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.	*Multiples of 50: 50, 100,150, 200, 250, 300, 350, 400, 450, 500*
Factors	A number that divides **into** another number exactly without leaving a remainder.	*Factors of 24: 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% of 400 = 400 ÷ 100 = 4*
10%	$\frac{1}{10}$	divide by 10	*10% of 400 = 400 ÷ 10 = 40*
25%	$\frac{1}{4}$	divide by 4	*25% of 400 = 400 ÷ 4 = 100*
50%	$\frac{1}{2}$	divide by 2	*50% of 400 = 400 ÷ 2 = 200*

Mean

The total of the numbers (add the numbers together), divided by how many numbers there are.	*The mean of 4,5,6,5 is 4+5+6+5 = 20* *20 ÷ 4 = 5* *The mean is 5.*

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 x n	$5^2 = 5 \times 5 = 25$
n^3	cubed	n x n x 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

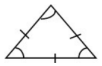
Order of Operations

B	I	D	M	A	S
brackets ( )	indices x^y	division ÷	multiplication x	addition +	subtraction -

Perimeter, Area and Volume

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

2d Shapes

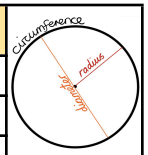
Scalene Triangle	Different side length Different angles		**Equilateral Triangle**	All sides equal All angles equal	
Isosceles Triangle	2 equal sides 2 equal angles		**Right angled Triangle**	One angle of 90°	
Parallelogram	4 sides 0 lines of symmetry		**Trapezium**	4 sides 1 line of symmetry	
Rhombus	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

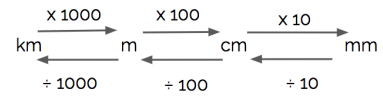
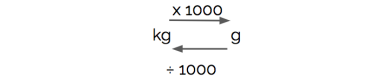
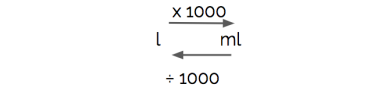
Acute	less than 90°
Right Angle	exactly 90°
Obtuse	more than 90°, less than 180°
Reflex	more than 180°
Angles on a straight line	add up to 180°
Opposite angles	opposite angles are equal
Angles in a triangle	add up to 180°
Angles in a quadrilateral	add up to 360°
Full turn	360°
Half turn	180°
Quarter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

Time

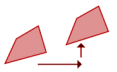
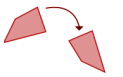
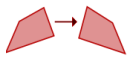
Thirty days hath September, April, June, and November, all the rest have thirty-one, except February, twenty-eight days clear, and twenty-nine in each leap year.

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**