



Portfields Primary School Medium Term Plan



Year Group – 3

Subject - **Computing**

Strand – **Information technology** Topic – **Branching databases**

Term - **Spring 1**

National Curriculum	Key Questions		Substantive Knowledge	Key Vocabulary	Real-Life Links
<ul style="list-style-type: none"> 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 use technology safely, respectfully and responsibly 	<p>Which questions are yes/no, and which questions are open-ended? How do you think these objects have been grouped? What question could you ask to separate these objects into groups? What attributes could you have used? What attribute could separate these objects into two equal groups? Why do you think it is called a branching database? What do you think you need before you can begin building a branching database? Do the questions focus on the correct attributes? Have the objects been organised into the correct groups? What else could you use a branching database for?</p>		<p>Understand how create questions with yes/no answers. Understand the attributes needed to collect data about an object. Understand how to create a branching database. Understand why it is helpful for a database to be well structured. Understand how to plan and create an identification tool.</p>	<p>Groups Open ended questions Closed ended questions Equal Characteristic</p>	<p>Organising books (fiction and non-fiction) in a library. Organising clothes into the correct drawers/spaces at home.</p>
	Technical Questions				
	<p>What is a closed question? Questions that can only be answered with certain answers.</p> <p>What is an open ended question? Questions that can only be answered in the person's own words.</p> <p>What is an attribute? A characteristic/ adjective used to describe someone or something.</p> <p>What is a branching database? It is a way of classifying/sorting/organising a group of objects.</p> <p>What is a fault? A mistake</p>		<p style="text-align: center;">Disciplinary Knowledge</p> <p>Can identify questions with yes/no answers, and can explain these can be used to identify and compare objects. Can arrange objects into a tree structure and can explain which attributes the questions are related to. Are able to use an online database tool to arrange objects into a branching database, to create their own questions with yes/no answers. Can identify and compare the efficiency of different branching databases, and will be able to explain why questions need to be in a specific order. Will be able to test that their database works, and consider and identify real-world applications for branching databases.</p>	<p>Branching database Attributes Fault</p>	<p>Computers Laptops</p>

Lesson Breakdown			
Lesson 1			
Flashback Four		Learning Objectives	Star Knowledge
<u>Last Lesson</u> N/A	<u>Last Topic</u> What are 3 things that a digital device must have? <i>An input, an output and a process.</i>	<u>Learning Objective</u> LO: To create questions with yes/no answers <u>Success Criteria</u> <ul style="list-style-type: none"> I can investigate questions with yes/no answers I can make up a yes/no question about a collection of objects I can create two groups of objects separated by one attribute 	A closed question is a question that can only be answered with a yes or a no. An open-ended question is a question that is answered in the person's own words and can be longer than yes or no.
<u>Last Year</u> True or false: you can create multiple different commands with the same set of algorithms? <i>True</i>	<u>Previous Key stage</u> What do we use to put text onto a computer? <i>A keyboard.</i>	<u>Task 1:</u> Put the learners into pairs and have them take turns to ask each other the questions on slide 3. Encourage them to think carefully about the answers that each question elicits. Ask the learners to sort the questions on the slide into yes/no questions and open-ended questions. <u>Task 2:</u> Share the collection of objects on slide 8 with the learners. Explain that you have chosen an object (notepad). The learners must think of questions with clear yes or no answers to ask you to identify it. Take suggested questions from the learners and cross off the objects that don't apply. For example, "Is it sharp?", "No" — cross off the scissors and the red coloured pencil. If a learner poses a question that doesn't have a yes or no answer, give an ambiguous answer and explain that you can't cross things off if the question isn't yes or no. <u>Task 3:</u> Split the learners into groups. The learners should take it in turns to choose an object. The rest of the learners can take it in turns to ask yes/no questions to find the object. Then, the learners should switch roles and repeat. <u>Task 4:</u> Ask the learners, "Can you think of other ways to group the objects?". Encourage the learners to think of different ways to group the objects, and not to solely use colour. <u>Task 5:</u> Provide each learner with the worksheet. Explain that they need to record at least two questions that will separate the collection of objects on the next slide into two similarly sized groups. Reference the example row to demonstrate the activity.	
Lesson 2			
Flashback Four		Learning Objectives	Star Knowledge
<u>Last Lesson</u> What are the only two responses a closed question can end in? <i>Yes or no.</i>	<u>Last Topic</u> True or false, there can be more than one input and output on one digital device. <i>True</i>	<u>Learning Objective</u> LO: To identify the attributes needed to collect data about an object <u>Success Criteria</u> <ul style="list-style-type: none"> I can select an attribute to separate objects into groups I can create a group of objects within an existing group I can arrange objects into a tree structure 	A database is a collection/group of information that is specifically organised in a way that makes it easy to identify/find the information.
<u>Last Year</u> In computing, what is a bug? <i>A bug is when a problem/fault is found with the program/algorithm.</i>	<u>Previous Key stage</u> What is the name of the flashing line that appears when you are typing on a computer? <i>A text cursor.</i>	<u>Task 1:</u> Group the learners into groups of four/six. Give each group a set of cut-out images and questions from the 'Images and questions' resource. Also give them a large sheet of paper. Learners need to choose a question that splits the group into two smaller equal groups. Ensure the learners are clearly separating the groups once they have used the questions. The learners have to use four of the remaining questions to break the groups down further, until each dinosaur is represented in its own group. Remind the learners to set the groups out in a way that means that it is easy to recognise which question they used to split each group. <u>Task 2:</u> Tell the learners that they will be organising their images and questions into a tree structure. The learners should arrange the pictures and questions on the large piece of paper. Once the learners are confident that they have structured it correctly, ask them to stick their pictures down, draw arrows, and label with yes or no .	

Lesson 3			
Flashback Four		Learning Objectives	Star Knowledge
<u>Last Lesson</u> True or false: databases are designed to be difficult to read and unorganised. <i>False</i>	<u>Last Topic</u> Fill in the missing word: Digital devices are all forms of _____ technology. <i>Information</i>	<u>Learning Objective</u> LO: To create a branching database <u>Success Criteria</u> <ul style="list-style-type: none"> I can select objects to arrange in a branching database I can group objects using my own yes/no questions I can test my branching database to see if it works 	The more groups that you have in your branching database, the easier it is to organise and sort objects.
<u>Last Year</u> Why is artwork important in computing? <i>Artwork is important in computing because it makes it easier and more fun for the user to engage with the code. For example, games.</i>	<u>Previous Key stage</u> What key can I use to make sure that all the letters are permanently in capital letters? <i>The caps lock key.</i>	<u>Task 1:</u> Give learners an opportunity to use the branching database, individually or in pairs, to identify a caterpillar, a ladybird, and a snail. <u>Task 2:</u> Explain to learners that they will be creating their branching database using a library set of their choice. They should have six to eight objects to sort. Learners will need to take a screenshot of their branching database and submit this to the Google classroom. <u>Task 3:</u> Ask the learners to share their branching database with a partner. They need to choose one of the objects in the branching database and answer the questions to test that the branching database works. Allow the other partner to share their database and repeat the activity.	
Lesson 4			
Flashback Four		Learning Objectives	Star Knowledge
<u>Last Lesson</u> Why is it better for a branching database to have more groups than less groups? <i>Having more groups will make the databases easier to organise and sort.</i>	<u>Last Topic</u> What is the difference between a connection and a network? <i>A connection is a link between two or more people or things. A network is a number of connections linking things with each other, eg people, roads, or computers.</i>	<u>Learning Objective</u> LO: To explain why it is helpful for a database to be well structured <u>Success Criteria</u> <ul style="list-style-type: none"> I can create yes/no questions using given attributes I can compare two branching database structures I can explain that questions need to be ordered carefully to split objects into similarly sized groups 	An attribute is a physical characteristic of an object/person.
<u>Last Year</u> What is debugging? <i>Checking your algorithm in computing to see if there are any mistakes.</i>	<u>Previous Key stage</u> What is the name of the bar where all the buttons to change how the text looks is kept? <i>The toolbar</i>	<u>Task 1:</u> Split the learners into table groups and provide the groups with a number of sticky notes or strips of plain paper. Explain that the learners need to write down as many questions as they can about the objects on slide 7, using the given attributes. Remind the learners to work as a group to ensure they have a good 'bank' of different questions. Give the learners time to come up with a number of questions to use. Ask the learners to share some of the questions they have written and add them to a flip chart or large piece of paper. <u>Task 2:</u> Provide each learner with the 'Comparing branching databases' worksheet. Explain that they have two branching databases and some questions that they need to answer when comparing the two databases. <u>Task 3:</u> Give each group a set of cut-out objects from the 'Branching database objects' resource. Ask the learners to use some of their questions from Activity 1 to create a branching database. They might not need to use all of the questions. Learners may also find that they need to write more questions to complete the database. Encourage the learners to make use of the questions on the flip chart if this is the case.	

Lesson 5

Flashback Four		Learning Objectives	Star Knowledge
<p><u>Last Lesson</u> What is an attribute? <i>An attribute is a physical characteristic of an object/person.</i></p>	<p><u>Last Topic</u> What is the purpose of a Wireless Access Point (WAP)? <i>A Wireless Access Point (WAP) sends and receives wireless signals for and from devices with wireless connectivity.</i></p>	<p><u>Learning objective</u> LO: to independently plan and create an identification tool</p> <p><u>Success Criteria</u></p> <ul style="list-style-type: none"> • I can independently create questions to use in a branching database • I can create questions that will enable objects to be uniquely identified • I can create a branching database that reflects my plan 	<p>The questions in a branching database need to specific and focus on the attributes of the objects/people which are being organised.</p>
<p><u>Last Year</u> What is it called when programmers break complicated tasks down into chunks? <i>This is decomposition.</i></p>	<p><u>Previous Key stage</u> True or false: the undo button can undo saving a document? <i>False</i></p>	<p><u>Task 1:</u> Remind learners that they have used j2data Branch before, and with support, they have made their own branching database. This time, they will be making their own branching database, which they have planned themselves, independently.</p> <p><u>Task 2:</u> Give learners the activity sheet. Ask them to cross out any dinosaurs that they have not used in their branching database. Once they have done that, ask them to swap their activity sheet with their partner. Ask Learner 1 to pick a dinosaur from Learner 2's activity sheet that has not been crossed out, and tell them that they should not reveal which dinosaur they have chosen. Explain that Learner 2 should then use their branching database to ask Learner 1 questions about the dinosaur that they have chosen. Once Learner 2 has followed a route through their branching database, they should be able to identify the dinosaur that Learner 1 has chosen. Ask learners to swap roles once they have completed the process.</p> <p><u>Task 3:</u> Learners will need to take a screenshot of their branching database and submit this to the Google classroom.</p>	