## Scheme of work – R060 Data manipulation using spreadsheets

### About this scheme of work

**Our redeveloped Cambridge National in IT Level 1/2 J836 is for first teaching from September 2022.**

This qualification provides lots of flexibility, allowing you to find the best route to suit your centre’s needs.Our curriculum planner shows you at a high level how you could teach the course over two or three years. Our schemes of work provide examples of how you could deliver each unit, integrating the knowledge and understanding learned in the externally assessed unit.

All schemes of work should provide an opportunity for integrating the knowledge and understanding learned from the externally assessed unit content alongside the NEA assessment content. This scheme of work provides one example for delivery of this unit. You may find that a different approach would work better in your centre. We have provided a blank template should you wish to create your own or adapt one of the approaches provided.

You’ve given us lots of feedback on what you need from a scheme of work, so we’ve made sure this resource features:

* a **unit-specific** and **lesson by lesson** approach
* **simple** and **editable** Word format – or you can use our [blank template](https://www.ocr.org.uk/Images/639549-scheme-of-work-template.docx) to create your own version
* links to our [curriculum planner’s first model](https://www.ocr.org.uk/Images/619706-curriculum-planner.docx) which is one teacher teaching the qualification over two years, broken down into half terms
* each lesson’s **key words**
* **ideas** for teaching and learning with useful **links**
* some ‘warm up’ teaching ideas if you’re teaching over three years.



## Units and guided learning hours

Here is a reminder of the three units in the redeveloped Cambridge National in IT Level 1/2 J836:

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| **Unit** | **Unit title** | **Guided learning hours (GLH)** | **How are they assessed?** | **Mandatory or optional?** |
| R050 | IT in the digital world | 48 | OCR set and marked | Mandatory |
| **R060** | **Data manipulation using spreadsheets** | 36 | Centre-assessed tasks, OCR moderated | Mandatory |
| R070 | Using Augmented Reality to present information | 36 | Centre-assessed tasks, OCR moderated | Mandatory |

## Assumptions

* You will adapt the SOW and lesson content to match your own timetabling arrangements and will choose how to spread the 36 GLH over the two years as best fits your needs. We have worked on the basis that the average lesson time is around 45 minutes.
* Students can access some resources outside of lessons for any online homework or extension tasks.
* You will refer to the [specification](https://www.ocr.org.uk/Images/610951-specification-cambridge-nationals-it-j836.pdf) as the key document for detailed insight into the qualification’s content and assessment requirements.

Summary of software/other equipment in this scheme of work

* Spreadsheet software. Note – design documentation may be hand-drawn/sketches or produced electronically using appropriate software, or a combination of both.
* Computer (a printer is not necessary as print preview / save as PDF may be used).

## First year of teaching

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|  Autumn 1 |
| **Summary of what you will cover from the** [**curriculum planner**](https://ocr.org.uk/Images/619706-curriculum-planner.docx)**:** | **TA1: Planning and designing the spreadsheet solution (TA1.1 Design tools)** |

| Lesson no. | Topic areas/sub topic areas  | Lesson ideas and activities | Lesson key words | Lesson outcome(s)At the end of the lesson, students will be able to: | Useful links/resources | How does this link to other units? |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | TA 1 Planning and designing the spreadsheet solution1.1 Design tools | This lesson looks at why you need plan a spreadsheet solution and the consequences of not planning the spreadsheet solution effectively.You could consider what needs to be planned:* functionality
* navigation system
* outputs from the system.
 | Planning | Identify why it is necessary to design a spreadsheet solution. | [Planning a spreadsheet](https://wikieducator.org/Working_with_spreadsheets/Spreadsheet_design/Planning_a_spreadsheet)(Wikieducator.org) | R050 TA 1 Design Tools |
| 2 | TA 1 Planning and designing the spreadsheet solution1.1 Design tools | This lesson looks at the consequences of failing to plan a spreadsheet solution in an effective manner.You could consider how to interpret the client requirements.The Sample Assessment Material scenario could be used to explore pitfalls of poor planning. | Planning | Identify the importance of incorporating client requirements into a spreadsheet solution. | [Customer needs](https://blog.hubspot.com/service/customer-needs)(blog.hubspot.com) | R050 TA 1 Design Tools |
| 3 | TA 1 Planning and designing the spreadsheet solution1.1 Design tools | This lesson looks at exploring functionality in relation to client requirements.You could look at the:* use of assets to be used when creating a solution for a client
* client requirements for a solution.
 | Functionality | Identify the importance of understanding client requirements. | [Customer needs](https://blog.hubspot.com/service/customer-needs)(blog.hubspot.com) | R050 TA 1 Design Tools |
| 4 | TA 1 Planning and designing the spreadsheet solution1.1 Design tools | This lesson looks at outputs from a spreadsheet solution in relation to client requirements.You could look at:* how information needs to be presented for the client
* alternative methods of presenting information.
 | Outputs | Understand the importance of considering the outputs that need to be created. | [Planning a spreadsheet](https://production-scheduling.com/biggest-mistake-production-planning-excel/)(production-scheduling.com) | R050 TA 1 Design Tools |
| 5 | TA 1 Planning and designing the spreadsheet solution1.1 Design tools | This lesson looks at exploring navigation of a spreadsheet solution in relation to client requirements.You could look at:* the purpose of a main menu
* navigation to other parts of a client solution
* navigation back to the main menu.
 | Navigation | Explain the importance of a complete navigation system within a solution. | [YouTube example 1 of navigation menu](https://www.youtube.com/watch?v=gQYpq1M2NVo)YouTube[YouTube example 2 of navigation menu](https://www.youtube.com/watch?v=2TxatpTJb60)YouTubeNote it is not necessary to consider the technical aspects of creating the menu, just the menu system. | R050 TA 1 Design Tools |
| 6 | TA 1 Planning and designing the spreadsheet solution1.1 Design tools | The lesson looks at the use of flowcharts and mind maps as design tools for representing the spreadsheet solution. | FlowchartMind map | Create a flowchart and a mind map to represent processes within a solution. | [Flow Charts for Practical Tasks](https://www.cimt.org.uk/projects/mepres/book8/bk8i1/bk8_1i2.htm)(www.cimt.org.uk)Centre for Innovation in Mathematics Teaching [Mind map templates](https://creately.com/diagram-community/popular/t/mind-map)(creately.com) | R050 TA 1 Design Tools |
| 7 & 8 | TA 1 Planning and designing the spreadsheet solution1.1 Design tools | The lesson looks at the use of story boards, visualisation diagrams and wireframes as design tools for representing the spreadsheet solution. | Story board Visualisation diagram Wireframe | Create a flowchart, a visualisation diagram and a wireframe to represent processes within a solution. | Story board [templates](https://creately.com/diagram-community/popular/t/story-board)(creately.com)[YouTube Cambridge Nationals I.T.: Visualisation Diagrams](https://www.youtube.com/watch?v=_dwlr4SKZU4)YouTube[Wireframe templates](https://creately.com/diagram-community/popular/t/wireframe)creately.com | R050 TA 1 Design Tools |

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| Autumn 2 |
| **Summary of what you will cover from the** [**curriculum planner**](https://ocr.org.uk/Images/619706-curriculum-planner.docx)**:** | **TA1.2: Human Computer Interface (HCI) design conventions and principles** |

| Lesson no. | Topic areas/sub topic areas  | Lesson ideas and activities | Lesson key words | Lesson outcome(s)At the end of the lesson, students will be able to: | Useful links/resources. | How does this link to other units? |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | TA 1 Planning and designing the spreadsheet solution1.2 Human Computer Interface (HCI) design conventions and principles1.2.1 Functionality | The lesson looks at functionality that could be incorporated into a spreadsheet solution.You could consider:* what data needs to be manipulated to meet the client requirements
* data provided by the client
* the concept that calculations need to be carried out within the solution.
 | Functionality  | Explain the importance of considering source data.Identify calculations that need to be performed. | [Planning a spreadsheet 1](https://wikieducator.org/Working_with_spreadsheets/Spreadsheet_design/Planning_a_spreadsheet)(wikieducator.org)[Production scheduling](https://production-scheduling.com/)(production-scheduling.com) | R050 TA 2 Human Computer Interface (HCI) in everyday life |
| 2 | TA 1 Planning and designing the spreadsheet solution1.2 Human Computer Interface (HCI) design conventions and principles1.2.1 Functionality | The lesson looks at calculations that need to be incorporated into a spreadsheet solution.You could consider:* what output is required to meet the client requirements
* what information has to be calculated
* how will the calculation be carried out – plain English calculations rather than spreadsheet functions
* the use of flowcharts to represent calculations to be carried out.
 | Calculations | Describe calculations that need to be carried out, using plain English, rather than in spreadsheet formula format. | [Separate Input & Output](https://www.perfectxl.com/excel-tools/perfectxl-explore/separate-input-output/)(perfectxl.com) | R050 TA 2 Human Computer Interface (HCI) in everyday life |
| 3 | TA 1 Planning and designing the spreadsheet solution1.2 Human Computer Interface (HCI) design conventions and principles1.2.1 Functionality | The lesson looks at user aids that need to be incorporated into a spreadsheet solution.You could consider:* why user aids are included in a spreadsheet solution
* the role of data validation
* the role of data entry messages.
 | User aids | Explain why user aids are important for an end user. | [Input and error messages in Excel video](https://support.microsoft.com/en-us/office/video-input-and-error-messages-36f4906c-7167-40d2-934b-fe46f8d80961)(support.microsoft.com)[The Importance of Data Validation](http://www.adetiq.co.uk/the-importance-of-data-validation)(adetiq.co.uk) | R050 TA 2 Human Computer Interface (HCI) in everyday life |
| 4 | TA 1 Planning and designing the spreadsheet solution1.2 Human Computer Interface (HCI) design conventions and principles1.2.2 Types of outputs that clearly present information for an organisation  | The lesson looks at types of output that could be used to present information for an organisation in a spreadsheet solution.You could consider:* the variety of outputs that may be required
* the use of charts, lists, invoices, reports and worksheets as output in an organisation
* chart formatting and labelling
* when it is appropriate to use various types of output.
 | OutputsChartsListsInvoicesReportsWorksheets | Identify a variety of outputs that may be included within a solution.Identify which outputs are relevant to a scenario.Identify the key components of each type of output. | [Separate Input & Output](https://www.perfectxl.com/excel-tools/perfectxl-explore/separate-input-output/)(perfectxl.com) | R050 TA 2 Human Computer Interface (HCI) in everyday life |
| 5 | TA 1 Planning and designing the spreadsheet solution1.2 Human Computer Interface (HCI) design conventions and principles1.2.2 Types of outputs that clearly present information for an organisation | The lesson looks at page layout options that should be considered when designing the layout of types of output in a spreadsheet solution.You should consider the appropriate use of page layout options such as:* page size
* print area on a page
* print area
* margins
* headers/footers
* gridlines
* orientation
* scaling.

You should also consider, within the output, the appropriate use of features or techniques such as:* house style/branding
* colour
* font size
* alignment (vertical and horizontal)
* logos/images
* cell formatting.
 | Page layoutOutput | Identify options to set on the page layout when designing the output.Identify features and techniques to consider when designing the output. | [Microsoft Excel: A Guide To Controlling Your Page Layout](https://www.acuitytraining.co.uk/news-tips/excel-page-layout/)(www.acuitytraining.co.uk) | R050 TA 2 Human Computer Interface (HCI) in everyday life |
| 6 | TA 1 Planning and designing the spreadsheet solution1.2 Human Computer Interface (HCI) design conventions and principles1.2.2 Types of outputs that clearly present information for an organisation | The lesson looks at tools that could be used to plan the output for an organisation.You could consider the use of design tools such as:* visualisation diagrams
* wireframes.
 | Output | Use a design tool to plan output for a scenario. | [YouTube Cambridge Nationals I.T.: Visualisation Diagrams](https://www.youtube.com/watch?v=_dwlr4SKZU4)YouTube [Wireframe templates](https://creately.com/diagram-community/popular/t/wireframe)(creately.com) | R050 TA 2 Human Computer Interface (HCI) in everyday life |
| 7 | TA 1 Planning and designing the spreadsheet solution1.2 Human Computer Interface (HCI) design conventions and principles1.2.3 Human Computer Interface (HCI) | The lesson looks at the HCI.You should make sure that spreadsheet solutions consider:* a clear navigation system that meets the user/client needs using visualisation diagram(s) and/or wireframe(s)
* the start-up and flow through the navigation system and being able to navigate back to the main menu
* learnability and memorability in the design of the solution navigation
* accessibility considerations of sufficient contrast of text and colours, using meaningful names, screen tips
* layout considerations of use of white space, alignment, location of navigation tools on the user interface.
 | HCINavigationAccessibilityLearnabilityMemorabilityUser perceptions | Identify features to include to create an effective HCI. | [Types of User Interface](https://www.w3computing.com/systemsanalysis/types-user-interface/) (w3computing.com) | R050 TA 2 Human Computer Interface (HCI) in everyday life |
| 8 | TA 1 Planning and designing the spreadsheet solution1.2 Human Computer Interface (HCI) design conventions and principles | This lesson recaps on the planning and designing of a spreadsheet solution, recapping on the content of TA 1.You could use the Sample Assessment Material (SAM) as a prompt.If the SAM, or similar material has been used throughout the delivery of TA 1, an exercise could be set as homework over the holiday period to combine any exercises undertaken and produce a solution to Task 1 in the SAM. | PlanningDesigning | Explain the key elements of creating an effective plan and design for a spreadsheet solution. | OCR [Sample Assessment Material R060](https://ocr.org.uk/Images/638018-data-manipulation-using-spreadsheets.zip)(ocr.org.uk) \*\* This link refers to current specification but are relevant to the new specification. | R050 TA 1 Design ToolsTA 2 Human Computer Interface (HCI) in everyday life |

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| Spring 1 |
| **Summary of what you will cover from the** [**curriculum planner**](https://ocr.org.uk/Images/619706-curriculum-planner.docx)**:** | **TA2: Creating the spreadsheet solution****TA3: Testing the spreadsheet solution****TA4: Evaluating the spreadsheet solution** |

| Lesson no. | Topic areas/sub topic areas  | Lesson ideas and activities | Lesson key words | Lesson outcome(s)At the end of the lesson, students will be able to: | Useful links/resources | How does this link to other units? |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | TA2Creating the spreadsheet solution2.1 Use spreadsheet tools and techniques to create the solution | This lesson introduces the concepts of creating a spreadsheet solution that is fit for purpose.You could:* explore the manipulation of data using simple formulas
* make us of operators (+,-,\*,/) and parenthesis
* introduce the use of cell formatting.
 | Data manipulationFormulas | Create a spreadsheet incorporating simple formulas and use cell formatting. | [BBC Bitesize Modelling with spreadsheets](https://www.bbc.co.uk/bitesize/guides/znjmn39/revision/1)(bbc.co.uk) | R050 TA 3 Data and testing |
| 2 | TA2Creating the spreadsheet solution2.1 Use spreadsheet tools and techniques to create the solution | This lesson develops the use of spreadsheet tools and techniques to create a solution.You could use:* meaningful worksheet names in a workbook
* named cells/group of cells
* cell references (relative, absolute, named, multi-sheet referencing).
 | NamingCell references | Identify the importance of using meaningful naming conventions in components of a solution.Identify different types of cell references and know when to use these. | [All About Naming and Renaming Excel Worksheets](https://www.keynotesupport.com/excel-basics/worksheet-names-characters-allowed-prohibited.shtml)(keynotesupport.com)[Name a range of cells in Google Sheets](https://support.google.com/docs/answer/63175?hl=en-GB&co=GENIE.Platform%3DDesktop)(support.google.com) | R050 TA 3 Data and testing |
| 3 to 5 | TA2Creating the spreadsheet solution2.1 Use spreadsheet tools and techniques to create the solution | This lesson continues to develop the use of spreadsheet tools and techniques to create a solution.You could use built in functions SUM, MIN, MAX, AVERAGE, COUNT, IF, COUNTIF, LOOKUP, VLOOKUP, HLOOKUP, AND, OR, DATE, TODAY, SUMIF, SUBTOTAL.You could:* use relational operators including =, <, >, <=, >=, <>
* solve formula errors ( #DIV/0, #NAME?, #REF! etc).
 | Spreadsheet functionsRelational operatorsErrors | Identify appropriate built in functions to use to create an efficient and effective formula.Identify the appropriate use of relational operators within a solution.Identify when an error(s) has occurred and take steps to resolve the error(s). | [Entering a formula into Excel](https://www.youtube.com/watch?v=f4fKxxkmBA4)YouTubeMethods will vary depending on the software used.[Relational operators](http://www.scriptingmaster.com/asp/relational-operators.asp)(scriptingmaster.com) | R050 TA 3 Data and testing |
| 6 | TA2Creating the spreadsheet solution2.1 Use spreadsheet tools and techniques to create the solution | This lesson continues to develop the use of spreadsheet tools and techniques to create a solution.You could use:* sorting
* filters.
 | Data manipulation | Sort spreadsheet data.Create filters to select data in a spreadsheet. | [Sort & filter your data in Google Sheets](https://support.google.com/docs/answer/3540681?hl=en-GB&co=GENIE.Platform%3DDesktop)(support.google.com)Methods will vary depending on the software used. | R050 TA 3 Data and testing |
| 7 | TA2Creating the spreadsheet solution2.1 Use spreadsheet tools and techniques to create the solution | This lesson continues to develop the use of spreadsheet tools and techniques to create a solution. Data validation checks are introduced.You could use:* range check
* text length
* lookup techniques
* limited choice
	+ drop down lists
	+ radio buttons
	+ tick list.
 | Data validation | Use range checks and text length checks to validate data in a spreadsheet.Use a lookup to validate data in a spreadsheet. Use techniques to limit choice to validate data in a spreadsheet. | [BBC Bitesize Data validation](https://www.bbc.co.uk/bitesize/guides/zdvrd2p/revision/1) (bbc.co.uk)[Why Radio Buttons and Checkboxes Can’t Co-Exist](https://uxmovement.com/forms/why-radio-buttons-and-checkboxes-cant-co-exist/)(uxmovement.com) | R050 TA 3 Data and testing |
| 8 | TA 3 Testing the spreadsheet solution3.1 Test the user interface and the technical aspects of the spreadsheet solution | This lesson introduces the concept of testing during development. At this stage students will have encountered errors in the development of a spreadsheet solution. For example, a formula will have generated an error message, data validation does not work as expected.You could consider:* testing during development
	+ technical testing
	+ usability testing
* how to record evidence of testing
* documentation to support testing/test plan
* how and when to retest.
 | Testing | Identify how to test and retest, if necessary, a spreadsheet during development.Document evidence of testing. | [Why is Testing part of the development process?](https://www.ag-prime.com/blog/why-testing-part-development-process)(ag-prime.com)[The One Page Test Plan](https://www.ministryoftesting.com/dojo/lessons/the-one-page-test-plan)(ministryoftesting.com)[RO60 Sample Assessment Material](https://ocr.org.uk/Images/638018-data-manipulation-using-spreadsheets.zip) – Westwood Doggy Day Care Test Plan document(ocr.org.uk) | R050 TA 3 Data and testing |
| 9 | TA2Creating the spreadsheet solution2.1 Use spreadsheet tools and techniques to create the solution | This lesson continues to develop the use of spreadsheet tools and techniques to create a solution.You could use:* conditional formatting
* importing different file types
* entering different data types
	+ Boolean
	+ Date
	+ Time
	+ Text
	+ Numeric -

Integer, Number/Real, Currency, Percentage, Decimal* further cell formatting such as alignment, border, font, shading, text wrap and currency.
 | Cell formattingData types | Apply cell formatting, including conditional formatting, to a cell(s).Use different data types effectively within a solution. | [Import or export text (.txt or .csv) files into Excel](https://support.microsoft.com/en-us/office/import-or-export-text-txt-or-csv-files-5250ac4c-663c-47ce-937b-339e391393ba)(support.microsoft.com)[BBC Bitesize Spreadsheets](https://www.bbc.co.uk/bitesize/guides/zdydmp3/revision/1)(bbc.co.uk)Methods will vary depending on the software used. | R050 TA 3 Data and testing |
| 10 | TA2Creating the spreadsheet solution2.1 Use spreadsheet tools and techniques to create the solution | This lesson continues to develop the use of spreadsheet tools and techniques to create a solution. Security measures are explored.You could use appropriate security measures such as lock cells, password protected workbook, worksheet editing. | Security | Use appropriate security measures in a spreadsheet solution. | [How to Secure Your Spreadsheets](https://www.nhphoenix.com/blog/excel-security-risks-how-to-secure-your-spreadsheets)(nhphoenix.com)[How to Lock Cells in Google Sheets](https://spreadsheetpoint.com/lock-cells-in-google-sheets/)(spreadsheetpoint.com)Methods will vary depending on the software used. | R050 TA 4 Cyber-security and legislation |
| 11 | TA2Creating the spreadsheet solution2.1 Use spreadsheet tools and techniques to create the solution | This lesson continues to develop the use of spreadsheet tools and techniques to create a solution. Modelling tools are explored.You could use * what-if and goal seek to predict different outcomes
* pivot tables.
 | What-ifGoal seekPivot tables | Use modelling tools in a spreadsheet solution. | [BBC Bitesize Why use computer models?](https://www.bbc.co.uk/bitesize/guides/znjmn39/revision/5)(bbc.co.uk) | R050 TA 3 Data and testing |
| 12-13 | TA2Creating the spreadsheet solution2.1 Use spreadsheet tools and techniques to create the solution | This lesson looks at techniques to generate outputs.You could:* create outputs which are fit for purpose
* create and format a variety of charts and graphs
* creating output documents that follow a house style and page layout properties as given
* ensuring the information in the rows and columns headings are visible or hidden as needed.
 | Outputs | Create a range of outputs that are appropriate and fit for purpose in a spreadsheet solution. | [Can we graph it?](http://code-it.co.uk/dlplanning/spreadsheet/spreadsheet)(code-it.co.uk)[BBC Bitesize Charts and Graphs](https://www.bbc.co.uk/bitesize/guides/zdydmp3/revision/7)(bbc.co.uk) | R050 TA 3 Data and testing |
| 14 | TA2Creating the spreadsheet solution2.1 Use spreadsheet tools and techniques to create the solution | This lesson looks at techniques to customise the user interface.You could use:* buttons
* macros
* hyperlinks
* forms
* a method to configure the spreadsheet to display the menu at start up.
 | User interface | Use techniques to customise the user interface so that it is appropriate for the end user. | [YouTube example with macros](https://www.youtube.com/watch?v=qdr29x3zYSM)YouTube[YouTube example with buttons](https://www.youtube.com/watch?v=g3VvBPKLEYI)YouTube | R050 TA 3 Data and testing |
| 15-16 | TA3Creating the spreadsheet solution3.1 Test the user interface and the technical aspects of the spreadsheet solution | The lesson develops the earlier skills in relation to testing the spreadsheet solution. Types of test data are explored as well as testing after development.You could:* explore types of test data – extreme, invalid (erroneous) and valid
* consider what technical testing involves
	+ navigation features
	+ spreadsheet calculations
	+ content included in the output
* carry out testing after development
* complete test plan documentation, including details of
	+ test number
	+ test description
	+ test data
	+ expected result
	+ actual result
	+ any remedial action carried out
	+ retesting (if required)
* explore the appropriateness of test data to be used within a test plan.
 | TestingTest planTest data | Carry out and document effective testing of a spreadsheet solution. Know when to carry out testing i.e. both during and after development. | [The One Page Test Plan](https://www.ministryoftesting.com/dojo/lessons/the-one-page-test-plan)(ministryoftesting.com)[R060 Sample Assessment Material](https://ocr.org.uk/Images/638018-data-manipulation-using-spreadsheets.zip) - Westwood Doggy Day Care Test Plan document(ocr.org.uk) | R050 TA 3 Data and testing |
| 17 | TA4Evaluating the spreadsheet solution4.1 Methods used to evaluate the success of the spreadsheet solution | This initial lesson explores evaluating the spreadsheet solution. The purpose of evaluating the solution will be explored.The solution will be evaluated in terms of meeting the client requirements.You could consider:* how suitable the spreadsheet solution is for the requirements of a client
* whether the planned spreadsheet solution has been created
* any deviation for the planned solution is explained and justification for any deviation is provided.
 | Evaluation | Carry out an effective evaluation of a spreadsheet solution, considering client requirements. | [BBC Bitesize Evaluating solutions](https://www.bbc.co.uk/bitesize/guides/zssk87h/revision/1)(bbc.co.uk) |  |
| 18 | TA4 Evaluating the spreadsheet solution4.1 Methods used to evaluate the success of the spreadsheet solution | This lesson continues to explore evaluating the spreadsheet solution. The solution will be evaluated in terms of meeting the client requirements and how HCI design principles and conventions have been addressed.You could consider:* how the navigation system meets the client requirements
* the effectiveness of the visual style of the solution
* to what extent house style has been followed.

Note: it is not necessary to carry out user feedback, focus group review, user testing or user acceptance testing when evaluating the spreadsheet solution. |  | Carry out an effective evaluation of a spreadsheet solution, considering HCI design principles and conventions. | [BBC Bitesize User interface: Strengths, weaknesses and improvements](https://www.bbc.co.uk/bitesize/guides/zccxk2p/revision/4)(bbc.co.uk) |  |
| 19 | TA2Creating the spreadsheet solution2.1 Use spreadsheet tools and techniques to create the solutionTA3Creating the spreadsheet solution3.1 Test the user interface and the technical aspects of the spreadsheet solutionTA4Evaluating the spreadsheet solution4.1 Methods used to evaluate the success of the spreadsheet solution | This lesson recaps on:* the use of spreadsheet tools and techniques to create a spreadsheet solution, recapping on the content of TA 2
* testing the user interface and technical aspects of a spreadsheet solution, recapping on the content of TA 3
* evaluating the spreadsheet solution, recapping on the content of TA 4.

You could use the Sample Assessment Material (SAM) as a prompt.If the SAM, or similar material has been used throughout the delivery of TA 2, TA 3 and TA 4, an exercise could be set as homework to combine any exercises undertaken and produce a solution to Task 2 and Task 3 in the SAM, extending over the holiday period if necessary. | Spreadsheet toolsSpreadsheet testingEvaluation techniques | Know how to create a spreadsheet solution based on planning documentation.Model scenarios for a client.Know that testing should be undertaken during development of the solution.Document evidence of testing using a given test plan.Evaluate the success of a spreadsheet solution.Evaluate the effectiveness of a HCI created by the student. | [R060 Sample Assessment Material](https://ocr.org.uk/Images/638018-data-manipulation-using-spreadsheets.zip) - Westwood Doggy Day Care Test Plan document(ocr.org.uk) | R050 TA 3 Data and testingTA 4 Cyber-security and legislation |

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| Spring 2 |
| **Summary of what you will cover from the** [**curriculum planner**](https://ocr.org.uk/Images/619706-curriculum-planner.docx)**:** | **R060 - NEA Assessment (working on)****R070 TA1 SoW** |

| Lesson no. | Topic areas/sub topic areas  | Lesson ideas and activities | Lesson key words | Lesson outcome(s)At the end of the lesson, students will be able to: | Useful links/resources | How does this link to other units? |
| --- | --- | --- | --- | --- | --- | --- |
| All | All | Working on NEA assessment |  |  |  |  |

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| Summer 1 |
| **Summary of what you will cover from the** [**curriculum planner**](https://ocr.org.uk/Images/619706-curriculum-planner.docx)**:** | **R060 - NEA Assessment (working on)****R060 - NEA Assessment (submit for moderation)****R050 – TA5 SoW****R070 – TA2 SoW** |

| Lesson no. | Topic areas/sub topic areas  | Lesson ideas and activities  | Lesson key words | Lesson outcome(s)At the end of the lesson, students will be able to: | Useful links/resources | How does this link to other units? |
| --- | --- | --- | --- | --- | --- | --- |
|  | n/a | Working on NEA assessment |  |  |  |  |

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| Summer 2 |
| **Summary of what you will cover from the** [**curriculum planner**](https://ocr.org.uk/Images/619706-curriculum-planner.docx)**:** | **R060 - N/A****R050 -TA6 SoW****R070 – TA 3 SoW** |

| Lesson no. | Topic areas/sub topic areas  | Lesson ideas and activities | Lesson key words | Lesson outcome(s)At the end of the lesson, students will be able to: | Useful links/resources | How does this link to other units? |
| --- | --- | --- | --- | --- | --- | --- |
| n/a |  |  |  |  |  |  |

**Second year of teaching – N/A for R060**

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| Autumn 1 |
| **Summary of what you will cover from the** [**curriculum planner**](https://ocr.org.uk/Images/619706-curriculum-planner.docx)**:** | **R070 – TA2, TA3 and TA4 SoW** |

| Lesson no. | Topic areas/sub topic areas  | Lesson ideas and activities | Lesson key words | Lesson outcome(s)At the end of the lesson, students will be able to: | Useful links/resources | How does this link to other units? |
| --- | --- | --- | --- | --- | --- | --- |
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| 2 etc |  |  |  |  |  |  |

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| Autumn 2 |
| **Summary of what you will cover from the** [**curriculum planner**](https://ocr.org.uk/Images/619706-curriculum-planner.docx)**:** | **R070 – NEA assessment SoW** |

| Lesson no. | Topic areas/sub topic areas  | Lesson ideas and activities | Lesson key words | Lesson outcome(s)At the end of the lesson, students will be able to: | Useful links/resources | How does this link to other units? |
| --- | --- | --- | --- | --- | --- | --- |
| 1 |  |  |  |  |  |  |
| 2 etc |  |  |  |  |  |  |

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| --- |
| Spring 1 |
| **Summary of what you will cover from the** [**curriculum planner**](https://ocr.org.uk/Images/619706-curriculum-planner.docx)**:** | **R070 – NEA assessment submission****R050 – TA 3 and TA 4 SOW** |

| Lesson no. | Topic areas/sub topic areas  | Lesson ideas and activities | Lesson key words | Lesson outcome(s)At the end of the lesson, students will be able to: | Useful links/resources | How does this link to other units? |
| --- | --- | --- | --- | --- | --- | --- |
| 1 |  |  |  |  |  |  |
| 2 etc |  |  |  |  |  |  |

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| Spring 2 |
| **Summary of what you will cover from the** [**curriculum planner**](https://ocr.org.uk/Images/619706-curriculum-planner.docx)**:** | **R050 – TA 4****R050 – exam revision**  |

| Lesson no. | Topic areas/sub topic areas  | Lesson ideas and activities | Lesson key words | Lesson outcome(s)At the end of the lesson, students will be able to: | Useful links/resources | How does this link to other units? |
| --- | --- | --- | --- | --- | --- | --- |
| 1 |  |  |  |  |  |  |
| 2 etc |  |  |  |  |  |  |

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| Summer 1 |
| **Summary of what you will cover from the** [**curriculum planner**](https://ocr.org.uk/Images/619706-curriculum-planner.docx)**:** | **R050 exam revision and exam** |

| Lesson no. | Topic areas/sub topic areas  | Lesson ideas and activities | Lesson key words | Lesson outcome(s)At the end of the lesson, students will be able to: | Useful links/resources | How does this link to other units? |
| --- | --- | --- | --- | --- | --- | --- |
| 1 |  |  |  |  |  |  |
| 2 etc |  |  |  |  |  |  |

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| Summer 2 |
| **Summary of what you will cover from the** [**curriculum planner**](https://ocr.org.uk/Images/619706-curriculum-planner.docx)**:** | **N/A** |

| Lesson no. | Topic areas/sub topic areas  | Lesson ideas and activities | Lesson key words | Lesson outcome(s)At the end of the lesson, students will be able to: | Useful links/resources | How does this link to other units? |
| --- | --- | --- | --- | --- | --- | --- |
| 1 |  |  |  |  |  |  |
| 2 etc |  |  |  |  |  |  |

## Teaching over three years

|  |  |  |
| --- | --- | --- |
| Topic area | Warm up/introductory activities | Length of time activity may take |
| TA 1 Planning and designing the spreadsheet solution1.1 Design tools | Students could start to become familiar with producing designs for solutions and the steps involved in producing such designs.Students could design a layout for a solution linked to scenario that they are familiar with in other areas of their studies. | 4-5 hours to develop their skills in the use of design tools and techniques, refining their designs, if necessary. |
| TA 1 Planning and designing the spreadsheet solution1.2 Human Computer Interface (HCI) design conventions and principles | Students could work in small groups to explore the use of HCI design conventions and principles in a variety of contexts. These could include learning resources used in other curriculum areas, websites and the school VLE.Students could identify good points and weaknesses of features observed. | 4-5 hours to explore suitable resources and identify what makes a good HCI and weaknesses observed in other HCIs. |
| TA2Creating the spreadsheet solution2.1 Use spreadsheet tools and techniques to create the solution | Students could work on straightforward activities to ensure that they are familiar with the basic features of the spreadsheet software that they will be using to create solutions.Students should undertake activities to ensure that they are confident in file management techniques, including version control of files. | 3-4 hours to complete some straightforward spreadsheet activities and ensure that students are confident in file management activities. |

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