# NHSG Key Stage 3 Unit Overview for 8S2: Data Analysis

| Computer Science | 8: S2 – Data Analysis<br>Basic Spreadsheets | Spring – Summer Term |
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| **Learning outcomes** | By the end of the unit you should have knowledge and understanding of how to use spreadsheets to predict mathematical and financial outcomes by using available formulae which automate the model. You will also start looking at how to format a spreadsheet to be fit for purpose including use of basic functions and automated formatting. | | |
| **Key Question** | How can we create predictive models that will allow us to experiment with different inputs to see the impact on potential outcomes? How can we format these models to be easy to use for a non-tech user? | | |
| **Knowledge** | **Key concepts**<br>• What is a spreadsheet?<br>• What are the different parts of a spreadsheet?<br>• What are formulae?<br>• How can we do maths in a spreadsheet?<br>• How do variables fit into this?<br>• How can we use our model to predict outcomes?<br>**Key Skills**<br>• Basic formatting skills<br>  ○ Colour<br>  ○ Column width<br>  ○ Font<br>  ○ Borders<br>  ○ Data Types<br>• Formulae<br>• Cell referencing (absolute and relative) | **Key terminology**<br>• Spreadsheet<br>• Workbook<br>• Worksheet<br>• Cell<br>• Row<br>• Column<br>• Range and Named range<br>• Formula<br>• Replication<br>• Operators<br>• Absolute and Relative Cell Referencing<br>• What -If Scenarios/Goal Seek<br>• Function<br>• Conditional Formatting | **Common Misconceptions**<br>• Rows vs columns<br>• Formulae and the use of =<br>• String vs number<br>• Replication without absolute cell referencing<br>• |

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| | • Mathematical operators<br>• Functions – SUM, AVERAGE, IF, COUNT<br>• Conditional formatting | | |
| **Ongoing Assessment** | Through a series of discussions and practice exercises, you will get hands on experience with formulae and predictions.<br>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.<br>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 8. 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.<br><br>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** | Introduction to spreadsheets and basic layout<br>• Familiarisation with the key features of a spreadsheet and manipulating them<br>Creating a model using automation<br>• Mathematical Operators and SUM function<br>Being efficient<br>• Replication<br>• Absolute cell referencing<br>Application to reality<br>• Understanding a model<br>• Financial models | | |

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| | • Profit, Revenue, Cost<br>• Discounts<br>• VAT<br>Increasing usability<br>• Automation functions<br>• Conditional formatting<br>Model prediction<br>• What if scenarios |
| **Links to Careers** | Running a business, financial services, marketing, Scientific modelling, Geographical models, teaching |
| **Diversity and Inclusion** | A range of role models from different career areas.<br>Appropriate and relative scenarios for students. |
| **Additional Support** | SharePoint pages (text based, images and videos)<br>Self-Assessment RAG sheets act as knowledge organisers with key questions for each lesson<br>Year 9 mentors available one lunchtime a week upon request, or under direction if deemed necessary<br>SMART textbooks<br>Good ways to revise for the end of unit include:<br>• Going through the exercises after your lesson each week<br>• Having a go at the practice exercises for homework<br>• Borrowing a SMART Year 7 textbook |
| **Challenge** | Extra Practice challenges<br>Create RAG week model |