Learning together. Respecting each other. Achieving our potential.

Knowledge Organiser

Year Group	Subject	Topic
6	Mathematics	Statistics

The Big Picture
Children will build on their experience of interpreting data in context from Year 5, using their knowledge of scales to read information accurately. Children need to read information accurately, including where more than one set of data is on the same graph. Children will build on their experience of reading and interpreting data in order to draw their own line graphs, deciding on the most appropriate scales and intervals to use depending on the data they are representing. They will need to be able to use line graphs to solve problems. At this point, children should be secure with the terms x and y axis, frequency and data. Children will illustrate and name parts of circles, using the words radius, diameter, centre and circumference confidently. They will also explore the relationship between the radius and the diameter and recognise the diameter is twice the length of the radius. Children will build on their understanding of circles to start interpreting pie charts.

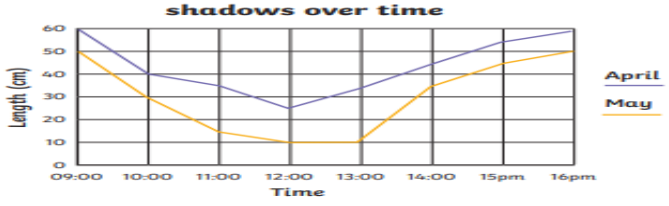
Key Vocabulary	
bar chart	A diagram which uses bars to represent variables
pictogram	A graph in which pictures are used to represent amounts
frequency table	A table that lists items and shows the number of times the items occur.
tally chart	used for counting and comparing the numbers of multiple classes of a data set
pie chart	a type of graph in which a circle is divided into sectors that each represent a proportion of the whole
discrete data	This is countable and has spaces between values.
continuous data	This is measurable and can take any value
line graph	a graph commonly used to show trends over time
sum	the total amounting from addition
difference	what is left after subtracting one value from another
interpret	to explain the meaning of information
mean average	The value obtained by dividing the sum of a set of quantities by the number of quantities in the set.

Line Graph

Line graphs are used to show changes to a measurement over time.

Data shown in a line graph is continuous.
Sets of points are joined together to make the line.

A line graph to show the length of shadows over time

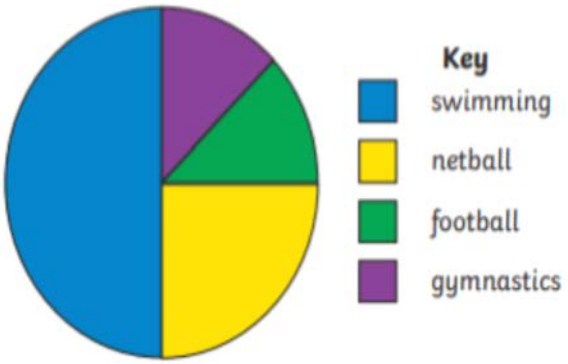


Pie Charts

Pie charts represent discrete data.

A circle is divided into segments, where each segment represents a data category. The size of each segment matches its proportion of the total amount.

A pie chart to show children's favourite sports



24 children were asked in total.

Swimming = $\frac{1}{2}$ so $\frac{1}{2}$ of 24 = 12 children

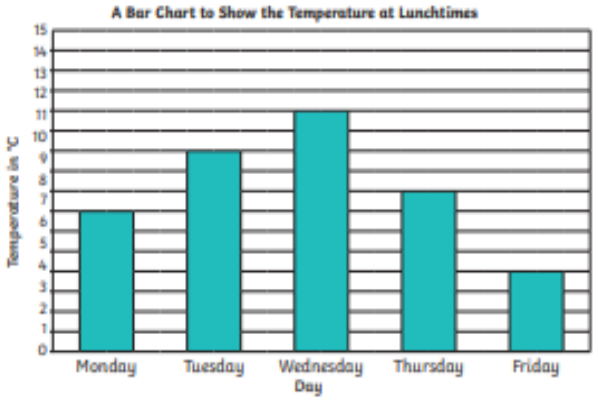
Netball = $\frac{1}{4}$ so $\frac{1}{4}$ of 24 = 6 children

Football = $\frac{1}{8}$ so $\frac{1}{8}$ of 24 = 3 children

Gymnastics = $\frac{1}{8}$ so $\frac{1}{8}$ of 24 = 3 children

Bar Chart

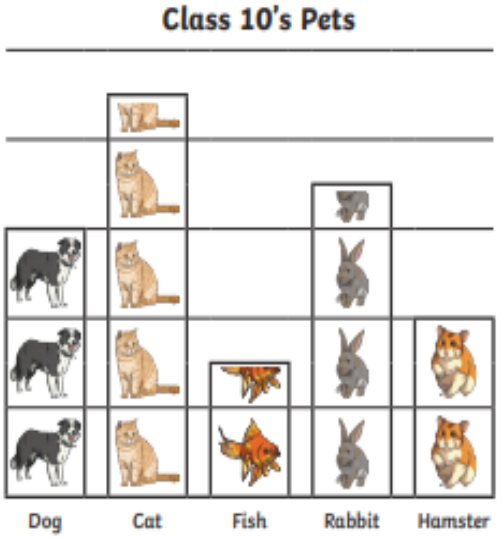
A bar chart has a horizontal axis and a vertical axis. Bars show the data value of each category. There must be a gap between each bar. The scale of the bar chart is chosen based on the data range.



Pictogram

This graph uses pictures or symbols to represent the data. The pictogram uses one picture or symbol to represent a value.

= 4 Children



Frequency Table

Eye Colour	Tally	Frequency
brown	𝍸 |	6
blue	𝍸 |||	8
green	|||	3
grey	||||	4
hazel	𝍸	5

Tally marks are used to help count things. Each vertical line represents one unit. The fifth tally mark goes down across the first four to make it easier to count.

The frequency column is completed after all the data has been collected.

Mean Average

The mean is the average of a set of data.

To find the mean or average, add up all of the values to find the total. Divide the total by the number of values that you added together. This will give you the mean.

12	15	10	8	15

12 + 15 + 10 + 8 + 15 = 60

60 ÷ 5 = 12

The mean of this data is 12.