



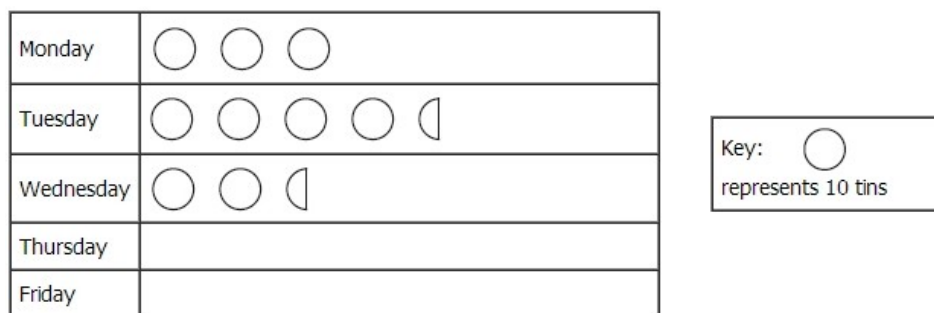
# Learning Journey for Statistics

## Representing Data

How does this unit link to prior learning?	What will you be learning about?
<ul style="list-style-type: none"> <li>Builds on graphical representation already learnt in KS3 including:               <ul style="list-style-type: none"> <li>- Bar charts</li> <li>- Pie charts</li> <li>- Line graphs</li> <li>- Simple scatter graphs</li> <li>- Frequency diagrams</li> </ul> </li> <li>Representing data in GCSE Statistics builds on KS3 by taking students from <b>constructing and reading basic graphs to selecting, interpreting, comparing, and critically evaluating statistical representations.</b></li> <li>The KS3 foundations of data handling, graph drawing, and numerical measures are essential for the more analytical and evaluative demands of GCSE Statistics.</li> </ul>	<ul style="list-style-type: none"> <li>To use different graphs, tables and charts to display data.</li> <li>Compare data sets by using different data values such as median and range.</li> <li>Interpret data sets using skewness.</li> </ul>
	<b>British Values</b>
	<ul style="list-style-type: none"> <li>Individual Liberty – choice of methods to represent and display data.</li> <li>Mutual Respect - listening and learning from both the teacher and peers to ensure a positive and productive learning environment.</li> </ul>
	<p style="text-align: center;"><b>Key vocabulary</b></p> <p>Bar chart, line graph, data set, pie chart, two-way tables, pictograms, comparative and compound bar charts, stem and leaf, frequency polygons, histograms, cumulative frequency, population pyramids, truncation, skew, skewness, mode, median, mean, range, interquartile, upper quartile, lower quartile.</p>

### Prior Knowledge

The pictogram shows the number of tins of dog food sold in a shop on Monday, on Tuesday and on Wednesday last week.



On Thursday, 60 tins of dog food were sold in the shop.

On Friday, 35 tins of dog food were sold in the shop.

(a) Use this information to complete the pictogram.

More tins of dog food were sold on Tuesday than on Monday.

(b) How many more tins?

### We will develop our learning each week by focusing on:

<p><b>Lesson 1: Pictograms</b> To be able to draw, read and interpret.</p>	<b>RAG</b>
<p><b>Lesson 2: Reading Tables and Two-Way Tables</b> To be able to draw, read and interpret.</p>	

<p><b>Lesson 3: Bar Charts</b>          To be able to draw, read and interpret bar charts.          To be able to draw, read and interpret dual bar charts.          To be able to draw, read and interpret compound bar charts.</p>	
<p><b>Lesson 4: Choropleth Maps</b>          To be able to draw, read and interpret.</p>	
<p><b>Lesson 5: Population Pyramids</b>          To be able to draw, read and interpret.</p>	
<p><b>Lesson 6: Stem and Leaf Diagrams</b>          To be able to draw, read and interpret including back-to-back.          To be able to calculate mean, median, mode, range and quartiles.</p>	
<p><b>Lesson 7: Pie Charts</b>          To be able to draw, read and interpret.</p>	
<p><b>Lesson 8: Comparative Pie Charts</b>          To be able to draw, read and interpret.          To be able to calculate radii.</p>	
<p><b>Lesson 9: Frequency Polygons</b>          To be able to draw, read and interpret.</p>	
<p><b>Lesson 10: Cumulative Frequency Graphs</b>          To be able to draw, read and interpret.          To be able to calculate the median and quartiles.</p>	
<p><b>Lesson 11: Histograms</b>          Draw, read, complete and interpret histograms of equal and unequal widths.          To be able to use linear interpolation to calculate the median and quartiles.</p>	
<p><b>Lesson 12: Misleading and Appropriate Graphs</b>          Recognise errors in constructions that can lead to misleading graphs.          Select and justify appropriate forms of representation for different sets of data.</p>	
<p><b>Lesson 13: Revision Lesson</b>          Select resources to use to revise for the end of topic assessment</p>	
<p><b>Lesson 14: Assessment Lesson</b>          Do 10-minute top up and go through answers together, students to self assess          Open book assessment done in silence</p>	
<p><b>Lesson 15: Feedback Lesson</b>          Students to highlight their traffic light sheet.          Teacher to go through assessment and students to self-assess in green pen.          Students to complete the NOW section of the WOW-HOW-NOW sheet.</p>	

## How will this help you in the future?

### KS4

- **Geography**

Students use data representation to:

- Display population, climate, and economic data.
- Interpret choropleth maps, pie charts, and bar graphs.
- Analyse trends in migration, urbanisation, and environmental change.
- This links closely to statistical skills of comparing distributions and identifying patterns.

- **Computer Science**

Students work with:

- Data visualisation techniques.
- Tables, charts, and databases.
- Interpretation of performance and usage data.
- The ability to organise and communicate information effectively is a key transferable skill.

- **Cross-Curricular Skills Developed**

Representing data helps students develop:

- Analytical thinking.
- Problem-solving.
- Communication of evidence.
- Critical evaluation of information.
- Digital literacy through spreadsheet and graphing software.

### Beyond LHS

#### Employment and Careers

- Many careers require the ability to present and interpret data, including:
- Healthcare (patient records, disease trends).
- Business and finance (sales figures, financial reports).
- Marketing (customer surveys and market research).
- Engineering and science (experimental and performance data).
- Government and public services (population and economic statistics).
- Information technology and data analysis (dashboards and visualisations).
- Even jobs that are not heavily mathematical often require staff to understand charts, reports, and performance measures.

#### Citizenship and Media Literacy

- In modern society, data is often used to support arguments and influence opinions. Understanding data representation enables people to:
  - Critically evaluate news reports and social media claims.
  - Recognise misleading graphs or selective presentation of data.
  - Interpret government statistics and public health information.
  - Make informed decisions about issues that affect their communities.
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- **Financial Decision-Making**
  - Adults use data to:
  - Compare loans, mortgages, and savings products.
  - Understand investment performance.
  - Monitor personal finances through graphs and budgeting tools.
  - Evaluate consumer information before making purchases.