CHARLBURY PRIMARY SCHOOL

Year 5 Maths facts to memorise

Time maths facts

- 60 seconds in a minute
- 60 minutes in a hour
- 24 hours in a day
- 7 days in a week
- 52 weeks in a year
- 4 weeks in a month
- 365 days in a year
- A leap year happens every 4 years: February has 29 days on a leap year

30 days hath September,
April, June and November,
All the rest have 31,
Excepting February alone.
Which only has but 28 days clear,
And 29 in each leap year.

24 hour clock time to 12 hour am/pm time and vice versa :

1 am = 01:00	**1pm = 13:00**
2am = 02:00	**2pm = 14:00**
3am = 03:00	**3pm = 15:00**
4am = 04:00	**4pm = 16:00**
5am = 05:00	**5pm = 17: 00**
6am = 06:00	**6pm = 18:00**
7am = 07:00	**7pm = 19:00**
8am = 08:00	**8pm = 20:00**
9am = 09:00	**9pm = 21:00**

10am = 10:00 **11am = 11:00** **12 noon/midday = 12:00**	**10pm = 22:00** **11pm = 23:00** **12 midnight = 00:00**

Example questions:

How many days are there in a leap year?

How many weeks are there in 3 months?

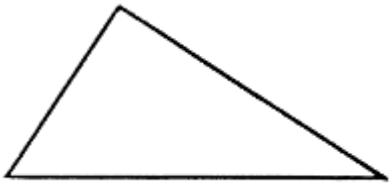
How many days in 3 weeks?

How many days are there in June and July combined?

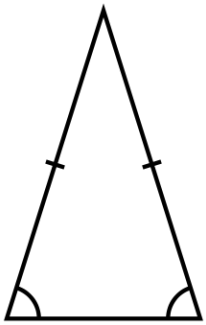
What is quarter past 6 in the evening in 24hr clock time?

What is 21:19 in 12 hr am/pm time?

- The angles in a triangle add-up to 180°
- The angles on a straight line add-up to 180°
- The angles round a point add-up to 360 °
- The angles in a quadrilateral add-up to 360°
- A **scalene triangle** has 3 sides of different length and 3 angles of different size

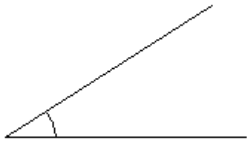


- An **isosceles triangle** has 2 equal length sides and 2 equal size angles

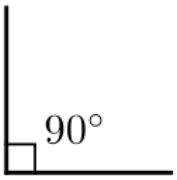


- An **equilateral triangle** has all sides and angles equal:

- **Acute angle** = 1-89°



- **Right angle** = 90°

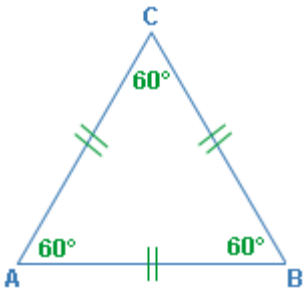


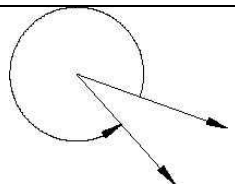
- **Obtuse angle** = 91-179°

- Straight line = 180°

- **Reflex angle** = 181-359°

each angle in an equilateral triangle is 60°





- Complete turn = 360°

You need to recognise **percentage, fraction and decimal equivalents**.

50% = $\frac{1}{2}$ = 0.5
10% = 1/10 = 0.1
30% = 3/10= 0.3
70% = 7/10 = 0.7
80% = 4/5 = 0.8
90% = 9/10 = 0.9
20% = 1/5 = 0.2
40% = 2/5= 0.4
60% = 3/5= 0.6
25% = 1/4 = 0.25
75% = $\frac{3}{4}$ = 0.75
1% =1/100 = 0.01
3% =3/100 = 0.03
7% =7/100 = 0.07

A **prime numbers** has exactly 1 factor pair. The pair is always 1 and the number itself. 1 is not a prime number, as it only has one factor: ***1 x 1 = 1***

2 is the only even prime number.

You should be able to list the first 10 prime numbers: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29

A **square number** is a number multiplied by itself. These are the first 10 square numbers: memorise them.

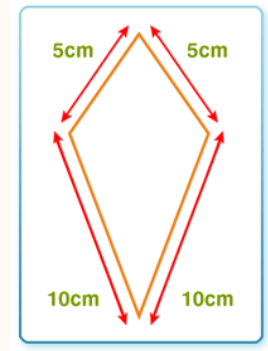
1^2 = 1 x 1= **1**
2^2 = 2 x 2 = **4**
3^2 = 3 x 3 = **9**
4^2 = 4 x 4 =**16**
5^2 = 5 x 5 = **25**
6^2 = 6 x 6 = **36**
7^2 = 7 x 7 = **49**
8^2 = 8 x 8 = **64**
9^2 = 9 x 9 = **81**
10^2 = 10 x 10 =**100**

*You need to know how to convert between **metric units**:*

1000g = 1kg	1500g = 1.5kg
1000kg = 1 tonne	0.6 tonnes = 600kg
1000ml = 1 litre	3000ml = 3 litres
100cl = 1 litre	0.02 litres = 2 cl
1000m = 1 km	250m = 0.25 km
100 cm = 1m	2cm = 0.02m
10mm = 1cm	2mm = 0.2cm
1000mm = 1m	26mm = 0.026m

$\frac{1}{2}$ a litre is 500ml
$\frac{3}{4}$ of a litre is 750 ml
$\frac{1}{4}$ of a litre is 250 ml

Perimeter



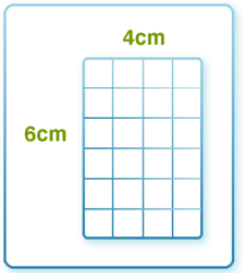
- The perimeter is the **distance** all the way around the **outside** of a 2D shape.
- To work out the perimeter, **add up the lengths of all the sides**.
  The perimeter of this shape is 5 + 5 + 10 + 10 = 30 cm

½ a kilometre 500m
¾ of a kilometre 750m
¼ of a kilometre 250m

½ a kilogram 500g
¾ of kilogram 750g
¼ of kilogram 250g

½ a metre 50cm
¾ of a metre 75cm
¼ of a metre 25cm

Area



- The area of a 2D shape is the **amount of surface it covers**.
- To work out the area of a rectangle, multiply its length (the longer side) by its width (the shorter side):

area = length × width

The area of this rectangle is 6 x 4 = 24 cm^2

Volume

The **volume** of a cube or cuboid **= length x breadth x height**

In Year 5 you should know your **2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 timetables.** Able mathematicians should know each timetable up to x12, not just stopping at x10. Similarly, you should know all the division facts up to 144÷12.

You are expected to know all the **number bonds** to 100 that include multiples of 5: e.g., 15+85, 45+55, 40+60, 25+75.

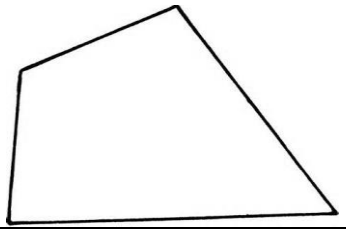
Children should have a firm grasp of number bonds to 10 (1+9, 3+7, 2+8, 3+7, 4+6, 5+5) and be able to apply this knowledge to quickly recall the **number bond to 1** (0.1+0.9, 0.3+0.7, 0.2+0.8, 0.3+0.7, 0.4+0.6, 0.5+0.5).

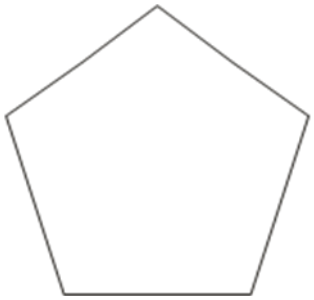
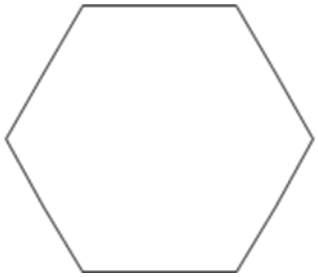
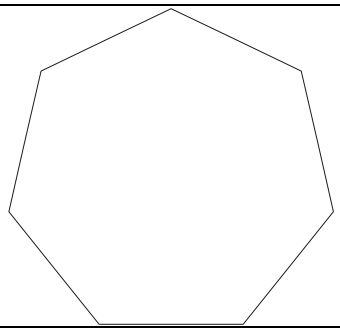
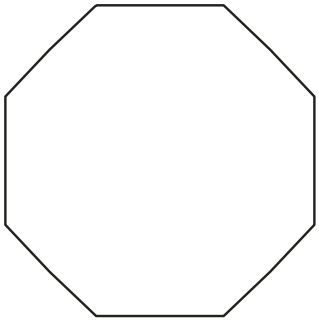
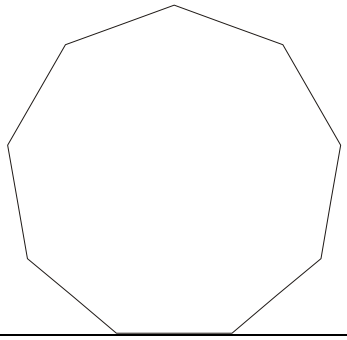
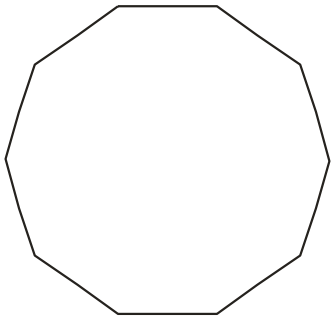
Plus the number bonds to 1 using multiples of 5: e.g., 0.15+0.85, 0.35+0.65, 0.25+0.75

2D Shapes

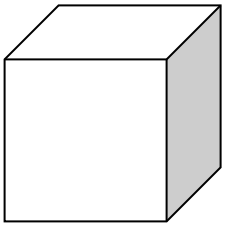
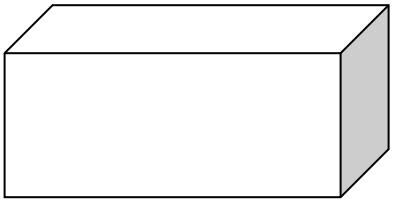
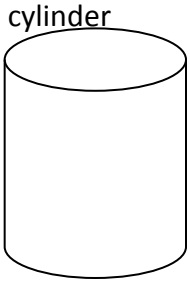
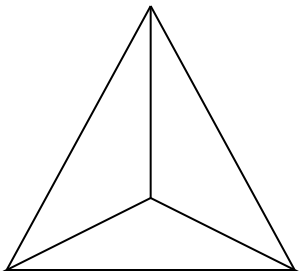
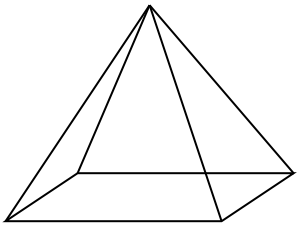
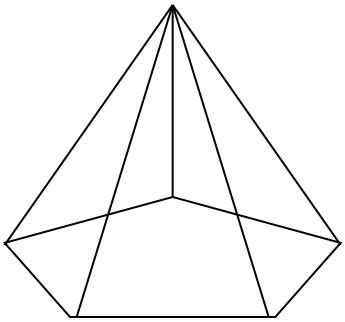
You need to be able to name and recognise, the regular and irreglar forms of, the following **polygons**:

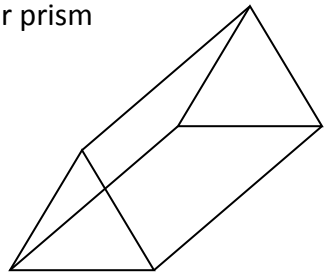
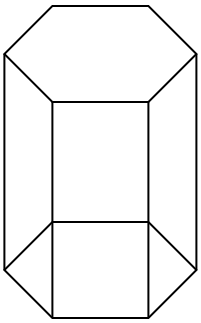
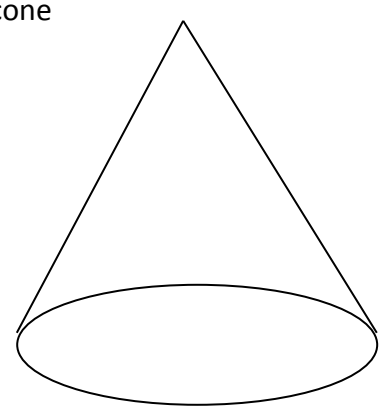
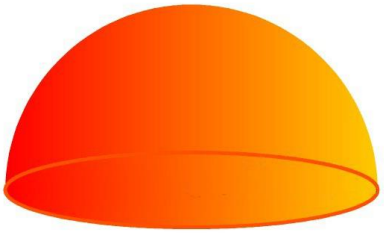
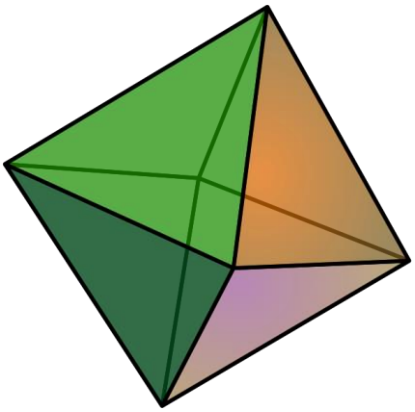
Quadrilateral (any 4 sided shape)

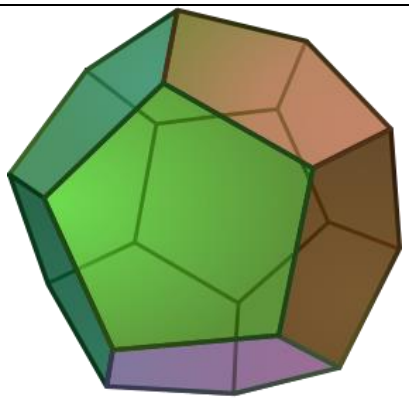


		
pentagon (5 sides)	hexagon(6 sides)	Septagon/heptagon (7sides)
		
octagon(8 sides)	Nonagon (9 sides)	Decagon (10 sides)

<u>3D shapes</u>

cube  Faces: 6 Vertices: 8 Edges: 12	cuboid  Faces: 6 Vertices: 8 Edges: 12	cylinder  Faces: 3 Vertices: 0 Edges: 2
Triangular based pyramid (a **tetrahedron** is a triangular based pyramid where all the face are the same size.)  Faces: 4 Vertices: 4 Edges: 6	Square based pyramid  Faces: 5 Vertices: 5 Edges: 8	Pentagonal based pyramid  Faces: 6 Vertices: 6 Edges: 10

Triangular prism  Faces: 5 Vertices: 6 Edges: 9	Hexagonal prism  Faces: 8 Vertices: 12 Edges: 18	cone  Faces: 2 Vertices: 1 Edges: 1
Sphere  Faces: 1 Vertices: 0 Edges: 0	Hemisphere  Faces: 2 Vertices: 0 Edges: 1	Octahedron (a regular octahedron has eight equilateral triangular faces)  Faces: 8 Vertices: 6 Edges: 12



Dodecahedron

A regular dodecahedron is composed of 12 regular pentagonal faces,.

Faces: 12 Vertices: 20 Edges: 30

Definition Issues

Using the definition for polyhedra, edges are defined to be straight, therefore a cylinder would have no edges. This often appears to run against common sense. If you allowed curved edges, a cylinder would have two.

A **cone technically has** no **vertices**, due to a **vertex** having to be a point where two or more straight lines meet; so a **cone would have** one circular base and one **apex** (instead of a vertex).

Roman Numerals

Arabic Numeral	Roman Numeral
1	I
2	II
3	III
4	IV
5	V
6	VI
7	VII
8	VIII
9	IX
10	X
20	XX
30	XXX
40	XL

50	L
60	LX
70	LXX
80	LXXX
90	XC
100	C
500	D
1000	M