



# Year 8 Summer 2 Unit 2—Statistics



### What you will learn

- Calculate the mean, median, mode and range of a set of data
- Compare data sets using averages
- Calculate the mean, median, mode and range of data in a table

A postman delivers letters to a block of flats.

There are 10 flats in the block.

The number of letters he delivers to each flat is shown below.

2    3    3    2    1    1    4    5    2    2

- Write down the modal value(s).
- Find the median number of letters delivered each day.
- Calculate the mean number of letters delivered to each flat.

### Concept corner

There are three types of averages:

the m....., the m..... and the m.....

Use the statements in the box to fill in the blanks.

middle number	total of the values	order of size
Divide the total	most frequent	

The mode is the ..... item.

To find the median, first arrange the values in .....

and the median is the .....

To calculate the mean, calculate the .....  
..... by the number of values.

### Concept corner

The **range** is a measure of **spread of a set of data**.

$$\text{Range} = \text{the highest value} - \text{the lowest value}$$

Fill in the gaps

data	range
spread	compare

In statistics we frequently need to

\_\_\_\_\_ two sets of \_\_\_\_\_.

A simple comparison can be made by using the \_\_\_\_\_ to compare the

\_\_\_\_\_ of data and the mean to compare average.

Find:

- Six numbers with a mean of 6 and a range of 5.
- Seven numbers with a median of 9 and the range of 10.
- Five numbers with a median of 6, mean of 5.6 and range of 5.



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Sally measures the lengths of all the pencils in her pencil case.

She recorded the following results.

2	3	2	6	3	6	2
3	5	4	3	2	2	3
5	6	2	6	5	6	2

a) Complete the frequency distribution table.

Length (cm)	Number of pencils Frequency	Frequency × length (cm)
2		
3		
4		
5		
6		
Totals		

b) Write the modal value(s) of the lengths of the pencils Sally measured?

c) What is the median of the length of pencils Sally measures?

d) Calculate the mean of the lengths of the pencils that Sally measured.  
Round your answers to a suitable degree of accuracy.

### Concept corner

A frequency distribution table is used to present data.

Michael records the number of goals his football team scores in one season.

0    0    1    1    1    1    2    2    2    3    3    4    4

His results are shown in the frequency distribution table below.

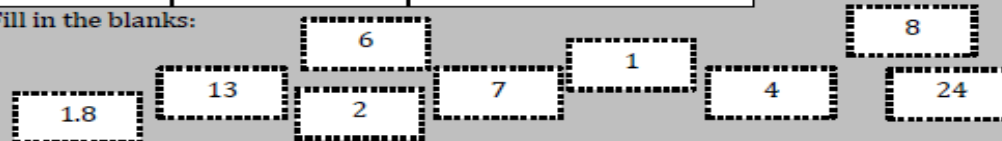
Goals	0	1	2	3	4
Frequency	2	4	3	2	2

To work out the mode, median and mean we can use a table.

Complete the table below:

Goals	Frequency	Goals × Frequency
0	2	$0 \times 2 = 0$
1	4	$1 \times 4 = 4$
2	3	$2 \times 3 =$
3	2	$3 \times 2 =$
4		$4 \times 2 =$
Totals	13	

Fill in the blanks:



The **mode** is the goals with the greatest frequency. The mode is equal to \_\_\_\_\_.

The **median** is the middle number.

The median is the \_\_\_\_\_<sup>th</sup> goal, so the median is equal to \_\_\_\_\_.

To calculate the mean

$$\text{mean} = \frac{\text{Total of [Goals} \times \text{frequency]}}{\text{Total frequency}} = \underline{\hspace{2cm}}$$

$$\text{mean} = \underline{\hspace{2cm}} \text{ correct to 1 decimal place}$$

**Answers to questions– See Mr CJ or your teacher for solutions**