## 

**LP & SoL -AEDxD2DE3M2**

**(From Data to Insight)**

V2

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# Production and Change Log

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Version | Date | Author | Description | Reviewer |
| 2.0 | Feb 2024 | Malcolm Percival / Lisa Kirke | Development, new format including SoL |  |
|  |  |  |  |  |
|  |  |  |  |  |

# Resources for Course

|  |  |  |
| --- | --- | --- |
| Learner technology requirement (i.e., Laptop, internet) | WebEx (Delivery App) | PPT Slides/Whiteboard |
| Learner Discovery (Online self-paced learning) | MS Word Documents of Step-by-step instructions (to go on CA platform) accompanied with Excel files. | Cloud Academy platform. |
| GOTMYPC (virtual machines for Labs) | Learner guides accompanied with Excel spreadsheets |  |

# Additional Resources

The **tutor** will require the following:

* Slides in both PPTX and PDF formats.
* All activity files.
* Solutions to activities.
* Trainer guide (this document).

Additionally, tutors must have access to Microsoft Excel 365 for Windows Desktop.

The **learners** will require the following:

* Slides in PDF format only.
* All activity files.

Additionally, learners must have access to Microsoft Excel for Desktop. For Windows users, version 2016 or later is required, and version 365 is strongly recommended. For Mac OS users, Excel v16.69 or later is required.

# Module Overview

This module aims to provide learners with a solid foundation in working with data. It covers essential concepts and practical skills related to data formats, manipulation, aggregation, blending, filtering, and trend analysis. Through hands-on exercises and theoretical study, participants will gain proficiency in handling and analysing diverse datasets. This module also introduces how to communicate data effectively through real-world and industry relevant scenarios.

Learners will:

* Explore the importance of data formats and good data management.
* Work on presentation, communication, and collaborative working technologies.
* Learn how to filter, blend, and manipulate data.
* Access data sets from multiple sources.
* Consider the digital and data landscape,

**Discover (Online)**

Learners will explore the core theory of the following topics online prior to attendingthe classroom/live session:

* Importance of Data Formats
* Collate, Format and Save Data
* Good Data Management
* Presentation Tools
* Communication Tools
* Collaborative Working Technologies
* Effective Filtering
* Blending Data
* Data Manipulation
* Identifying Trends

**Practice (Live)**

During the live session learners will explore real life and practical examples of gaining insight from data. This exploration will require learners to put their learning into practice.

On the morning of Day 1, learners build familiarity with file formats important to junior analysts, with a focus on XLSX, CSV, and JSON. This background knowledge is essential, as we will work with these file types throughout the apprenticeship. Learners are then taught how to format data in Excel to aid readability. In the afternoon, special effort is devoted to the key skill of filtering.

Day 2 begins with a recap of the XLOOKUP() function and an activity that solidifies this important function in the learners’ memory. The remainder of the day is spent on gaining practical experience with table joins.

Day 3 introduces Power Query for Excel. This advanced tool is ideal for the apprenticeship and an invaluable asset in any analyst’s toolkit. We spend 2/3 of the day giving each learner a guided, hands-on tour of Power Query, focusing on the features most useful to the junior analyst.

Activities include:

* Access multiple data sets from different sources.
* Manipulate, filter and format data.
* Blend or correlate data sets via common fields to generate an aggregated data set and store this aggregated data set for later analysis.
* XLookup
* Intro to data quality.
* Power queries.
* Data Type, structure and understanding patterns.
* Excel Formulas.
* 365 > Filter, Sort and Unique.

Learning outcomes:

* Essential knowledge of the XLSX, CSV, and JSON file formats, including common use cases, benefits, and constraints.
* Fail-safe techniques for extracting data from CSV and JSON files.
* Normalise semi-structured data encoded in the JSON format.
* Apply number formatting in Excel to improve the readability of figures and adhere to a standard style. Understand the difference between a cell’s number format and its underlying value.
* Apply Conditional Formatting in Excel to visualise trends and highlight data quality issues.
* Filter a data table by applying text or numeric filters. Understand the effects of applying multiple filters at once.
* Filter on complex conditions. Translate written requests into filters to retrieve data according to stakeholder requirements.
* Gain an intuitive and technical understanding of table joins. Select the correct join for the situation. Join data tables to answer specific business questions.
* Apply lookup functions in Excel, including XLOOKUP(). Key differences between lookups and joins.
* An in-depth introduction to Power Query in Excel.
* Combining all of the above techniques to derive insights from real data.

**Apply (Online/Workplace)**

Following the live session learners will put their newfound knowledge into action at work. Learners will explain the digital and data landscape:

1. Is the company data stored on premises or in the cloud?
2. What digitisation sits within the architecture and how does this impact the data and their role?
3. Do they use Drives, SharePoint etc?
4. Where do they pull the data they use from?
5. What systems and tools do they use - Power BI, Power Query, Excel etc.?
6. Demonstrate the formats they work with, CSV, Excel etc. What are the advantages and disadvantages? Make some recommendations to the business from findings.

# KSB Mappings

**Mapped KSBs for this Module**

**Knowledge:**

* K3: How to collate and format data in line with industry standards.
* K4: Data formats and their importance for analysis Management and presentation tools to visualise and review the characteristics of data Communication tools and technologies for collaborative working.
* K6: The value of data to the business How to undertake blending of data from multiple sources.
* K8: How to filter details, focusing on information relevant to the data project.
* K9: Basic statistical methods and simple data modelling to extract relevant data and normalise unstructured data.
* K10: The range of common data quality issues that can arise e.g. misclassification, duplicate entries, spelling errors, obsolete data, compliance issues and interpretation/ translation of meaning.

**Skills:**

* S2: Collect, format and save datasets.
* S3: Summarise and explain gathered data.
* S4: Blend data sets from multiple sources and present in format appropriate to the task.
* S5: Manipulate and link different data sets as required.
* S6: Use tools and techniques to identify trends and patterns in data.
* S10: Demonstrate the different ways of communicating meaning from data in line with audience requirements.
* S13: Explain data and results to different audiences in a way that aids understanding.
* S17: Operate as part of a multi-functional team.

**Behaviours:**

* B1: Manage own time to meet deadlines and manage stakeholder expectations.
* B2: Work independently and take responsibility.
* B3: Use own initiative.
* B4: A thorough and organised approach.
* B5: Work with a range of internal and external customers.
* B6: Value difference and be sensitive to the needs of others.

# Discover Learning Path

In order to prepare for the course learners have completed the online Discover content covering the following topics:

|  |  |  |
| --- | --- | --- |
| Step | Title | Description |
| 1 | Introduction | This step sets the scene for the module and the Discover stage and lays out the KSBs (learning outcomes). |
| 2 | Prerequisites | This step sets out the prerequisites for the Course (some familiarity with Excel.) |
| 3 | Common types of data file | Explore file types and file extensions, including CSV, XLSX, JSON. |
| 4 | Importing data | Covers methods of importing data into Excel, including opening from a file, copy/paste, and importing with Power Query. |
| 5 | Sorting and filtering | Sorting and filtering data in Excel, including a problem-solving activity using a supplied data set. |
| 6. | Data manipulation in Excel | Excel functions that allow manipulation of data, including PROPER(), CONCATENATE(), text functions, aggregate functions, and averages. |
| 7 | Lookup functions | Explore the INDEX(), MATCH(), XLOOKUP(), and VLOOKUP() functions in Excel. |
| 8 | Table joins | Learn about tabular formats and the different types of table join, with examples and an activity. |
| 9 | Trend analysis | Learn about data trend and analysis sources and conduct some research. |
| 10 | Charts | Explore visualisations and charts in Excel, including frequency tables, bar charts, histograms, pie charts, and dashboards. |
| 11 | Knowledge check | Round out the Discover stage with a formative knowledge check. |

# Differentiation Strategies (how to deal with different types i.e., levelling the teaching)

* Ensure work is sufficiently challenging for all learners and allow learners to ask questions.
* Accommodate a range of learning styles and distribute attention fairly to the class, through engaging teaching and learning activities and varied methods of assessment.
* The tutor will identify which learners are participating and questions will be directed to those not actively participating. Learning preferences have been considered and a range of media has been used to suit all learners.
* Faster, able learners will be directed to lead discussion groups and be advised to research additional sources of information to support their learning.
  + Extension Tasks which scaffold to a more advanced topic areas will be included for those who show aptitude or whose prior learning/experience is already more advanced.
* Peer review of group work, individual and group questioning, and class participation are mandatory in all modules.
* Use of different mediums throughout the module to enhance learning and engagement which include use of video clips, audio clips, practical activities, breakout room discussion etc.
* Promote holistic development of the skills required for EPA, which include ability to engage in professional discussion, report writing, presentation skills, responding to a variety of question types.
* Slides will use minimal text, written in short sentences/bullets. Where possible, these will be introduced using phased animation order to support those with reading/cognition difficulties. Slides will also make use of graphics/diagrams where appropriate, to support comprehension.

# Equality and Diversity, Safeguarding and Prevent

There will be many opportunities to embed and discuss topics of Equality and Diversity, Safeguarding and Prevent including:

* Sleeping and eating well - Learners need to have good energy levels to do well in the course, they need to ensure they are getting good sleep, eating well and feel safe in the classroom/virtual environment.
* Dealing with the stress of work and balancing the apprenticeship requirements and work roles.
* Wellbeing and anxiety - discuss wellbeing and work life balance during the session.
* Equality and Diversity - Working with a diverse group of people will help enrich the learners. There may be opportunity to learn about a different culture, of either an individual or of organisations. Where possible, learning materials should include knowledge of protected characteristics contextualised to the course. This may be enriched with subjects such as stereotyping, confirmation bias, gender pay-gap etc.
* British Values – Tolerance; please be aware of and make adjustments for learners who need to have breaks for Prayers.
* Tutors to enable discussion around diversity, Prevent and Safeguarding during activities, linking to relevant recent news/events.
* Democracy and rule of law can be embedded by using activities such as setting classroom/virtual regulations and/or voting for lunch or breaks.

# Cognitive Load Theory (CLT)

Cognitive load refers to the amount of information working memory can process at any given time. For educational purposes, cognitive load theory helps to avoid overloading learners with more than they can effectively process into schemata for long-term memory storage and future recall.

**Cognitive learning strategies for this event:**

* When creating lesson plans and schemes of learning consider the ‘know more’, ‘do more’, ‘remember more’ approach.
* Link learning activities to prior learning e.g., the work completed by the learner during the discover stage and/or during prior modules.
* Plan the session to increase in complexity over time.
* Ask learners to reflect and discuss their learning experiences.
* Support learners in seeking new solutions to problems.
* Facilitate group discussions exploring the subject material, including prompting learners to provide explanations of reasoning.
* Encourage learners to explore ideas and work out how they are connected, and how they relate to the learners’ own context.
* Provide visual learning techniques to help learners learn and recall.

**Tips for preventing cognitive overload in your classroom:**

* **Include information that's already in learners’ long-term memory**. Working memory allows for limited interaction with new elements. However, long-term memory is unlimited. This means that the more elements your learners have in their long-term memory the easier it is to keep learning.
* **Only include information directed at the learning goal**. If learners are faced with unnecessary details, such as irrelevant anecdotes or animations, it can easily overload your learners’ capacity to learn.
* **Encourage learners to combine new information with the concepts and ideas they've already learned.** If a learner can relate a piece of knowledge to something they've already understood it makes getting the information across much easier.

# English, Maths & Soft Skills (how is this being covered in this module?)

Functional and soft skills are developed throughout the programme of learning for this event:

* Learners will be expected to prepare verbal presentations and feedback to the rest of the group.
* Learners will be expected to record written reflections in their notes.
* Learners will need to use problem solving and analytical skills.
* Learners will be expected to understand and plan project schedules including estimating and calculating time/resource requirements.
* Links to English and maths Functional Skills level 2 will be specific and learners’ skills in these areas. Naturally occurring opportunities to embed English and maths will be identified, and where possible, other opportunities created to support learners’ deeper learning.
* Communication skills will be encouraged though speaking and listening activities which emphasises collaboration, clear speaking, presentation skills and recognising non-verbal communication cues.
* Learners will be required to collaborate on exercises and tasks promoting collaboration and co-operative learning to take place.
* Facilitators will support learners in developing their confidence by assigning roles and responsibilities during activities and enabling group discussion and reflection.

# Iconography

Iconography is included within the Scheme of Learning. This provides visual indication of where you will find holistic opportunity to embed functional skills and values-based activities into the session.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Icon Key:** | |  |  |  |  |
|  | Equality & diversity |  | Differentiation / Stretch & Challenge | A close up of a badge  Description automatically generated | Workplace application |
|  | English | [A handshake in a circle  Description automatically generated](file:///C:\Users\afletcher\AppData\Local\Temp\Temp1_Scheme%20of%20Learning.zip\SOL%20guidance%20JM%202021%20-%20DXD.pptx) | British Values | A hand holding a person  Description automatically generated | Soft skills |
|  | Safeguarding |  | Maths |  |  |

# Lesson Plan (LP)

The table below is the ‘5-minuite/1 page lesson plan’, use this resource to create a high-level overview of each day or half day session for your delivery. Further detail to be included within the SoL.

|  |  |  |  |
| --- | --- | --- | --- |
| Camera with solid fill**Big Picture** | Target with solid fill**Learning Objectives**  **(Know More)** | Pin with solid fill**What should stick with learners?**  **(Remember More)** | Chat bubble with solid fill**Promoting E&D, S&P, H&S, BV:** |
| Building knowledge of the tools used when handling data (Excel).  Identify file types.  Formatting in Excel.  Excel tables.  Filtering data.  Formulas and functions. | Build skills in Excel – lookups and joins. (Day 2)  Working with PowerQuery (Day 3) | Build proficiency handling and manipulating data in Excel. |  |
| Abacus with solid fill**Differentiation / Stretch & Challenge** | Connected outline**Assessment for Learning** | **Remote work outlineWorkplace application** | Pen with solid fill**English, Maths & Soft Skills:** |
| Scientific notation and custom number formats.  Absolute and relative cell references.  Advanced filtering. | Learners will be assessed through a range of Excel activities and group discussions. | Learners will apply their live event learning to their workplace-based dataset in the Apply stage activity. | Soft skills such as confidence, public speaking, effective communication will be assessed through presentations activities.  English and Maths will be assessed through their learning, including practical activities and report writing. |
| **Learning Phase 1 (Do More)** | **Learning Phase 2 (Do More)** | **Learning Phase 3 (Do More)** | Document with solid fill **Resources required:** |
| Day 1:  File formats (CSV, XLSX, JSON).  Number formats in Excel.  Conditional formatting in Excel.  Excel Tables.  Basic Filtering.  Formulas and functions activity.  Day 2:  XLOOKUP() (or INDEX() and MATCH() for Excel 2019 and earlier).  Guide to Joins.  Experiments with Joins activity.  Lookup formulas vs. Joins.  Knowledge check: Joins.  Day 3:  Introduction to Power Query (full day activity, broken into chunks around breaks and lunch) | Day 1:  Supplementary information on file formats.  Stretch and challenge:   * Scientific notation and custom number formats. * Absolute and relative cell references. * Advanced filtering.   Day 2:  Breakout for INDEX() and MATCH() for 2019 and earlier users.  Joins playground activity to experiment and build competence.  Group discussion: when is a join or lookup the best option?  Day 3:  Self-driven work with Power Query spreadsheet with one-to-one check-ins during the day.  Activity builds from paint-by-numbers to experiment and apply. | Feedback, discussion, and Q&A on topics covered. | PC/Laptop, whiteboard, Microsoft tools such as Excel and PowerPoint. |

# Agenda & Timings – Practise (Live Event)

The below session agendas provide a guide for your delivery. You may adapt timings and negotiate breaks and lunchtimes with your group. For virtual delivery, you should aim to provide a short 5–10-minute break after approx. 1 hour of training time. Duplicate days as required.

## Day 1

|  |  |  |
| --- | --- | --- |
| Timings | Length | Topic |
| 09:30 | 30 m | **Welcome** |
| 10:00 | 50 m | **CSV, XLSX, and JSON files**  Recap and quiz.  The duration of this activity will depend on whether all learners have completed the Online learning. |
| 10:50 | 15 m | BREAK |
| 11:05 | 40 m | **Number formats in Excel** |
| 11:45 | 45 m | **Conditional Formatting in Excel** |
| 12:30 | 60 m | LUNCH |
| 13:30 | 30 m | **Excel Tables**  If the group is not experienced with Excel Tables, the tutor should deliver a brief introduction. Otherwise, the “Basic Filtering” activity may begin immediately. |
| 14:00 | 50 m | **Activity: Basic Filtering**  A time-limited activity in which learners pick up the basics of filtering Excel Tables. The tutor may decide to spend a longer or shorter time here, depending on the group.  There is also an optional Advanced filtering activity, which can be used here, or at a later point during the live event. |
| 14:50 | 15 m | BREAK |
| 15:05 | 75 m | **Activity: Formulas and functions**  A group activity that focuses on working with Excel’s formulas and functions. |
| 16:20 | 10 m | **Wrap-up**  Congratulate the teams.  Mention anything learners should prepare for tomorrow.  End. |

## Day 2

|  |  |  |
| --- | --- | --- |
| Timings | Length | Topic |
| 09:30 | 80 m | **Activity: Practice with XLOOUKP()**  Learners on Excel 2019 or earlier will study INDEX() and MATCH() instead of XLOOKUP(). The tutor will need to take these learners aside to brief them on the differences. This does not affect the total duration of the activity. |
| 10:50 | 15 m | BREAK |
| 11:05 | 35 m | **Activity: Guide to Joins** |
| 11:40 | 50 m | **Activity: Experiments with Joins**  Learners may work at very different paces, and some learners may make no progress at all until joins “click” for them. The tutor should be extra-attentive to ensure these learners receive assistance and are not left behind. |
| 12:30 | 60 m | LUNCH |
| 13:30 | 80 m | **Activity: Experiments with Joins (continued)** |
| 14:50 | 15 m | BREAK |
| 15:05 | 30 m | **Activity: Experiments with Joins: SUMMARY**  Each group shares some of the insights they were able to derive by applying joins.  This section is “nice to have”, not essential, and as such can be used as a time buffer. |
| 15:35 | 20 m | **Lookup Formulas vs. Joins** |
| 15:45 | 15 m | **Joins**  Recap and quiz. |
| 16:00 | 10 m | **Wrap-up**  Mention anything learners should prepare for tomorrow.  End. |

## Day 3

|  |  |  |
| --- | --- | --- |
| Timings | Length | Topic |
| 09:30 | 80 m | **Activity: Introduction to Power Query**  The tutor should break this large activity into sections and check in with learners regularly.  Plenty of time has been allocated to this activity to ensure all learners have time to gain at least basic familiarity. |
| 10:50 | 15 m | BREAK |
| 11:05 | 85 m | **Activity: Introduction to Power Query (continued)**  The tutor should continue to check in with learners. |
| 12:30 | 60 m | LUNCH |
| 13:30 | 80 m | **Activity: Introduction to Power Query (continued)** |
| 14:50 | 15 m | BREAK |
| 15:05 | 75 m | **Activity: Introduction to Power Query (continued)** |
| 16:20 | 10 m | **Wrap-up**  End. |

# Scheme of Learning – Practise (Live Event)

The scheme of learning includes estimated timings alongside session details & activity guidance to support you in delivering this module.

## Day 1

|  |  |  |  |
| --- | --- | --- | --- |
| **Timing** | **Details**  How to facilitate the session, i.e., key points to say, do, ask. Include details of how the activity embeds relevant embedded skills and values | **Embedded Skills and Values**  Indicate the opportunities for embedding by [copy](#CopyandPaste)ing and pasting these icons into the text: | **Resources**  Reference to resources i.e., slide number, handouts etc. |
| **AM 9:30-10:00** | Introductions and Welcome  Share Day 1 files with learners.  Instruct learners to put cameras on and reiterate the importance i.e. safeguarding purposes.  Sign in learners in the sign-in QA system etc.  Some tutors may wish to establish a way to send each learner the updated files at the end of the module. E.g., email, Dropbox, Google Drive. This is not mandatory.  Summarise the day’s itinerary.  Summarise the KSBs (no need to read word-for-word). As this is only Module 2, it is not expected that all learners will be fully familiar with KSBs or the assessment process. The tutor may provide details here as they see fit.  **Recommended:** explain the difference between Assessment Methods 1 and 2. This is very important for learners to know as they compose their portfolios. | |  |  | | --- | --- | |  | Equality & diversity | |  | English | |  | Safeguarding | |  | Differentiation/  Stretch and challenge | |  | British values | |  | Maths | | A hand holding a person  Description automatically generatedA close up of a badge  Description automatically generated | Workplace application | |  | Soft skills | | “Module 2—From Data to Insight DAY 1 v3.pptx”  This slide deck is needed for all sections of Day 1. |
| **AM**  **10:00-10:50** | **CSV, XLSX, and JSON files**   * Recap and quiz. * The duration of this activity will depend on whether all learners have completed the online learning. * Provide key facts about the CSV, XLSX, and JSON file formats. This should recap the Online courseware and slightly expand on it. The slide notes in the PPTX file supply some supplementary facts. * The Knowledge Check quiz is intended to be conducted using the QA Ticks & Crosses web app. Tutors may use whatever medium they wish. * The tutor should feel free to teach this section dynamically. For example, if many learners get a specific question wrong, the tutor should spend some time teaching that topic. | |  |  | | --- | --- | |  | Maths | |  | | English | |  | | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | | Workplace application | |  |
|  | Break |  |  |
| **AM**  **11:05-11:45** | **Number formats in Excel**  Recommendation: teach this interactively via Screen Share.  Teach whatever concepts you deem appropriate for the group.  **For a list of recommended key points to cover, please see the slide notes in the PPTX file.**  **Stretch and Challenge.** After covering the key concepts, the tutor may find that some groups are able to proceed to scientific notation and Custom Number Formats. If there is only time to cover one of these, choose scientific notation, as learners will encounter this in Excel quite frequently. | |  |  | | --- | --- | |  | Maths | |  | | English | |  | | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | | Workplace application | |  |
| **11:45AM- 12:30PM** | **Conditional formatting in Excel**  Recommendation: teach this interactively via Screen Share.  **For a list of recommended key points to cover, please see the slide notes in the PPTX file.**  **Stretch and Challenge.** For advanced groups, the tutor might assign an extra challenge of their choice. For example, if the group knows how to use absolute and relative cell references (A1, A$1, $A1, $A$1), the tutor might challenge learners to use this notation in a custom formula in Conditional Formatting. | |  |  | | --- | --- | |  | Maths | |  | | English | |  | | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | | Workplace application | |  |
|  | **Lunch** |  |  |
| **PM**  **1:30-2:00** | **Excel Tables**  If the group is not experienced with Excel Tables, the tutor should deliver a brief introduction. Otherwise, the “Basic Filtering” activity may begin immediately. | |  |  | | --- | --- | |  | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | Workplace application | |  |
| **PM**  **2:00-2:50** | **Activity: Basic Filtering**   * A time-limited activity in which learners pick up the basics of filtering Excel Tables. The tutor may decide to spend a longer or shorter time here, depending on the group. * There is also an optional Advanced filtering activity, which can be used here, or at a later point during the live event. * Advanced learners will acquire the required knowledge in perhaps 10 minutes. These learners could move on to the optional **Advanced filtering** activity. * Less able learners will require the full 50 minutes and may need ongoing tutor support afterwards. | |  |  | | --- | --- | |  | Maths | |  | | English | |  | | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | | Workplace application | | “Learner Guide - Basic Filtering.pdf”  “Palmer Penguins.xlsx”  “Superstore.xlsx”  **OPTIONAL:**  “Learner Guide - Advanced Filtering.pdf”  “Data lists.xlsx” |
|  | **Break** |  |  |
| **PM**  **3:05-4:20** | **Activity: Formulas and functions**   * A group activity that focuses on working with Excel’s formulas and functions. * This activity is intended to provide an enjoyable end to Day 1. * The tutor should introduce the activity via Screen Share. For less advanced groups, the tutor may also want to walk the learners through the first step or two to give them the idea. | |  |  | | --- | --- | |  | Maths | |  | | English | |  | | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | | Workplace application | | A hand holding a person  Description automatically generated | | Soft skills | | “Learner Guide - Formulas and Functions.pdf”  “(Demo) Book Sales.xlsx”  “Species.xlsx”  “(Demo) Book Sales\_SOLUTIONS.xlsx”  “Species\_SOLUTIONS.xlsx” |
| **PM**  **4:20-4:30** | **Wrap-up**   * Congratulate the teams. * Mention anything learners should prepare for tomorrow. * End. |  |  |

## Day 2

|  |  |  |  |
| --- | --- | --- | --- |
| **Timing** | **Details**  How to facilitate the session, i.e., key points to say, do, ask. Include details of how the activity embeds relevant embedded skills and values | **Embedded Skills and Values**  Indicate the opportunities for embedding by [copy](#CopyandPaste)ing and pasting these icons into the text: | **Resources**  Reference to resources i.e., slide number, handouts etc. |
| **AM**  **9:30-10:50** | Welcome  Instruct learners to put cameras on  Share day 2 files  A brief welcome, then straight into the activity.  **Activity: Practice with XLOOUKP()**  Learners on Excel 2019 or earlier will study INDEX() and MATCH() instead of XLOOKUP(). The tutor will need to take these learners aside to brief them on the differences. This does not affect the total duration of the activity.  **Recommendation:** if there are any Excel 2019 or earlier learners, take them into a breakout room for 15 mins or so to cover INDEX() and MATCH() while the rest of the group is at work. | |  |  | | --- | --- | |  | Safeguarding | |  | Maths | |  | English | |  | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | Workplace application | | “Module 2—From Data to Insight DAY 2 v3.pptx”  This slide deck is needed for all sections of Day 2.  “Learner Guide - Practice with XLOOKUP.pdf”  “Superstore.xlsx” |
|  | **Break** |  |  |
| **AM**  **11:05-11:40** | **Activity: Guide to Joins**  The tutor has a PDF guide to work from. This teaches the mechanism of joins. The main teaching points should be:   * What joins are used for. * The join algorithm. * The four main types of join.   If the tutor favours a visual or interactive teaching style, “Joins Playground” is also provided. With this Excel file, both tutors and learners can experiment with joins and view the output instantly. | |  |  | | --- | --- | |  | Maths | |  | English | |  | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | Workplace application | | “Guide to Joins v1.pdf” |
| **11:40AM-12:30PM** | **Activity: Experiments with Joins**  Learners may work at very different paces, and some learners may make no progress at all until joins “click” for them. The tutor should be extra-attentive to ensure these learners receive assistance and are not left behind.  Recommended: introduce the activity over Screen Share.  Encourage the learners to use the supplied Excel tool “Joins Playground” to experiment with joins and enhance their understanding as they go.  The activity may be set as either an individual or group task at the tutor’s discretion.  The activity continues after lunch. | |  |  | | --- | --- | |  | Maths | |  | English | |  | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | Workplace application | | A hand holding a person  Description automatically generated | Soft skills | | “Learner Guide - .Joins Playground.pdf”  “Activity – Joins Playground.xlsx”  “Activity – Joins Playground SOLUTIONS.xlsx”  **Optional challenge activity:**  “Activity - Joins with Power Query.xlsx”  “Activity - Joins with Power Query SOLUTIONS.xlsx”  “Order data.xlsx” |
|  | **Lunch** |  |  |
| **PM**  **1:30-2:50** | **Activity: Experiments with Joins (continued)** |  |  |
|  | **Break** |  |  |
| **PM**  **3:05-3:35** | **Activity: Experiments with Joins: SUMMARY**   * Each group shares some of the insights they were able to derive by applying joins. * This section is “nice to have”, not essential, and as such can be used as a time buffer. * The tutor should check in with the groups to see what datasets they decided to join together and what insights they were able to draw as a result. * Each group is likely to have pursued a different analysis. This offers opportunity for the groups to learn from each other’s strategies. | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  | Maths | |  | |  | | |  | | English | |  | |  | | |  |
| **PM**  **3:35-3:55** | **Lookup Formulas vs. Joins**  The tutor should teach this section however they wish. A group discussion might work well. When is a lookup the best option? When is a join the best option?  **For a list of recommended key points to cover, please see the slide notes in the PPTX file.** | |  |  | | --- | --- | |  | Maths | |  | English | |  | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | Workplace application | |  |
| **PM**  **3:55-4:10** | **Joins**   * Recap and quiz. * Similar to previous knowledge checks. Ticks & Crosses recommended. |  |  |
| **PM**  **4:10-4:30** | **Wrap-up**   * Mention anything learners should prepare for tomorrow. * If there is still time left in the session, the tutor may wish to provide an introduction to PivotTables. Alternatively, the tutor can take questions, set a challenge activity, or use some of the original Module 2 Live Event content to fill the gap. * End. |  |  |

## Day 3

|  |  |  |  |
| --- | --- | --- | --- |
| **Timing** | **Details**  How to facilitate the session, i.e., key points to say, do, ask. Include details of how the activity embeds relevant embedded skills and values | **Embedded Skills and Values**  Indicate the opportunities for embedding by [copy](#CopyandPaste)ing and pasting these icons into the text: | **Resources**  Reference to resources i.e., slide number, handouts etc. |
| **AM**  **9:30-10:50** | Welcome  Instruct learners to put cameras on  Share day 3 files  A brief welcome, then straight into the activity.  **Activity: Introduction to Power Query**   * The tutor should break this large activity into sections and check in with learners regularly. * Plenty of time has been allocated to this activity to ensure all learners have time to gain at least basic familiarity. * The activity consists of a PDF guide. The guide is abundantly screenshotted, so most learners should be able to get through the § 1–4 relatively unassisted. * Later, as learners move on to § 5, the instructions become less “paint-by-numbers” and more “experiment and apply”. This is when questions are likely to start coming in. * Important: learners end up loving Power Query, but you have to get them past the initial, steep part of the learning curve. This should be the tutor’s focus. After that point, they will start teaching themselves. | |  |  | | --- | --- | |  | Safeguarding | |  | Maths | |  | English | |  | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | Workplace application | | “Module 2—From Data to Insight DAY 3.pptx”  This slide deck is needed for all sections of Day 2.  “Module 2-From Data to Insight DAY 3 LEARNERS.pdf”  “Introduction to Power Query v0.4.9.xlsx” |
|  | **Break** |  |  |
| **AM**  **11:05-12:30** | **Activity: Introduction to Power Query (continued)**   * The tutor should continue to check in with learners. * More learners will reach § 5 and later. Expect questions. * The tutor should keep track of the progress of each learner in the group and help any who seem to be struggling. | |  |  | | --- | --- | |  | Maths | |  | English | |  | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | Workplace application | |  |
|  | **Lunch** |  |  |
| **PM**  **1:30-2:50** | **Activity: Introduction to Power Query (continued)**   * By this point, the tutor should have acquired an accurate impression of each learner’s competence with Power Query. The tutor will also have administered one-to-one tuition as needed. * Most learners will now be ready to use Power Query in a practical activity. * If there are any learners who have not yet received a tutor check-in, now is a good time. | |  |  | | --- | --- | |  | Maths | |  | English | |  | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | Workplace application | |  |
|  | **Break** |  |  |
| **PM**  **3:05-4:20** | **Activity: Introduction to Power Query (continued)** | |  |  | | --- | --- | |  | Maths | |  | English | |  | Differentiation/  Stretch and challenge | | A close up of a badge  Description automatically generated | Workplace application | |  |
| **PM**  **4:20-4:30** | **Wrap-up**   * Congratulate the teams on their achievements. * Wrap up as usual. * End. |  |  |