



**S2**

# Statistics

L4MSt

3

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## Collecting and organising discrete data using a frequency table:

There are two types of data that can be collected, discrete data and continuous data.

A frequency table (tally chart) is a good way to organise both types of data as the data is being collected.

Discrete data is data that is obtained by counting.

Example: John records the number of people in cars as the cars go past the school gate.



Example: This frequency table shows the results of John's survey.

Number of people	Tally	Frequency
1		10
2		8
3		4
		22

The total of the frequency column is 22.

What does this tell us?

Answer: There were 22 cars in John's survey.

How many cars had only one person?

Answer: 10 cars.

What other information is contained within this frequency table?

Continuous (measurement) data is obtained by measuring and will be looked at in Task 11, Worksheet 7.

Example: Amanda measured the height of her younger sister every week.

### Task 5

The following data shows the number of spelling mistakes that pupils in Room 10 made in a spelling test of 20 words.



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

Number of spelling mistakes	Tally	Frequency
0		
1		
2		
3		
4		

1. Copy and complete the frequency table.
2. What was the most common number of mistakes made?
3. How many pupils sat the spelling test?

Pupils in Room 9 were surveyed to find out how they travelled to school and how far away from school they lived (measured to the nearest km). Below are the results of the survey.

walk 1km, bike 2km, car 5km, walk 2km, bike 3km,  
bus 7km, bus 5km, walk 1km, bike 2km, car 6km,  
walk, 2km, bike 3km, walk 1km, bus 4km, walk  
2km, bike 2km, walk 1km, walk 1km, bike 3km,  
walk 2km, bus 6km, car 4 km, walk 2km, bike 3km,  
walk 1km, bus 7km, bike 5km, walk 2km, bus  
6km, car 5km, bike 2km, walk 1km, bike 3km, walk

4. Organise the results of this survey into two frequency tables.
5. How many pupils in Room 9?
6. Study the results in both frequency tables, then write a statement about the 'average' Room 9 pupil - how he/she travels to school and how far she/he has to travel.

7. Conduct a similar survey of the pupils of your class and organise and display your results in two frequency tables.



### Task 6

Look at the questions in the questionnaire you created in Task 4, Worksheet 2.

For some of your questions, using a frequency table may be a good way to collect and organise the data.

Create frequency tables for those questions, then proceed to collect the data using your frequency tables.



# Statistics

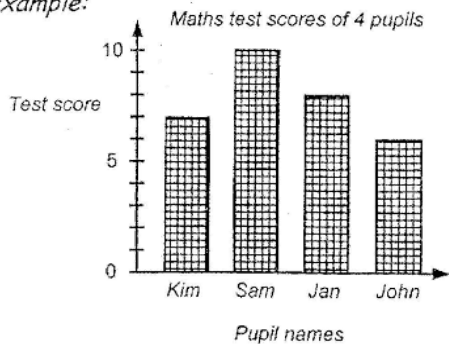
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## Displaying ungrouped discrete data as a column graph:

Ungrouped discrete data, organised using a frequency table, can be displayed as a column graph.

Example:



All column graphs should have ...

- a title or name,
- a label on each axis,
- a scale on the frequency axis (vertical axis),
- all columns should be the same width.

All column graphs **MUST** have gaps between the columns.



What other information is contained within this column graph?

### Task 8

This frequency table shows the goals scored by 5 players in Western Soccer Club during one season.



Player's Name	Number of goals scored
Simon	7
Mark	3
Steven	9
Rangi	5
David	8

- Create a column graph to display these results.
- Who scored the most number of goals?
- How many goals did Rangi score?
- Who scored 3 goals?
- How many goals did these 5 Western Soccer Club players score in this season?



Michelle asked pupils in her class three questions:



- How many brothers and / or sisters do you have?
- In which month of the year is your birthday?
- If you had to make a choice between having a cat or a dog as a pet, which pet would you choose?



Below are the results of her survey, in the order the questions were asked.

6. How could Michelle improve the way she recorded this data?

2, September, cat	3, March, dog	1, January, cat	2, September, cat	0, May, dog	4, September, cat
3, June, cat	2, September, cat	1, August, dog	3, July, cat	4, March, cat	2, March, dog
2, December, dog	1, June, cat	0, March, cat	2, October, cat	0, May, cat	1, April, cat
2, August, dog	3, February, cat	2, November, cat	3, January, dog	2, July, cat	3, September, dog
2, October, dog	1, April, cat	2, August, dog	4, December, dog	2, May, cat	0, April, dog

- Reorganise Michelle's survey results into 3 frequency tables.
- Draw 3 column graphs to display these results.
- Write several statements about the pupils in Michelle's class, based on the data Michelle collected.



### Task 9

Create column graphs from the frequency tables created in Task 5, questions 1 and 4, Worksheet 3.

Look back at the frequency tables you used to collect and organise data from your questionnaire.

Create column graphs from the frequency tables you created in Task 6, Worksheet 3 (if appropriate).

