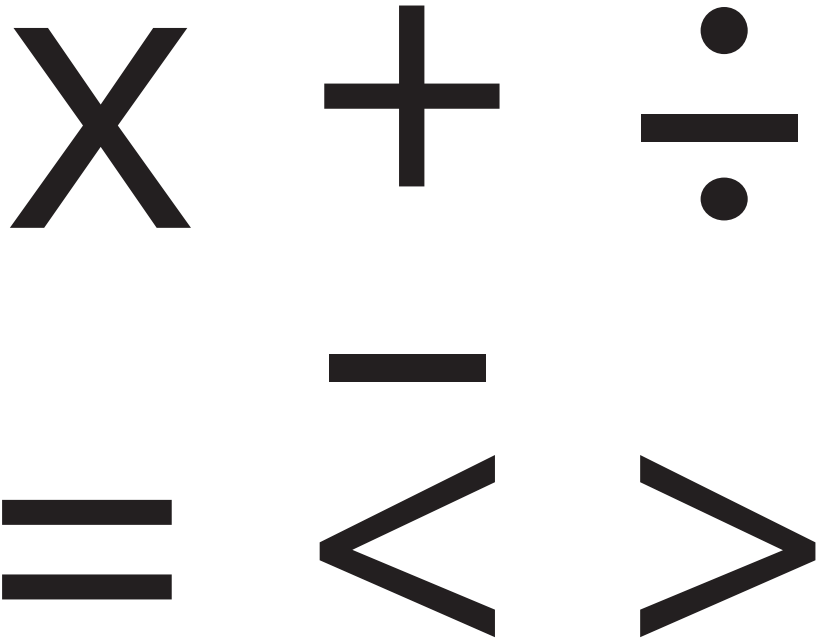
HELPFUL MATHEMATICAL INFORMATION

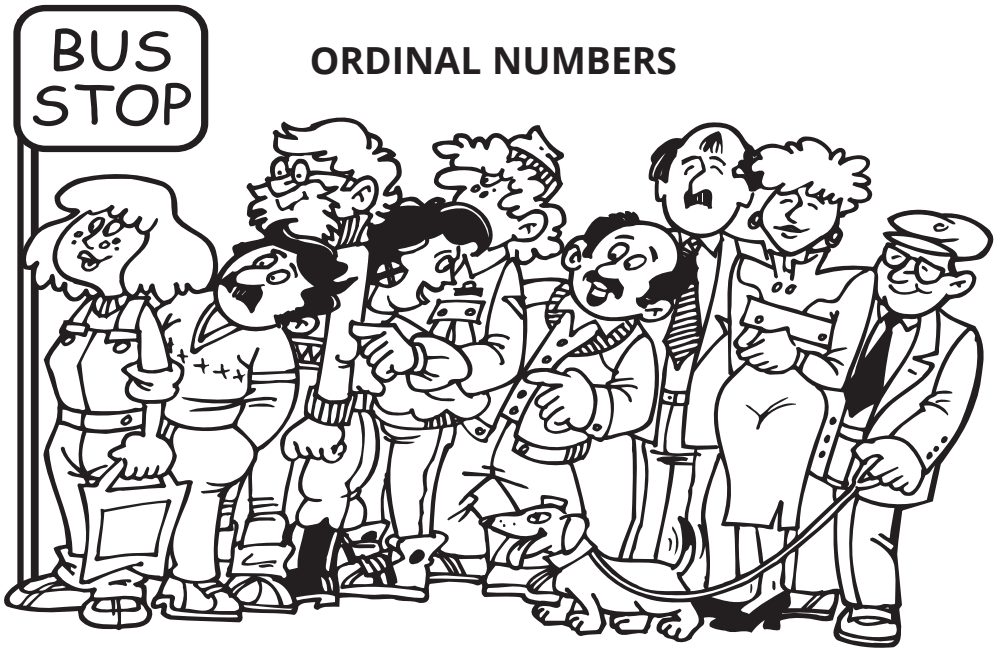


© copyright City of York L.E.A. 2002

NUMBERS

1 one	11 eleven	30 thirty
2 two	**12 twelve**	**40 forty**
3 three	13 thirteen	50 fifty
4 four	**14 fourteen**	**60 sixty**
5 five	15 fifteen	70 seventy
6 six	**16 sixteen**	**80 eighty**
7 seven	17 seventeen	90 ninety
8 eight	**18 eighteen**	**100 one hundred**
9 nine	19 nineteen	1000 one thousand
10 ten	**20 twenty**	**1,000,000 one million**

ORDINAL NUMBERS



1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
first	second	third	fourth	fifth	sixth	seventh	eighth	ninth	tenth

© copyright City of York L.E.A. 2002

PRIME NUMBERS

2 3 5 7 11 13. . . .

can only be divided by 1 and itself without a remainder

SQUARE NUMBERS

1 4 9 16 25

the product of a number multiplied by itself

1 x 1 = 1 2 x 2 = 4 3 x 3 = 9 ...

FACTORS

2 6 3 4 1 12 are factors of 12 . . .

numbers which can be multiplied together to form a product.

QUOTIENTS

4 is the quotient of 8 divided by 2
number resulting from the division of one number by another

GREATER THAN

> 10 > 3 **≥** greater than or equal to

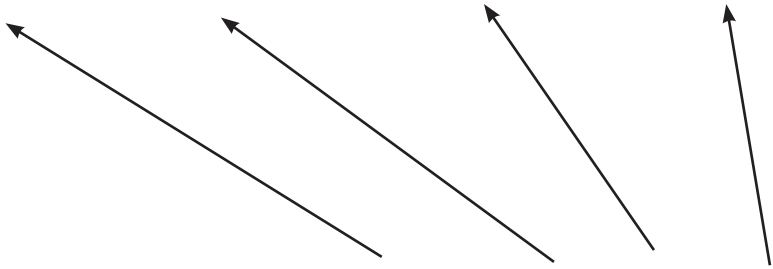
LESS THAN

< 3 < 10 **≤** less than or equal to

© copyright City of York L.E.A. 2002

PLACE

MILLIONS	100, THOUSANDS	10 THOUSANDS	THOUSANDS
1,000,000	100,000	10,000	1,000



7 832

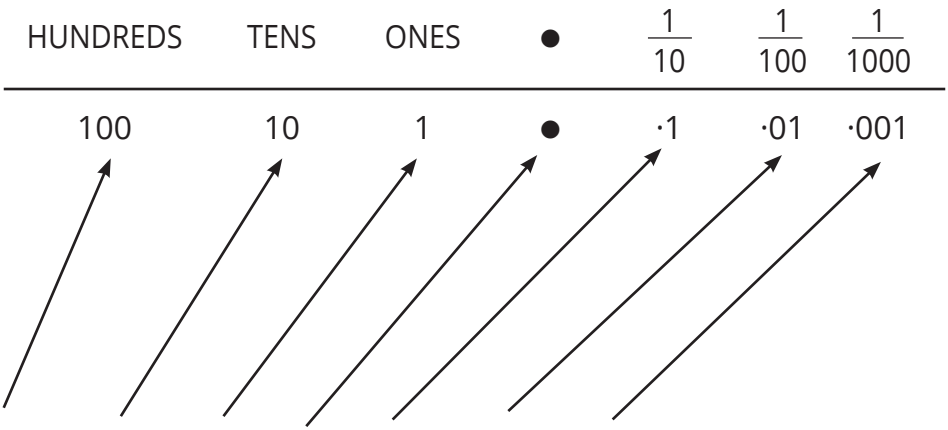
Seven million, eight hundred and thirty two thousand,

5

Five thousand,

© copyright City of York L.E.A. 2002

VALUE



647·123

six hundred and forty seven point one, two, three

243

Two hundred and forty three

762·1

seven hundred and sixty two point one

© copyright City of York L.E.A. 2002

100 SQUARE

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

ADDITION

+

add
plus
sum of
and
more than
total
increase
altogether

SUBTRACTION

−

subtract
take away
difference
minus
less than
fewer than
decrease
How much smaller
is . . . . than . . . .?

© copyright City of York L.E.A. 2002

MULTIPLICATION SQUARE

X	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

MULTIPLICATION

X

multiply
times
sets of
groups of
lots of
product of
six 8's
repeated addition

DIVISION

÷

divide
share
group into. . . . .
equal groups of. . . . .
split
How many 5s in . . . . . ?
$\frac{1}{2}$ of . . . . .
repeated subtraction

© copyright City of York L.E.A. 2002

MULTIPLICATION TABLES

1 x 2 = **2**	1 x 3 = **3**	1 x 4 = **4**
2 x 2 = **4**	2 x 3 = **6**	2 x 4 = **8**
3 x 2 = **6**	3 x 3 = **9**	3 x 4 = **12**
4 x 2 = **8**	4 x 3 = **12**	4 x 4 = **16**
5 x 2 = **10**	5 x 3 = **15**	5 x 4 = **20**
6 x 2 = **12**	6 x 3 = **18**	6 x 4 = **24**
7 x 2 = **14**	7 x 3 = **21**	7 x 4 = **28**
8 x 2 = **16**	8 x 3 = **24**	8 x 4 = 3**2**
9 x 2 = **18**	9 x 3 = **27**	9 x 4 = **36**
10 x 2 = **20**	10 x 3 = **30**	10 x 4 = **40**

1 x 5 = **5**	1 x 6 = **6**
2 x 5 = **10**	2 x 6 = **12**
3 x 5 = **15**	3 x 6 = **18**
4 x 5 = **20**	4 x 6 = **24**
5 x 5 = **25**	5 x 6 = **30**
6 x 5 = **30**	6 x 6 = **36**
7 x 5 = **35**	7 x 6 = **42**
8 x 5 = **40**	8 x 6 = **48**
9 x 5 = **45**	9 x 6 = **54**
10 x 5 = **50**	10 x 6 = **60**

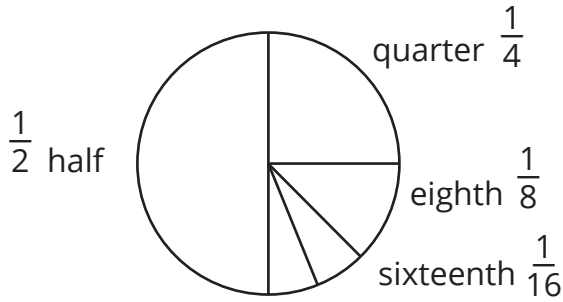
© copyright City of York L.E.A. 2002

1 x 7 = **7**	1 x 8 = **8**
2 x 7 = **14**	2 x 8 = **16**
3 x 7 = **21**	3 x 8 = **24**
4 x 7 = **28**	4 x 8 = **32**
5 x 7 = **35**	5 x 8 = **40**
6 x 7 = **42**	6 x 8 = **48**
7 x 7 = **49**	7 x 8 = **56**
8 x 7 = **56**	8 x 8 = **64**
9 x 7 = **63**	9 x 8 = **72**
10 x 7 = **70**	10 x 8 = **80**

1 x 9 = **9**	1 x 10 = **10**
2 x 9 = **18**	2 x 10 = **20**
3 x 9 = **27**	3 x 10 = **30**
4 x 9 = **36**	4 x 10 = **40**
5 x 9 = **45**	5 x 10 = **50**
6 x 9 = **54**	6 x 10 = **60**
7 x 9 = **63**	7 x 10 = **70**
8 x 9 = **72**	8 x 10 = **80**
9 x 9 = **81**	9 x 10 = **90**
10 x 9 = **90**	10 x 10 = **100**

© copyright City of York L.E.A. 2002

FRACTIONS



$\frac{1}{2}$ ← **numerator** / **denominator**

Proper fraction $\frac{3}{8}$

Improper fraction $\frac{8}{3}$

Inverse of $\frac{2}{3}$ is $\frac{3}{2}$

Mixed number $2\frac{3}{8}$

PERCENTAGES

Per Cent %

10% = 10 out of 100 = $\frac{10}{100}$ = $\frac{1}{10}$

25% = 25 out of 100 = $\frac{25}{100}$ = $\frac{1}{4}$

50% = 50 out of 100 = $\frac{50}{100}$ = $\frac{1}{2}$

75% = 75 out of 100 = $\frac{75}{100}$ = $\frac{3}{4}$

100% = 100 out of 100 = $\frac{100}{100}$ = 1

© copyright City of York L.E.A. 2002

FRACTIONS DECIMALS PERCENTAGES

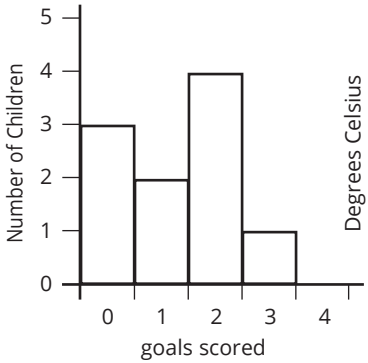
0	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1
0	0.25	0.5	0.75	1
0	25%	50%	75%	100%

$\frac{1}{10}$		0.1	10%
$\frac{2}{10}$		0.2	20%
$\frac{3}{10}$		0.3	30%
$\frac{4}{10}$		0.4	40%
$\frac{5}{10}$		0.5	50%
$\frac{6}{10}$		0.6	60%
$\frac{7}{10}$		0.7	70%
$\frac{8}{10}$		0.8	80%
$\frac{9}{10}$		0.9	90%
$\frac{10}{10}$		1.0	100%

© copyright City of York L.E.A. 2002

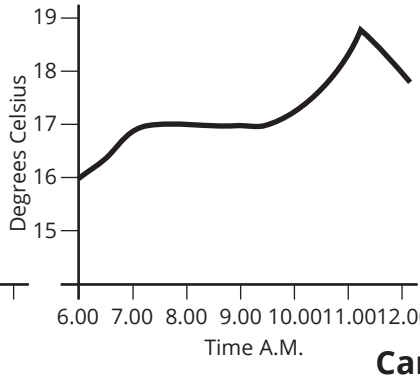
HANDLING DATA

Bar Chart



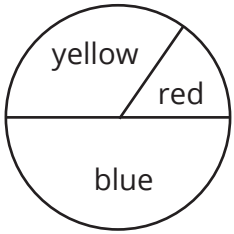
Line Graph

Room Temperature

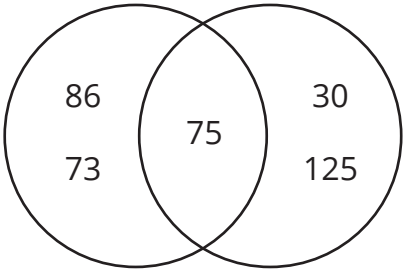


Pie Chart

Favourite Primary Colour



Venn Diagram



Carroll Diagram

	odd	even
> 20	21, 37	38, 50
< 20	1, 3, 7	2, 14, 8

AVERAGE of 2 4 3 5 6 6 9

MEAN = 5 Total the figures and divide the answer by the number of figures

2+4+3+5+6+6+9=35

35 ÷ 7 = 5

MEDIAN = 5 The middle number in a series of numbers arranged in order of size

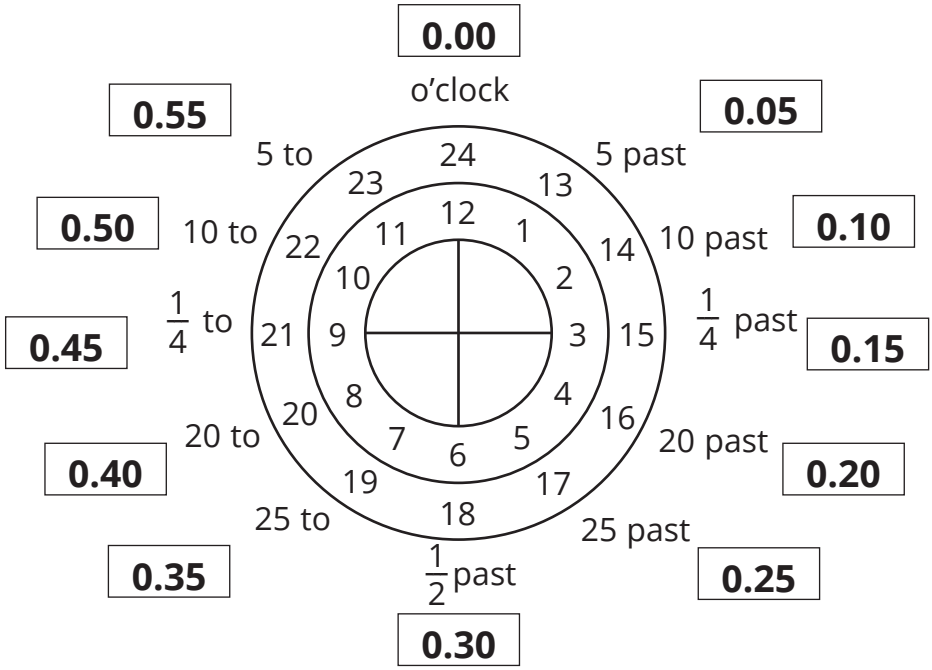
2 3 4 (5) 6 6 9

MODE = 6 The most common number

There are more 6's than any other number

© copyright City of York L.E.A. 2002

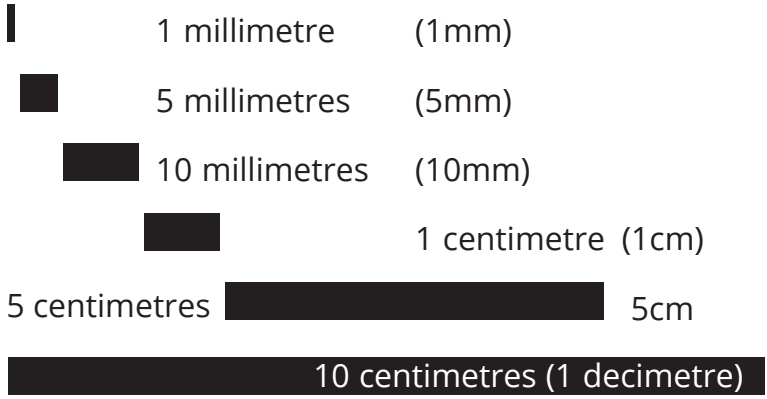
MEASURES TIME



60 seconds	=	1 minute
60 minutes	=	1 hour
24 hours	=	1 day
7 days	=	1 week
365 days	=	1 year
366 days	=	1 leap year
52 weeks	=	1 year
12 months	=	1 year
10 years	=	1 decade
100 years	=	1 century
1000 years	=	1 millennium

© copyright City of York L.E.A. 2002

LENGTH



10 millimetres = 1 centimetre	10mm = 1cm
100 centimetres = 1 metre	100cm = 1m
1000 millimetres = 1 metre	1000mm = 1m
1000 metres = 1 kilometre	1000m = 1km

MASS (WEIGHT)

1000 grams = 1 kilogram	1000g = 1kg
500 grams = $\frac{1}{2}$ kilogram	500g = $\frac{1}{2}$ kg
1000 kilograms = 1 tonne	1000kg = 1t

© copyright City of York L.E.A. 2002

CAPACITY

1000 millilitres = 1 litre	1000ml = 1l
500 millilitres = $\frac{1}{2}$ litre	500ml = $\frac{1}{2}$ l
100 millilitres = 1 centilitre	100ml = 1cl
10 centilitres = 1 litre	10cl = 1l

VOLUME

1 millilitre = 1 cubic centimetre	1ml = 1cc
1000 cubic centimetres = 1 litre	1000cc = 1 L

IMPERIAL MEASURES

LENGTH

12 inches = 1 foot	12″ = 1′
3 feet = 1 yard	3′ = 1 yard
1760 yards = 1 mile	1760 yards = 1m

MASS (WEIGHT)

16 ounces = 1 pound	16oz = 1lb

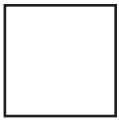
CAPACITY

20 fluid ounces = 1 pint	20 fl oz. = 1 pint
8 pints = 1 gallon	8 pints = 1 gall

© copyright City of York L.E.A. 2002

SHAPE
REGULAR 2 DIMENSIONAL SHAPES (2D)

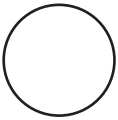
square or regular rectangle



rectangle oblong

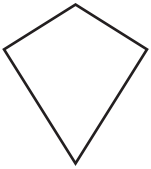
triangle

circle

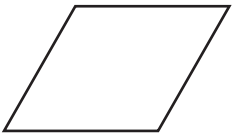


parallelogram

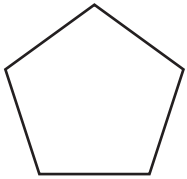
kite



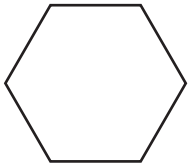
rhombus



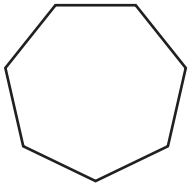
regular pentagon



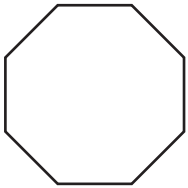
regular hexagon



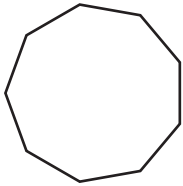
regular heptagon



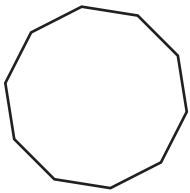
regular octagon



regular nonagon



regular decagon

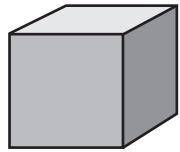


Quadrilateral: any shape with 4 sides

© copyright City of York L.E.A. 2002

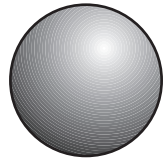
REGULAR 3 DIMENSIONAL SHAPES (3D)

cube

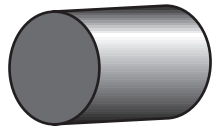


cuboid

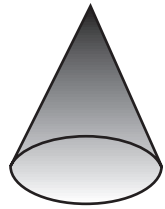
sphere



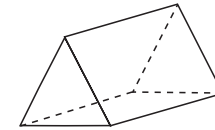
cylinder



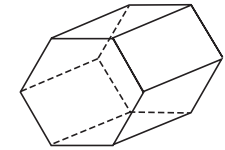
cone



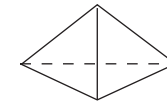
triangular prism



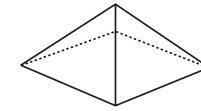
hexagonal prism



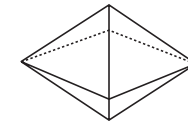
tetrahedron



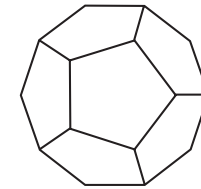
square pyramid



octahedron



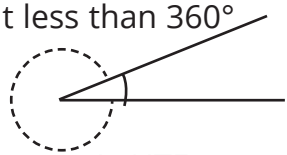
dodecahedron



© copyright City of York L.E.A. 2002

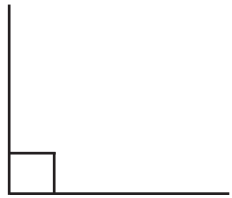
ANGLES

REFLEX -------
greater than 180°
but less than 360°



ACUTE
less than 90°

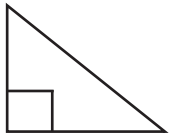
OBTUSE
greater than 90°
less than 180°



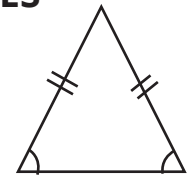
RIGHT ANGLE
90°

TRIANGLES

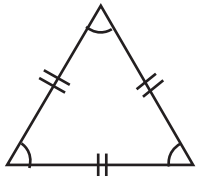
scalene
no sides
equal length



right angle



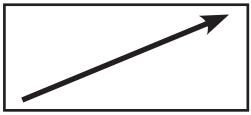
isosceles
two sides
equal length



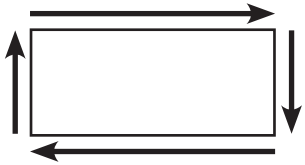
equilateral
each side
equal length

The angles of all triangles total 180°

MEASURING SHAPES



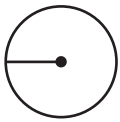
diagonal



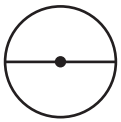
perimeter

area = length x width

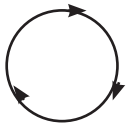
volume = length x width x height



radius



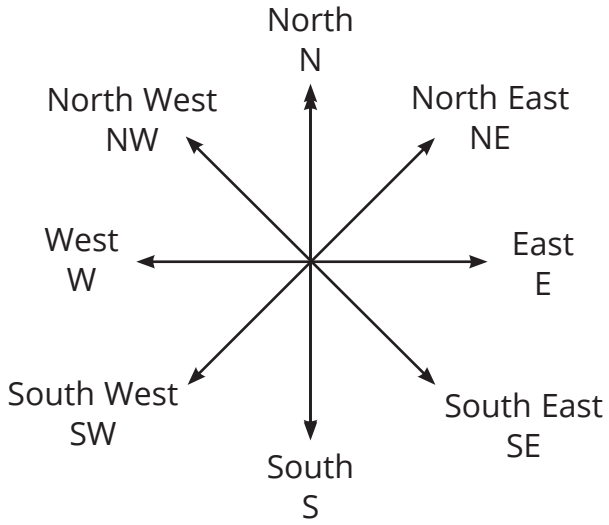
diameter

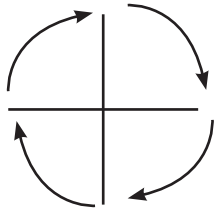


circumference

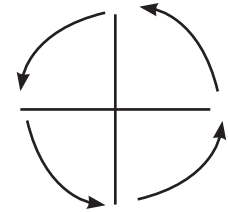
© copyright City of York L.E.A. 2002

DIRECTION



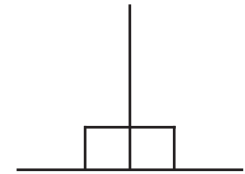


clockwise



anticlockwise

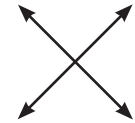
parallel



perpendicular

horizontal

vertical



diagonal

© copyright City of York L.E.A. 2002

YOUR OWN MATHEMATICAL INFORMATION

© copyright City of York L.E.A. 2002