Subject: Purple Mash unit 5.4 Databases

Key Concept/ Theme: • To learn how to search for information in a database. • To contribute to a class database. • To create a database around a chosen topic.

Prior Learning links:

	Cycle 1	Cycle 2
Year 1/2	Unit 1.2 Grouping and Sorting • Sorting data according to criteria	Unit 1.3 Pictograms • Collecting and presenting data in a picture format Unit 2.3 Spreadsheets • Use of 2Calculate to collect data and produce a graph Unit 2.4 Questioning • Enquiry into different data handling tools • Use of questioning to separate and group data
Year 3/4	Unit 3.3 Spreadsheets • Use of 2Calculate to collect data and produce a variety of graphs Unit 3.6 Branching Databases • Sorting and interrogating data Unit 3.8 Graphing • Displaying and interrogating data in a graph form.	
Year 5/6		Unit 6.7 Quizzing • Answering and setting questions based on the interpretation of a database.

Key Vocabulary

Arrange
Sorting information in order against a search request.

Avatar
An icon or figure representing a person in a video game, Internet forum, etc.

Chart
A diagram that represents data. Charts include graphs and other diagrams such as pie charts or flowcharts.

Collaborative
Produced by, or involving, two or more parties working together.

Data
A collection of information, especially facts or numbers, obtained by observation, questions or measurement to be analysed and used to help decision-making.

Database
A set of data that can be held in a computer in a format that can be searched and sorted for information.

Field
A heading in a database record against which information is entered.

Group
Putting similar pieces of information together in a database so it is easy to read, understand and interpret.
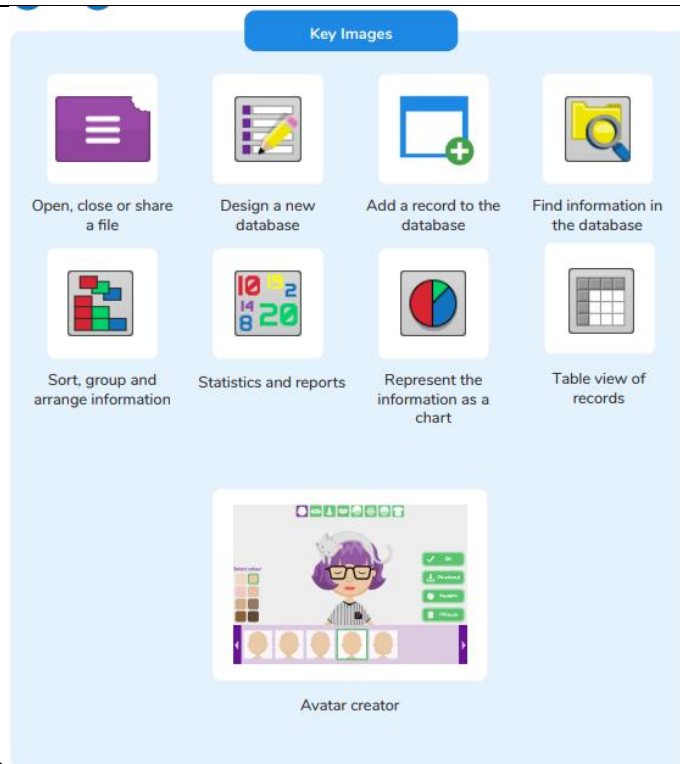
Record
A collection of data about one item entered into a database.

Database Report
A way of producing a written paragraph that incorporates the data from the fields and records of the database.

Search
A way of finding information.

Statistics
The study and manipulation of data, including ways to gather, review, analyse, and draw conclusions from data.

Sort
Organising data by a rule such as alphabetical or numerical.

Vocabulary:

Key Images:

Key Images

Open, close or share a file

Design a new database

Add a record to the database

Find information in the database

Sort, group and arrange information

Statistics and reports

Represent the information as a chart

Table view of records

Avatar creator

Resources needed for each lesson – 2dos to set.

Lesson 1:

Unless otherwise stated, all resources can be found on the main unit 5.4 page. From here, click on the icon to set a resource as a 2Do for your class. Use the links below to preview the resources; right-click on the link and 'open in new tab' so you don't lose this page.

• 2Investigate tool: This is found in the Tools area of Purple Mash.

• Worksheets or online quizzes: There are two differentiated versions of the following worksheets and a sheet on which children create their own questions. Select the appropriate sheets to print for your children or set as a 2Do to open in the PDF Annotator tool. Alternatively, you can use the 2Quiz files with the same questions as the worksheets. Set these as 2Dos for the class and children's scores will appear in the scores report.

• Alien Simple Questions sheet or Aliens Database Simple Quiz

• Alien Advanced Questions sheet or Aliens Database Advanced Quiz

• Your Own Questions

• Answers

• Extension: Database Top Tips Poster. See extension activities and set as a 2Do if required.

Lesson 2

Unless otherwise stated, all resources can be found on the main unit 5.4 page. From here, click on the icon to set a resource as a 2Do for your class. Use the links below to preview the resources; right-click on the link and 'open in new tab' so you don't lose this page.

• Prior to the lesson ensure that you know how to create a collaborative 2Investigate database, see the 2Investigate User Guide for more information.

 • Purple Mash avatar creator: this is accessed by logging on to Purple Mash and clicking on the avatar image in the top right corner.

Lesson 3&4

• There are alternative ways to proceed with activities in these lessons.

• You could make use of the pdf resource Lesson 3 - 4 – Worksheet in which children write questions for others to answer about their database: o This could be set as a 2Do to use the PDF Annotator to type in the questions. Once this is handed in, the resulting file could again be set as a 2Do for a specific other pupil to fill in the answers. o You could also save the file in your own work folder and then open it with the PDF annotator and save in the class folder for children to open and save their own copy of. Other children could then access each other's questions to answer them. o The file could also be printed for children to write into and swap.

• Alternatively, children could create 2Quiz quizzes or 2Survey surveys for other children to complete. Use the table below to compare the advantages and disadvantages of these methods. Also consider children's existing familiarity with the tools when deciding which approach to take.

• Data Detectives (Extension): You might wish to let children explore Data Detectives – A structured game that teaches increasingly complex data analysis methods. To find out more explore the Data Detectives category and guide.

Method	Advantages	Disadvantages
Printed PDF	Might be logistically easier	Harder to assess children's level of competence.
2Do PDFs	You will have evidence about the children's ability to create questions and to answer questions.	Need to keep on top of handed in 2Dos and then set them as 2Dos for a peer.

Shared folder PDF	Might be logistically easier. Evidence will be in the shared folder.	Danger of files being overwritten by children. Harder to sort work into children's folders.
2Quiz – set the app as a 2Do.	Easy to create quizzes that can then be shared in 2Blog or 2Email	Hard to access the results of children completing others quizzes to assess pupil ability.
2Survey	Children will be able to analyse the number of people answering their questions correctly for each question.	Children completing the survey will not get feedback about whether they are correct. Likely to be less familiar with this tool.

1. Unit 5.4 Lesson 1	**Deeper learning questions: Why are databases useful?** **Reconnection:** Remind children of online safety rules. Go over previous words encountered in previous units. **LO:** • To learn how to search for information in a database. **Activity:** Go over new vocab for lesson Can children answer the questions. Children were introduced to databases in unit 2.4 and 3.6. Clicking reveals the answers and further information.

2.	Clarify the vocabulary that will be used.
	Clicking the icon will open the tool in Purple Mash. Open up the Aliens Database.
	Demonstrate the features of 2Investigate that children will be using in the lesson. Focus on **Find (searches)** for this lesson. Use the slides or demonstrate within 2Investigate itself. You do not have to go into detail on every point, children will be able to explore the effect of choosing each option. Ensure that children know how to find 2Investigate in the Tools area on Purple Mash. Clicking on each slide reveals the information gradually.
	Introduce the activity. Children should spend time using 2Investigate to answer the questions. Children could share some of the questions that they created and see whether the class can answer them.
	Go over vocab and success criteria.
	Extension: Look at the database table below: This database was created recently in another school but doesn't seem to work properly, because when the 'favourite colour' graph was looked at it seemed very strange.
	Why has this happened?
	What could the database creator have done to avoid this problem?
	Can you design a 'How to make your database great' poster, using the template set as a 2Do? Include lots of top tips such as:
	• Why spellings are important?
	• Are field names clear and understandable?
	• Have drop-down menus been used effectively?
	• Are image choices relevant?
	• Can questions set be answered from the data within the database?
2.	**Deeper learning questions: what does collaborative mean?**
	Reconnection: Remind children of online safety rules. Go over previous words encountered in previous units.

Unit 5.4 Lesson 2	**LO:** • To contribute to a class database.
	Activity: Go over new vocab for lesson
	Show children how to create their avatars. Give them time to complete this before moving on.
	Decide as a class on the database structure. Clicking reveals more questions and suggestions.
	Set up the database as a class on the whiteboard. Clicking the icon will open 2Investigate. **Note:** The 'Select a Class' option is only available for teacher users.
	Make the database collaborative. Guide the activity where children complete their own record on the collaborative database
	Go over vocab and success criteria.
	Extension:
	Create complex questions using AND / OR / IF that might require two fields to be interrogated.
	Create a 2Quiz activity for your classmates to complete based on the complex questions.
	For example:
	"Who has brown hair AND wears glasses?"
	"Which children have 2 OR fewer siblings?"
	"IF their eye colour is blue, who has a birthday in August?"

3. Unit 5.4 Lesson 3&4	**Deeper learning questions: Why is it important that the database is understandable and clear? Are drop down menus effective?** **Reconnection:** Remind children of online safety rules. Go over previous words encountered in previous units. **LO:** • To create a database around a chosen topic. **Activity:** Go over new vocab for lesson Give some examples of topics that you think children within your class will be interested in and would make a good topic for a database. Children could use information from a game of Top Trumps. This could also be used to speed up the research time. Children should choose different topics for class variety. Use either this slide or the next to outline the activity to be completed over the two lessons. Some of the lesson time will need to be used for the pupils to research and gather information for their database. Use either this slide or the previous to outline the activity to be completed over the two lessons. Some of the lesson time will need to be used for the pupils to research and gather information for their database. Adapt the slide to show the method that you wish children to use for writing the questions, handing in and answering others' questions. Go over vocab and success criteria. **Extension: Evaluate your own database with a focus on the following (from the poster task in lesson 1 extending activity).** **Is my spelling correct throughout?** **Have I used clear, understandable titles within my database? (Do my field titles explain the data within each of them?)** **Have I used drop-down menu options effectively? (Is it possible to enter the same data in different ways?)** **Are my image choices relevant? (Do they help others to analyse my database information? For example, can I see how many legs the alien has just from the image?)**

Can the questions I have set be answered from the data within my database?

Where necessary, changes can be made to improve their database before being re-saved.

You might wish to let children explore Data Detectives – A structured game that teaches increasingly complex data analysis methods. To find out more explore the Data Detectives category and guide.

End of unit quiz & reflect on gaps from the unit:

Unit 5.4 Quiz – found on unit page on PM

 Questions:

Which of these programs on Purple Mash is used for databases?

Complete this text about databases.

Why are collaborative databases useful?

What is a database record?

What is meant by a database field?

What three ways can you enter information into a field in 2Investigate?

What does the button below do in 2Investigate?

How would I add a new record to the database?

What does this graph from 2Investgate show? Tick all that are correct.

End Points:

What is a database? A collection of data organised in such a way that it can be searched, and information found easily. Database usually refers to data stored on computers.

Why is the collaborative feature important? Making a database collaborative allows lots of people to enter information into the database at the same time. This is a lot quicker than one person entering the data by themselves.

In what ways can I sort information in a database? A database can hold lots of information so it is essential that information can be effectively investigated. In 2Investigate, data can be searched and sorted in a variety of ways. It can also be presented pictorially.

Evaluation: What have the end of unit quizzes, pupil self-reflections and termly work told you about what the children can remember and recall? What are the gaps? Ensure that the areas that need further reinforcement are documented in the next subject unit MTP. **Plan in time to revisit gaps within units, determined by the quizzes.**

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