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

In order from smallest to largest

543,241   564,406   570,540

Stop and look. What do you notice?

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

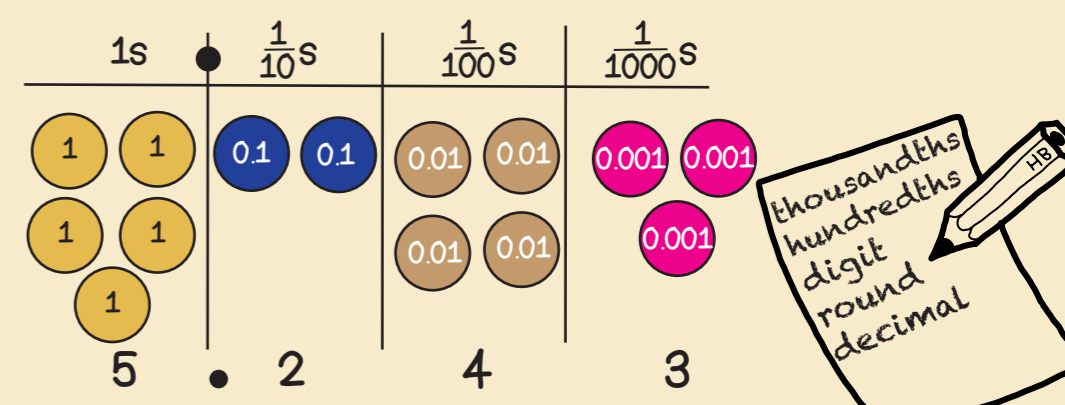6 hundred thousands, 2 ten thousands, 3 thousands, 1 hundred, 4 tens and 5 ones

thousands digit round multiple positive negative

1s	$\frac{1}{10}$s	$\frac{1}{100}$s	$\frac{1}{1000}$s
5 . 2	4	3

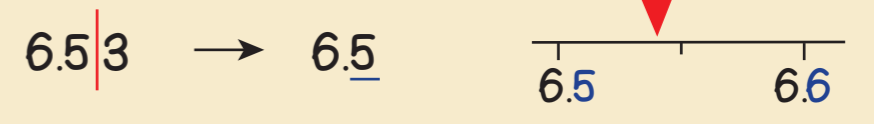*thousandths hundredths digit round decimal*

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

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

100,000 less   100,000 more

224,100   324,100   424,100

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

3 steps forwards from – 2 is 1

-10   0   10
negative   positive

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

Round to the nearest ten thousand

6|5,727 → 70,000

60,000   70,000

Round to the nearest hundred thousand
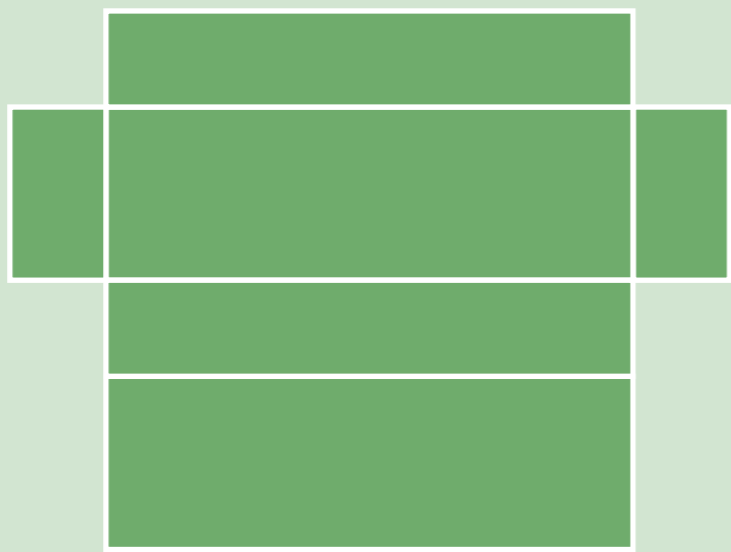
6|43,278 → 600,000
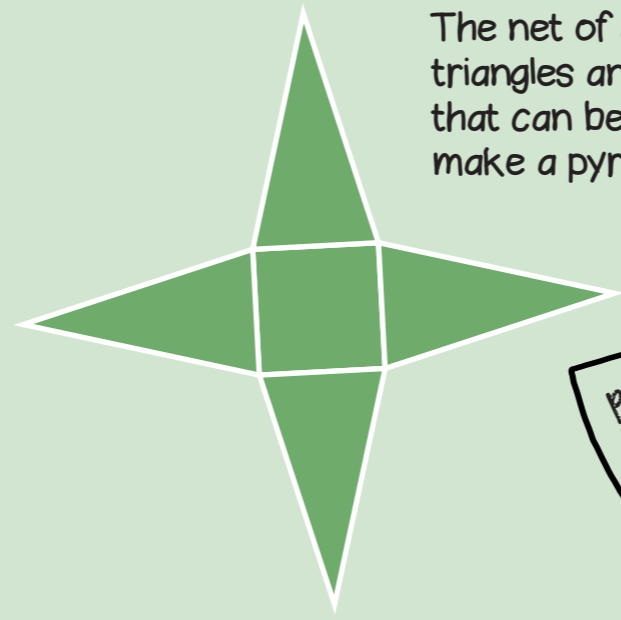
600,000   700,000

Year 5 Term 1

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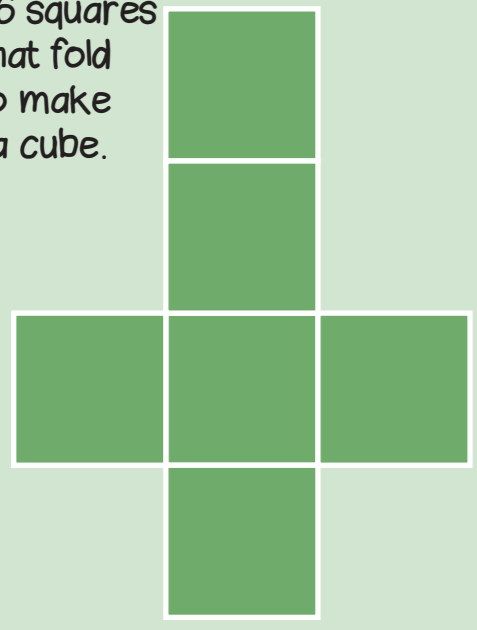
The net of a cuboid has 6 rectangles that fold to make a cuboid.

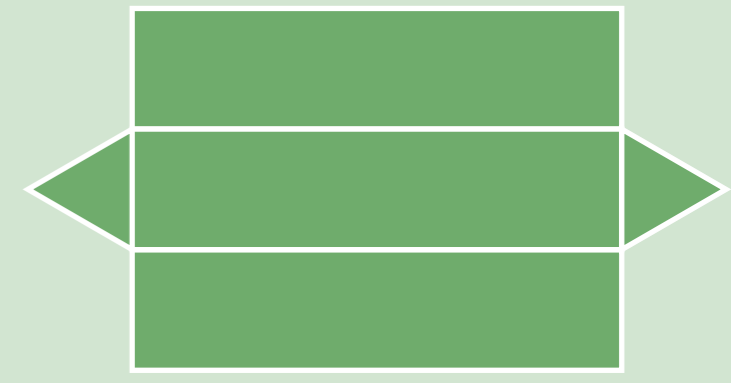The net of a pyramid has triangles and a polygon that can be folded to make a pyramid.

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

prism pyramid net polygon

Year 5 Term 2

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.

note: millions, digit, round, multiple, positive, negative

13.6 × 10
move digits 1 column left

13.6 × 1000
move digits 3 columns left

24.7 ÷ 10
move digits 1 column right

24.7 ÷ 100
move digits 2 columns right

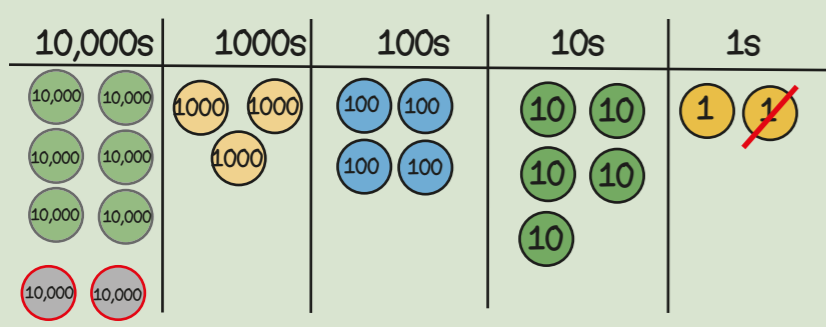| 1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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
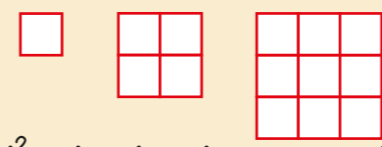
$1^2 = 1 \times 1 = 1$
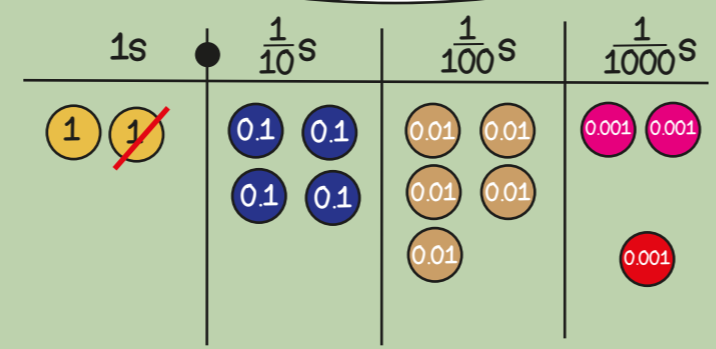$2^2 = 2 \times 2 = 4$
$3^2 = 3 \times 3 = 9$

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.

note: prime, common, factor, multiple, multiplier, divisor

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
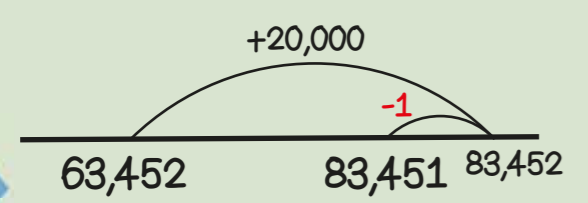
2.452 − 0.999
Round then adjust

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
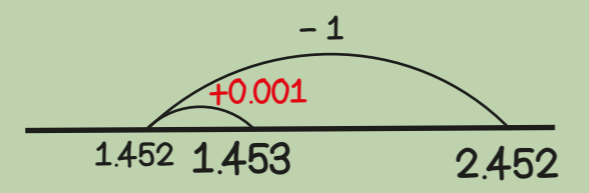
40,007 − 39,995
Find the difference between two numbers

40,007
39,995   12

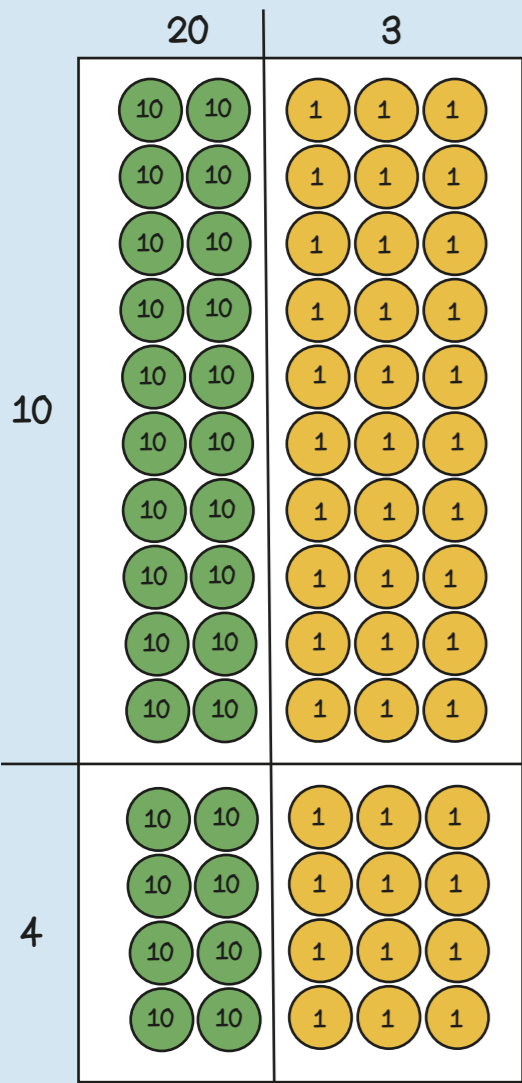Count on 5 from 39,995 to 40,000, then 7 more so the difference between them is 12
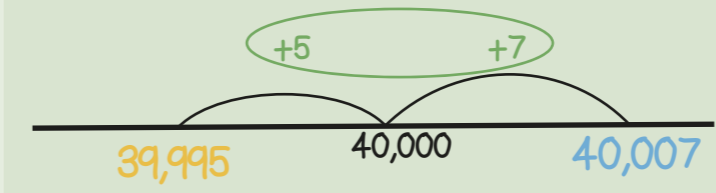
+5   +7
39,995   40,000   40,007

note: sum, total, subtract, difference

Written methods

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

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

```
  25.648
+ 42.524
--------
  68.172
```

```
  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
    1
  2 3 0
  ─────
  3 2 2
    1
```

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
    1 2
3 7 3 8 0
  1 1
─────────
4 1 7 4 1
  1   1
```

In my head?
With jottings?
Formal written method?

$426 \times 50 = 426 \times 100 \div 2$
$= 42600 \div 2$
$= 21300$

$30 \times 99 = 30 \times 100 - 30 \times 1$
$= 3000 - 30$
$= 2970$

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

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

```
    2 4
  x   3
  ─────
    7 2
    1
```

$9423 \div 3$

```
    3 1 4 1
3 ) 9 4 ¹2 3
```

1000s	100s	10s	1s

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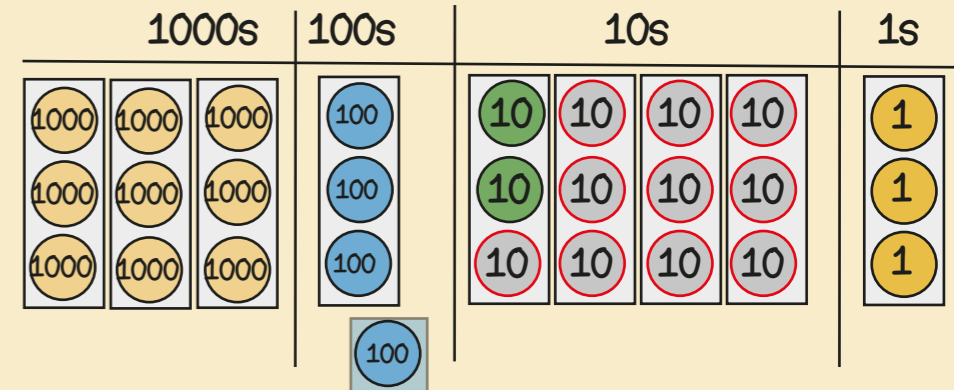
If I know…
then I also know…
because…

```
    0 5 7 6 r 1
6 ) 3 ³4 ³3 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
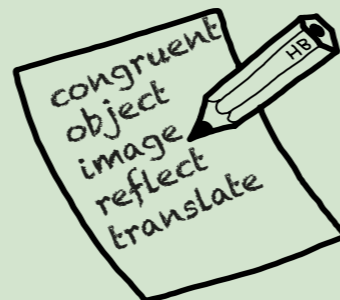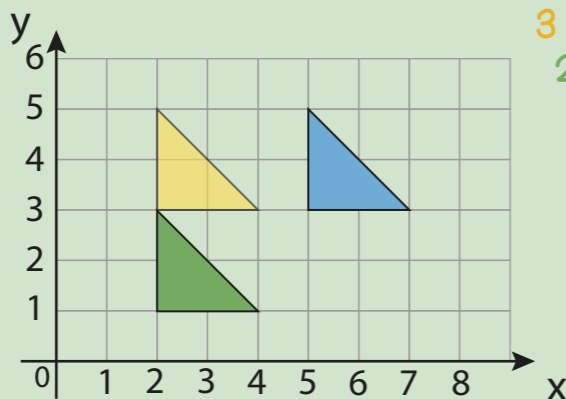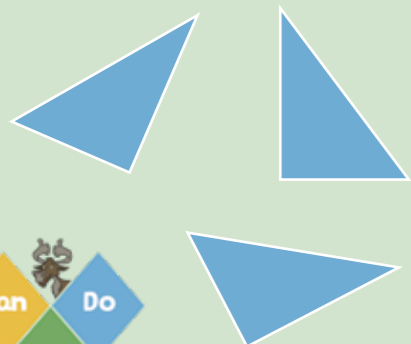
Reflect the triangle in the horizontal line.
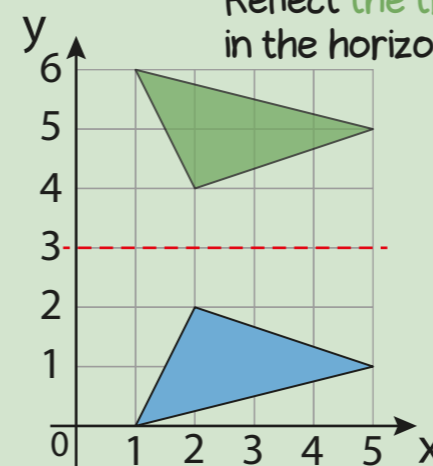
The image is the same distance from the mirror line as the object.

Reflect the triangle in the vertical line.

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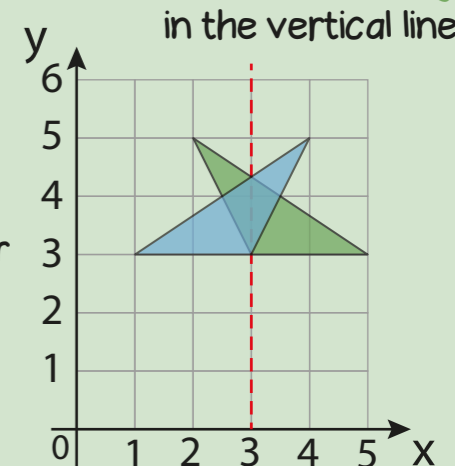
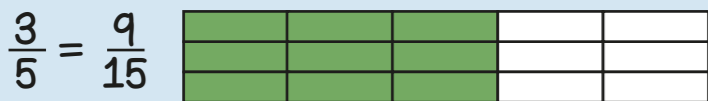**Use equivalence to compare** $\frac{5}{8}$ $\frac{3}{4}$ $\frac{1}{2}$
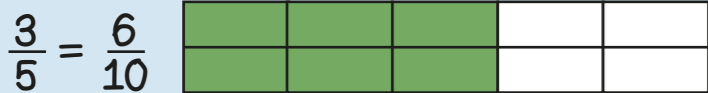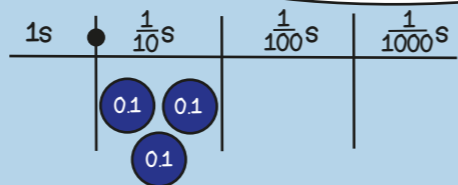
$\frac{3}{4} = \frac{6}{8}$
$\frac{1}{2} = \frac{4}{8}$

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

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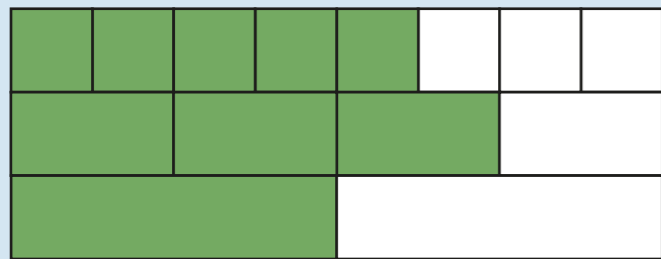
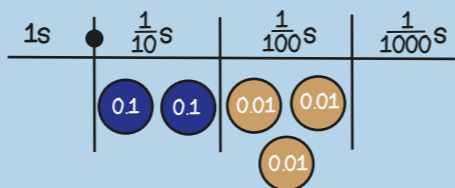If there are 2 times as many equal parts, then there are 2 times as many shaded parts
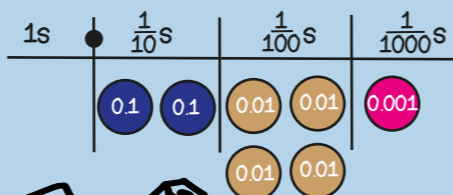
$\frac{3}{5} = \frac{6}{10}$
$\frac{3}{5} = \frac{9}{15}$

Decimals as fractions

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

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

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

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

$\frac{10}{100} = \frac{1}{10}$

denominator
numerator
equivalence
thousandths
percentage
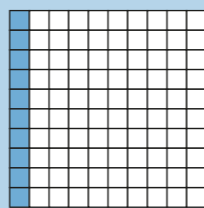
Percentage, decimal, fraction equivalence
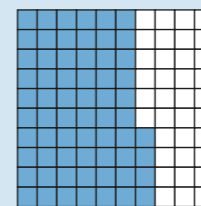
$\frac{64}{100} = 0.64 = 64\%$
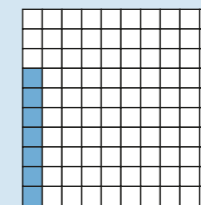
$\frac{7}{100} = 0.07 = 7\%$
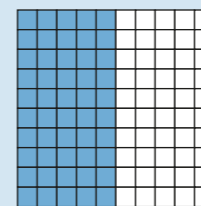
$\frac{1}{2} = \frac{50}{100} = 0.5 = 50\%$
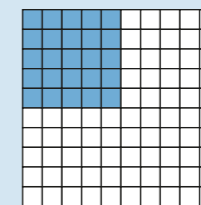
$\frac{1}{4} = \frac{25}{100} = 0.25 = 25\%$
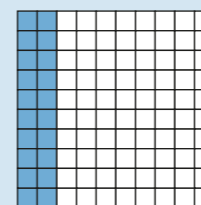
$\frac{1}{5} = \frac{20}{100} = 0.2 = 20\%$

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
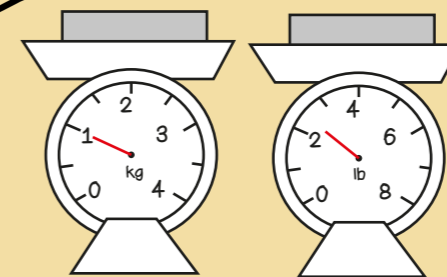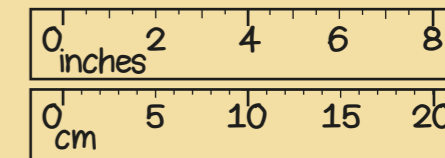convert
perimeter
rectilinear

Missing width = w = 7 + 6 = 13cm
Missing height = h = 9 − 4 = 5cm

7cm
h
6cm
9cm
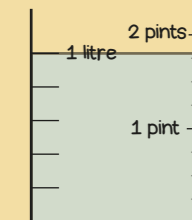4cm
w

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

2.5cm = approximately 1 inch

1kg = approximately 2 pounds

1 litre = approximately 2 pints

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

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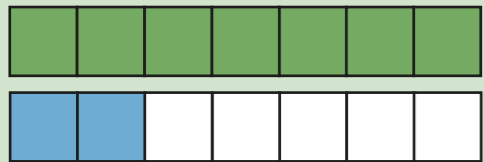so 13.6cm = 136mm

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

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

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

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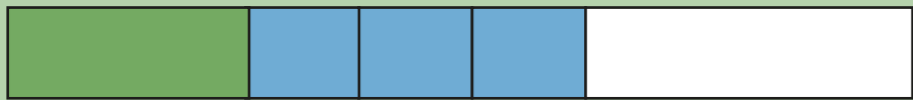1360 ÷ 1000 = 1.36
so 1360g = 1.36kg

Can Do Maths

Year 5 Term 5
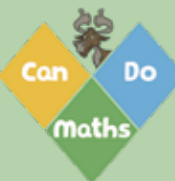
$\frac{9}{7} = 1\frac{2}{7}$

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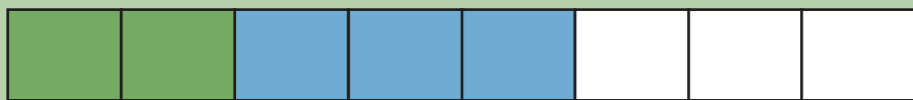Two sevenths is a part

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

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

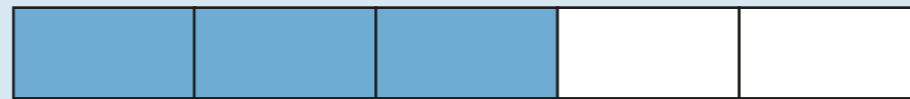I can't describe the sum!.

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

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

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

Add the fractions by finding a common denominator.

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

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

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

$\frac{3}{5} - \frac{3}{10} =$ 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.

$1\frac{6}{7} - \frac{4}{7} =$ I can subtract fractions with the same denominator.

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

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

$= \frac{3}{5}$

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

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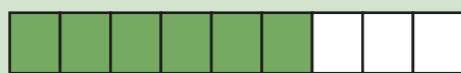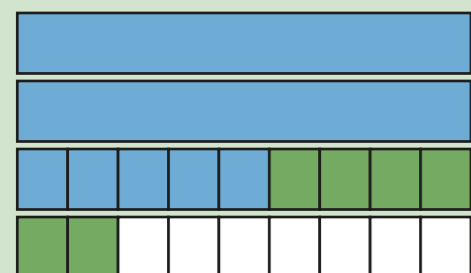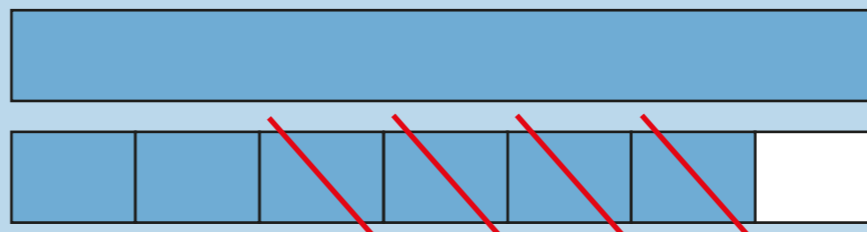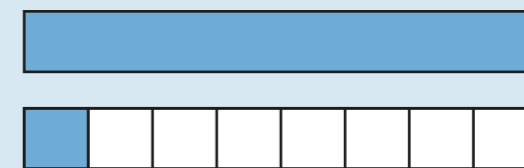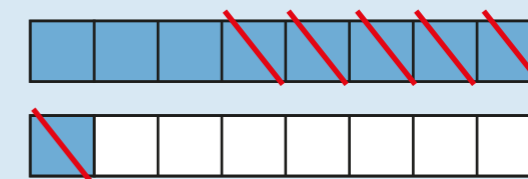
$1\frac{1}{8} \times 3 = 3\frac{3}{8}$

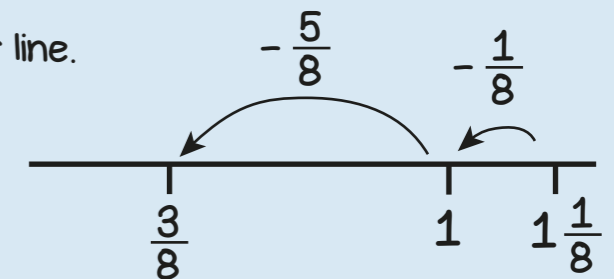$1\frac{1}{8} - \frac{3}{4} =$ How can I subtract $\frac{3}{4}$?
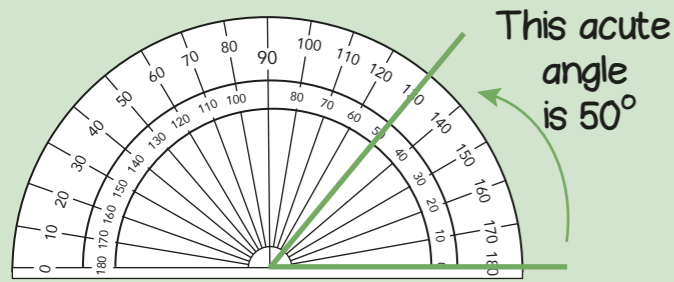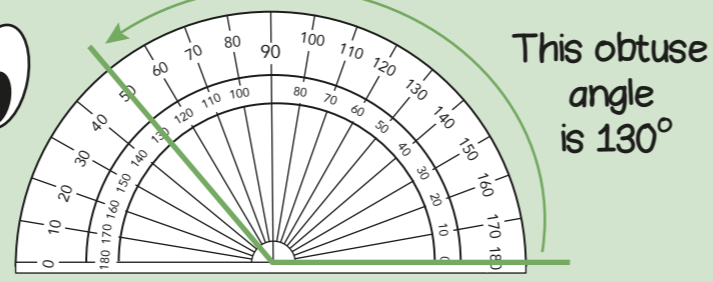
$\frac{3}{4} = \frac{6}{8}$ Find a common denominator.

$1\frac{1}{8} - \frac{6}{8} = \frac{3}{8}$

Or on a number line.

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

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

Year 5 Term 6

This acute angle is 50°

An acute angle is less than 90°

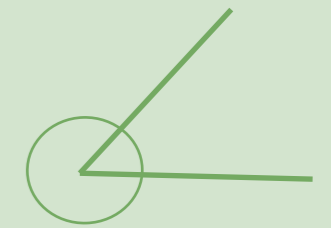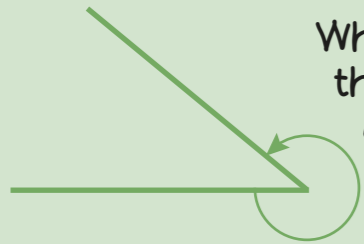This obtuse angle is 130°

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°

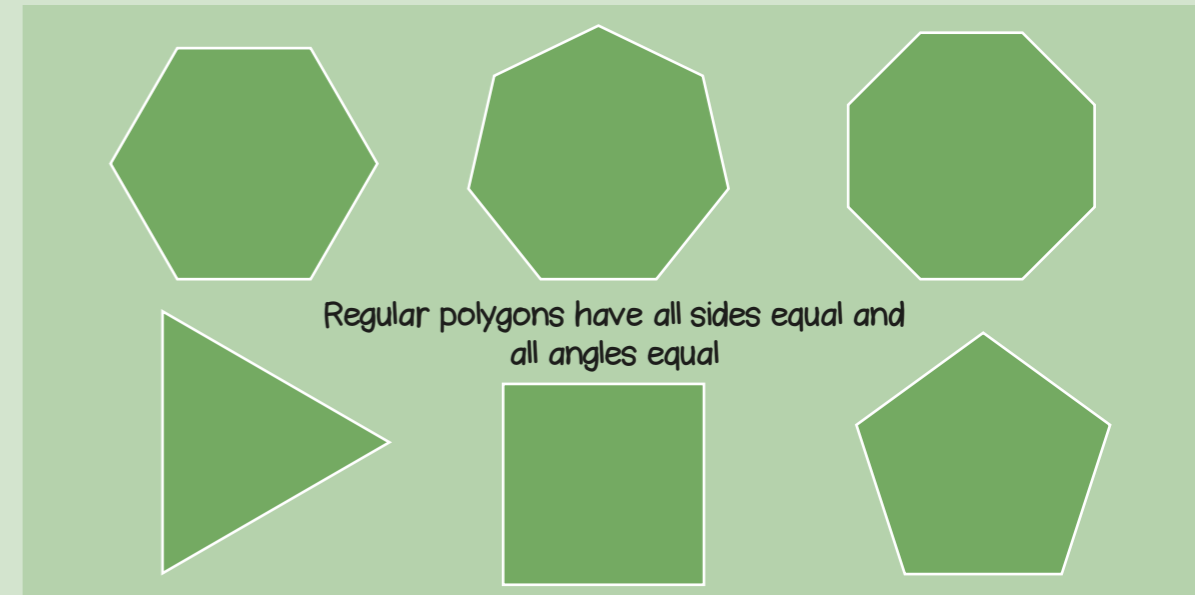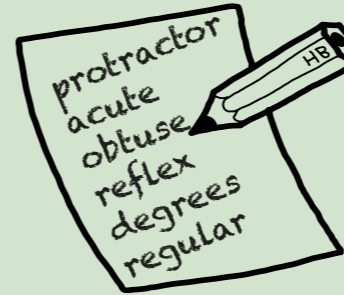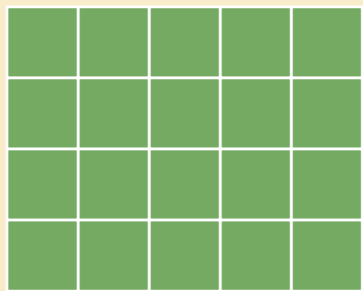The sum of the angles at a point is 360°

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

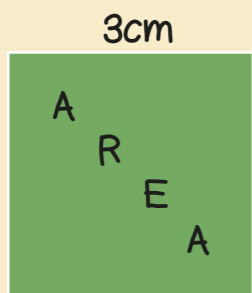Regular polygons have all sides equal and all angles equal
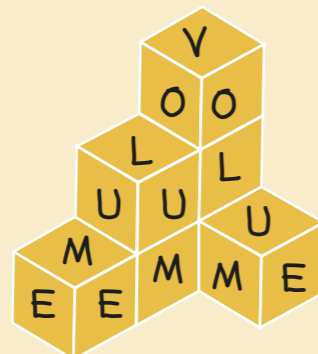
4 rows of 5 = 20 squares

5cm
AREA
4cm
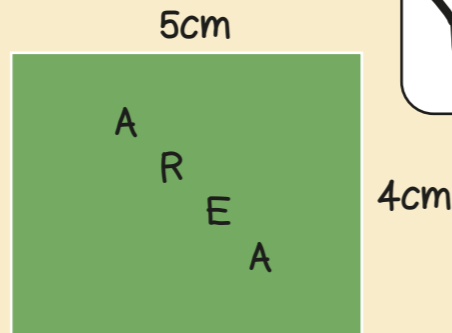
Area of rectangle = length x width
= 5 x 4
= 20cm²
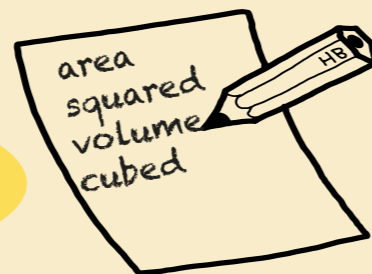
The area of a shape is the amount of space inside a shape
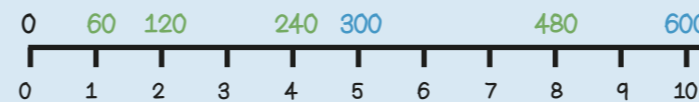
3cm
AREA

Area of the square = 3²
= 3 x 3
= 9 cm²
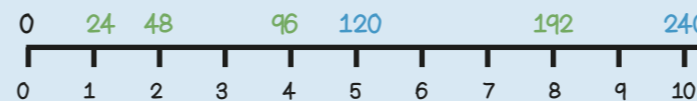
Volume is the amount of space a 3D shape takes up

area
squared
volume
cubed

VOLUME

The volume is 7 cubes or 7cm³

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
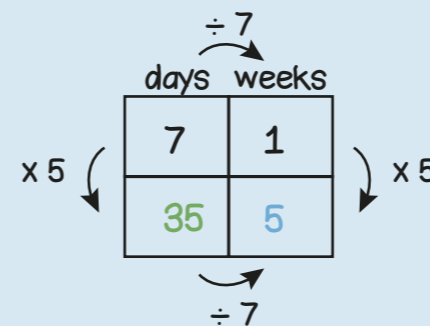
Bus timetable

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

bar chart
graph
axes
scale

distance travelled in km
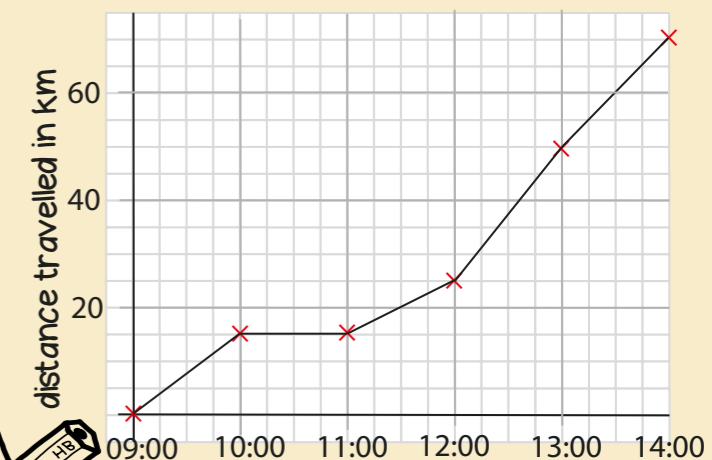
From 11a.m. to 1p.m. they travelled 35km

Can Do maths