

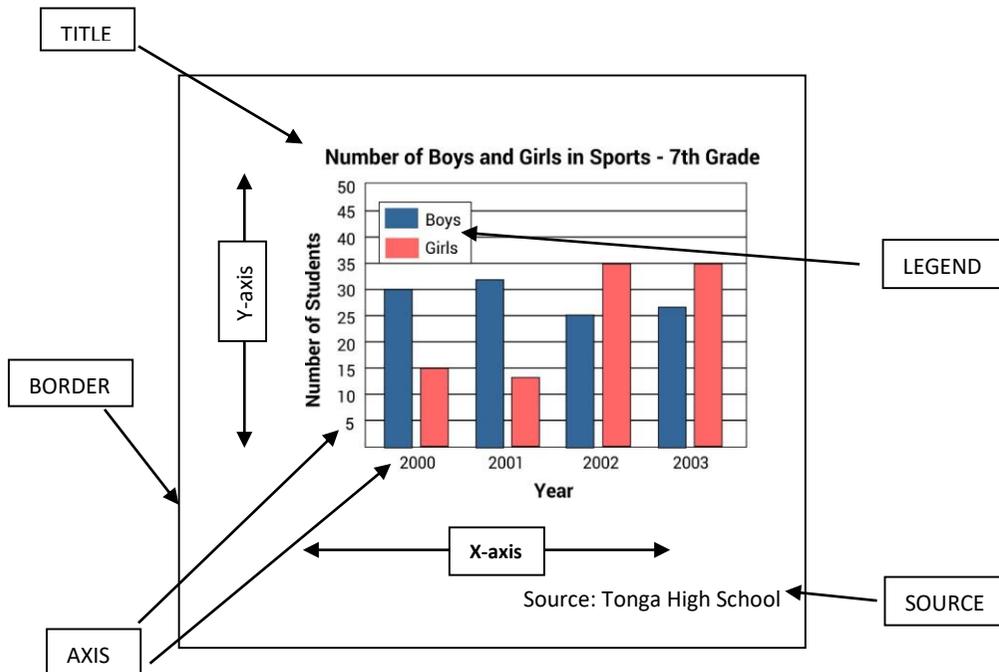
GRAPHS

Type of graphs

- Bar graph
- Line graph
- Climograph
- Pie graph
- Percentage bar graph
- Scatter graph

1. BAR GRAPHS

- Also called *column graphs* because the data on it is arranged in bars or column.



1. Fill out the following graphs

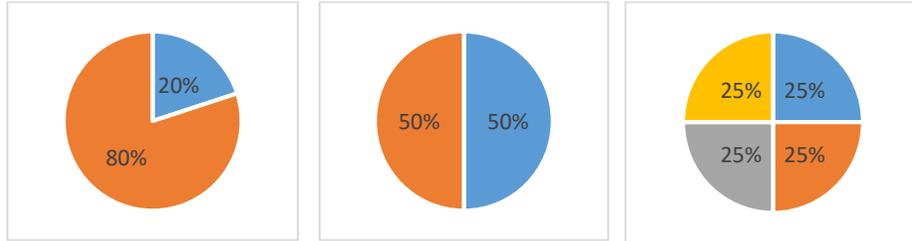
- a. The graph has come from _____.
- b. The vertical axis is also called the _____ axis.
- c. The number of student is shown on the _____ axis.
- d. The horizontal axis is also called _____ axis.
- e. The year are shown on the _____ axis.

2. Use the data below to construct a bar graph. Make sure that all elements of a graphs are given.

Percentage population of Obesity		
Country	Male	Female
France	13	14
Russia	23	25
Finland	15	16
UK	34	35
Australia	29	31
New Zealand	13	14
USA	38	41
Germany	12	15
Japan	9	10

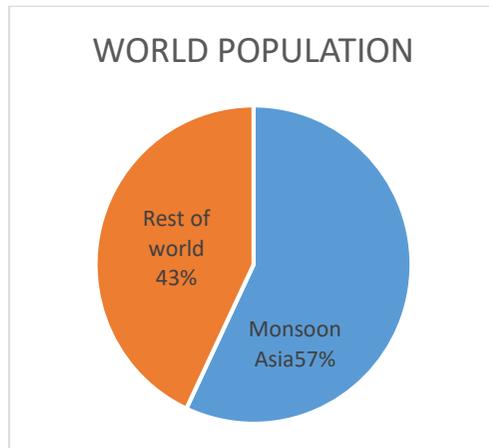
2. PIE GRAPHS

- A pie-graph is shaped like an old-fashioned pie – circular.
- Pie graphs are good for showing percentage.



Percentages of the pie graph must add up to 100%

Example of a Pie Graph.

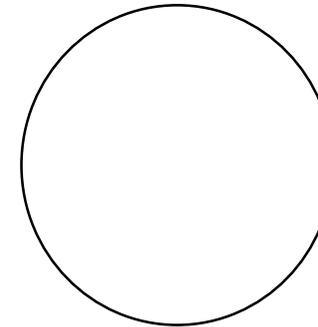


If the percentages have not been written on the graph, you can work them out by using your eyes to estimate them *OR* you can measure the angle of a slice/sector with a protractor and divide the number of degrees by 3.6 (there are 360 degrees in a circle).

LEGEND/ KEY	
	Rest of World
	Monsoon Asia

- a. Use the data below to construct a pie graph.

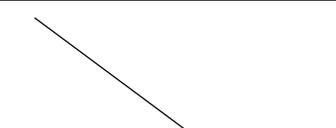
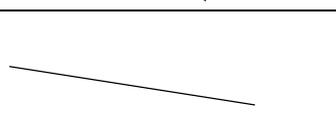
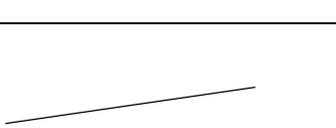
Population of islands in Tonga	
Places	Population in (%)
Tongatapu	53
Ha'apai	12
Vava'u	20
'Eua	8
Niuaotupapu	4
Niuafo'ou	3



3. LINE GRAPHS

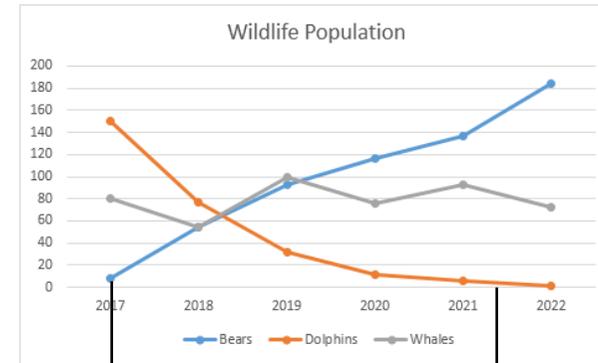
- A line graphs shows change over time
- All the data on it relates to each other.

For example, a line graph might show how the population of a place has changed (gone up or down or fluctuated) over a certain number of years.

	Rapidly going up = rapid increase
	Rapidly going down = rapid decrease
	Slowly going down = slow decrease
	Slowly going up = slow increase
	Going up and down = fluctuation

Example of a Line graph

Population rates of wildlife in the world (2017-2022)



Points where the data on the vertical axis and data on the horizontal axis meet.

Line joins points together

Activity

Use the data below to construct a line graphs.

1. This data table down below shows the number of females and males joined varsity sports for Queen Victoria’s High School.

Varsity Sport	Males	Females	Total Participants
Baseball	29	0	29
Basketball	14	14	28
Cross Country	16	18	34
Lacrosse	35	19	54
Soccer	29	24	53
Swimming	29	33	62
Tennis	10	10	20
Track & Field	34	23	57
Wrestling	37	0	37
Softball	0	16	16
Volleyball	0	16	16

2. Susan’s Year 11’s grade for Geography Final Exams.

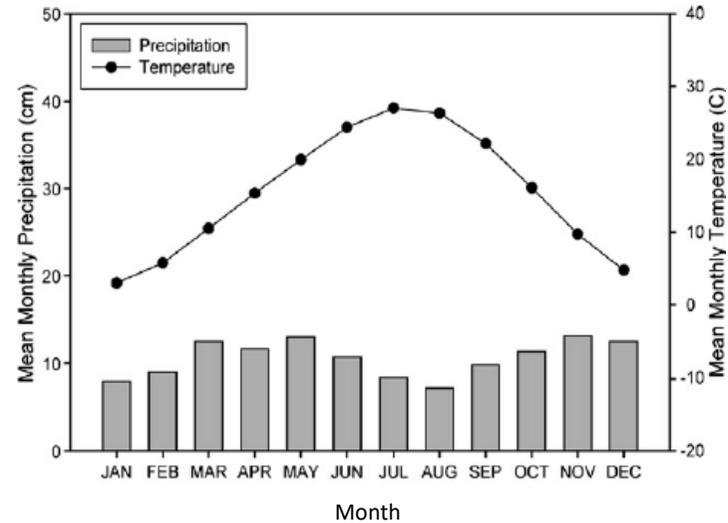
Name	Grade
James	100
Stuart	91
Bill	91
Garry	87
Jim	77
Jerry	75
Need	74
Mike	73
Tim	68
Ed	65
Nancy	59
Sarah	59
Diana	54
Andrew	52
Mary	48
Russ	17
John	12
Michael	6
Ali	1

4. **CLIMATE GRAPH**

- A graph about climate is called **climograph**.
- It is made up of 2 graphs together – **line graph & bar graph**

Example of a Climate Graph

Climate Graph for Beijing, China.



It does not matter what sides of the graph the rainfall scale and the temperature scale go.

The bar graph shows rainfall:
Rainfall is usually measured in millimeters - mm

1). Complete the following sentences.

- The line graph shows _____
- The bar graph represents _____
- The 12 measurements for temperature match the 12 _____ of the year.
- The measurement used to show rainfall is _____.
- The measurement used to show temperature is _____.
- The highest temperature is _____ °C in the month of _____
- The lowest temperature is _____ °C in the month of _____
- The highest rainfall is _____ mm in the month of _____
- The lowest rainfall is _____ mm in the month of _____

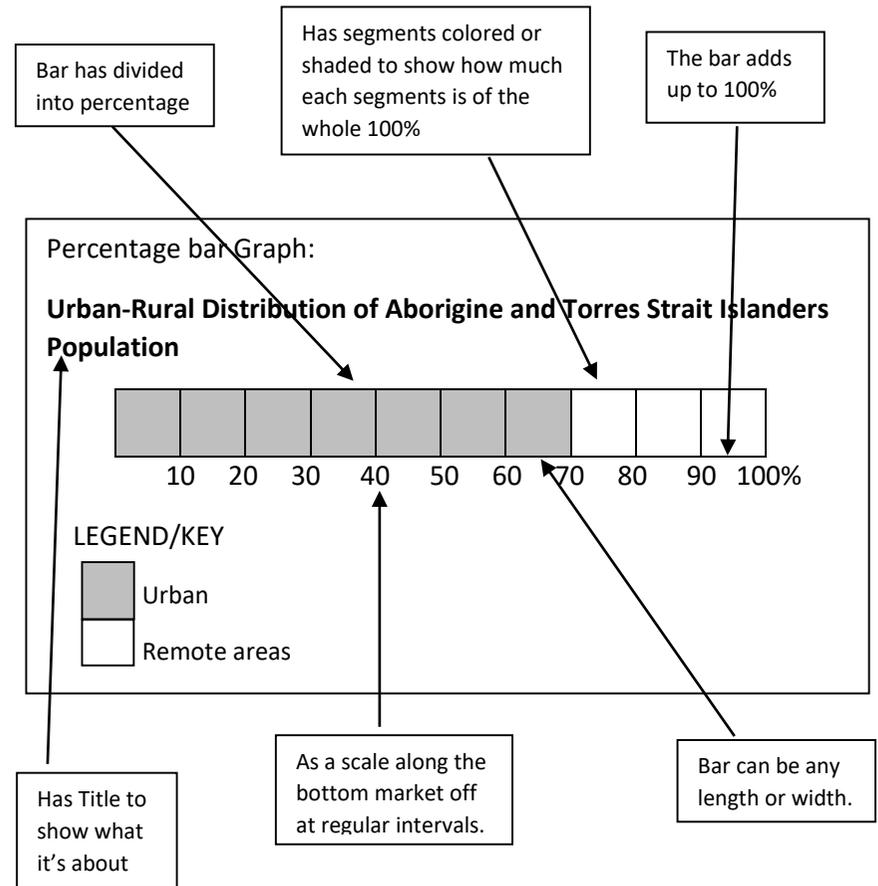
2). Construct a climograph/ climate graph using the climate data for Melbourne.

Month	J	F	M	A	M	J	J	A	S	O	N	D
Temp°C	10	11	12	13	14	15	15	16	17	16	13	11
Rainfall	105	71	59	39	10	3	1	1	8	10	50	72



5. PERCENTAGE BAR GRAPH

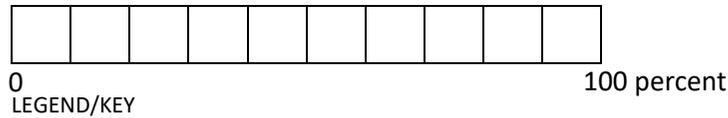
Example of a Percentage Bar Graph.



Activity

- 1 a) Write the figures for the percent scales of the two graphs below.
- b) On Graph 1 use two colors to show that English is the first language for 79% of the Australian population.
- c) On Graph 2 use two colors to show that Christianity is the religion of 70.5% of the Australian population.
- d) Finish the legend/key by adding correct colors.

Graph 1: Percentage of Australian with English as their first language



- English
- Other (e.g. Chinese, Italian)

Graph 2: Percentage of Australians whose religion is Christianity



- Christianity
- Non-Christianity (e.g. Buddhist, Muslim)

2. Use the key to finish the ROB's YEAR 10 CLASS percentage bar graph. Use 4 different colors on your graph.

Rob's Year 10 Class

LEGEND/ KEY

- Australian-born (89%)
- European-born (3%)
- New Zealand-born (3%)
- Asian-born (5%)



3. Finish this sentence:

The **BIG** difference between a bar graph and a percentage bar graph is

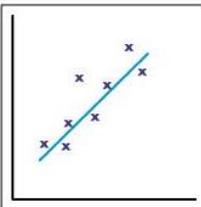
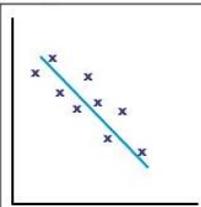
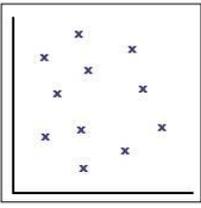
6. SCATTER GRAPHS

A scatter graph:

- * It shows relationships between two sets of data named on the x and y axes
- * The sets of data called variables
- * It is drawn to see if different data (variables) have anything in common
- * If the scatter of points look to form a line in a particular direction, it is safe to think there is a relationship between them.

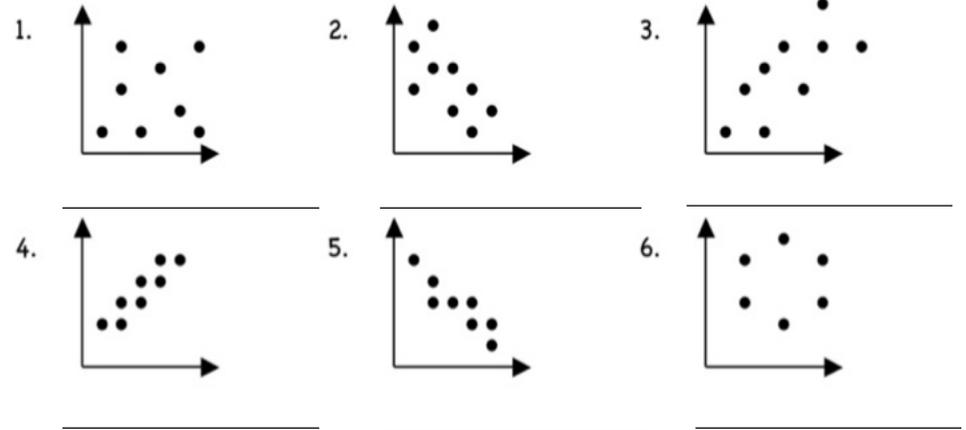
To check for a relationship:

- * Put a ruler along the scatter points until about half the points are on one side of the ruler and half the scatter points are on the other side of the ruler
- * Draw a line along the ruler
- * The line is called **best-fit line** or **trend-line**

Scatter Diagram	Types of Correlation	Interpretation
	POSITIVE	Straight line, sloping up from left to right. As one variable increases so does the other variable.
	NEGATIVE	Straight line, sloping down from left to right. As one variable increases the other decreases.
	NONE	No line, which means there is no connection/relationship between the two variables.

Activity

- 1) Classify the scatter plots below as having **positive**, **negative** or **no correlation**.



- 2)

English Mark	25	35	30	78	45	67	91	82	60
History Mark	40	38	35	75	60	85	87	95	54

- Plot a scatter graph on this data
- Remember to label the axes
- Draw a line of best fit on the graph
- State what type of correlation there is

