Maths

	First 10 prime numbers
1	2, 3, 5, 7, 11, 13, 17, 19, 23, 29

	First 12 square numbers
2	1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144

	First 5 cube numbers
3	1, 8, 27, 64, 125

Equivalent FDP

	Fraction	Decimal	%
4	$\frac{1}{10}$	0.1	10%
5	$\frac{1}{5}$	0.2	20%
6	$\frac{1}{4}$	0.25	25%
7	$\frac{1}{3}$	$0.\dot{3}$	$33.\dot{3}\%$
8	$\frac{1}{2}$	0.5	50%
9	$\frac{3}{4}$	0.75	75%

Units of time

10	**1 minute**	**60 seconds**
11	**1 hour**	**60 minutes**
12	**1 hour**	**3600 seconds**

Units of length

13	**1 cm**	**10 mm**
14	**1 m**	**100 cm**
15	**1 km**	**1000 m**

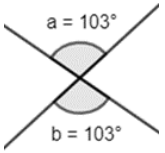
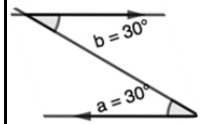
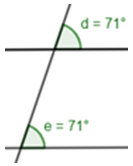
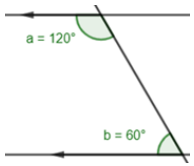
Units of weight

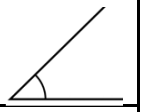
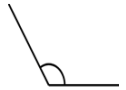
16	**1 g**	**1000 mg**
17	**1 kg**	**1000 g**
18	**1 tonne**	**1000 kg**

Units of capacity

19	**1 litre**	**1000 ml**
20	**1 litre**	**1000 cm^3**

Angles in parallel lines

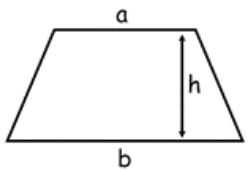
21		Vertically opposite angles are equal
22		Alternate angles are equal
23		Corresponding angles are equal
24		Co-interior angles add up to 180°

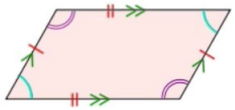
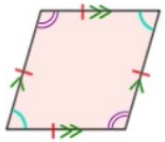
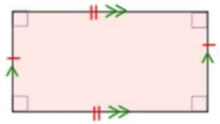
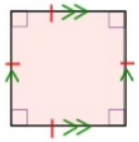
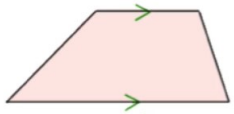
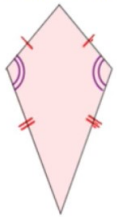
	Type of angle	Definition	Example
27	Acute angle	Between 0° and 90°	
28	Right angle	90°	
29	Obtuse angle	Between 90° and 180°	
30	Reflex angle	Between 180° and 360°	

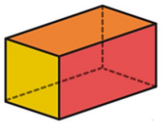
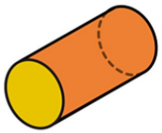
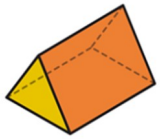
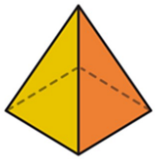
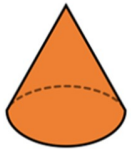
Circles

25	Area of a Circle	$A = \pi \times r^2$
26	Circumference of a circle	$C = \pi \times d$

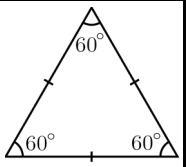
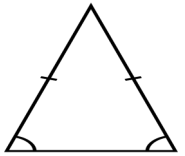
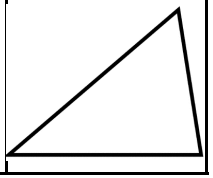
Area Formula

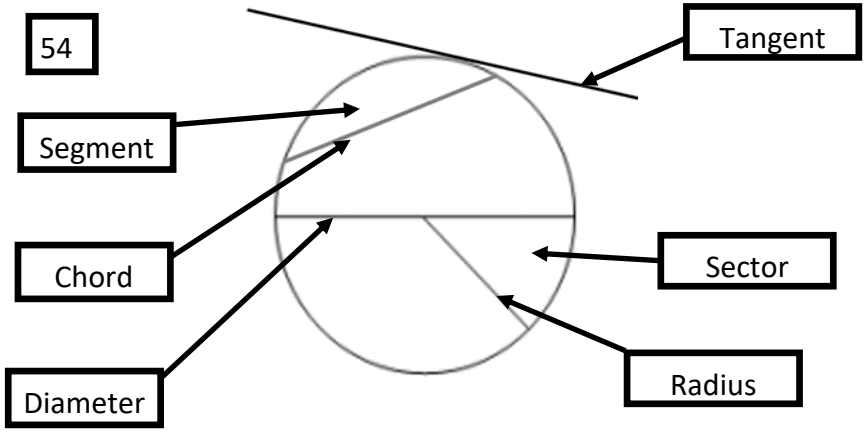
31		**Area of a trapezium** $A = \frac{a+b}{2} \times h$

	Type of Quadri-lateral	Example
32	Parallelo-gram	
33	Rhombus	
34	Rectangle	
35	Square	
36	Trapezi-um	
37	Kite	

	Type of 3D Shape	Example
38	Cube	
39	Cuboid	
40	Sphere	
41	Cylinder	
42	Triangular Prism	
43	Square Based Pyramid	
44	Cone	

Names of polygons		
	Sides	Name
45	4	Quadrilateral
46	5	Pentagon
47	6	Hexagon
48	7	Heptagon
49	8	Octagon
50	9	Nonagon
51	10	Decagon
52	11	Hendecagon
53	12	Dodecagon

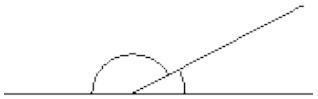
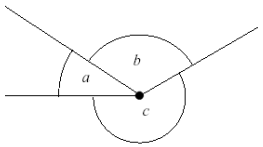
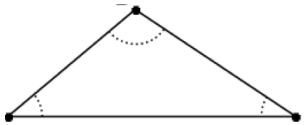
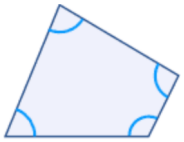
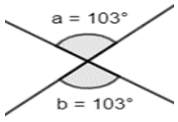
Types of Triangle		
55	Equilateral	
56	Isosceles	
57	Scalene	



Algebraic Terms

58	Expression	No equal signs e.g. $2x + 3$, $2y$, $(3x - 2)^2$
59	Equation	An equal signs, one unknown, e.g. $y + 4 = 10$
60	Identity	Identical expressions e.g. $2(y + 4) \equiv 2y + 8$
61	Formula	Equal signs, more than one unknown e.g. $A = \frac{1}{2}bh$

Angle Rules

62		Angles on a straight line add up to 180°
63		Angles around a point add up to 360°
64		Angles in a triangle add up to 180°
65		Angles in a quadrilateral add up to 360°
66		Vertically opposite angles are equal

Area

67	Perpendicular	Lines that meet at 90°
68	Area of a rectangle	A = base x height
69	Area of a triangle	A = base x perpendicular height ÷ 2
70	Area of a parallelogram	Base x perpendicular height

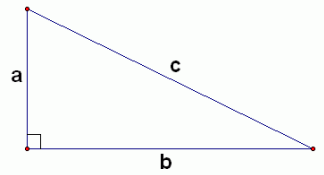
Polygons

71	Formula to find the sum of interior angles of a polygon	180 x (n—2) where n is the number of sides
72	Sum of exterior angles of any poly-	360°

Compound Measures

73	Speed =	Speed = Distance ÷ Time
74	Density =	Density = Mass ÷ Volume
75	Pressure =	Pressure = Force ÷ Area

Pythagoras

76		$a^2 + b^2 = c^2$

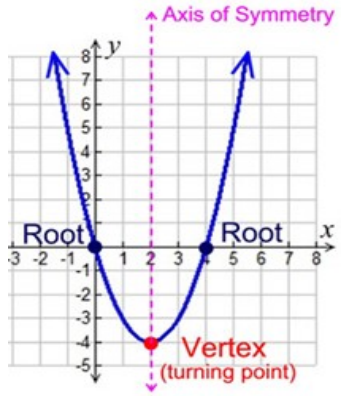
Measures of average and spread

77	Mode	Most common
78	Median	Sum of the data ÷ total frequency
79	Mean	The middle value when the numbers are in order
80	Range	Highest value—Smallest value

Quadratic Graphs

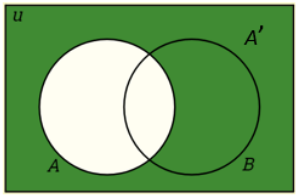
81

Roots of a quadratic graph: where the graph crosses the x axis



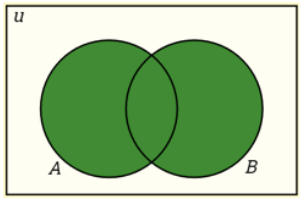
Set Notation

82



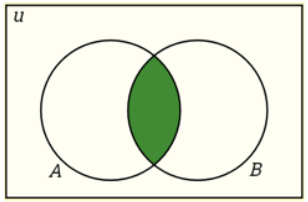
A' the complement of A

83



Either A or B
A union B $A \cup B$

84



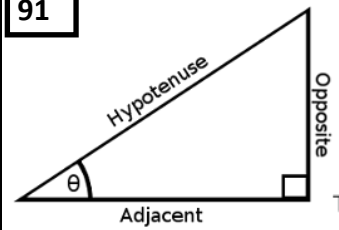
Both A and B
A intersect B $A \cap B$

Straight Line graphs

85	y = *m*x + *c* Where *m* is the gradient and *c* is the y-intercept
86	positive gradient / negative gradient
87	Gradient formula $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{change\ in\ y}{change\ in\ x}$
88	Parallel Lines have equal gradients

Right Angled Trigonometry

91



Sine = $\frac{opposite}{hypotenuse}$ $s = \frac{o}{h}$

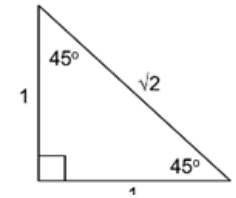
Cosine = $\frac{adjacent}{hypotenuse}$ $c = \frac{a}{h}$

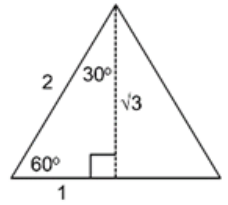
Tangent = $\frac{opposite}{adjacent}$ $t = \frac{o}{a}$

Exact Trig Values

92

Angle (θ)	sin(θ)	cos(θ)	tan(θ)
0°	0	1	0
30°	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{3}}$
45°	$\frac{1}{\sqrt{2}}$	$\frac{1}{\sqrt{2}}$	1
60°	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\sqrt{3}$
90°	1	0	undefined





Higher

Quadratic formula

89 $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Quadratic Sequences

90

For $an^2 + bn + c$

a + *b* + *c*
3a + *b*
2a