Count in multiples

Now you must learn these multiples

Multiples of 6	Multiples of 7	Multiples of 9	Multiples of 25
6	7	9	25
12	14	18	50
18	21	27	75
24	28	36	100
30	35	45	125
36	42	54	150
42	49	63	175
48	56	72	200
54	63	81	225
60	70	90	250

Find 1000 more or less

thousands	hundreds	tens	units
4	5	6	7

To increase or decrease by 1000 this is the digit that changes.

4567 has increased by 1000 to 5567

thousands	hundreds	tens	units
5	5	6	7

4567 has decreased by 1000 to 3567

thousands	hundreds	tens	units
3	5	6	7

Round to nearest 10, 100, 1000,

Example 1– Round 4279 to the nearest 1000

- Step 1 – Find the 'round-off digit' - 4
- Step 2 – Look one digit to the right of 4 - 2

5 or more? NO – leave 'round off digit' unchanged
- Replace following digits with zeros

ANSWER – 4000

Example 2– Round 4279 to the nearest 10

- Step 1 – Find the 'round-off digit' - 7
- Step 2 – Look one digit to the right of 7 - 9

5 or more? YES – Add one to the 'round off digit'
- Replace following digits with zeros

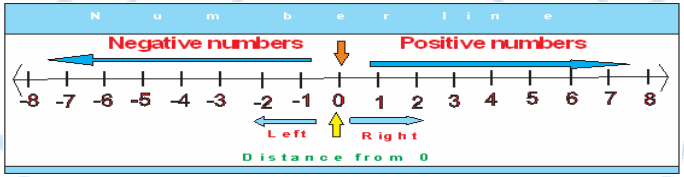
ANSWER – 4280

Negative numbers

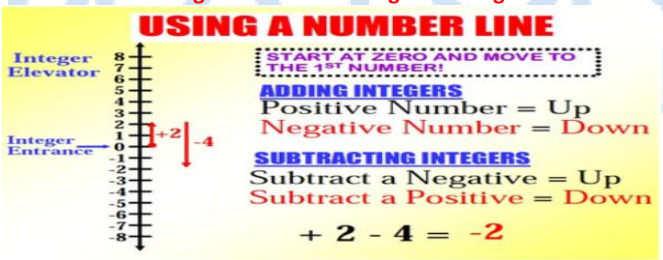
Negative numbers are numbers **BELOW ZERO**

Think of a number line

- **Horizontal number line**



We move to the right to add a positive integer.
We move to the left to add a negative integer.
We move to the left to subtract a positive integer.
We move to the right to subtract a negative integer.



Place value

thousands	hundreds	tens	units
3	7	4	8

3000 700 40 8

Roman Numerals to 100

The numbers 1-100 are constructed from these:

I = 1
V = 5
X = 10
L = 50
C = 100

1	I	21	XXI	41	XLI	61	LXI	81	LXXXI
2	II	22	XXII	42	XLII	62	LXII	82	LXXXII
3	III	23	XXIII	43	XLIII	63	LXIII	83	LXXXIII
4	IV	24	XXIV	44	XLIV	64	LXIV	84	LXXXIV
5	V	25	XXV	45	XLV	65	LXV	85	LXXXV
6	VI	26	XXVI	46	XLVI	66	LXVI	86	LXXXVI
7	VII	27	XXVII	47	XLVII	67	LXVII	87	LXXXVII
8	VIII	28	XXVIII	48	XLVIII	68	LXVIII	88	LXXXVIII
9	IX	29	XXIX	49	XLIX	69	LXIX	89	LXXXIX
10	X	30	XXX	50	L	70	LXX	90	XC
11	XI	31	XXXI	51	LI	71	LXXI	91	XCI
12	XII	32	XXXII	52	LII	72	LXXII	92	XCII
13	XIII	33	XXXIII	53	LIII	73	LXXIII	93	XCIII
14	XIV	34	XXXIV	54	LIV	74	LXXIV	94	XCIV
15	XV	35	XXXV	55	LV	75	LXXV	95	XCV
16	XVI	36	XXXVI	56	LVI	76	LXXVI	96	XCVI
17	XVII	37	XXXVII	57	LVII	77	LXXVII	97	XCVII
18	XVIII	38	XXXVIII	58	LVIII	78	LXXVIII	98	XCVIII
19	XIX	39	XXXIX	59	LIX	79	LXXIX	99	XCIX
20	XX	40	XL	60	LX	80	LXXX	100	C

Add & subtract

- **Line up digits from right to left**

Example 1: Add 4735 and 386

```
  4 7 3 5            4 7 3 5
+   3 8 6        +   3₁8₁6
  5 1 2 1            5 1 2 1
  1 1 1
```

Example 2: Subtract 637 from 2476

```
2̸¹ ¹4 7̸⁶ ¹6          2 ¹4  7 ¹6
-   6 3 7          ₁- 6  3₁ 7
  1 8 3 9             1 8  3 9
```

Estimate a calculation

- **Round off each number so that the calculation is easy to do**

Example 1: 644 x 11

To make it easy use:

600x11=6600 or 600x10 =6000

Example 2: 503.926 + 709.328

To make it easy use:

500 + 700 = 1200

Example 3: Half of 51.4328963

To make it easy use:

Half of 50 = 25

Example 3: 806 - 209

To make it easy use:

800 – 200 = 600

Addition & subtraction problems

(Based upon 4/6)

Words associated with addition:

add

altogether

total

add

altogether

Words associated with subtraction:

minus

difference

Subtract

How many more?

Multiplication tables 12 x 12

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Remember:

7 x 8 = 56   8 x 7 = 56   56 ÷ 7 = 8   56 ÷ 8 = 7

Factor pairs

The number 12 can be made from these factor pairs

1 x 12
2 x 6
3 x 4
4 x 3
6 x 2
12 x 1

From these factor pairs we can see that the factors of 12 are: 1, 2, 3, 4, 6, 12

Multiply by a single digit number

Example: 342 x 7

3 4 2 X 7 2 3 9 4 2 1	3 4 2 X ₂ ₁ 7 2 3 9 4

Connections between 2 sums

- Look for connections between the 2 sums

Example: We know 342 x 7 = 2394 (See above)

x2   x2

So we also know 342 x 14 = 4788

Example: We know 342 x 7 = 2394 (See above)

x2   x2

So we also know 684 x 7 = 4788

Example: We know 342 x 7 = 2394 (See above)

+1

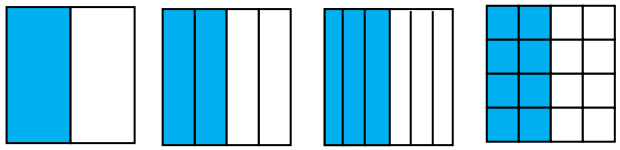
So we also know 342 x 8 = 2394 + (342 x 1)

= 2394

Common equivalent fractions

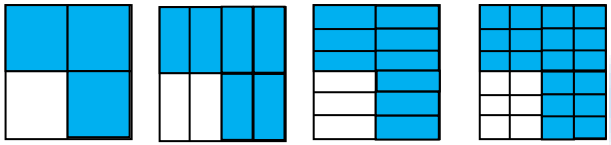
- The same fraction can be expressed in different ways

All these are $\frac{1}{2}$



$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{8}{16}$

All these are $\frac{3}{4}$



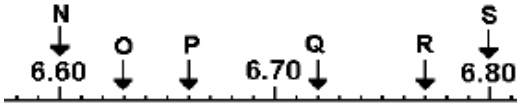
$\frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \frac{18}{24}$

Hundredths

tens	units	•	tenths	hundredths
8	2	•	6	4

- This represents 4 hundredths = $\frac{4}{100}$
- To find a hundredth of an object or quantity you divide by 100

Counting in hundredths (continued)



O = 6.63
P = 6.66
Q = 6.72
R = 6.77

Add & subtract fractions

- To add and subtract fractions

When the denominators are the same

$\frac{5}{8} + \frac{3}{8} = \frac{8}{8} = 1$ Do not add the denominators

$\frac{5}{8} - \frac{1}{8} = \frac{4}{8}$ Do not subtract the denominators

Decimal equivalents

units	•	tenths
0	•	6

$0.6 \Leftrightarrow \frac{6}{10}$

units	•	tenths	hundredths
0	•	0	3

$0.03 \Leftrightarrow \frac{3}{100}$

units	•	tenths	hundredths
0	•	6	3

$0.63 \Leftrightarrow \frac{63}{100}$

Decimal equivalents

Others to learn are:

$\frac{1}{4} = 0.25$ $\frac{1}{2} = 0.5$ $\frac{3}{4} = 0.75$

Effect of dividing by 10 and 100

Convert between units of measure

Capacity or Volume

- **To divide by 10, move each digit one place to the right**

e.g. 35 ÷ 10 = 3.5

Tens	Units	•	tenths
3	5	•	
	3	•	5

- **To divide by 100, move each digit 2 places to the right**

e.g. 35 ÷ 100 = 0.35

(we add a zero to show there are no whole numbers)

Tens	Units	•	tenths	hundredths
3	5	•		
	0	•	3	5

Round decimals to nearest whole

The Rules:

- If the digit behind the decimal point is **LESS THAN 5**, the number is rounded **DOWN** to the next whole number

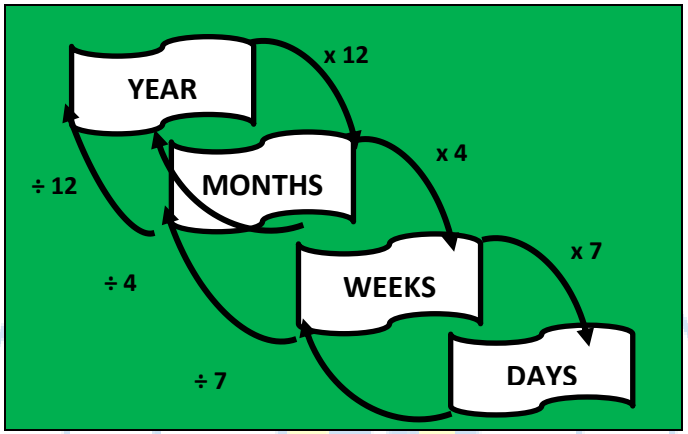
Example: 6.**4** becomes rounded to 6

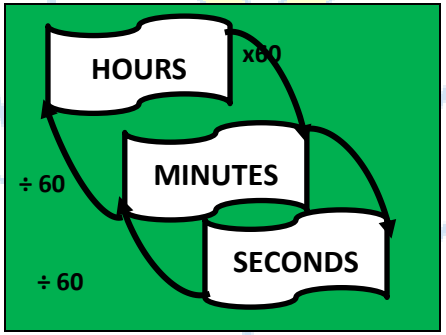
- If the digit behind the decimal point is **5 OR MORE**, the number is rounded **UP** to the next whole number

Example: 6.**5** becomes rounded to 7

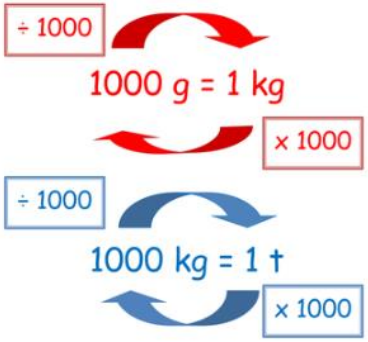
6.**8** becomes rounded to 7

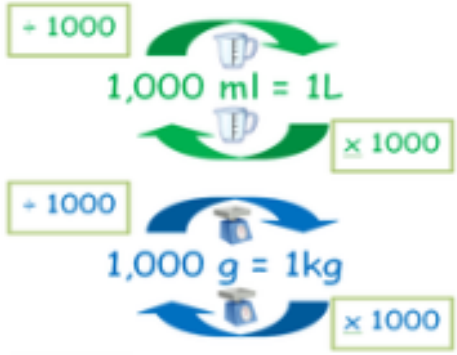
- **Time**





- **Mass or weight**



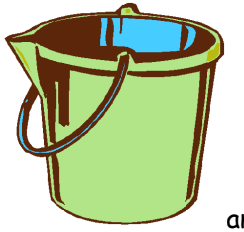


Estimate measures

- **Capacity**

a 5ml spoon

a 330ml can of drink



an average bucket holds 10 litres

Estimate measures - continued

- **Mass**

this apple weighs 125g

this bag of sugar weighs 1kg

this man weighs 70kg

- **Length**

this pencil is 17cm long

length of classroom is 10m

distance to Exeter is 64miles

12 and 24 hour clock

12 am	00:00
1am	01:00
2am	02:00
3am	03:00
4am	04:00
5am	05:00
6am	06:00
7am	07:00
8am	08:00
9am	09:00
10am	10:00
11am	11:00
12 pm Lunch time	Noon
1pm	13:00
2pm	14:00
3pm	15:00
4pm	16:00
5pm	17:00
6pm	18:00
7pm	19:00
8pm	20:00
9pm	21:00
10pm	22:00
11pm	23:00

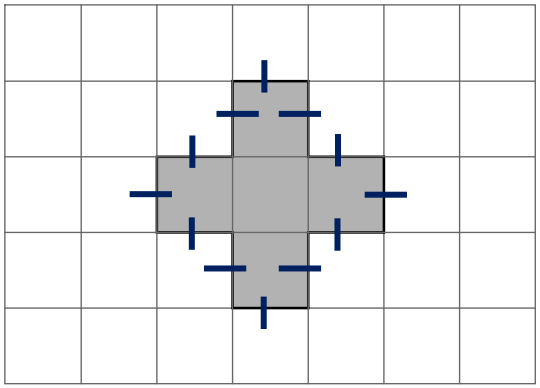
Eliminate "AM" for the hours between 1:00 and 11:59 AM

1:00 AM = 01:00	7:00 AM = 07:00
2:00 AM = 02:00	8:00 AM = 08:00
3:00 AM = 03:00	9:00 AM = 09:00
4:00 AM = 04:00	10:00 AM = 10:00
5:00 AM = 05:00	11:00 AM = 11:00
6:00 AM = 06:00	

Perimeter & area by counting

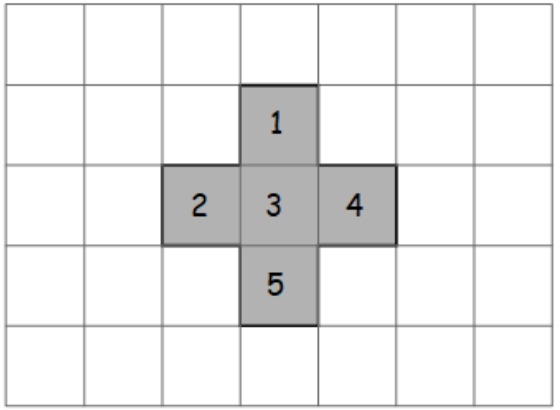
- **Perimeter** is round the **OUTSIDE**

Perimeter of this shape = 12cm



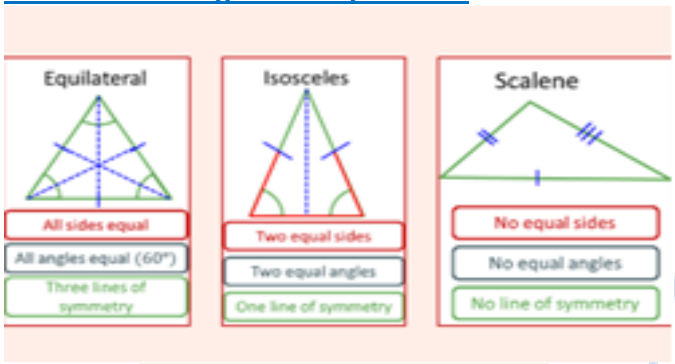
- **Area** is the number of squares **INSIDE**

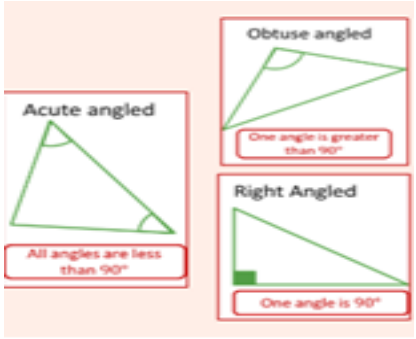
Area of this shape = 5cm^2



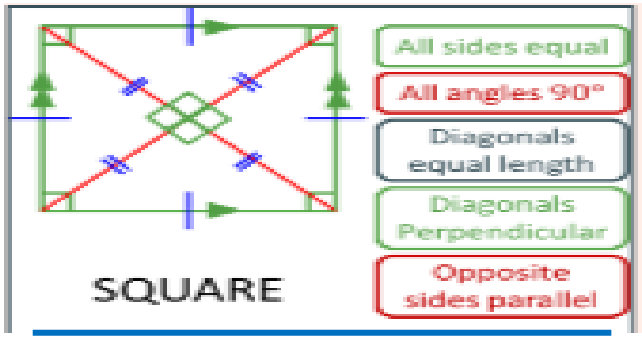
Properties of quadrilaterals & triangles

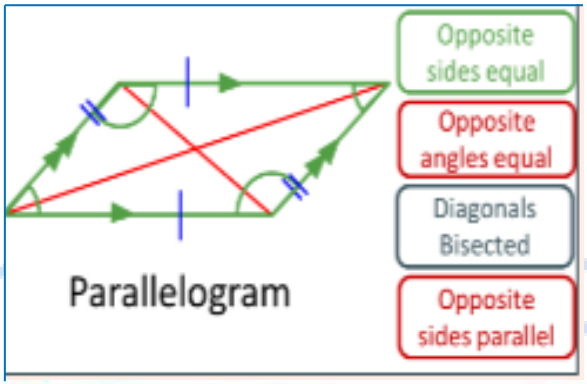
TRIANGLES – angles add up to 180^0

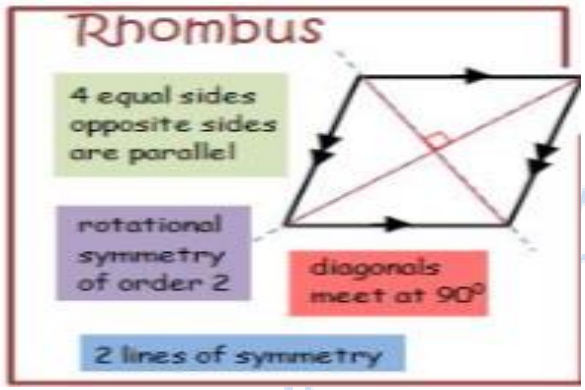


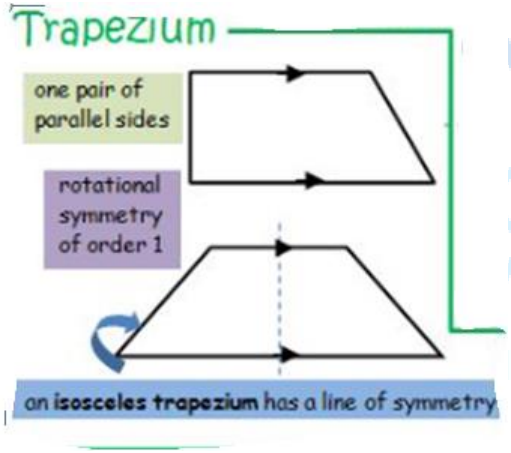


QUADRILATERALS – all angles add up to 360^0

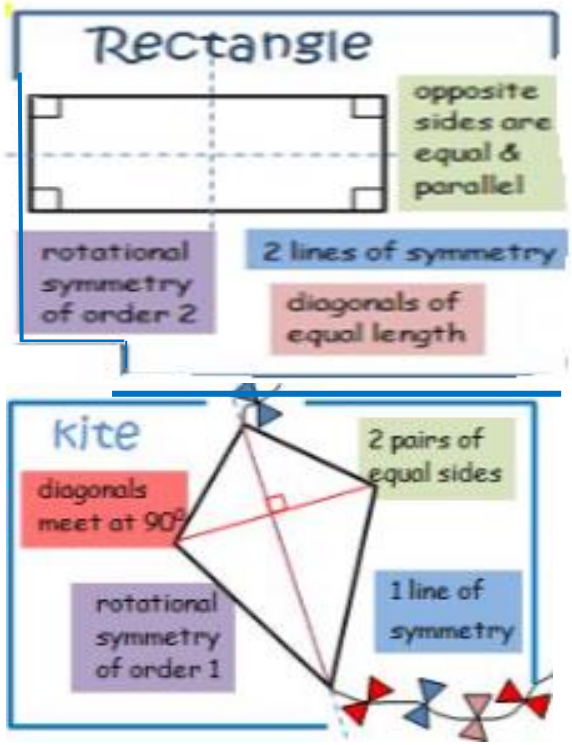








Properties of quadrilaterals & Triangles (continued)



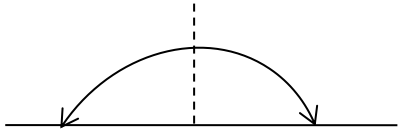
Types of angles

Acute (less than 90^0)

Right (Exactly 90^0)

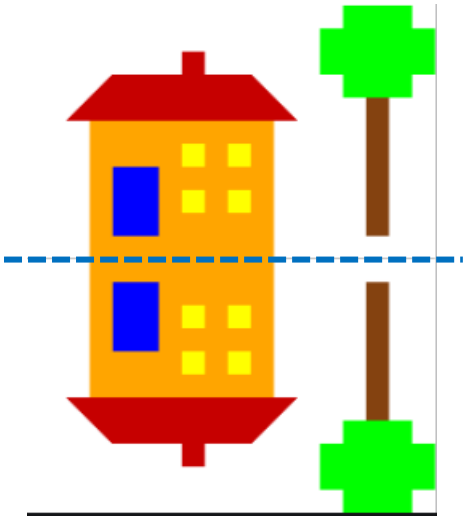
Obtuse (Between 90^0 & 180^0)

Straight line (180^0 or two right angles)

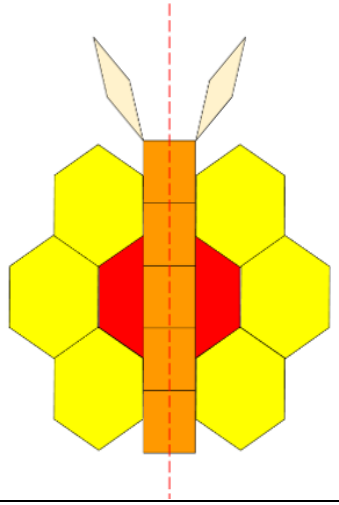


Identify lines of symmetry

- Horizontal line of symmetry

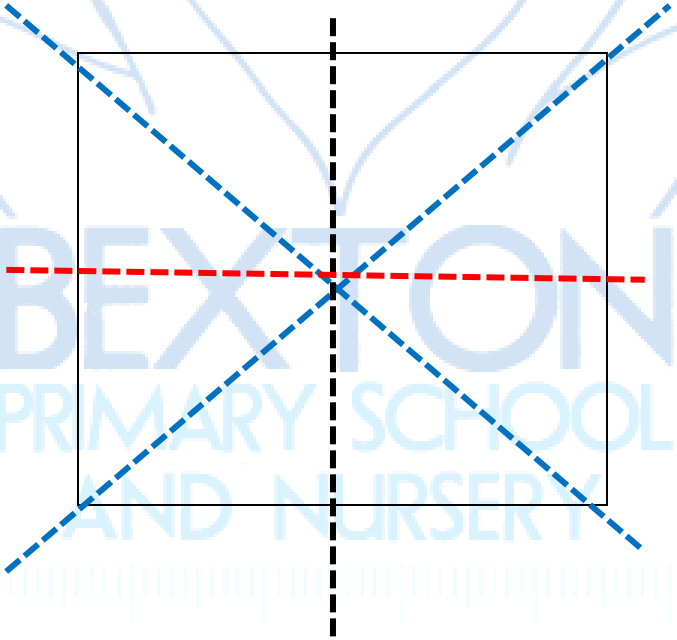


- Vertical line of symmetry



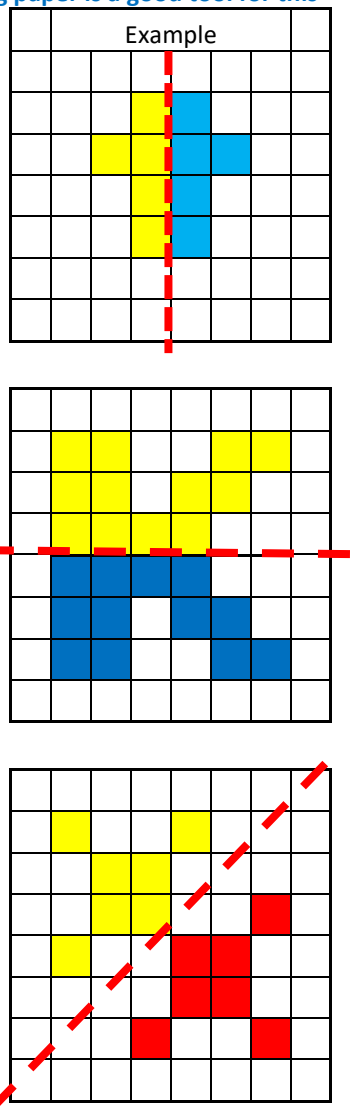
- Oblique line of symmetry

- Horizontal, Vertical & Oblique lines of symmetry



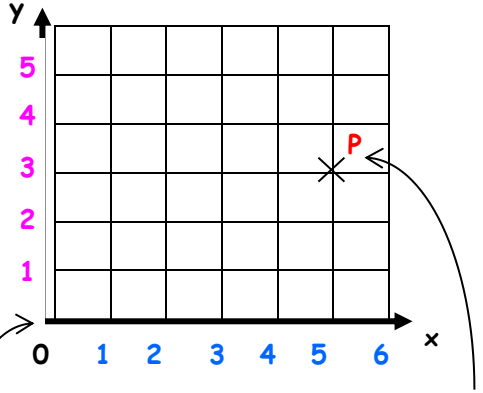
Complete a symmetrical figure

- Tracing paper is a good tool for this



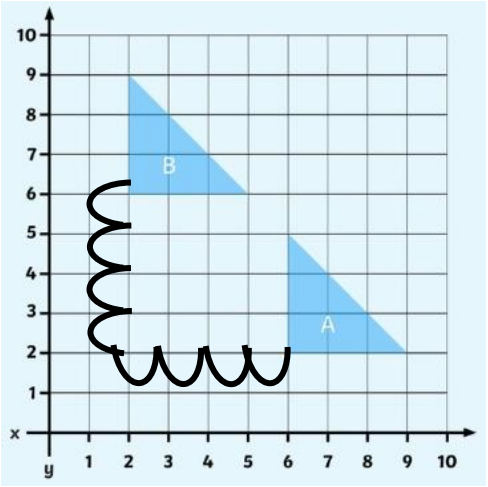
Describe position of points

- The horizontal axis is the x-axis
- The vertical axis is called the y-axis
- The origin is where the axes meet
- A point is described by two numbers
  The 1st number is off the x-axis
  The 2nd number is off the y-axis



Origin (0,0) P is (5, 3)

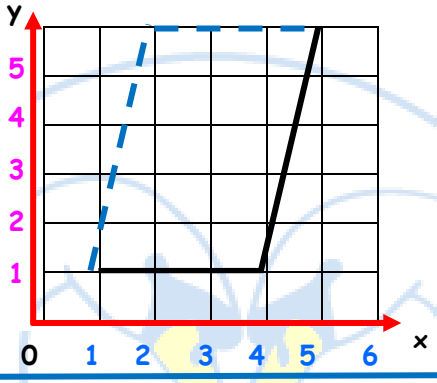
Describe movement of shapes



Shape A has been moved 4 squares left and 4 up.
This movement is called TRANSLATION

Complete a 2D shape

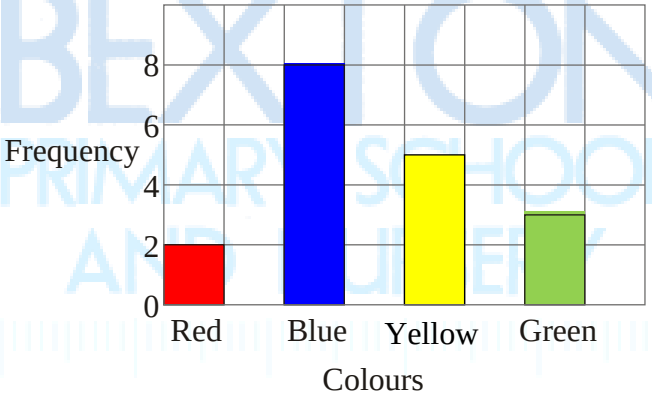
Example: Draw on lines to complete parallelogram



Present discrete & continuous data

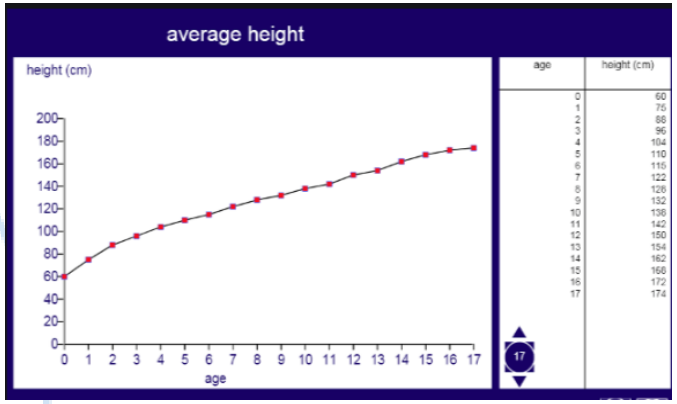
Discrete data is counted
e.g. cars, students, animals

Graph to show favourite colours in Y4JG



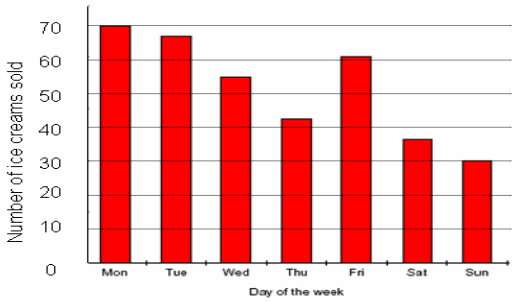
Present discrete & continuous data

Continuous data is measured
e.g. heights, times, temperature
Graph to show a patient's temperature over 24h



Compare data in graphs

'Sum' or 'total' means 'add up'
'Difference' or 'how many more' means 'subtract'
Bar chart to show Number of Ice Creams sold in a week



(i) What is the total number of ice creams sold over the weekend?
Answer: 37 + 30 = 67

(ii) How many more were sold on Friday than Saturday?
Answer: 61 – 37 = 24

Pictogram to show the number of pizzas eaten by four friends in the past month

Key:  **= 4 pizzas**

Alan 

Bob 

Chris 

Dave 

(i) What is the sum of the number of pizzas eaten in the month

Answer: 6 + 9 + 19 + 12 = 46

(ii) Find the difference in the number eaten by Chris and Bob

Answer: 19 – 9 = 10

Picture graphs are used to display large amounts of data. A symbol is chosen to represent a specific amount. Picture graphs have a title that tells us what data has been collected, category labels and a key to show the value of the symbol.

How many chocolate cupcakes were sold?

4 + 4 + 4 + 4 + 2 = 18

Cupcakes Sold in a Day **Key:**  = 4 cupcakes

Strawberry	
Chocolate	
Cherry	
Choc-chip