Jeavons Wood
Primary School
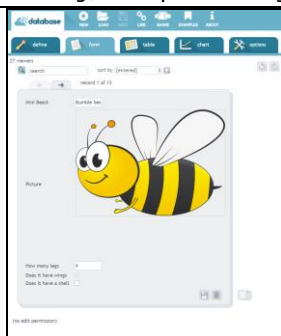
Knowledge Organiser for Year 5
Big question: How can organising and analysing data help us answer real-world questions?

In this unit, the children will:
Use a form to record information.
Compare paper and computer-based databases.
Outline how you can answer questions by grouping and then sorting data.
Explain that tools can be used to select specific data.
Explain that computer programs can be used to compare data visually.
Use a real-world database to answer questions.

Key vocabulary:	
Information	Facts or details that have meaning and can be understood.
Data	Raw facts or numbers that can be collected and stored.
Collection	A group of related data or information gathered together.
Database	An organised way of storing information so it can be easily searched and used.
Search	Looking for specific information in a database or on the internet.
Sort	Arranging data in a particular order, such as A–Z or smallest to largest.
Filter	Showing only the data that meets certain conditions.
Software	Programs that tell a computer what to do.
Fields	Categories in a database where specific pieces of information are stored.
Records	A complete set of information about one item in a database.

Types of Databases	Using a Computer Database
Database: A database is a collection of organised data that is easily stored and used. Databases often structure data in logical ways (e.g. in columns, rows and tables) so that it can be accessed by those who need it easily. Databases are made up of individuals records, which contain information in different fields	-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. This can be useful if we are looking for a particular record. -If we are looking for records that share certain

(categories).

Paper Databases: *Paper databases require the creator to manually write in individual records, and to sort the records in an appropriate order. Paper records can still be useful in small databases, particularly 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 computer programs allow us to create databases, e.g. j2data or Microsoft Excel.*
Computer databases have become more popular than paper databases, as data can be easily and quickly added or removed, sorted, filtered, edited, or viewed at any time.
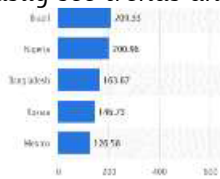

information we can filter out data by different fields. For example, we filer in the 'age' field for all students aged 23. The database will then present only the students aged 23.
-We can also sort records by the data in particular fields. e.g. we may sort by the students' ages, from youngest to oldest. The youngest student will then appear at the top.

College Enrollment 2016 - 2017			
Student ID	Last Name	Initial	Age
ST348-245	White	R.	21
ST348-246	Wilson	P.	19
ST348-247	Thompson	A.	18
ST348-248	Holt	R.	23
ST348-249	Armstrong	J.	37
ST348-250	Graham	S.	20
ST348-251	McFadden	H.	26
ST348-252	Jones	S.	22
ST348-253	Russell	W.	20
ST348-254	Smith	L.	19

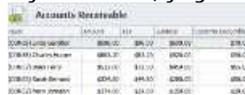| Presenting Data	Using Databases
-Data can be shown visually, by using graphs and charts. This allows users to quickly and easily find answers to the questions that they need. It helps the user to easily see trends and to sequence information. -Charts and graphs can be created by selecting the charts icon and selecting which fields to display in the x-axis and y-axis.	-Remember that databases are used in order to quickly and easily find information. Databases are only able to do this if the data is organised logically into clear records and fields. -Databases are used in most institutions across the world. Think about: medical records, school student information, flight logs and business

Teacher Information:	
Subject Knowledge	Teachers will need to know that a flat-file database is a collection of data organised in a single table. The term 'database' means 'a collection of organised data that is stored on a computer'. Databases allow people to search and sort large quantities of data to find information. Data can be letters, words, numbers, dates, images, sounds, etc. In addition, teachers will need to be familiar with the basic structure of a database, and the concept of 'grouping' and 'sorting' data records based on different fields. For example, grouping objects by colour, or sorting into alphabetical order. A database is composed of 'records', which are sets of data on a particular object. Records are formed from one or more 'fields' of data. A field is one specific piece of data in a database record. For example, a record all about a country could have fields such as 'country name' and 'country population'. The value within the record is the 'answer' to each field, e.g. Mexico is the value in the 'country name' field and '126.2 million' is the value in the 'country population' field. Teachers will also need to be aware that all objects have attributes. An attribute includes its 'name' and a 'value'. For example, a ball will have a 'colour', which might be 'red'. 'Colour' is the attribute 'name'; 'red' is the attribute 'value'. In a flat-file database the attribute names become the fields when the data about the object is stored

	as a record. The values of the attributes become the values that are saved in the database fields. Teachers will need to be familiar with using J2Data sample databases. Support with navigating the databases can be found at http://www.j2e.com/help/videos/datags4. Knowledge of how to carry out a flight search using https://www.expedia.co.uk/Flights, and the ability to screenshot flight details from a web browser would also be beneficial.
Progression	This unit progresses learners' knowledge and understanding of why and how information might be stored in a database, and looks at how tools within a database can help us to answer questions about our data. It moves on to demonstrate how a database can help us display data visually, and how real-life databases can be used to help us solve problems. Finally, the learners create a presentation showing understanding and application of all the tools used within the unit.
Unit introduction	This unit looks at how a flat-file database can be used to organise data in records. Learners will use tools within a database to order and answer questions about data. They will create graphs and charts from their data to help solve problems. They will also use a real-life database to answer a question, and present their work to others.