Overview
Small Steps

- Interpret charts
- Comparison, sum & difference
- Introducing line graphs
- Line graphs

NC Objectives

Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.

Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.
Complete the table using the information in the bar chart.

<table>
<thead>
<tr>
<th>Transport</th>
<th>Number of children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td></td>
</tr>
<tr>
<td>Walk</td>
<td></td>
</tr>
<tr>
<td>Bus</td>
<td></td>
</tr>
<tr>
<td>Bicycle</td>
<td></td>
</tr>
</tbody>
</table>

What is the most/least popular way to get to school?
What do you notice about the different axes?
What do you notice about the scale of the bar chart?
What other way could you present the data shown in the bar chart?
What else does the data tell us?
What is the same and what is different about the way in which the data is presented?
What scale will you use for your own bar chart? Why?

<table>
<thead>
<tr>
<th>Day</th>
<th>Number of tickets sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>55</td>
</tr>
<tr>
<td>Tuesday</td>
<td>30</td>
</tr>
<tr>
<td>Wednesday</td>
<td>45</td>
</tr>
<tr>
<td>Thursday</td>
<td>75</td>
</tr>
<tr>
<td>Friday</td>
<td>85</td>
</tr>
</tbody>
</table>
Halifax City Football Club sold the following number of season tickets:
- Male adults – 6,382
- Female adults – 5,850
- Boys – 3,209
- Girls – 5,057

Would you use a bar chart, table or pictogram to represent this data? Explain why.

Possible answer: I would represent the data in a table because it would be difficult to show the exact numbers accurately in a pictogram or bar chart.

Alex wants to use a pictogram to represent the favourite drinks of everyone in her class.

It is not a good idea, because it would be difficult to show amounts which are not multiples of 5.

What advice would you give Jack about the scale he has chosen? What would be a better scale to use? Is there anything else missing from the bar chart?

Possible response: I would tell Jack to use a different scale for his bar chart because the numbers in the table are quite large. The scale could go up in 5s because the numbers are all multiples of 5. Jack needs to record the title and he needs to label the axes.
Children solve comparison, sum and difference problems using discrete data with a range of scales. They use addition and subtraction to answer questions accurately and ask their own questions about the data in pictograms, bar charts and tables. Although examples of data are given, children should have the opportunity to ask and answer questions relating to data they have collected themselves.

As a class, decide on some data that you would like to collect, for example: favourite books, films, food. Collect and record the data in a table. Choose a pictogram or a bar chart to represent your data, giving reasons for your choices. What questions can you ask about the data?
Rosie says,

We asked 54 people altogether.

Can you spot Rosie’s mistake? How many people were asked altogether?

Rosie has read the bar chart incorrectly. 15 people chose vanilla, 19 people chose chocolate, 10 chose strawberry and 12 chose mint. That means 56 people were asked altogether.

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**True or false?**

- The same number of people visited Maltings Castle as Film Land Cinema on Saturday.
- Double the number of people visited Animal World Zoo on Sunday than Saturday.
- The least popular attraction of the weekend was Primrose Park.

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<table>
<thead>
<tr>
<th>Attraction</th>
<th>Number of visitors on Saturday</th>
<th>Number of visitors on Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal World Zoo</td>
<td>1,282</td>
<td>2,564</td>
</tr>
<tr>
<td>Maltings Castle</td>
<td>2,045</td>
<td>1,820</td>
</tr>
<tr>
<td>Primrose Park</td>
<td>1,952</td>
<td>1,325</td>
</tr>
<tr>
<td>Film Land Cinema</td>
<td>2,054</td>
<td>1,595</td>
</tr>
</tbody>
</table>

- False
  The Film Land Cinema had 9 more visitors than Maltings Castle

- True
  1,282 doubled is 2,564

- True
  Animal World Zoo - 3,846
  Maltings Castle - 3,865
  Primrose Park - 3,277
  Film Land Cinema - 3,649
The graph shows the temperature in the playground during a morning in April.

The temperature at 9 a.m. is _______ degrees.

The warmest time of the morning is ________.

Class 4 grew a plant. They measured the height of the plant every week for 6 weeks. The table shows the height of the plant each week.

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 cm</td>
<td>7 cm</td>
<td>9 cm</td>
<td>12 cm</td>
<td>14 cm</td>
<td>17 cm</td>
</tr>
</tbody>
</table>

Create a line graph to represent this information. What scale would you use on the x and y axes? Between which two weeks did the plant reach a height of 10 cm?
Jack launched a toy rocket into the sky. After 5 seconds the rocket fell to the ground. Which graph shows this? Explain how you know.

Graph A
The height of the rocket increases then decreases quickly again, returning to a height of 0 at 5 seconds.

Example story:
A bird flew up from the ground. It continued to fly upwards for 5 seconds then flew at the same height for another 3 seconds.

Graph B
Make up your own story for the other graph.

Tommy created a line graph to show the number of dogs walking in the park one afternoon.

Tommy says,
At half past one there are 1.5 dogs in the park.

Why is Tommy incorrect?

What would be a better way of presenting this data?

Tommy is incorrect because you cannot have 1.5 dogs.

A better way of presenting this data would be using a bar chart, pictogram or table because the data is discrete.
The graph shows the growth of a plant over 6 months.
• How tall was the plant when it was measured in May?
• In what month did the plant first reach 50 cm?
• How many centimetres did the plant grow between March and July?
• What was the difference between the height of the plant in February and the height of the plant in April?

The graph shows the weight of a puppy as it grows.
When the puppy is ____ months old the weight is ____kg
Between month ____ and month ____ the puppy increased by ____ kg
Eva measured the temperature of a cup of tea every 30 minutes for 2 hours. The graph shows Eva’s results.

Eva says,

Do you agree with Eva? Explain why.

I do not agree with Eva. At 9 a.m. the temperature was 80 degrees and at 9.45 a.m. the temperature was 50 degrees, so it had dropped 30 degrees not 20 degrees.

Write a story to match the graph.

Example story: Mo drove 20 miles in his lorry. At half past 9 he had a 15 minute rest then drove for another 30 miles until he reached his destination at 10:30 a.m.