

INTO Y7 — STATISTICS ...

Statistics

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Read and interpret line graphs
- Draw line graphs
- Circles
- Read and interpret pie charts
- Draw pie charts
- The mean

Keywords

Protractor: equipment used to measure and draw angles

Trend: a line on a graph showing the general direction the points seem to follow.

X-axis: the horizontal axis

Y-axis: the vertical axis

Mean: the average of all the numbers

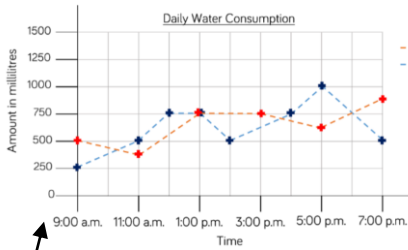
Circumference: the perimeter of a circle. The line around the outside.

Diameter: a straight line that goes through the centre of a circle. The longest line in a circle.

Radius: a straight line from the centre to the radius (Half the length of the diameter)

Line graphs

A method to observe trends in data over time and make comparisons between groups of data.



A key identifies the data set each line represents

Make comparisons between the data and then relate this information back to the context of the data

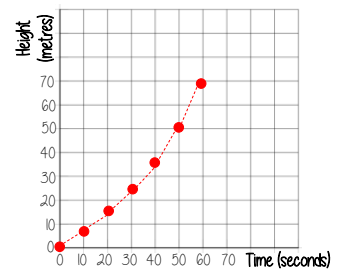
"On Tuesday, more water was consumed at 5pm this could have been a period of exercise"

The axes are labelled and show a clear timescale

Drawing line graphs

Time (seconds)	Height (metres)
0	0
10	8
20	15
30	25
40	37
50	50
60	70

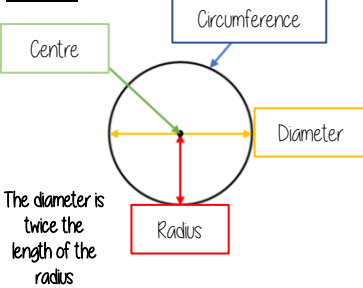
Height of a rocket



- Join each point with a straight line.
- Have regular intervals on both axes

Time is labelled across the x axis

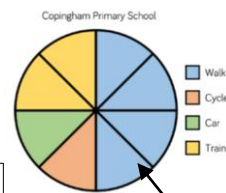
Circles



Read and interpret pie charts

Always read the data for the total amount the pie chart represents

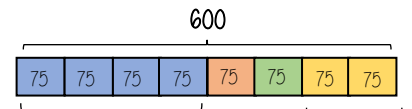
Coppingham Primary School has 600 students



There are 8 equal sectors in this pie chart

There are 360° in a circle

This bar model represents the information in the bar chart



Walking represents half of this data

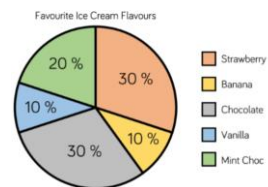
Train represents a quarter of this data

Pie charts with percentages

This survey asked 160 people

The whole pie chart represents 100%

$$10\% = \frac{1}{10} \quad 50\% = \frac{1}{2} \quad 25\% = \frac{1}{4}$$



Strawberry 30% = $\frac{3}{10}$

$$160 \div 10 = 16 \quad \leftarrow \text{This is } 10\% \text{ make other calculations from this value}$$

$$16 \times 3 = 48$$

Draw pie charts

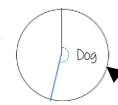
Type of pet	Dog	Cat	Hamster
Frequency	32	25	3

There were 60 people asked in this survey (Total frequency)

$$\frac{32}{60} \quad \leftarrow \text{"32 out of 60 people had a dog"}$$

This fraction of the 360 degrees represents dogs

$$\frac{32}{60} \times 360 = 192^\circ$$



Multiple method
As 60 goes into 360 - 6 times
Each frequency can be multiplied by 6 to find the degrees (proportion of 360)

Use a protractor to draw
This is 192°

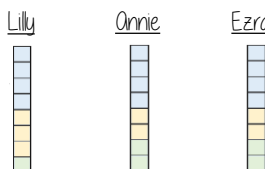
The mean

Mean - a measure of average. It gives an idea of the central value

Lilly, Annie and Ezra have the following cubes



Finding the mean amount is the average amount each person would have if shared out equally



The mean number of blocks would be 8 each

The information is redistributed equally across all groups