

Analysing a graph in detail

COMMUNICATION

LEVEL
Intermediate

NUMBER
EN_BE_3817X

LANGUAGE
English



lingoda

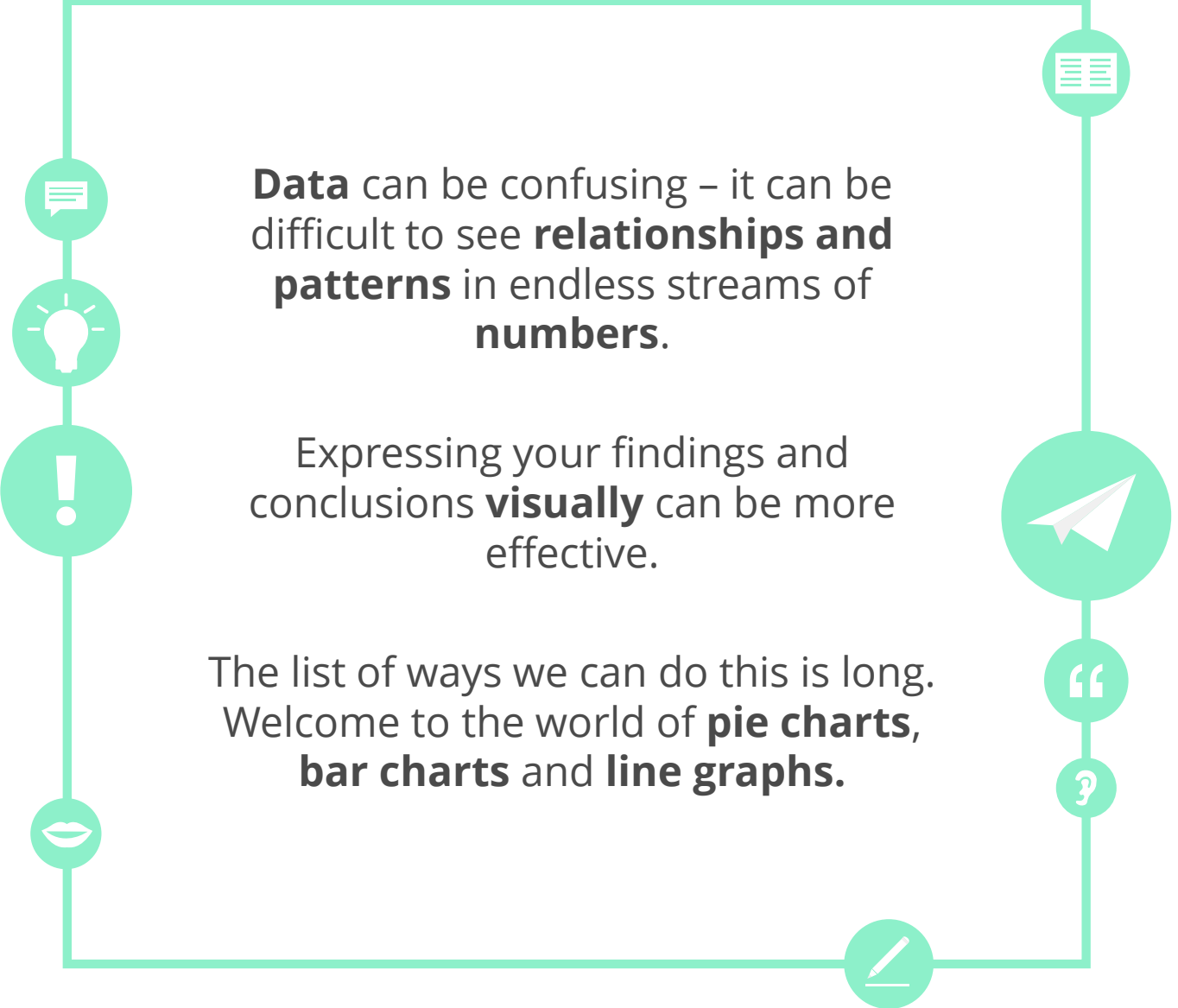




Goals

- Can understand and recall a range of language used to describe a graph in detail.
- Can explain the information displayed on a graph and accurately relate it to measures of life expectancy.





Data can be confusing – it can be difficult to see **relationships and patterns** in endless streams of **numbers**.

Expressing your findings and conclusions **visually** can be more effective.

The list of ways we can do this is long. Welcome to the world of **pie charts**, **bar charts** and **line graphs**.



Warm-up discussion

What are some uses of graphs?

Why are they useful?





Vocabulary

diagram

graph

statistics

chart

columns

estimate

bars

reasoning



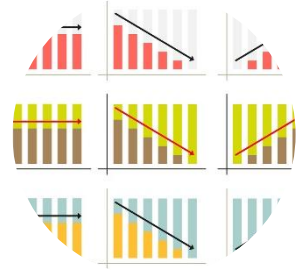


Sentences slide



The **diagram** made his explanation clear.

Please refer to the **graph** on page four.



I've included a **chart** which summarises the data.

What do you **estimate** the result will be?





Sentences slide



The **columns** indicate projected profit in the next quarter.

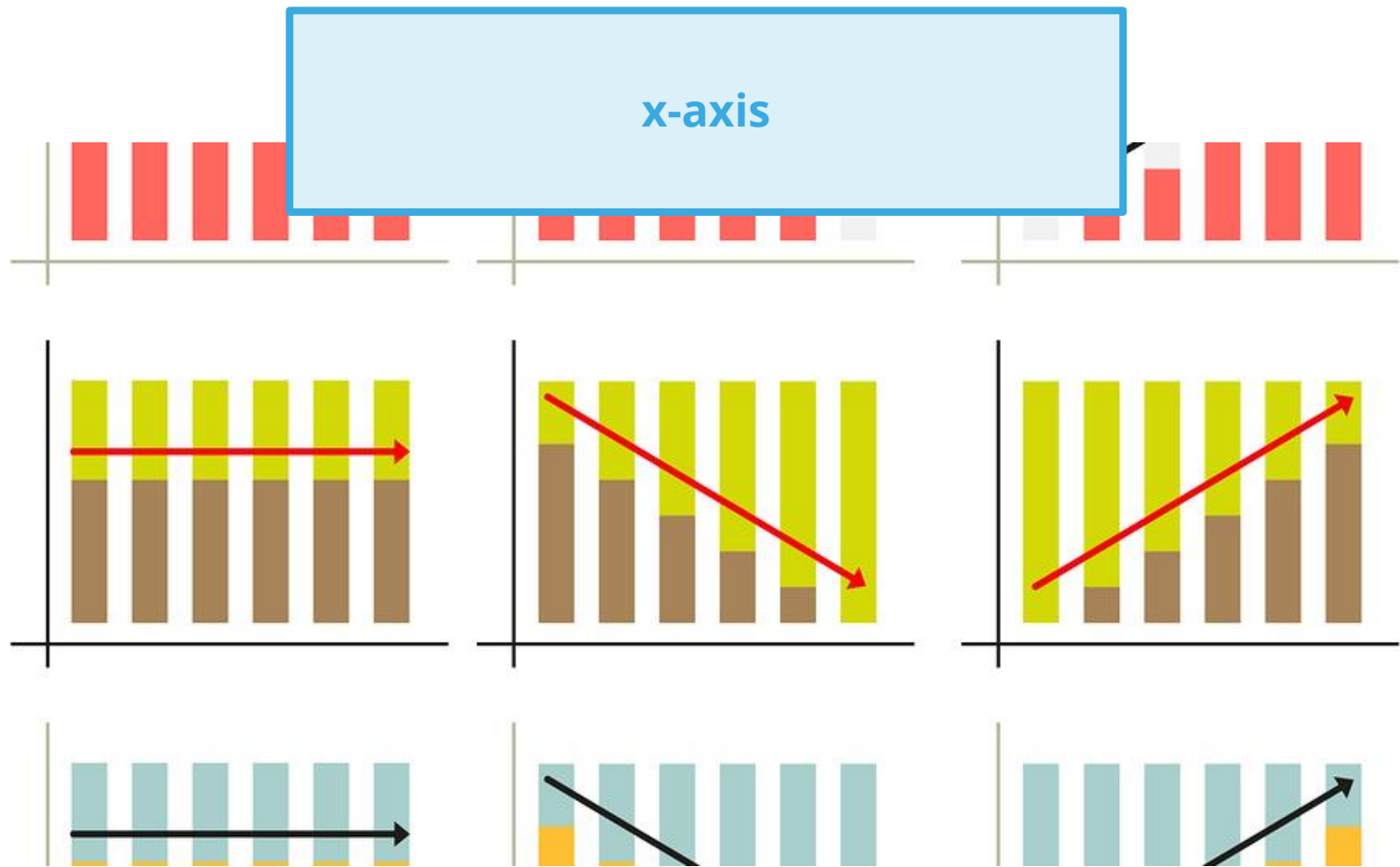
The **bars** indicate different results in the experiment.



See where your **reasoning** gets you after assessing the data.

The **statistics** indicate a clear trend.





The **x-axis** is the horizontal axis of a two-dimensional graph which runs from left to right.

y-axis



The **y-axis** is the vertical axis of a two-dimensional graph and usually runs from bottom to top. It is used as a reference line to measure from.



Introduction to graphs and charts

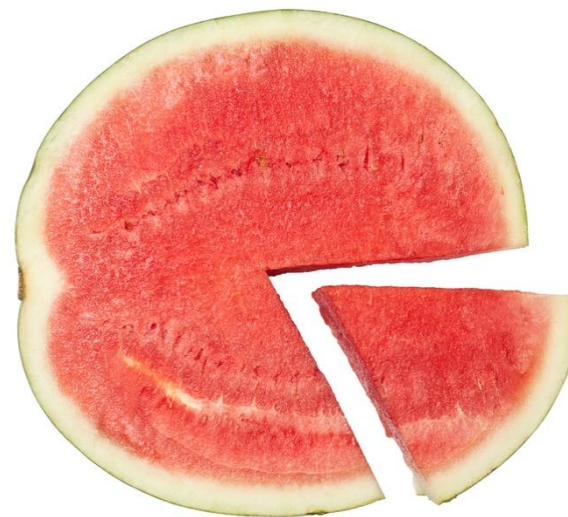
- Within many fields there is a need to refer to numbers and **statistics**.
- This often comes in the form of **data**, which can be used to **support an idea** or **opinion**.
- Rather than show this data as numbers, it is much easier for the human mind to process and understand these numbers when they are **represented visually** in the form of **graphs** and **charts**.

types of graphs and charts

line graph

pie chart

bar chart





Pie chart: review

- **Pie charts** represent **categories of data** in **segments**.
- Represented as circles, **pie charts reflect the proportion** of each category in relation to the **entire data set**.
- **Segments** are valued in terms of **percentages**.

Pie charts...

- are ideally used for **comparing small numbers of categories** – too many categories can make them difficult to understand.
- ...should be labelled clearly with **categories** and **percentages** in each **segment**.

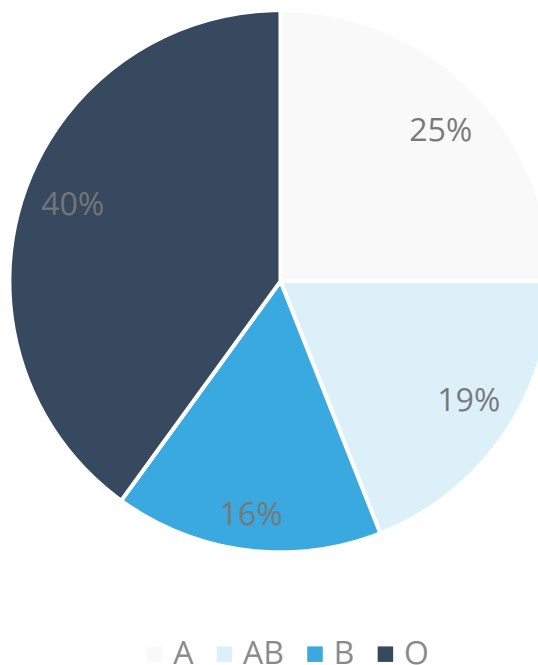




Study the pie chart

**Analyse the pie chart.
It shows the percentages of blood types of 400 people taken by a
medical laboratory.**

Analysis of Blood Types





Respond to the questions

Study the pie chart carefully and respond to the questions.

1. What portion of people have the blood type AB?
2. What portion of people have the blood type O?
3. What portion of people have either the blood type A or B?
4. What are the advantages of displaying data as a pie chart?
5. How would you improve the pie chart?



True or false?

	TRUE	FALSE
1. The x-axis is the vertical line.	<input type="checkbox"/>	<input type="checkbox"/>
2. The chart in the previous activity shows changes in data over time.	<input type="checkbox"/>	<input type="checkbox"/>
3. O was the most common blood type.	<input type="checkbox"/>	<input type="checkbox"/>
4. One quarter of the participants have the blood type A.	<input type="checkbox"/>	<input type="checkbox"/>
5. The data would have been more effectively portrayed in a line graph.	<input type="checkbox"/>	<input type="checkbox"/>
6. There were 400 participants in the spread of data.	<input type="checkbox"/>	<input type="checkbox"/>



Terms and definitions

Match the graph terms on the left with their definitions on the right.

The cards are as follows:

- x-axis** (light green card)
- bar chart** (light blue card)
- line graph** (light orange card)
- pie chart** (light grey card)
- diagram** (light green card)
- A graph which represents the direction or trend of data over time.** (light green card)
- The horizontal axis in a bar or line graph.** (light green card)
- An image which represents data.** (light blue card)
- A graph representing data in vertical or horizontal columns.** (light orange card)
- The vertical axis in a bar or line graph.** (light grey card)



Line graph: review

- A **line graph** is an excellent way to **map data**.
- **Each point** on the graph **represents a piece of data** – the horizontal line represents time that has passed.
- **Line graphs** are commonly used to show **change in data over time**.

Line graphs...

- are great for showing information that has changed over time.
- are quick and easy to understand.
- utilise the x and y-axes.





Interpreting a graph

- The **title** of a graph can help you to **identify** what it represents.
- Understanding the **relevance** of the data on the graph is then dependent on the **type of graph** you are looking at.



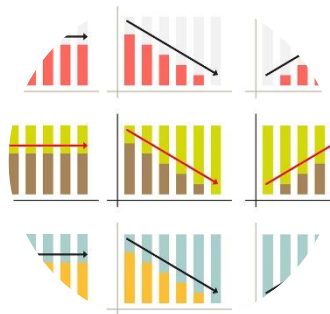
Understanding the technical aspects of the graph helps you to **interpret** the relationship between the sets of data.



Talk to the teacher

Explain to your teacher what each term means.

bar chart



line graph



pie chart



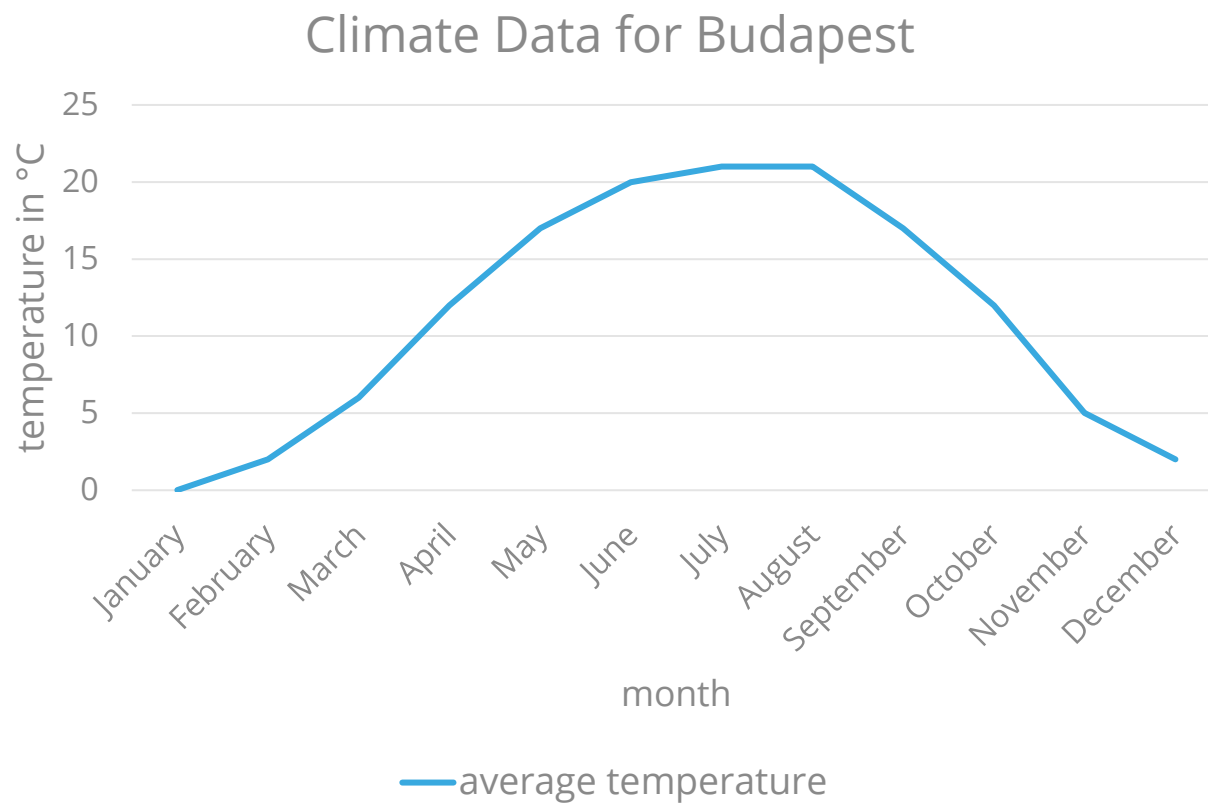
diagram





Line graphs

Study the graph carefully.





Respond to the questions

Answer the following questions about the line graph on the previous page.

1. How might this data have been collected?
2. Why might someone be interested in this kind of data?
3. What data is represented by the x and y-axes?
4. What does the chart tell you about the climate in Budapest?
5. What is effective about using a line graph for data like this?



Bar chart: review

- **Bar charts** can be used to **present** and **compare data** and are clear to read and understand.
- Different **vertical** or **horizontal bars** differ in height or length depending on their value.
- **Bar charts** are **useful** when comparing the **amount or magnitude** of something.

Bar charts...

- have an x and y-axis.
- are easy to read at a glance.
- show us the relative size or amount of something.





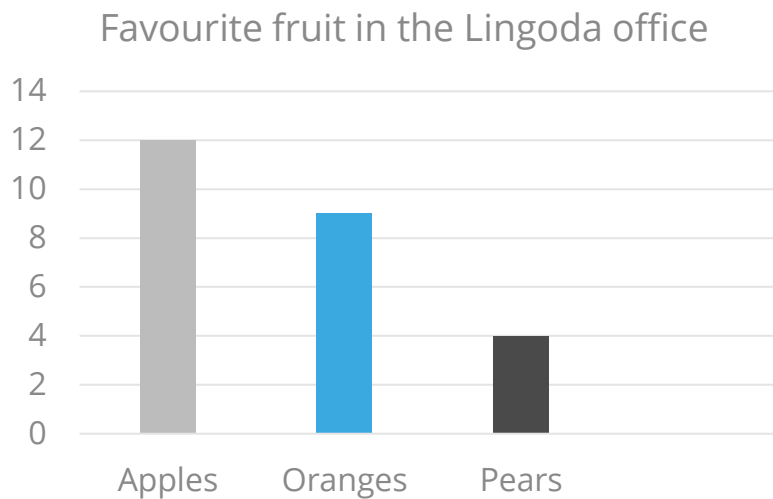
Words to describe data and trends





Bar charts

- Study the graph below.



What is easy to understand about **bar charts**?



Describing a graph

Write a brief paragraph describing the graph on the previous page.

Most people's favourite fruit is...

The least popular fruit is...

Only 4 people...



Writing about a graph

- **Analytical writing** is stronger when it includes quantitative data such as results shown on a graph.
- When you are confident that you can read and analyse the data presented in a graph, you can write about it and the **conclusions** of its findings.

- When writing about a graph, it is important to discuss the **trends of the data** as well as your overall conclusions.
- When writing about data, we **do not** tend to give our **opinion**. The writing is **objective**.





Talking about graphs

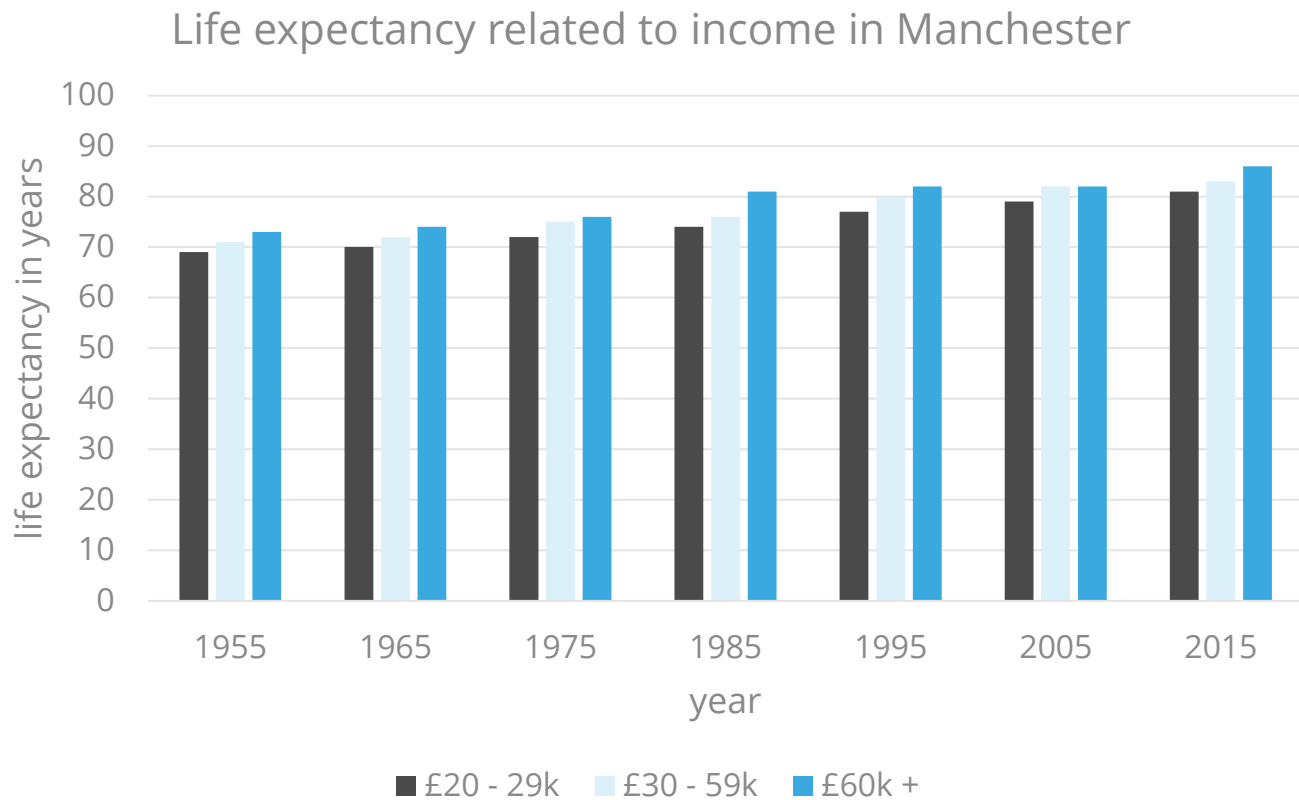
Explain to your teacher which graphs are most **effective** for you and why.

In your explanation, try to use the technical vocabulary we have explored during this lesson.



Bar charts

Study the graph carefully.





Fill in the gaps

Fill in the gaps with the correct words.

This graph _____ the life expectancy for people living in Manchester from _____. The _____ represents years while the _____ shows age.

The graph shows the _____ in life expectancy in Manchester in relation to _____ over the last _____ years.

What the graph doesn't tell us is the _____ of the participants. This information, as well as more data about their _____ and habits, could have made the graph more _____.

60

1955-2015

gender

income

increase

informative

lifestyle

shows

x-axis

y-axis



Write a letter

Write a letter to your friend. They are doing some research on life expectancy in Manchester and they sent you the graph on p. 27. Give them some feedback. What did they do well on their graph? What was their graph missing that they could include for clearer results next time?

A large rectangular box with a black border, containing several horizontal lines for writing. The lines are spaced out, with a longer line at the top right, followed by a series of shorter lines on the left, and a few more lines at the bottom left.



Analyse the data

**Write a report about the data you have studied about life expectancy in Manchester. What does the data suggest?
Study it carefully and come to a conclusion.**

aim for 200 words

present your
findings to the
teacher



A blank sheet of lined paper with a vertical blue margin line on the left and a series of punch holes along the left edge. The paper is intended for writing the report.



Reflect on the goals

Go back to the second slide of the lesson and check if you have achieved all the goals of the lesson.

yes

no





Reflect on this lesson

Think about everything you have seen in this lesson.
What were the most difficult activities or words? The easiest?



If you have time, go over
the most difficult slides again



Answer key

Exercise p. 13
1. Type AB: 76 people
 400×0.19

2. Type O: 160 people
 400×0.4

3. Type A or B: 164 people
 $(400 \times 0.25) + (400 \times 0.16)$
 $100 \text{ (type A)} + 64 \text{ (type B)}$

4. Easy to quickly compare data, clearly labelled, easy to understand.
5. Accept any thoughtful answer.

Exercise p. 14
1F, 2F, 3T, 4T, 5F, 6T

Exercise p. 15
X-axis: the horizontal axis in a bar or line graph.

Line graph: a graph which represents the direction or trend of data over time.

Pie chart: a circular graph which reflects percentages and categories of a whole data set.

Bar chart: a graph representing data in vertical or horizontal columns.

Y-axis: the vertical axis in a bar or line graph.

Diagram: an image which represents data.

Exercise p. 28
shows, 1955-2015, x-axis, y-axis, increase, income, 60, gender, lifestyle, informative





Discuss the pros and cons

Write a list of the pros and cons of the following types of graphs:

pie chart

bar chart

line graph

pros

cons



Interpreting a graph

Write an e-mail to your colleagues about how to interpret one graph type of your choice. Use the technical vocabulary and your new expertise to teach them what you have just learned.

-□×

To: analyticsteam@lingodastudents.com

Subject: How to interpret a _____ graph.

Dear team...



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