Maths, Y8—Data

1. Averages and range

Mode: the most common value

Median: the middle value when numbers are placed in order

Mean: sum of all values ÷ number of values

Range: largest value - smallest value

Find the mode, median, mean & range for this data

26, 27, 28, 29, 30, 32, 32, 36

Mode: **32**

Median: 29.5

~~26~~, ~~27~~, ~~28~~, 29, 30, ~~32~~, ~~32~~, ~~36~~

Mean: (26 + 27 + 28 + 29 + 30 + 32+ 32 + 36) ÷ 8

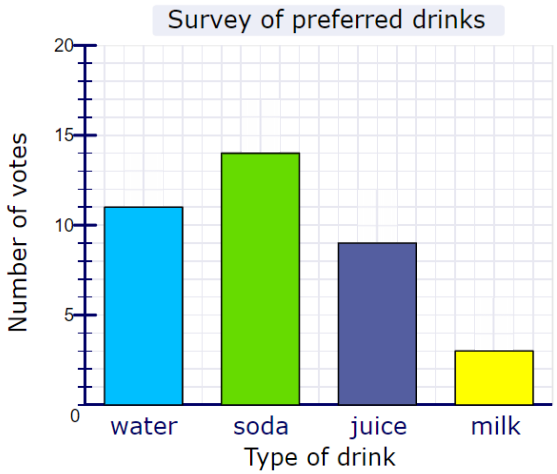
= 240 ÷ 8 = **30**

Range: 36 - 26 = **10**

2. Bar charts

When drawing bar charts make sure that:

- All bars are the same width
- You put gaps between the bars. These should be the same width too.



5. Stem and Leaf Diagrams

A **stem and leaf diagram** is a good way to organise data into groups without losing any of the detail.

Here are the ages, in years, of the 24 employees in an office.

19	23	33	21	18	48	37	23	28	26	53	55
62	26	18	27	58	34	40	30	25	30	48	18

Think of each value as having a **stem** and a **leaf**. Here the stem is the **tens** and the leaf is the **units**.

Put the leaves in order, add a key

stem	leaf
1	8 8 8 9
2	1 3 3 5 6 6 7 8
3	0 0 3 4 7
4	0 8 8
5	3 5 8
6	2

Key: 1|8 means 18

6. Pie Charts

In a pie chart the size of each segment represents its **proportion**.

You can use proportion grids to calculate the angles needed to draw the pie chart.

Colour	Frequency	Angle
Red	84	120
Blue	84	120
Green	56	80
Yellow	28	40
Total	**252**	**360**

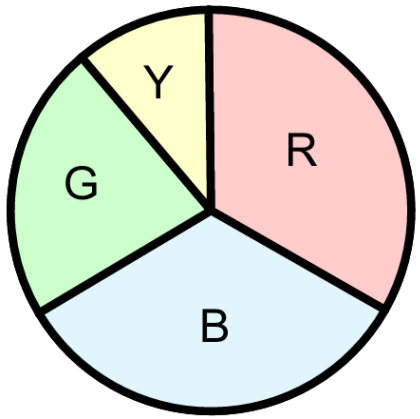
Find the total by adding all of the frequencies

We know the total of the angles should be 360°

Frequency		Angle
252	x 1.43	360°
÷ 3		÷ 3
84	x 1.43	120

Frequency		Angle
252	x 1.43	360°
÷ 4.5		÷ 4.5
56	x 1.43	80

Frequency		Angle
252	x 1.43	360°
÷ 9		÷ 9
28	x 1.43	40



Here is the pie chart.

It shows the proportions of each colour.