

YR4 Knowledge Organiser - Statistics

Key Concepts

- 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.
- Understand a greater range of scales in representations
- Relate graphical representation of data to recording change over time

Key Vocabulary

- discrete / continuous data
- bar chart / pictogram
- time / line graph
- comparison / sum / difference
- scale
- axis / axes



Discrete Data

Discrete data is information that is counted in whole numbers and has a set amount. Examples of discrete data include the number of children in a class or the number of questions on a test.

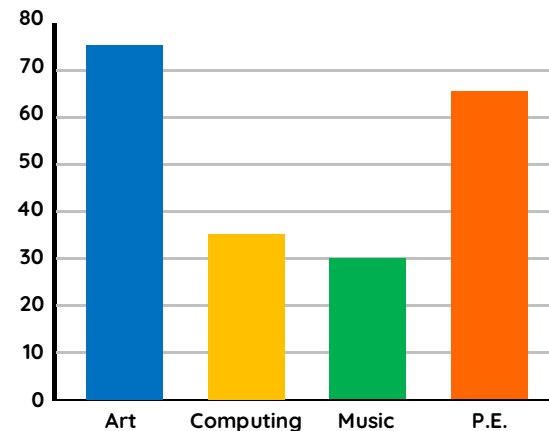
Continuous Data

Continuous data is information that is measured over time and can have infinite values. The values between whole numbers can also be counted. Examples of continuous data include weight, height and temperature.

Bar Charts

Bar charts can be used to present discrete data.

Favourite School Subjects



We can use this data to solve problems, such as comparison questions.

Which is the most popular school subject?

Art because it has the most votes.

Pictograms

Pictograms can be used to present discrete data.

Cakes Sold at the School Bake Sale

Carrot	● ● ●
Chocolate	● ● ● ● ●
Fruit	● ●
Red Velvet	● ● ● ●

● = 20 cakes

We can use this data to solve problems, such as sum questions.

How many cakes were sold altogether?

$$50 + 100 + 25 + 75 = 250$$

Tables

Tables can be used to present discrete data.

Number of Weekend Visitors at Theme Parks

Theme Park	Visitors
Animal World	4,916
Dino Zone	6,582
Fantasy Island	8,705
Wonderland	7,194



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We can use this data to solve problems, such as difference questions.

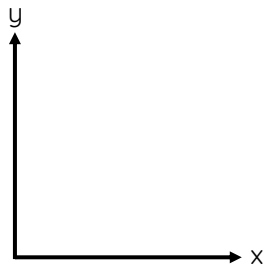
How many more people visited Fantasy Island than Animal World?

$$8,705 - 4,916 = 3,789$$

Time Graphs

Time graphs are a type of line graph used in the context of time. They are used to present continuous data.

Line graphs have two axes. One is horizontal and the other is vertical. The horizontal axis is called the x axis and the vertical axis is called the y axis.



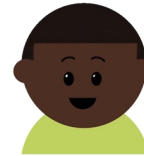
It is important to choose an appropriate scale so that data is presented in the clearest way possible.

If I recorded the average temperature each week for 10 weeks, and the temperature ranged from 0°C to 19°C, what scale should I use?

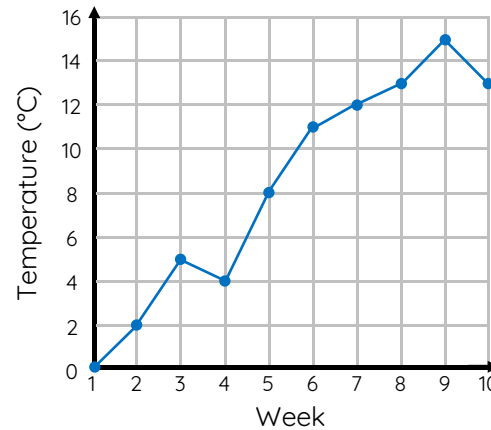


“A scale going up in 10s from 0°C to 100°C would not be appropriate because most of the graph would be unused. The data would be condensed into a small space making it hard to read accurately.”

“The scale should go up in 2s from 0°C to 20°C. Most of the graph will be used and the data will be clear and easy to read accurately.”



Average Temperature



We find the data point on the x axis and move up the chart to read the plotted point along the y axis. For example, in week 5, the average temperature was 8°C.

As with bar charts, pictograms and tables, we can use this data to ask and answer questions and

solve comparison, sum and difference problems.

Between which two weeks was there a temperature increase of 4°C?

There was a temperature increase of 4°C between weeks 4 and 5.

As the plotted points are joined, we can read values between them. However, it is important to note that any readings taken between actual measurements are estimates only. For example, we cannot say exactly when the average temperature was 14°C.

Presenting Data in Line Graphs

When presenting data in line graphs, there are some key pointers which can help us.

Line graphs should have a title to summarise the data being presented. Both the axes should also be labelled to show which part of the data they are representing. Choose an appropriate scale and ensure it is aligned against each marker to avoid any confusion. You should plot the points in the same way as you read them. Find the value along the x axis and move up the chart to mark the point along the y axis. You should then join your points to connect the data points. Use a ruler to help you present your data accurately.

