Your notes

GCSE Maths: revision notes

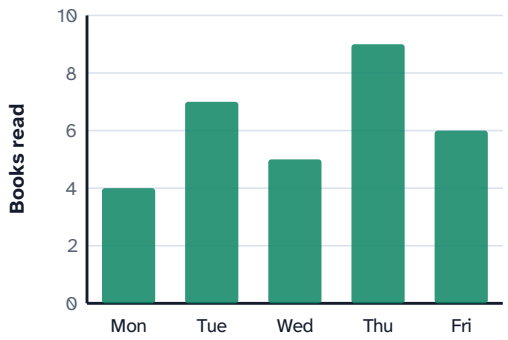
Charts and diagrams

Contents

1. Bar charts and pictograms
2. Pie charts
3. Stem-and-leaf diagrams
4. Line graphs and frequency polygons
5. Key terms
6. Quick questions
7. What to do next

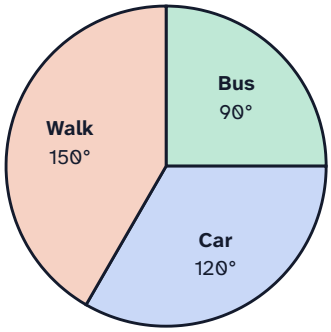
Bar charts and pictograms

- A **bar chart** has bars of equal width with gaps between them. The height shows the frequency. Label both axes.
- A **pictogram** uses a symbol for a number of items, with a key. If one symbol stands for 4 people, half a symbol stands for 2.
- Dual **bar charts** (side by side) and composite **bar charts** (stacked) compare groups.



Pie charts

- Angle = frequency ÷ total × 360°. If 12 out of 60 students choose swimming, the angle is 12 ÷ 60 × 360 = 72°.
- To read a **pie chart**, find the fraction of 360°. An angle of 90° is ¼ of the total.

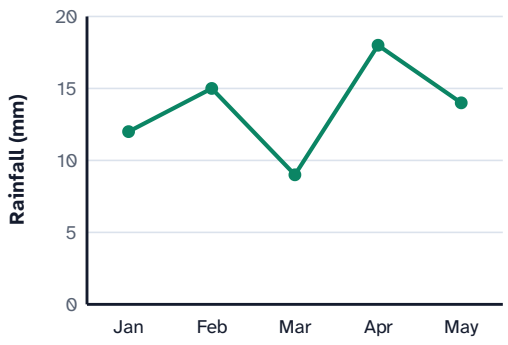


Stem-and-leaf diagrams

- A **stem-and-leaf diagram** keeps the actual values, in order, with a key such as 3 | 5 = 35.
- It makes the median, mode and range easy to find.

Line graphs and frequency polygons

- A **time series** graph shows data over time. Look for the **trend** (the general direction) and repeating seasonal patterns.
- A **frequency polygon** plots each frequency at the midpoint of its group, and joins the points with straight lines.
- Watch out for misleading graphs, such as an axis that doesn't start at zero or an uneven scale.



Key terms

Bar chart	A chart using bars of equal width to show frequencies.
Pictogram	A chart using symbols to stand for a number of items.
Pie chart	A circle divided into sectors to show proportions of a total.
Stem-and-leaf diagram	A diagram that splits each value into a stem and a leaf, keeping the data in order.

Your notes

Key	A note that explains what a symbol or diagram means.
Time series	Data recorded at regular times, shown on a line graph.
Frequency polygon	A graph joining points plotted at the midpoints of groups.
Trend	The general direction of the data over time.

Your notes

Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. 12 of 60 students choose swimming. What angle is this on a pie chart?
2. How do you work out the angle of a pie chart sector?
3. A pie chart sector has an angle of 90°. What fraction of the total is it?
4. In a pictogram, one symbol stands for 4 people. How many people do 3½ symbols show?
5. A stem-and-leaf diagram has the key 3 | 5 = 35. What does 4 | 2 mean?
6. What must a stem-and-leaf diagram always have?
7. Where are the points plotted on a frequency polygon?
8. What does a time series graph show?

Answers

1. 72°
2. Frequency divided by the total, multiplied by 360
3. 1/4
4. 14
5. 42
6. A key
7. At the midpoints of the groups
8. How data changes over time

What to do next

Practise 12 questions on this topic

Try 6 exam questions, with mark schemes

Read the lesson, one step at a time

Free revision for GCSE and KS3 at lycolearn.co.uk. Some notes are for one exam board only, and say so in brackets.