Subject: Purple Mash unit 3.6 Branching Databases
Key Concept/ Theme: • To sort objects using just 'yes' or 'no' questions. • To complete a branching database using 2Question. • To create a branching database of the children's choice.
Prior Learning links: Year ½   **Cycle 1**   Unit 1.2 Grouping and sorting   • Sorting data according to criteria   **Cycle 2**   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

Key Vocabulary

Binary Tree
Another name for a branching database.

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.

Branching database
Used to classify groups of objects. It is used to help identify the objects by answering questions with either 'yes' or 'no'. Branching databases can also be called binary trees.

Data
A collection of information, especially facts or numbers, obtained by observation, questions or measurement to be analysed and used to help decision-making.
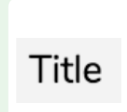
Debugging
The process of identifying and removing errors from computer hardware or software.
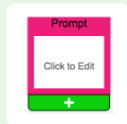
Vocabulary:

Key Images

Open, close or share a file

Title
Give the database a name

Prompt
Click to Edit
+
Add a question to begin to sort the information

Key images

Resources needed for each lesson – 2dos to set.

Lesson 1:

Unless otherwise stated, all resources can be found on the main unit 3.6 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 do not lose this page.

• Images of fruit in Appendix 1. The images can be printed for use with the class or use the online file Classifying Fruit to display and move the pictures of fruit on the whiteboard.

• Images of musical instruments Appendix 2. You will need to print copies of these for children to play with unless you have similar resources, e.g., minibeast pictures, alien/monster pictures, country flags or animals that children could use instead.

• Images of vegetables Appendix 3. You will need to print copies of these for children to play with unless you have similar resources, e.g., minibeast pictures, alien/monster pictures, country flags or animals that children could use instead.

Lesson 2

Unless otherwise stated, all resources can be found on the main unit 3.6 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 do not lose this page.

• Example 2Question Databases Fruits Database and Vegetables - Incomplete. Set the Vegetables - Incomplete. as a 2Do for the class.

You can select the following objectives when setting the 2Dos to make future assessment easier:

Year:	Y3	∨
Subject:	Computing	∨
Strand:	IT	∨

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.	✓

• Images of fruit used last week.

• Blu-Tack.

• Yes/No Cards, Arrows and Blank Questions. The pictures will be used to make a branching-database model on the whiteboard or floor which will then be recreated on the computer.

• The 2Question Tool, which can be found in the Tools area of Purple Mash.

Lesson 3 & 4

• Appendix 5; Animals examples. See lesson plan for the use of these pictures.

• For the Extension activity prepare a branching database linked to a class topic that contains errors (yes answers go to no branch, images are incorrect, etc). Set this as a 2Do for the class.

You can select the following objectives when setting the 2Dos to make future assessment easier:

Year:	Y3	∨
Subject:	Computing	∨
Strand:	IT	∨

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.	✓

1. Unit 3.6 Lesson 1	**Deeper learning questions: What questions can you ask to split the fruit into 2 equal groups?** **Reconnection:** prior online learning. – remind children of the idea of online safety and why it is important to be safe online. introduce new vocabulary. The vocabulary is repeated at the end of the lesson where it can be used to review lesson vocabulary. **LO:** • To sort objects using just YES/NO questions.

	Activity:
	Go over vocab for lesson.
	Ask the children if they know what a database is.
	Explain what it is
	Can children make any sensible guesses as to what is meant by a ***branching*** database? You will probably have to give a hint -- think of trees.
	Show the images of the fruit and play a game where the children must find a fruit using only yes/no questions. Tell the children you are going to have some fruit for lunch; can they guess which fruit you have chosen? The children need to think of questions to separate the objects
	Play again, but this time ask the children to think of a question that will separate the fruit into two equal groups if possible (groups with uneven numbers cannot be split exactly in half). Can anyone suggest why this is better?
	Ask the children if they have played the game 'Guess Who?' In this game, there are lots more items (people) to sort through, and if you ask questions that split the people into two equal groups you will get to the solution quicker (unless you are lucky in the question that you ask). This is quite a difficult concept to understand without playing these types of games a lot. Children will gain more understanding of this in the next two lessons when they make their databases. Now let the children play a similar game themselves. They could use the pictures of the musical instruments or the vegetables.
	Recap vocab and success criteria.
	Extension: create your own guess who of databases for a collection of your choice.
2. Unit 3.6 Lesson 2	**Deeper learning questions: Why is this a useful process? When would this get difficult?** **Reconnection:** prior online learning. – remind children of the idea of online safety and why it is important to be safe online. introduce new vocabulary. The vocabulary is repeated at the end of the lesson where it can be used to review lesson vocabulary. **LO:** • To complete a branching database using 2Question **Activity:** Go over vocab for lesson.

	Recap the definition of a branching database from last week.
	Explain we are going to use the images of the fruit to create a branching database on the board or the floor. Use the six fruit images. Use the blank boxes to write your questions (or write them directly onto a wipeable whiteboard if you have this available).
	Use Blu-Tack to stick on the 'yes'/ 'no' cards and arrows to display the database as it develops. Alternatively, write on the whiteboard and use the Blu-Tack just for the fruit objects.
	Remind children of the need to start with a question that will split the fruit into two groups. Continue doing this until the branching database is complete.
	Explain to the class that we are going to use the data from our paper branching database in a computer version. Show children the example fruit database. Click on the 'Play' button at the top and use the database to identify a fruit. You could also try using it to identify a fruit that is not in the database; only fruits that are in the database can be identified correctly.
	Show children how to open 2Question and create a new branching database. (If you require assistance in using the program, click on the video Help files at the top-right of 2Question.
	Show the children how to add questions and images (fruit can be found in the Food section of the clipart gallery) to create the database.
	You can click the icon to open 2Question. Clicking reveals the process in steps.
	The children should go to their computers and open the 2Question file 'Vegetables' from their 2Dos. This is partially completed as it is missing the questions. Ask the children to write the questions.
	Bring the children together and then look at some of their completed vegetable databases. Try playing them; do they work?
	Recap vocab and success criteria.
	Extension: Make a poster explaining branching databases
3. Unit 3.6 Lesson 3&4	**Deeper learning questions:** **Reconnection:** prior online learning. – remind children of the idea of online safety and why it is important to be safe online. introduce new vocabulary. The vocabulary is repeated at the end of the lesson where it can be used to review lesson vocabulary.

LO: To create a branching database of the children's choice.

Activity:
Go over vocab for lesson.

Explain to the children that in these two lessons, the children will create their own branching database. Some children will be able to choose their own topic and gather appropriate images online. It is advisable not to choose more than 10 objects.
Some children may find it easier to create a branching database about animals using the example images. These animals are easy to separate using YES/NO questions and the images can all be found in the clipart bank which can be found in 2Question.
Some children will find it easier to use paper versions so they can plan their database before they sit at the computer.

At the end of Lesson 3, the children need to ensure that they have saved their work so they can continue it in Lesson 4.

When the children have finished their database, they could share it on a display board, via a class blog or email it to a classmate to try.

Recap vocab and success criteria.

Extension: In Purple Mash class area, or on paper, have a prepared branching database containing errors (yes answers go to no branch, images are incorrect, etc) Children need to test, debug and amend the database so that it works correctly

What is wrong with the branching database?

What do you need to do to correct it?

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

Unit 3.6 Quiz – found on unit page on PM

The image is an example of _____

What is meant by the term 'data'?

A database is 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.

An example of a database is where the school stores information about who has attended. (fill the gaps)

A branching database is so called because each answer creates two _____.

A branching database is also known as a _____

In a branching database, information should be sorted into how many different sets?

In a branching database there should be how many possible answers to a question?

What program is used on Purple Mash for the creation of branching databases?

Sunil is creating a branching database using the children in his class. He asks the question 'Is the child a boy or girl?'

What is the best question to separate these six pieces of fruit on a branching database?

End Points:

What is meant by data? Facts about something; data can be words, numbers or pictures. For example, the class register contains data about the names, addresses and attendance of the children in the class.

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.

What is a branching database? Used to classify groups of objects. It is used to help identify the objects by answering questions with either 'yes' or 'no'. Branching databases can also be called binary trees.

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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