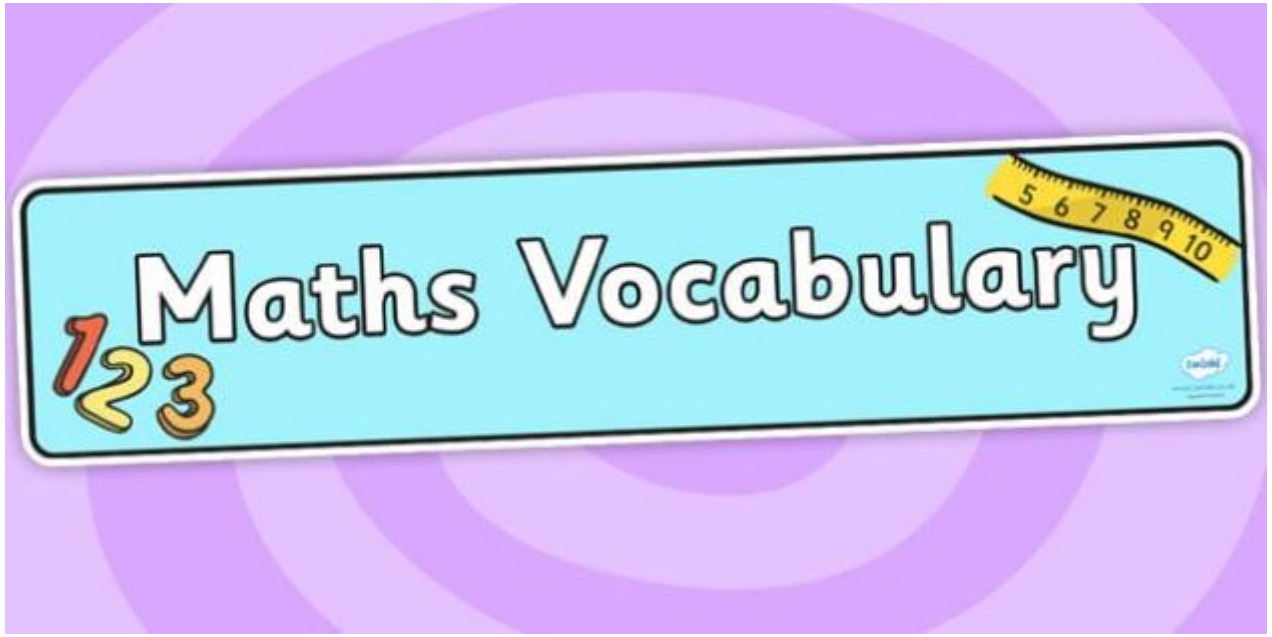

Key vocabulary for Year 5 Maths learning.

Year 5 Addition

Addition: 5-digit numbers

sum

1

85683
+45978
_____

Place the numbers one on top of the other, lining up the hundreds, tens and

2

85683
+45978
1
_____

Add the ones and write the answer.

3

85683
+45978
1
_____
1

Carry any tens to the tens column.

4

85683
+45978
61
_____
11

Add the tens including any tens you have carried. Carry any hundreds to the hundreds column.

difference

counting on

counting back

5

85683
+45978
661
_____
11

Add the hundreds including any hundreds you have carried.

6

85683
+45978
1661
_____
111

Add the thousands including any thousands you've carried.

7

85683
+45978
131661
_____
1111

Add the tens thousands including any thou-sands you've carried.

8

85683
+45978
131661
_____
1111

Check your answer.

minus

less

Rounding to Check Answers

Rounding is a great way to make a number simpler while keeping it close to the value that it was. Rounding can be used to help check answers to calculations.

For example: 3487 + 2725 = **6212**

3500 + 2700 = **6200**

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Year 5 Subtraction

Subtraction: 5-digit numbers

plus

minus

total

difference

sum

less

counting on

counting back

1

38291
-18636
_____

Place the numbers one on top of the other, lining up the thousands, hundreds, tens and ones. Subtract the ones (the answer to 1 – 6 is negative).

2

38291
-18636
55

Exchange 10 from the 90 to make 11 ones.
Subtract the ones: 11 – 6 = 5.
Subtract the tens: 80 – 30 = 50.

3

38291
-18636
655

Subtract the hundreds (the answer to 200 – 600 is negative). Exchange 1000 from the 8000 to make 1200. Subtract the hundreds: 1200 - 600 = 600.

4

38291
-18636
9655

Subtract the thousands (the answer to 7000 – 8000 is negative). Exchange 10 000 from the 30 000 to make 17 000. Subtract the thousands: 17 000 - 8000 = 9000.

5

38291
-18636
19655

Subtract the ten thousands:
20 000 – 10 000 = 10 000.

6

38291
-18636
19655

Check your answer.

Rounding to Check Answers

Rounding is a great way to make a number simpler while keeping it close to the value that it was. Rounding can be used to help check answers to calculations.

For example: 9877 - 3827 = **6050** 9900 - 3800 = **6100**

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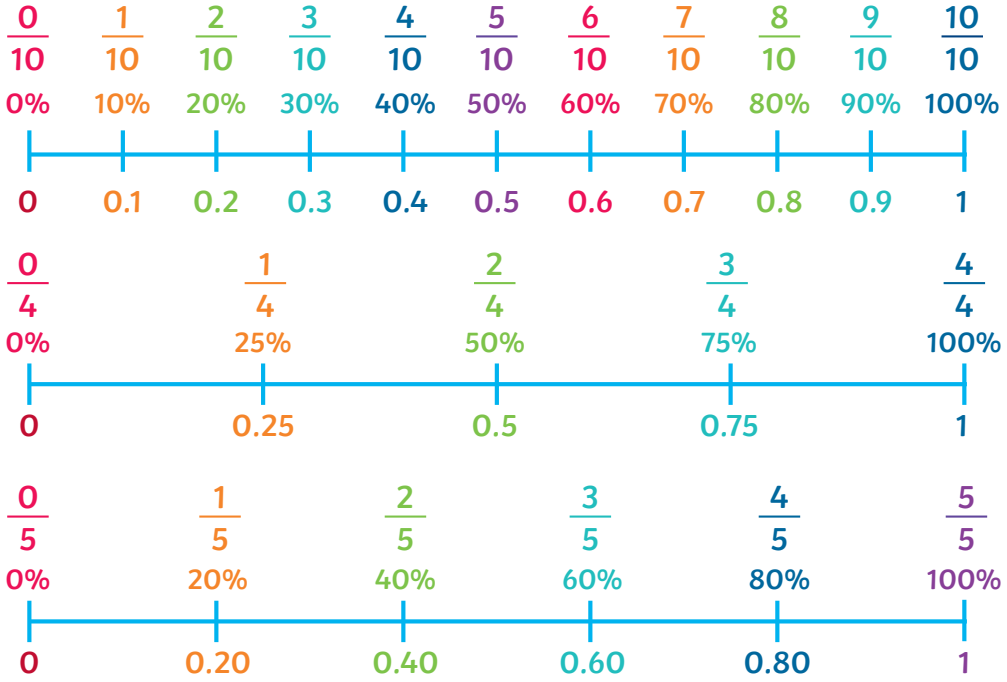
Year 5 Fractions



Percent: Number of parts per 100.

1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
11%	12%	13%	14%	15%	16%	17%	19%	19%	20%
21%	22%	23%	24%	24%	26%	26%	28%	29%	30%
31%	32%	33%	34%	35%	36%	37%	38%	29%	40%
41%	42%	43%	44%	45%	46%	47%	48%	49%	50%
51%	52%	53%	54%	55%	56%	57%	58%	59%	50%
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%

Equivalent Fractions:
Fractions which have the same value.

Adding and Subtracting Fractions:
When the denominators are the same, you simply add or subtract the numerators.

$$\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$$

When the denominators are not the same, find the lowest common denominator and rewrite the fractions. Then, add or subtract the numerators.

$$\frac{2}{5} + \frac{1}{10} = \frac{4}{10} + \frac{1}{10} = \frac{5}{10} = \frac{1}{2}$$

Mixed Numbers

Mixed numbers contain a whole number and a fraction.

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

$2\frac{1}{4}$ is a mixed number.

The whole number is 2.

The fraction is $\frac{1}{4}$.

Improper Fractions

An improper fraction is a fraction where the numerator is greater than or equal to the denominator.

$\frac{5}{3}$ ← 5 is the **numerator**; 3 is the **denominator**

Multiplying Fractions:
When multiplying a proper fraction, multiply the numerator by the multiplier.

$$\frac{2}{3} \times 5 = \frac{10}{3} = 3\frac{1}{3}$$

Round to the nearest whole number: Round to a number which has no digits beyond the ones place holder. For example, 2, 45, 70.

Round to one decimal place:
Round to a number which has no digits beyond the tenths place holder. For example, 2.3, 45.1, 70.4

Round to two decimal place:
Round to a number which has no digits beyond the hundredths place holder. For example, 2.31, 45.19, 70.44

Tenths, Hundredths and Thousandths:

Ten	One	.	tenth	hundredth	thousandth
10	1	.	0.1	0.01	0.001
T	O	.	t	h	th

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Year 5 Measurement

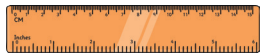
Length

km
m
cm
mm

1 kilometre = 1000 metres

1 metre = 100 centimetres

1 centimetre = 10 millimetres



km
m
yd
ft

1 kilometre = 0.62 miles

1 metre = 1.09 yards

1 metre = 3.28 feet

cm
in
ft
yd

1 centimetre = 0.39 inches

1 foot = 12 inches

1 yard = 3 feet

Capacity

l
cl
ml

1 litre = 1000 millilitres

1 centilitre = 10 millilitres

l
fl oz
pt
gal

1 litre = 35.19 fluid ounces

1 litre = 1.75 pints

1 litre = 0.21 gallons

1 gallon = 8 pints

A **rectilinear** shape is one which is bound by straight lines and can be divided into rectangles or triangles in order to find its area.

Mass

t
kg
g
mg

1 tonne = 1000 kilograms

1 kilogram = 1000 grams

1 gram = 1000 milligrams

g
oz
kg
lb
s

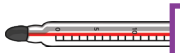
1 gram = 0.035 ounces

1 kilogram = 2.2 pounds

1 stone = 14 pounds

1 stone = 6.35 kilograms

Temperature

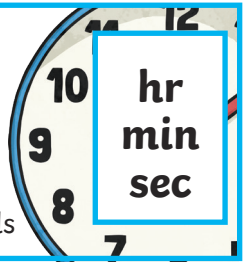


°C
°F

1° celsius = 33.8° fahrenheit

0° celsius = 32° fahrenheit

Time



hr
min
sec

1 day = 24 hours

1 hour = 60 minutes

1 minute = 60 seconds

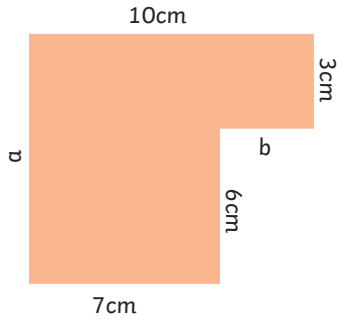
Currency

£
p

1 pound = 100 pence

Finding the perimeter of a Rectilinear Shape

You can calculate the perimeter of a rectilinear shape by adding together the length of each side. **You may need to calculate the length of any sides not given.**



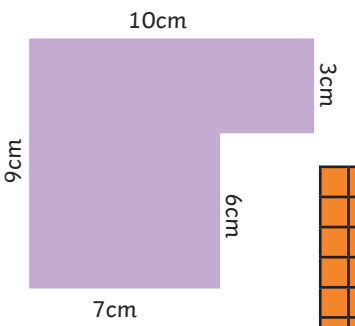
a= 6cm + 3cm = **9cm**

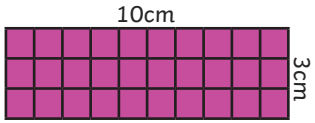
b= 10cm - 7cm = **3cm**

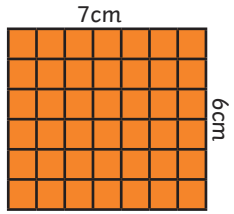
The perimeter:

10cm + 3cm + 3cm + 6cm + 7cm + 9cm = **38cm**

You can calculate the area of shapes made up of rectangles by breaking them down into individual rectangles.







The area:

10cm × 3cm = **30cm²**

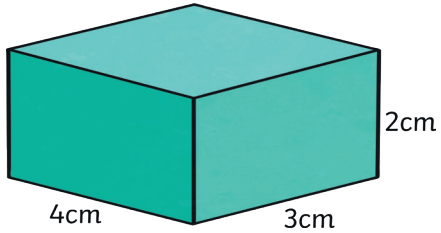
6cm × 7cm = **42cm²**

30cm² + 42cm² = **72cm²**

Volume

3D shapes have volume.

length × height × depth = volume



4cm × 2cm × 3cm = 24cm³

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Year 5 Multiplication and Division

Factors and Multiples

A multiple is a number that can be divided evenly by a given number.

For example, 12 × 1 = **12**, 12 × 2 = **24**, 12 × 3 = **36**

The multiples of 12 include: 12, 24, 36, 48...

A factor is a number that is multiplied by another number to get a product.

For example, 12 ÷ **1** = **12**, 12 ÷ **2** = **6**, 12 ÷ **3** = **4**

The factors of 12 are: 1, 2, 3, 4, 6 and 12.

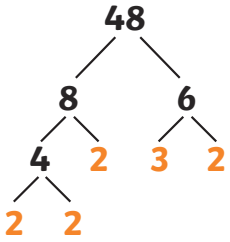
Prime Numbers

A natural number greater than 1 with no divisors other than 1 and itself.

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	9	95	96	97	98	99	100

Prime Factors

Prime factors are the factors of a number that are prime. They can be found using a diagram like this:



Common Factors

A common factor is a number which is a factor of two or more other numbers. For example, 3 is a common factor of 6 and 9.

Multiplying and Dividing by 10, 100 and 1000

When dividing a number by 10, 100 or 1,000 the value of each digit is divided, sometimes giving a decimal point.

3020 ÷ 10 = 302

When multiplying a decimal number by 10, 100 or 1000, the value of each digit is multiplied.

3.02 × 10 = 30.2

Each digit moves the necessary number of places to the right because dividing by 10 decreases the number.

	3	0	2	0	.	0
÷10 →	3	0	2	.		

Each digit moves the necessary number of places left because multiplying by 10, 100, or 1000 increases the number.

			3	.	0	2
		3	0	.	2	← ×10

Square and Cube Numbers

1^2 1×1=1	1^3 1×1×1=1
2^2 2×2=4	2^3 2×2×2=8
3^2 3×3=9	3^3 3×3×3=27
4^2 4×4=16	4^3 4×4×4=64
5^2 5×5=25	5^3 5×5×5=125
6^2 6×6=36	6^3 6×6×6=216
7^2 7×7=49	7^3 7×7×7=343
8^2 8×8=64	8^3 8×8×8=512
9^2 9×9=81	9^3 9×9×9=729
10^2 10×10=100	10^3 10×10×10=1000
11^2 11×11=121	11^3 11×11×11=1331
12^2 12×12=144	12^3 12×12×12=1728

4-digit × 2-digit carrying not shown

5368 × 24	Write the numbers above each other in columns.
5368 × 24 21472	Multiply 5368 × 4
5368 × 24 21472 107360	Multiply 5368 × 20
21472 + 107360 128832	Add the products

Short Division

84 ÷6

1 Partition 84 into tens and ones.

Work out how many 6s divide into 80 so that the answer is a multiple of 10. In this case, the highest multiple of 10 divisible by 6 is 60. Partition 84 into 60 and 24 then divide each number by 6.

2 **Combine the totals.**

$$6 \overline{)\,6\,0 + 2\,4} \quad 10 + 4$$

3 **This can be shortened to:**

$$6 \overline{)\,8\,{}^{2}4} \quad 14$$

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Year 5 Number and Place Value

Place Value to One Million

M	Hth	Tth	Th	H	T	O	t	h	th
Millions 1 000 000	Hundred Thousands 100 000	Ten Thousands 10 000	Thousands 1000	Hundreds 100	Tens 10	Ones 1	Tenths 0.1	Hundredths 0.01	Thousandths 0.001

Roman Numerals to 1000

I = ONE

V = five

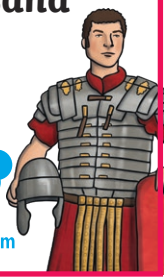
X = ten

L = fifty

C = hundred

D = five hundred

M = thousand



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Count Forwards and Backwards through 0

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

Negative Numbers | Positive Numbers

Rounding to Nearest 10

239 238 237 236 235 234 233 232 231

Round up to 240

Round down to 230

Remember: The **red** digit is the one to consider.

Rounding to Nearest 100

7399 7388 ... 7351 7350 7349 7348 ... 7302 7301

Round up to 7400

Round down to 7300

Remember: The **red** digit is the one to consider.

Rounding to Nearest 1000

5999 5998 ... 5501 5500 5499 5498 ... 5002 5001

Round up to 6000

Round down to 5000

Remember: The **red** digit is the one to consider.

Rounding to Nearest 10 000

29 999 29 998 ... 25 001 25 000 24 999 24 998 ... 20 002 20 001

Round up to 30 000

Round down to 20 000

Remember: The **red** digit is the one to consider.

Rounding to Nearest 100 000

699 999 699 998 ... 650 001 650 000 649 999 649 998 ... 600 002 600 001

Round up to 700 000

Round down to 600 000

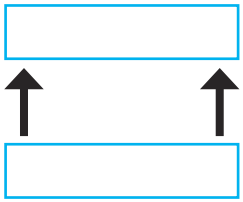
Remember: The **red** digit is the one to consider.

Year 5 Position and Direction

Translate / Translation

A shape is translated when it is moved without rotating or resizing.

Every point of the shape moves the same distance in the same direction.



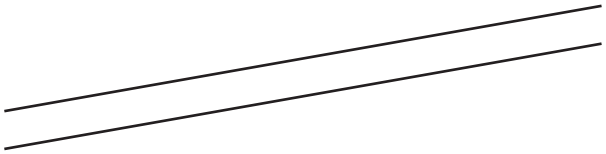
Reflect / Reflection

A shape is reflected about a line when it is flipped over a mirror line.

Every point of the shape is the same distance from the mirror line as the same point on the reflected shape.

Parallel

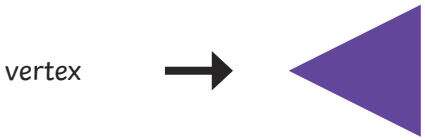
Parallel lines are always the same distance apart and never touching.



Vertex / Vertices

The corner of a shape is called a vertex.

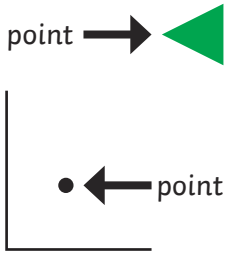
The plural is vertices. A triangle has 3 vertices.



Point

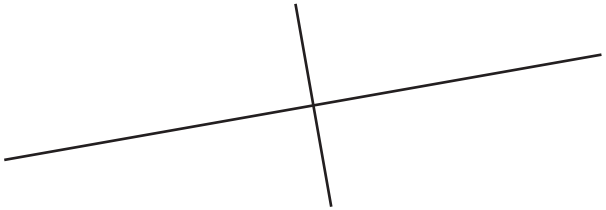
A point is an exact location.

It has no size, only position. They are shown by dots or parts of a line, but they have no size.



Perpendicular

Perpendicular lines meet at a right angle.

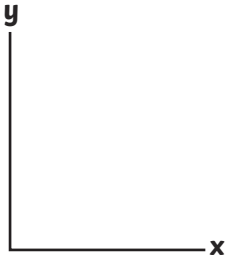


Axis / Axes

A coordinate grid has axes.

The x axis is horizontal.

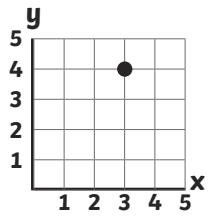
The y axis is vertical.



Coordinates

Coordinates mark the location of a point on a coordinate grid.

The coordinates are written in brackets in the format (x,y) where x is how far along and y is how far up.



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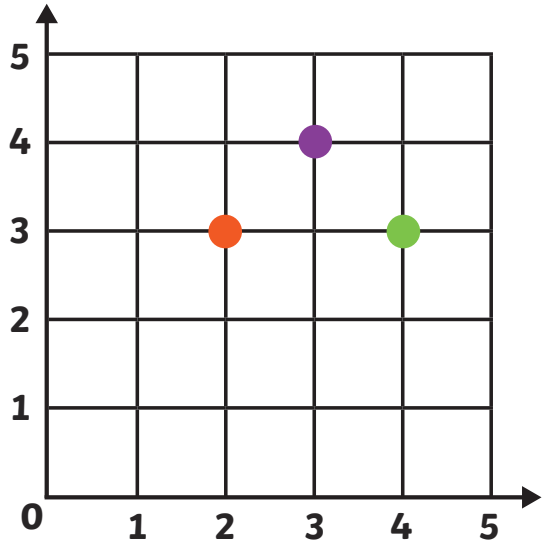
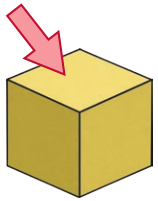


Year 5 Properties of Shape Word Mat

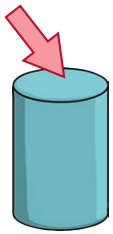
cube

A cube has 6 square faces.



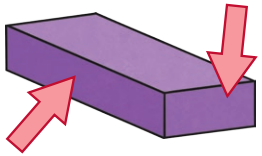
cylinder

A cylinder has two circular faces.



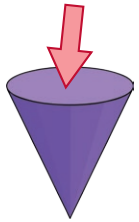
cuboid

A cuboid has 6 rectangular faces.



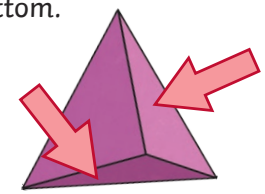
cone

A cone has a circular face.



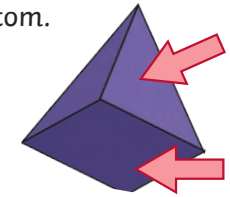
triangular-based pyramid

A triangular-based pyramid has 4 triangular faces. One of the trangular faces is on the bottom.



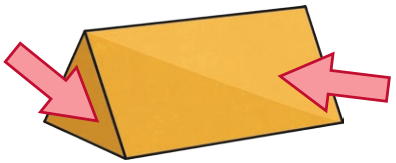
square-based pyramid

A square-based pyramid has 4 triangular faces. It has a square face on the bottom.



triangular prism

A triangular prism has 2 triangular faces. It has 3 rectangular faces.



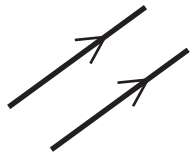
Angles are measured in degrees (°).

Regular and Irregular Shapes

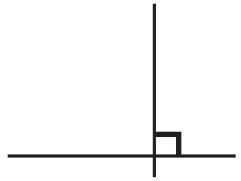
Regular	Irregular
Square	Rectangle
Triangle	Triangle
Pentagon	Pentagon
Hexagon	Hexagon

A **rectilinear** shape is one which is bound by straight lines and can be divided into rectangles or triangles in order to find its area.

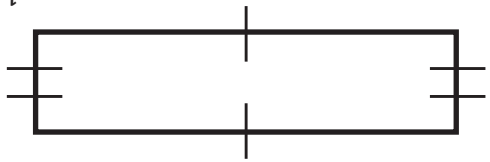
Parallel



Perpendicular

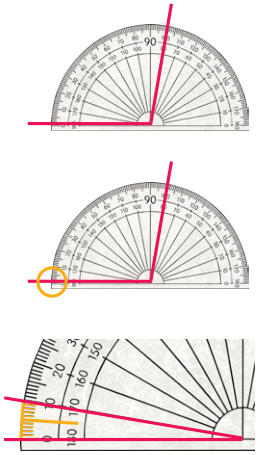


Equal

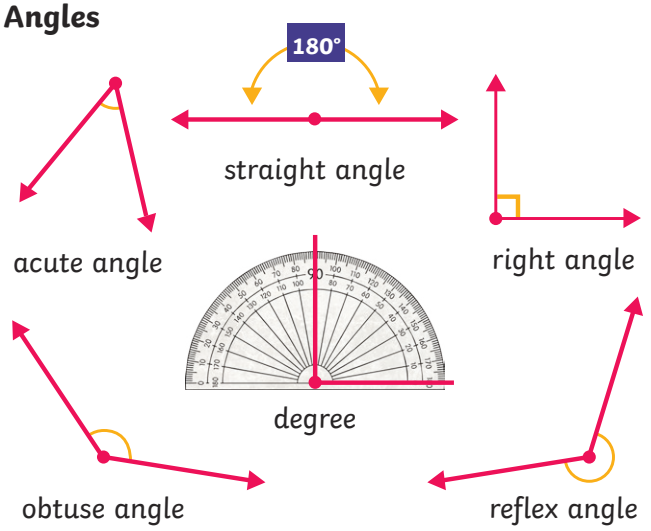


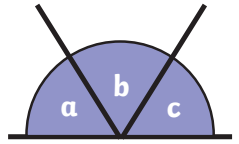
How to Use a Protractor

1. Place the cross of circle at the point (vertex) of the angle that you are measuring.
2. Read from the zero on the outer scale of your protractor.
3. Count the degree lines carefully.

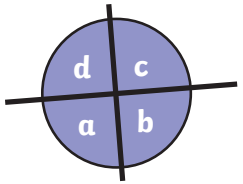


Angles





Angles on a straight line add up to 180°



Angles around a point total 360°. This is a whole turn.

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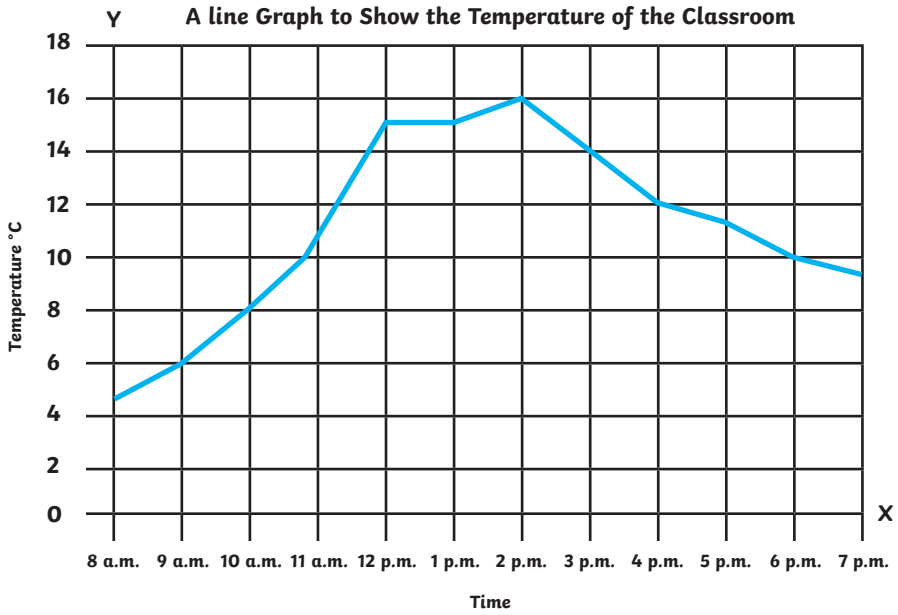
Year 5 Statistics

Line Graph Comparison, Sum and Difference Problems



Compare: Look at two or more points on the graph and identify similarities or differences.

Sum: Finding the total of two or more points.

Difference: Finding the numerical difference between two points.

Mill Road	0726	0800	0842
High St.	0729	0803	0845
Southey Green	0742	0816	0858
Pitsmoor Road	0759	0833	0915
Snig Hill	0812	0846	0928
Hunters Bar	0830	0904	0946
Fulwood	0845	0919	1001

Timetables

Timetables tell the reader what time a certain event will happen. In this case, it shows what time each bus will reach a stop.

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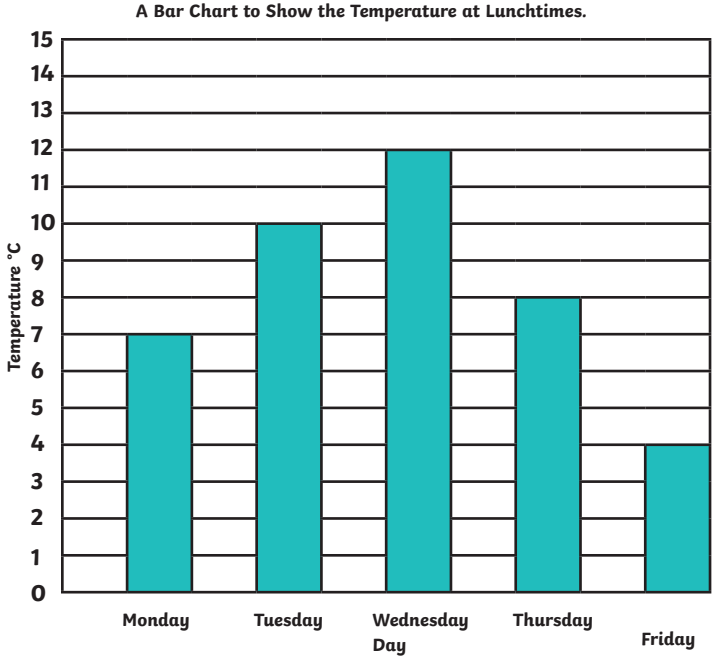
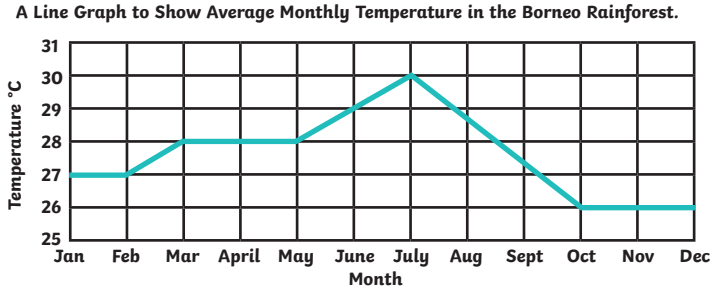
Time Graph

Time graphs show the changing of data over time.

Here is a bar chart which shows the change in temperature over five days.



Here is a line graph which shows the change in temperature over twelve months.