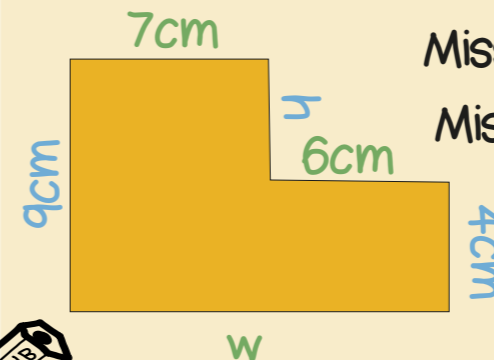$13.6 \div 10$
move digits 1 place right

$13.6 \div 100$
move digits 2 places right
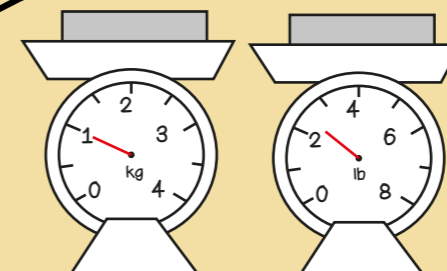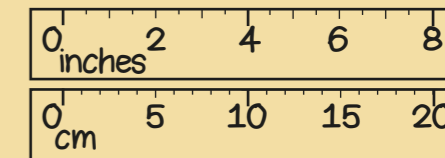
imperial metric convert perimeter rectilinear

1m = 100 cm
13.6 x 100 = 1360
so 13.6m = 1360cm

1km = 1000 m
13.6 x 1000 = 13600
so 13.6km = 13,600m

1l = 1000 ml
13600 ÷ 1000 = 13.6
so 13,600ml = 13.6litres

1cm = 10 mm
13.6 x 10 = 136
so 13.6cm = 136mm

When converting from a larger unit to a smaller unit, multiply because there will be more of them.

1kg = 1000 g
1360 ÷ 1000 = 1.36
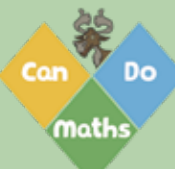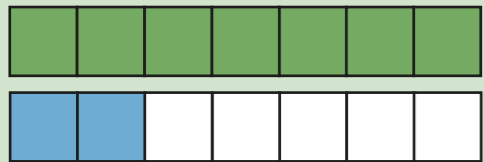so 1360g = 1.36kg

Missing width = w = 7 + 6 = 13cm

Missing height = h = 9 – 4 = 5cm

7cm
h
6cm
9cm
4cm
w

Perimeter
= 9 + 7 + h + 6 + 4 + w
= 44cm

2.5cm = approximately 1 inch

1kg = approximately 2 pounds

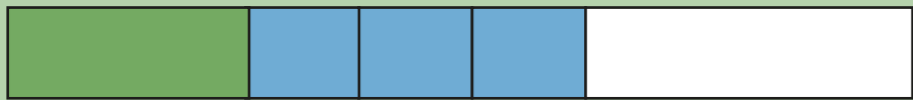1 litre = approximately 2 pints

Year 5 Term 5

Top-left section

$$\frac{9}{7} = 1\frac{2}{7}$$

One and two sevenths is the whole
One is a part
Two sevenths is a part

$1\frac{2}{7}$
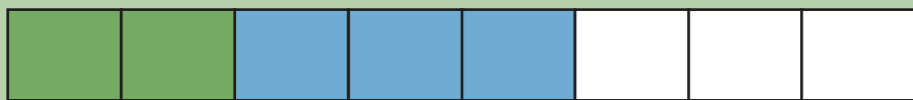
1 | $\frac{2}{7}$

$$\frac{1}{4} + \frac{3}{8} =$$

I can't describe the sum!.

$$\frac{1}{4} = \frac{2}{8}$$ Find a common denominator.

$$\frac{2}{8} + \frac{3}{8} = \frac{5}{8}$$
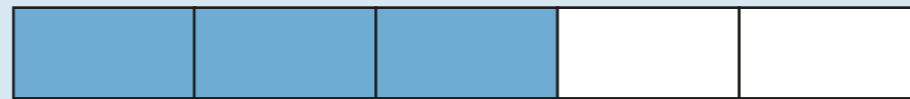
I can add fractions with the same denominator.

Bottom-left section

$$2\frac{5}{9} + \frac{2}{3} =$$

Add the fractions by finding a common denominator.

$$\frac{2}{3} = \frac{6}{9}$$

$$2\frac{5}{9} + \frac{6}{9} = 2\frac{11}{9}$$

$$= 3\frac{2}{9}$$

Top-middle section

$$\frac{3}{5} - \frac{3}{10} =$$
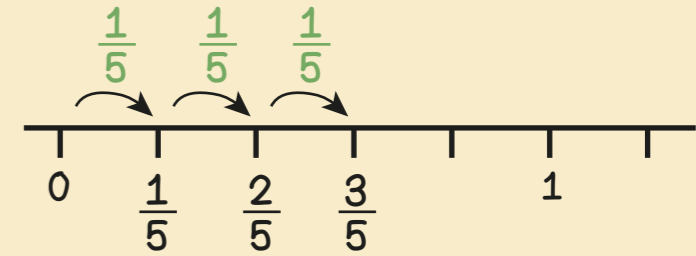
How can I subtract $\frac{3}{10}$?

$$\frac{3}{5} = \frac{6}{10}$$ Find a common denominator.

$$\frac{6}{10} - \frac{3}{10} = \frac{3}{10}$$

I can subtract fractions with the same denominator.

Bottom-middle section

$$1\frac{6}{7} - \frac{4}{7} =$$

I can subtract fractions with the same denominator.

$$1\frac{6}{7} - \frac{4}{7} = 1\frac{2}{7}$$

Top-right section

$$\frac{1}{5} \times 3 = \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$$

$$= \frac{3}{5}$$

$\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$
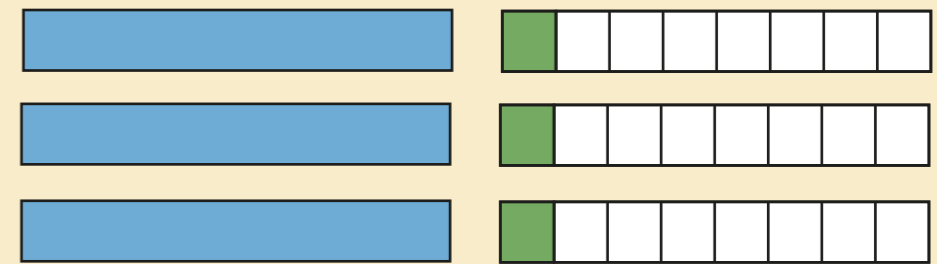
0 $\frac{1}{5}$ $\frac{2}{5}$ $\frac{3}{5}$ 1

$$1\frac{1}{8} \times 3 =$$

1×3 $+$ $\frac{1}{8} \times 3$

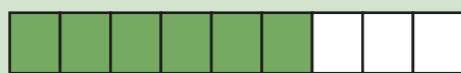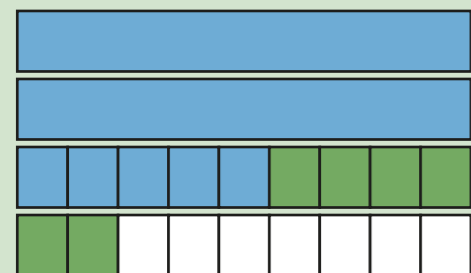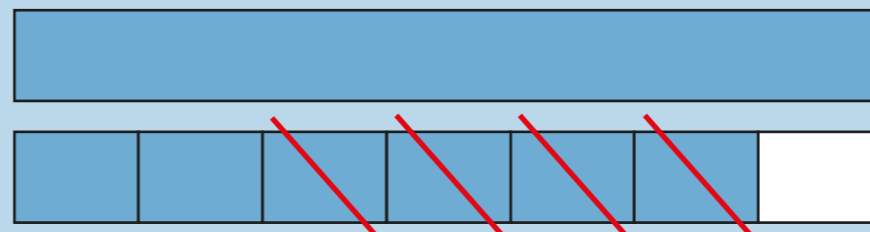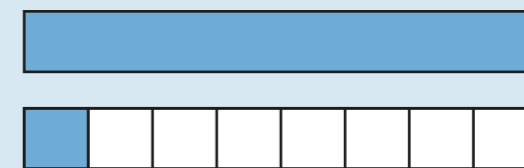3 $+$ $\frac{3}{8}$

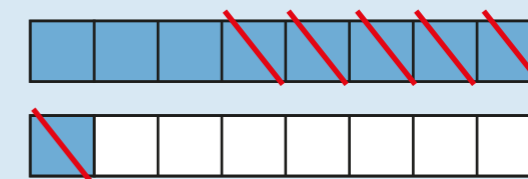$$1\frac{1}{8} \times 3 = 3\frac{3}{8}$$

Bottom-right section

$$1\frac{1}{8} - \frac{3}{4} =$$

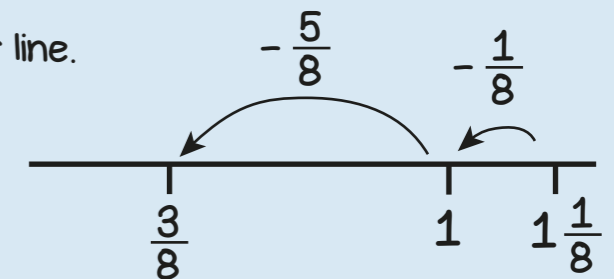How can I subtract $\frac{3}{4}$?

$$\frac{3}{4} = \frac{6}{8}$$ Find a common denominator.
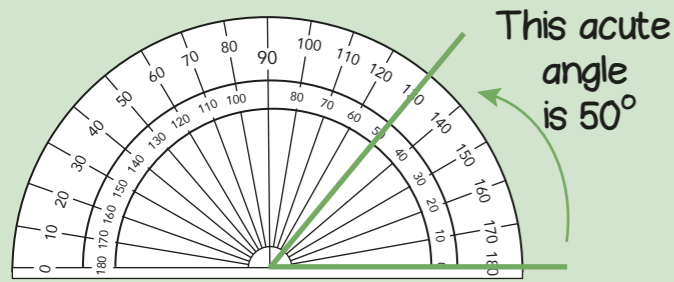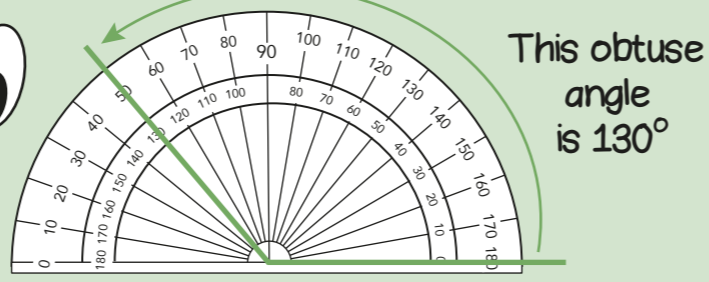
$$1\frac{1}{8} - \frac{6}{8} = \frac{3}{8}$$

Or on a number line.

$-\frac{5}{8}$ $-\frac{1}{8}$

$\frac{3}{8}$ 1 $1\frac{1}{8}$
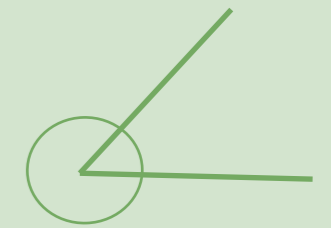
This acute angle is 50°

An acute angle is less than 90°
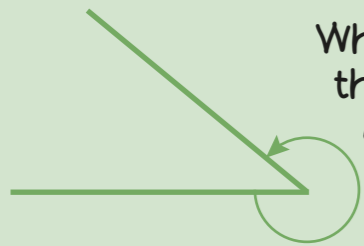
This obtuse angle is 130°

An obtuse angle is more than 90° and less than 180°

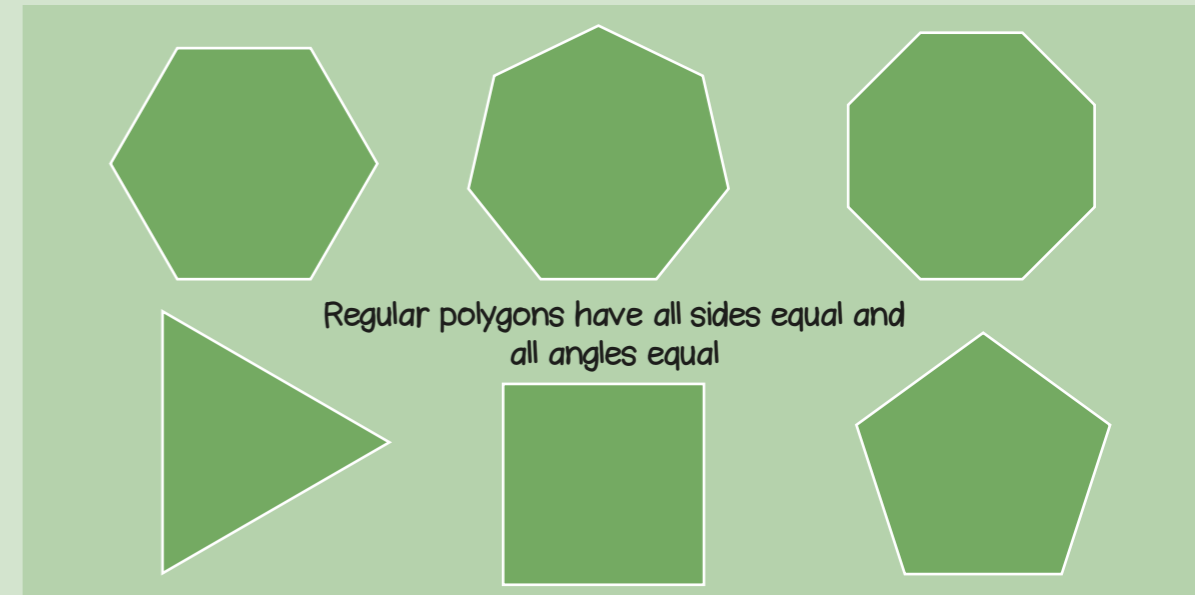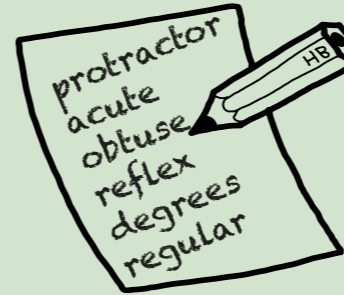The sum of the angles at a point on a straight line is 180°

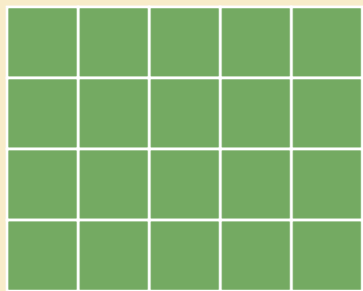The sum of the angles at a point is 360°

What size is the reflex angle?

A reflex angle is more than 180° and less than 360°

The acute angle is 40°

The reflex angle is 360° – 40° = 320°

protractor
acute
obtuse
reflex
degrees
regular

Regular polygons have all sides equal and all angles equal
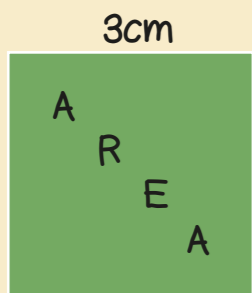
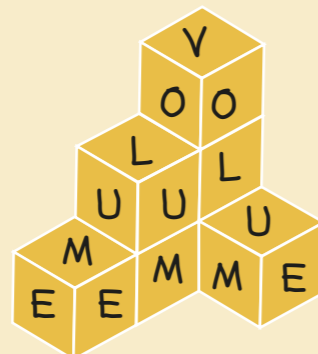# Year 5 Term 6

5cm

A R E A

4cm

4 rows of 5 = 20 squares
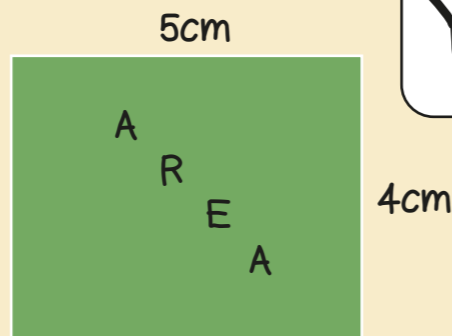
Area of rectangle = length x width
= 5 x 4
= 20cm^2

The area of a shape is the amount of space inside a shape
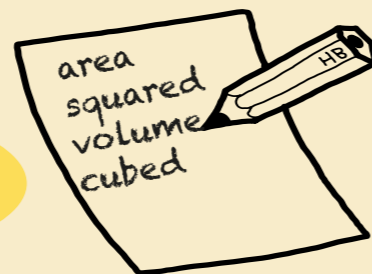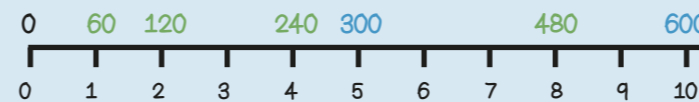
3cm

A R E A

Area of the square = 3^2
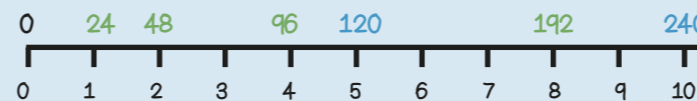= 3 x 3
= 9 cm^2

Volume is the amount of space a 3D shape takes up

area
squared
volume
cubed

V O O L U L U M E M M E E

The volume is 7 cubes or 7cm^3

seconds
minutes
hours
days
weeks

60 seconds = 1 minute
so 240 seconds = 4 minutes

0   60   120   240   300   480   600

0   1   2   3   4   5   6   7   8   9   10

60 minutes = 1 hour
so 240 minutes = 4 hours

24 hours = 1 day
so 120 hours = 5 days

0   24   48   96   120   192   240

0   1   2   3   4   5   6   7   8   9   10

7 days = 1 week
35 days = 5 weeks

÷ 7

days	weeks
7	1
35	5

x 5   x 5

÷ 7
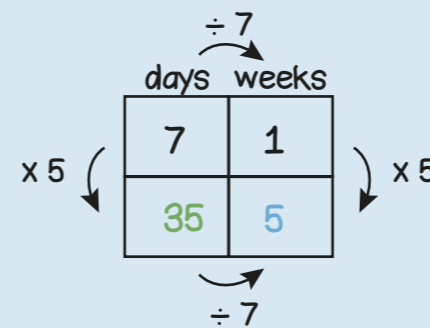
Bus timetable

Ashley	09:30	11:50	16:15
Barton	10:10	12:30	17:00
Calford	10:52	13:12	17:44
Digley	11:08	13:28	18:02

The 11:50 bus from Ashley takes 1 hour and 22 minutes to reach Calford

distance travelled in km

60

40

20

09:00 10:00 11:00 12:00 13:00 14:00

bar chart
graph
axes
scale
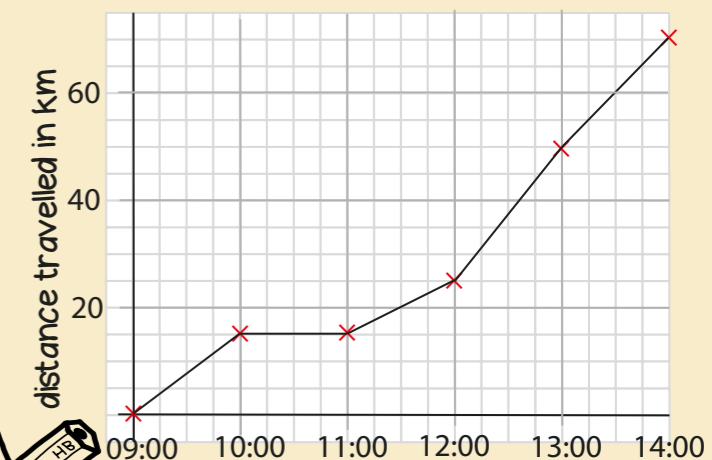
From 11a.m. to 1p.m. they travelled 35km

Can Do Maths