

Year 5: Maths Knowledge Mat



Rounding

78,543

To the **nearest 10** is 78,540
 To the **nearest 100** is 78,500
 To the **nearest 1000** is 79,000
 To the **nearest 10,000** is 80,000
 To the **nearest 100,000** is 100,000

67.53

To the **nearest 10** is 70
 To the **nearest whole number** is 68
 To **one decimal place** is 67.6

Multiplying a fraction by a whole number

If you have a **proper** fraction multiplied by a whole number, it is going to be **less** than that whole number

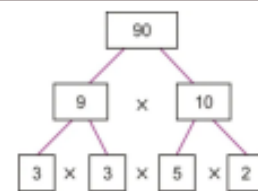
$$\frac{3}{5} \times 2$$

$$\frac{3}{5} \times \frac{2}{1} = \frac{6}{5} = 1 \frac{1}{5}$$

Prime Numbers

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

Prime factors



Converting a mixed number to an improper fraction



$$1 \frac{4}{7} = \frac{11}{7}$$

Percentages %

'part per hundred' $50\% = \frac{50}{100}$ $25\% = \frac{25}{100}$

50% of 100 = 50 25% of 100 = 25
 50% of 200 = 100 25% of 200 = 50
 50% of 300 = 150 25% of 300 = 75

$$\frac{1}{2} = 0.5 = 50\% \quad \frac{1}{4} = 0.25 = 25\%$$

$$\frac{1}{5} = 0.2 = 20\% \quad \frac{2}{5} = 0.4 = 40\%$$

Square and cubed numbers

$1^2 = 1 \times 1 = 1$
 $2^2 = 2 \times 2 = 4$
 $3^2 = 3 \times 3 = 9$
 $4^2 = 4 \times 4 = 16$
 $5^2 = 5 \times 5 = 25$
 $6^2 = 6 \times 6 = 36$
 $7^2 = 7 \times 7 = 49$
 $8^2 = 8 \times 8 = 64$
 $9^2 = 9 \times 9 = 81$
 $10^2 = 10 \times 10 = 100$



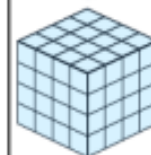
1 is the first cube number, because $1 \times 1 \times 1 = 1$



8 is the second cube number, because $2 \times 2 \times 2 = 8$



27 is the third cube number, because $3 \times 3 \times 3 = 27$



64 is the fourth cube number, because $4 \times 4 \times 4 = 64$

Place value

Each row divides by 10

	Tens	Ones	.	tenths	hundredths	thousandths
36.7	3	6	.	7	0	0
3.67	0	3	.	6	7	0
0.367	0	0	.	3	6	7

$$36.7 = 36 \frac{7}{10}$$

$$3.67 = 3 \frac{67}{100}$$

$$0.367 = \frac{367}{1000}$$

Formal methods of multiplication and division

3741 x 6 becomes

X	3000	700	40	1
6	18 000	4 200	240	6

$$\text{Total: } 18\,000 + 4\,200 + 240 + 6 = 22\,446$$

485 ÷ 11 becomes

$$\begin{array}{r} 44 \text{ r } 1 \\ 11 \overline{) 485} \\ \underline{44} \\ 45 \\ \underline{44} \\ 1 \end{array}$$

34 x 26 becomes

X	30	4
20	600	80
6	180	24

$$\text{Total: } 680 + 204 = 884$$

134 x 27 becomes

X	100	30	4
20	2 000	600	80
7	700	210	28

$$\text{Total: } 2\,680 + 938 = 3\,618$$

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Measures – Sticky Knowledge



1 km = 1000 m
1 m = 100 cm
1 cm = 10 mm



1 kg = 1000 g



1 l = 1000 ml

Imperial measures

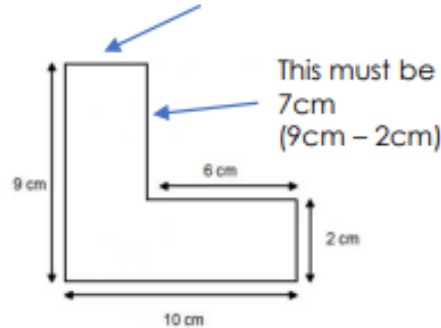
1 mile = 1.6 km
1 yard = 0.91 m
1 foot = 30 cm
1 inch = 2.54 cm

1 lb (pound) = 0.45 kg

1 pint = 0.57 litre

Perimeter

This must be 4 cm (10cm – 6cm)



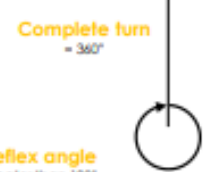
Angles



Right angle
Exactly 90°



Straight line
= 180°



Complete turn
= 360°



Acute angle
Less than 90°



Obtuse angle
Between 90° and 180°



Reflex angle
greater than 180°

3D Shapes

Solid (3D) shapes are three-dimensional shapes having length, breadth and height.

Examples



sphere



cone



cylinder



cube

Prisms



triangular prism



square prism



rectangular prism



pentagonal prism



hexagonal prism



octagonal prism

Pyramids



triangular pyramid



square pyramid



rectangular pyramid



pentagonal pyramid



hexagonal pyramid



octagonal pyramid

Platonic solids



tetrahedron



cube



octahedron



dodecahedron



icosahedron

Roman Numerals

Symbol	Value
I	1
V	5
X	10
L	50
C	100
D	500
M	1000

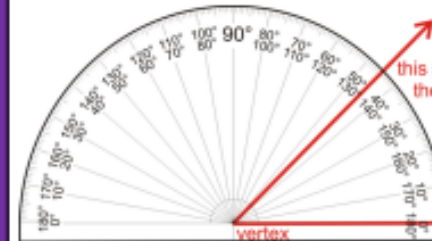
Dates

2020 = MMXX
2021 = MMXXI
2022 = MMXXII
2023 = MMXXIII
2024 = MMXXIV

1066 = MLXVI

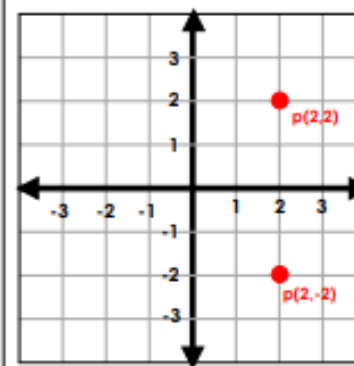
1939 = MCMXXXIX

Using a protractor



Coordinates

P has been reflected in the x axis



The shape has been reflected in the dotted line $y=x+2$

