



What should I already know about data?

- I know that information can be stored in databases.
- I know that pictograms are a type of database.
- I know that I can collect data from a data logger.
- I know that we can use data to answer questions.

Unit Overview – What I will be able to do

- I will be able to use a database to help solve problems and present my work to others.

Overview

- Data is raw numbers and figures. Information is what we can understand from analysing data.
- There are lots of different ways that we can collect, log and interpret data, including by using databases.
- Databases organise data so that it can be easily added to, amended, stored and accessed. Computer databases can allow large amounts of data to be stored, filtered and edited more easily.

- Databases often structure data in logical ways (e.g. in columns, rows and tables) so that it can be accessed easily by those who need it. Databases are made up of individual records of information in different fields (categories).

- **Paper databases** – these require the creator to manually write in individual records, and to sort the records in an appropriate order. They can still be useful in small databases, where information is not changing and does not need to be amended frequently. However, most large databases are now stored on computers..

- **Computer databases** – many programs allow us to create databases e.g. j2data or Microsoft Excel. They have become more popular than paper databases, as can be easily and quickly added to removed, sorted, filtered, edited or viewed at any time.

Values

Computerscientists have a 'can do' attitude towards solving problems and are reflective when trying out different possibilities.

Using a computer database

- Computer databases often contain large amounts of data. We can find the data that we need by using the 'search', 'filter' and 'sort' functions. Search functions allow us to type in the exact word/s that we are looking for – useful to find a particular record.
- If we are looking for records that share certain information we can filter out data by different fields.
- We can sort records by the data in order in particular fields.

Technical vocabulary

Bar Chart	A chart that shows bars of sizes that are proportional to the numbers being represented.
Boolean	Data which can only have one of two values, typically 1 or 0, true or false, yes or no
Datatype	The type of data held in a particular field. For example if the field contains numbers, dates, text, etc.
Database	a comprehensive collection of related data organized for convenient access, generally in a computer.
Field	A field is one specific piece of data in a database record.
Pictogram	A pictogram is a chart that uses pictures to represent data.
Populate	to "populate" a database means to add in some data.
Record	A record is a set of data on a particular object, formed of one or more fields of data.
Filter	A piece of software that removes unwanted types of data.

Presenting data

- Data can be shown visually by using graphs and charts to allow users to quickly and easily find answers to the questions that they need. They can see trends and compare information.
- Charts and graphs can be created by selecting the chart icons and selecting which fields to display in the x-axis and y-axis.



Using databases

- Remember that databases are used in order to quickly and easily find information. They can only do this if the data is organised logically into clear records and fields.
- Databases are used in many institutions across the world: medical records, school student information, flight logs and business accounts.



National Curriculum Objectives

Computing

- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information

• Possible additional NC links

- Links to charts and databases in maths and science

Computing: Data and Information

Follows on from:

- KS1: Grouping data
- KS1: Pictograms
- LKS2: Branching databases
- LKS2: Data logging