Seamer and Irton CP School – Computing (H.Griffiths)

Topic – Branching Databases	Year 3 Spring 2	Strand – Data and Information

Prior Learning

In **Year 2- Spring 1 - Pictograms**, learners began to understand what the term data means and how data can be collected in the form of a tally chart. They learnt the term 'attribute' and used this to help them organise data. They then progressed onto presenting data in the form of pictograms and finally block diagrams. Learners used the data presented to answer questions.

Key Knowledge I need to understand

I need to understand that:

Data is raw numbers and figures. Information is what we can understand from looking at data.

Objects can be organised into groups, based on what they are or their different attributes. –

Branching databases can help us to identify objects within sets of data.

They are useful when we want to classify objects (consider objects within a certain group).

Learners will develop their understanding of what a branching database is and how to create one. They will use yes/no questions to gain an understanding of what attributes are and how to use them to sort groups of objects. Learners will create physical and on-screen branching databases. To conclude the unit, they will create an identification tool using a branching database, which they will test by using it. They will also consider real-world applications for branching databases.

How I will show what I have learned

To create questions with yes/no answers	- 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
To identify the attributes needed to collect data about an object	- 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
To create a branching database	- 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
To explain why it is helpful for a database to be well structured	- 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
To plan the structure of a branching database	- I can independently create questions to use in a database - I can create questions that will enable objects to be uniquely identified
To independently create an identification tool	- I can create a branching database that reflects my plan - I can work with a partner to test my identification tool - I can suggest real-world uses for branching databases

What vocabulary I need to know

Attribute, value, questions, table, objects, branching database, database, objects, equal, even, separate, structure, compare, order, organise, j2data, selecting

What's next

In **Year 4 – Spring 2 - Data Logging** pupils will consider how and why data is collected over time. Pupils will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Pupils will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals. Pupils will spend time using a computer to review and analyse data. Towards the end of the unit, pupils will pose questions and then use data loggers to automatically collect the data needed to answer those questions.

Please access resources at Teach Computing Curriculum - https://teachcomputing.org/curriculum

Assessment

National Curriculum Computing links

- 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

Assessment

Formative assessment opportunities are highlighted in each of the lesson plan documents. The learning objective and success criteria will be introduced at the beginning of each lesson and then reviewed at the end. Learners should assess how well they feel they have met the learning objective using the teacher's chosen method.

Summative assessment document included - multiple choice questions. This should be used, alongside teacher judgement, to complete summative assessment on ScholarPack
https://teachcomputing.org/curriculum/key-stage-2/data-and-information-branching-databases

Teacher Subject Knowledge
For this unit, you will need access to the j2data Pictogram, Branch, and Database tools (see https://www.j2e.com/jit5#branch or similar).

A branching database is a collection of data organised in a tree structure using yes/no or true/false questions. In computer science, these are known as binary trees. Learners will begin to recognise that information can be presented in different ways. Teachers will need to be familiar with pictograms. A pictogram is a pictorial representation of information, usually used to present numerical data.
Teachers will also need to be familiar with the term 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.
Throughout this unit, learners will use the online database tool j2data. You should be familiar with using the 'Branch' tool. Support with navigating the 'Branch' tool can be found at https://www.j2e.com/help/videos/datags3. Teachers would also benefit from having an understanding of the 'Pictogram' tool. Support with navigating the 'Pictogram' tool can be found at https://www.j2e.com/help/videos/ks1datavideo1.
Teachers may also choose to use the 2question tool, 2quiz and 2DIY on PurpleMash to teach this unit – See 'Using PurpleMash to teach the NCCE Units of work' document on PurpleMash for support.