

Year 6 Maths Knowledge Organiser

Multiples, Factors and Prime Numbers		
Multiples	A number that can be divided by another number exactly without leaving a remainder.	<i>Multiples of 50:</i> 50, 100, 150, 200, 250, 300, 350, 400, 450, 500
Factors	A number that divides into another number exactly without leaving a remainder.	<i>Factors of 24:</i> 1, 24, 2, 12, 3, 8, 4, 6
Prime Numbers	A number that can only be divided by itself and 1.	2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47

Fractions, Decimals and Percentages		
Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{1}{4}$	0.25	25%
$\frac{3}{4}$	0.75	75%
$\frac{1}{10}$	0.1	10%
$\frac{1}{5}$	0.2	20%
$\frac{2}{5}$	0.4	40%
$\frac{3}{5}$	0.6	60%

Calculating Percentages			
1%	$\frac{1}{100}$	divide by 100	$1\% \text{ of } 400 = 400 \div 100 = 4$
10%	$\frac{1}{10}$	divide by 10	$10\% \text{ of } 400 = 400 \div 10 = 40$
25%	$\frac{1}{4}$	divide by 4	$25\% \text{ of } 400 = 400 \div 4 = 100$
50%	$\frac{1}{2}$	divide by 2	$50\% \text{ of } 400 = 400 \div 2 = 200$

Mean	
The total of the numbers (add the numbers together), divided by how many numbers there are.	<i>The mean of 4,5,6,5 is $4+5+6+5 = 20 \div 4 = 5$ The mean is 5.</i>

Parallel and Perpendicular		
Parallel	Two lines that are always the same distance apart and never meet.	
Perpendicular	Two lines that cross at right angles.	
Horizontal		Vertical

Indices			
n^2	squared	$n \times n$	$5^2 = 5 \times 5 = 25$
n^3	cubed	$n \times n \times n$	$5^3 = 5 \times 5 \times 5 = 125$

Roman Numerals					
I	1	VI	6	X	10
II	2	VII	7	L	50
III	3	VIII	8	C	100
IV	4	IX	9	D	500
V	5	X	10	M	1000

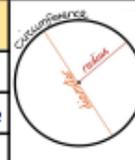
Order of Operations					
B	I	D	M	A	S
brackets ()	indices x^2	division \div	multiplication \times	addition $+$	subtraction $-$

Perimeter, Area and Volume				
Perimeter	The distance around a shape - add up all of the sides.			
Area	Rectangle	$length \times width$	Triangle	$\frac{base \times height}{2}$
	Parallelogram	$base \times height$		
Volume	$length \times width \times height$			

2d Shapes					
Scalene Triangle	Different side length Different angles		Equilateral Triangle	All sides equal All angles equal	
Isosceles Triangle	2 equal sides 2 equal angles		Right angled Triangle	One angle of 90°	
Parallelogram	4 sides 0 lines of symmetry		Trapezium	4 sides 1 line of symmetry	
Rhombus	4 sides 2 lines of symmetry		Kite	4 sides 1 line of symmetry	
Pentagon	5 sides 5 lines of symmetry		Hexagon	6 sides 6 lines of symmetry	

3d Shapes				
Shape	square-based pyramid	triangular prism	cone	cylinder
faces (flat surface)	5	5	2	3
edges (where 2 faces meet)	8	9	1	2
vertices (where 2 edges meet)	5	6	1	0

Parts of a Circle	
Circumference	the distance all the way around a circle
Diameter	the distance across the middle of a circle
Radius	half the diameter



Calculating Angles	
Acute	less than 90°
Right Angle	exactly 90°
Obtuse	more than 90° , less than 180°
Reflex	more than 180°
Angles on a straight line	add up to 180°
Opposite angles	opposite angles are equal
Angles in a triangle	add up to 180°
Angles in a quadrilateral	add up to 360°
Full turn	360°
Half turn	180°
Quarter turn	90° (right angle)

Time			
Thirty days hath September, April, June, and November, all the rest have thirty-one, except February, twenty-eight days clear, and twenty-nine in each leap year.			
1 year	52 weeks	365 days (366 in leap year)	
1 week	7 days	1 day	24 hours
1 hour	60 minutes	1 minute	60 seconds

Measurement	
Length	1cm = 10mm 1m = 100cm 1km = 1000m 8 km = 5 miles
Mass	1kg = 1000g
Capacity	1l = 1000ml

Position and Direction			
Coordinates	(x, y) read along x axis (horizontal) and then y axis (vertical)		
Translation		Rotation	
Reflection		Enlargement	