NHSG Key Stage 3 Unit Overview for 9S2: Data Analysis

Computer Science	9:S2 – Data Analysis Databases and SQL Queries		Autumn Term
Learning outcomes	By the end of this unit, students should have knowledge of the basic structure of a flat file database and have the skills to use basic SQL queries to interrogate the data for answers.		
Key Question	What is a database and why would we use it? How are SQL queries used to find sets of data?		

Knowledge	**Key Concepts**
	• Impact of databases on accuracy and efficiency
	• Data Organisation in a flat file database
	• How to interrogate data in a database
	
	Key Skills
	• Find information quickly in a large data set
	• SQL queries
	  • Select
	  • From
	  • Where
	  • And, or
	  • LIKE, wildcards
	  • Relational operators
	• Table.field
		Key Terminology
		• Database
		• Flat file
		• Table
		• Field
		• Record
		• Data Type
		• Query
			Common Misconceptions
			• What is a field and what is a record
			• The sequence of commands needed in a SQL query
			• Use of incorrect field names
			• When to use quote marks and when not to
			• > vs <
			• Not using an = as well as BETWEEN x AND y

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Ongoing Assessment	The teacher will be monitoring, assessing progress and giving verbal feedback throughout the exercises. Students are expected to self-evaluate their achievements in the lesson using the provided template of key questions. They will then use homework time to secure a weak area that they have identified. Answers are expected to be in the student's own words and not paraphrased or directly copied from online resources. You will have access the resources used via SharePoint/Teams and will be expected to continue familiarising with the systems each day outside of class. Students are expected to access Computer Science resources via Teams outside of lesson time and this is monitored throughout the year.
Key Assessment	There are two assessment periods for Year 9. These take place at the start of the Spring term, and halfway through the Summer term. Each assessment will check understanding of the units recently covered as well as their sustained understanding of previous units, building upon the Year 7 units. The self-evaluation sheets should be used as the basis of what they need to revise. These assessments will have the same number of marks across the year group, though there may be some variety in the questions depending on the progress of the individual class. They are written tests on paper and consist of three sections: Knowledge (facts), Application, Explanation. The reports are based on how each student does in comparison with the rest of the year group in these assessments.
Clear sequencing of content	This unit develops the use of: • functions to automatically work with a selection of data within a database • functions to interrogate the data being given to form a decision This unit links with 8S2: Spreadsheets, GCSE Unit 7 – Databases and SQL, and then A-Level
Links to Careers	Data Scientists, business management, crime control, medical research
Diversity and Inclusion	Discussions on how to use databases to see if there are any relationships between different preferences or characteristics of people. Discussion on how the size of the set of data will impact the result but what could be considered a considerable return that would warrant doing more research with more data.
Support	• SharePoint pages (text based, images and videos) • Knowledge organisers or handouts • Weekly drop-in lunchtime peer mentor help sessions – please ask your teacher for more information. We have a set of Year 9 and 10 mentors who volunteer to help students out. They have either been through the unit

	previously themselves or have been brought up to date to be able to help explain and demonstrate the unit content.
Challenge	Create your own database to store your friends' details. Can you make it tell you who has a birthday next month? We've been learning with MS Access but take a look at mySQL online.