



An Bord Oideachais agus Oiliúna Chathair Bhaile Átha Cliath
City of Dublin Education and Training Board

Programme Module

Introduction to Spreadsheets

leading to

Level 3 QQI Component: Spreadsheets 3N0542

Please note the following prior to using this programme module descriptor:

- This programme module can be delivered as a stand alone module or as part of the:
 - 1. Level 3 QQI Certificate in General Learning 3M0874**
 - 2. Level 3 QQI Certificate in Employability Skills 3M0935**
 - 3. Level 3 QQI Certificate in Information and Communication Technologies 3M0877.**
- Upon successful completion of this programme module a learner will achieve 10 credits towards the Level 3 QQI Certificates in General Learning, Employability Skills or Information and Communication Technologies
- The learner needs to accumulate a minimum of 60 credits in order to achieve the Level 3 QQI Certificates in General Learning, Employability Skills or Information and Communication Technologies
- Teachers/tutors should familiarise themselves with the information contained in CDETb's programme descriptor for Everyday Living Skills, Skills for the Workplace or Introduction to Information and Communication Technologies prior to delivering this programme module
- In delivering this programme module teachers/tutors will deliver class content in line with the Guidelines for Teaching and Learning included in this programme module
- In assessing the learner, teachers/tutors will assess according to the information included in this programme module. Teachers/tutors are required to devise Assessment Brief/s for the Collection of Work and Skills Demonstrations
- Where overlap is identified between the content of this programme module and one or more other programme module(s), teachers/tutors are encouraged to integrate the delivery of this content
- Where there is an opportunity to facilitate the learner to produce one piece of assessment evidence which demonstrates the learning outcomes from more than one programme module, teachers/tutors are encouraged to integrate assessment.

Overview of the Programme Module

The Programme Module is structured as follows:

Section 1 to 8: contains important information for the teacher/tutor about the credit value, title, code, etc. of the programme module.

Section 9: details the learning outcomes prescribed for the programme module by QQI. These outcomes are set by QQI and cannot be changed in any way by the CDETb or individual teachers/tutors.

Section 10: outlines suggestions and guidelines for teaching the module. It contains useful information and ideas for teachers/tutors and can be helpful in clarifying learning outcomes.

Section 11: contains the relevant information in relation to the assessment of the module. As the teacher/tutor is the assessor of the work, this section is essential reading.

Section 11a specifically prescribes the way in which learners are required to present evidence for assessment.

Learner Marking Sheet: this is the marking sheet that must be attached to the assessment portfolio and signed by the teacher/tutor and the learner.

Programme Module	Award
1. Title of Programme Module Spreadsheets	2. Component Name and Code Spreadsheets 3N0542
3. Duration in Hours of Programme Module 100	4. Credit Value 10
5. Assessment Technique Collection of Work 60% Skills Demonstration 40%	6. Specific Requirements The learner must have access to a fully functioning computer with the appropriate software applications
7. Aims of the Programme Module This programme module aims to equip the learner with a range of skills in using a spreadsheet application for use in their social, personal and work life and to encourage the Learner to have the confidence to use these skills in their daily lives. 8. Objectives: <ul style="list-style-type: none"> • to learn about a spreadsheet application, its uses and features • to use a spreadsheet application software to create, edit and store appropriate data • to explore the use and application of a range of features and functions to limit the reproduction of data entry • to explore the use of formula when performing simple calculations in a spreadsheet • to improve the presentation of a spreadsheet for printing and viewing on the screen using formatting techniques. 	
9. Learning Outcomes of Level 3 Spreadsheets 3N0542 The learner will be able to: <ol style="list-style-type: none"> 1. outline the significance of using spreadsheet applications in terms of their common uses and features 2. explain rudimentary terminology associated with spreadsheets including workbook, worksheet, cell, tab, formula, filtering, sorting, function, and chart 3. use a spreadsheet application to open an existing workbook, access a worksheet, print a hardcopy of the worksheet and exit the application 4. enter data to a spreadsheet to include formatting rows and columns, applying data formats, inserting and deleting rows, columns and worksheets, and moving information within the worksheet 5. use formulae to perform simple calculations including addition, subtraction, multiplication and division 6. produce a hardcopy printout from a spreadsheet taking all required steps including creating a workbook, entering data into a worksheet, applying suitable formatting, previewing and printing the cell range, saving the workbook, and closing the spreadsheet application 7. apply appropriate health, safety and personal hygiene procedures when working in an ICT environment. 	
Delivery Strategies and Learning Activities The programme module could be delivered through classroom-based learning activities, team work, group discussions, one-to-one tutorials, field trips, case studies, role play and other relevant activities. There are practical elements to this module requiring access to a range of materials, resources and equipment and the learner should be allocated adequate time and facilities to complete each task. All practical activities should exemplify safe working practices and reinforce standard health, safety and environmental concerns.	
10. Guidelines for Teaching and Learning Please note: the following guidelines suggest a sequence for the teaching of this module. In some cases, this may differ from the sequence of learning outcomes as outlined in section 9.	

Unit 1: Health and Safety Procedures

1. Health and Safety Procedures

- Discuss with the learner the measures that can be taken to help create a healthy, safe and hygienic working environment when using computers, for example:
 - ensure the appropriate positioning of monitor, keyboard and mouse
 - ensure the appropriate positioning of the material being worked from
 - ensure correct posture when sitting in front of a computer
 - use an adjustable height chair
 - ensure there is adequate light where work is being undertaken
 - ensure there is adequate ventilation
 - take frequent breaks away from the computer
 - ensure that power cables are carefully placed so as not to be in the way of others
 - ensure that power points are not overloaded
 - place personal belongings such as bags out of the way of others when using the computer
 - maintain all I.T. equipment appropriately and any equipment not working correctly should be removed until it is fixed
 - do not consume any food or drink when around the computer
 - clean the keyboard, mouse and other computer hardware elements regularly
 - wash your hands before and after handling the keyboard or mouse.
- Facilitate the learner to apply these measures when using the spreadsheet application to create spreadsheets.

Unit 2: Spreadsheet Uses and Features

2. Spreadsheet Uses and Features

Explore with the learner the significance of using spreadsheets including the reduction of repetition of tasks involving calculations. Setting up a spreadsheet can save time as it does not need to be set up each time you want to perform calculations, once it is setup it can be reused. Spreadsheets can also be changed and resaved. Spreadsheets can produce charts allowing for easier reading of data. (A picture tells a thousand words.) Explain that these features are available in free open source spreadsheets, online spreadsheets and commercially purchased spreadsheets.

2.1 Explain the uses of spreadsheets

- Spreadsheets are used for calculations. Spreadsheets can reduce repetition of tasks involving calculations (i.e. saving and reusing spreadsheets).
- Spreadsheets are used in a wide variety of professions and jobs, from engineers and accountants, administrative work and personal use.
- Examples include;
 - Listing information for e.g.,
 - Product and price lists, Employee lists of names, addresses and contact details, Shopping Lists, etc.
 - Calculation Spreadsheets
 - Household and Business Budgets, Timesheets, Invoices, Credit Notes, Petty Cash, Sales Figures, creation of charts for easier reading of data, Accounting Balance Sheets, Profit & Loss accounts, etc.

2.2 Explain the common features of a spreadsheet

- The inclusion of tools for opening existing files and saving files for reuse.
- The inclusion of tools for inserting, deleting data and spell checking data entered.

- The inclusion of tools for formatting data in terms of changing font styles, font sizes and applying features such as bold, italic and underlining, applying data types.
- The inclusion of tools for copying, cutting and pasting data.
- The inclusion of tools for page layout, page previewing and printing files.

Unit 3: Terminology

3. Terminology

With the learner explain the terminology that is used when using spreadsheets. Explain that these features are available in free open source spreadsheets, online spreadsheets and commercially purchased spreadsheets.

3.1 Structure of a spreadsheet

- Spreadsheets files are called workbooks.
- Each workbook is organised into worksheets. Worksheets can be inserted and deleted as needed. Each worksheet has a name located in the tab.
- Spreadsheets are organised in a grid structure consisting of columns and rows. Columns are denoted by letters, rows are denoted by numbers.
- Each rectangle on the screen is called a cell.
- Each cell has a cell address/reference denoted by the column letter and then the row number, for example, A1, C20, D12, etc.
- To enter data click on a cell and type the data.

3.2 Types of Data in a Spreadsheet

- Explain that these features are available in free open source spreadsheets, online spreadsheets and commercially purchased spreadsheets.
- Explain to the learner that there are three types of data that can be entered into a spreadsheet:
 - Labels or Text
 - Labels denote what type of numbers or calculations are displayed under a column heading or on a row. Labels may consist of both numbers and letters
 - Examples include Name, Month, Total, Average, Product A1, Product A2
 - Numbers
 - There are different types of numbers that can be entered into a spreadsheet
 - Examples include integers, decimals, currency and percentages
 - Formula and Functions
 - Formula and Functions are used to perform calculations
 - They always begin with an = sign
 - If an = sign is not entered, the formula will be displayed as text and the answer to the calculation will not be calculated.
- The learner should be able to:
 - interpret a spreadsheet formula
 - give examples of formula
 - explain the structure of a formula calculation
 - explain that cell addresses are used in a calculation and not the numbers in the cells
 - explain and demonstrate the mathematical symbols used in a formula:
 - =A1+A2, =B1-B2, =A1*G4, =D3/A3
 - a formula always begins with an equals sign (=)
 - the following mathematical symbols are used in formula
 - minus, take away, subtract

- + plus, add
- * multiply, multiplication, product
- / divide, division.

- The learner should understand the limitations of using simple formula for example, we may want to add 100 numbers, using the formula method to add these numbers is tedious, will take too long and is open to data entry errors.
- The learner should be made aware of using Functions in spreadsheets whereby a range of cells to add can be entered rather than each cell individually.
- Give an example of using the SUM function. For example, =A1+A2+A3+A4.....+A100 compared to =SUM(A1:A100).
- Explain that functions are denoted by keywords and have syntax rules to determine how they are structured.

3.3 Charts

The learner should understand that spreadsheets have a chart facility. Basic chart types include bar, column, pie and line charts. The learner should understand that it is easier to read a chart compared to a list of numbers as spreadsheets can become large. These features are available in free open source spreadsheets and online spreadsheets.

3.4 Filtering and Sorting Data

The learner should understand that spreadsheets can become large and it may be difficult to see all data on the screen at the same time. The learner should understand that spreadsheets can be filtered to limit the display of data on the screen or to be printed. The learner should also understand that data can be sorted into alphabetical / numerical, ascending / descending order to make it easier for data to be read from the screen or on a printout. These features are available in free open source spreadsheets and online spreadsheets.

Unit 4: Using the Spreadsheet

4. Using the Spreadsheet

Facilitate the learner to use a spreadsheet application to produce spreadsheets that may be used for work and personal uses, for example, a household budget, a sales figures spreadsheet, a timesheet showing calculations of weekly wages, an invoice/credit note or other business document and other spreadsheets of interest to the learner.

4.1 Accessing a spreadsheet application

Facilitate the learner accessing a spreadsheet application, for example, Microsoft Excel, Open Office Calc (Open Office – free open source software), Google Spreadsheets (free Google Apps), Lotus 1-2-3, etc:

- If using free open source software such as Open Office, demonstrate how to download the Open office suite of software onto the learner's computers. The learner should be capable of doing this outside of the classroom environment.
- If using the spreadsheet application from Google Apps, for example, demonstrate to the learner how to sign up and use Google Docs. The learner should be capable of doing this outside of the classroom environment.

4.2 Basic file tasks

- Review with the learner the basic file handling options in a spreadsheet:
 - accessing a spreadsheet application from the Start menu and the desktop icon
 - accessing an online spreadsheet application (if applicable to software used, for e.g. Google Docs)
 - creating a new spreadsheet from toolbars / icons / menu options
 - opening an existing spreadsheet from toolbars / icons / menu options
 - saving / renaming a spreadsheet from toolbars / icons / menu options
 - closing a spreadsheet from toolbars / icons / menu options.

4.3 Data Entry

Facilitate the learner to create a number of spreadsheets beginning with a simple layout leading to a spreadsheet existing of up to 6 columns and 6 rows, including label headings and blank rows.

- Enter a range of data into a new spreadsheet using an appropriate layout taking into account column and row labels and blank rows/columns
- Enter a range of data into an existing spreadsheet
- Delete data in a cell
- Use the mouse to select the correct cell to enter data
- Widen columns to view data larger than the cell
- Insert / delete rows and columns
- Insert / delete / rename worksheets
- Apply data formats, for example, currency, dates, percentages, etc.
- Formatting rows and columns including applying
 - font styles and sizes
 - applying bold, italic and underlining to data
 - aligning text to the left, centre, right
 - merge cells (for e.g., in a spreadsheet heading)
- Cutting / copying and pasting data within a worksheet using one of the following methods - the icon method, right click method or keyboard shortcut method.

4.4 Performing simple calculations

Facilitate the learner to complete the following tasks:

- perform a simple calculation involving addition of a row and a column
 - Click the cell where you want to display the answer and enter the formula
 - = A1+A2+A3+A4+A5, = B1+C1+D1+E1 for example
 - Note the letter or number change
- perform a simple calculation involving subtraction in a row and a column
 - Click the cell where you want to display the answer and enter the formula
 - = A5 – A4, = C3 – D3 for example
 - Note the letter or number change
- perform a simple calculation involving multiplication in a row and a column
 - Click the cell where you want to display the answer and enter the formula
 - = B3 * B5, = D2 * E2 for example
 - Note the letter or number change
- perform a simple calculation involving division in a row and a column
 - Click the cell where you want to display the answer and enter the formula
 - = B3 / B5, = D3 / E2 for example
 - Note the letter or number change.

4.5 Saving and Printing a spreadsheet

Explain the importance of giving a spreadsheet a meaningful name so it is easy to find the spreadsheet to use again. Explain to the learner that a spreadsheet can become large and may not fit onto one page if printed in portrait. Explain the benefits of printing in landscape – less paper used, easier to read the data. Explain the use of setting a print area in a spreadsheet before printing.

Complete the following tasks:

- spell check and proofread the spreadsheet
- insert borders / grid to improve reading of the hard copy of the spreadsheet
- name a spreadsheet with a suitable file name
- save a spreadsheet onto the hard drive
- save a spreadsheet onto a removable storage device, for example, a memory stick.

- preview the spreadsheet before printing and determine if a spreadsheet page layout needs to be adjusted
- set up the spreadsheet to print in portrait and landscape
- set print area before printing
- printing a spreadsheet
- printing a cell range in a spreadsheet.

11a Specific Information Relating to the Assessment Techniques

The assessor (teacher/tutor) is required to devise Assessment Brief/s for the Collection of Work and Skills Demonstration. In devising the Assessment Brief/s, care should be taken to ensure that the learner is given the opportunity to show evidence of ALL learning outcomes. Each learner is required to work alone in completing the Collection of Work. There is no facility for this Collection of work to be completed as a group.

Evidence that the learner has achieved the learning outcomes may take a variety of forms including tutor verification of the learner's contribution, learner's worksheet, diagrams, cloze tests, multiple choice statements, visual presentation or another appropriate evidence in the form of written, oral, graphic, audio, visual or any combination of these. Any audio or visual evidence must be provided in a suitable format. All of the evidence must be retained in the learner's assessment portfolio.

Collection of Work	60%
<p>The Collection of Work may be produced throughout the duration of this programme module. It must be clearly indicated where evidence covers more than one learning outcome.</p>	
<p>The learner will compile a Collection of Work to include a minimum of 5 spreadsheets for digital and hard copy. The collection should include at least 3 spreadsheets that could work related and at least 1 spreadsheet for personal use.</p> <p>In producing the spreadsheets for the Collection of Work, the learner should demonstrate the following:</p> <ul style="list-style-type: none"> • Design of the spreadsheet in terms of layout, labels used and formatting techniques to make data clear and easy to read • Correct data entry from a given spreadsheet with no errors • Editing of data on a spreadsheet • Appropriate application of a range of data types including at least one of the following - date, currency, decimals and percentages • Simple calculations using addition, subtraction, multiplication and division • Replication of formula • The insertion/deletion of rows and columns in an existing/new spreadsheet • The insertion/deletion of a worksheet in an existing/new spreadsheet • Moving data within a spreadsheet • Enter name of candidate and date on each spreadsheet before saving printing • Saving spreadsheets in an appropriate folder structure with meaningful naming conventions • Spell checking, proofreading and previewing spreadsheets before producing a hard copy • Printing in portrait and landscape • Printing specified cell ranges • Printing with borders/grid. <p>In the Collection of Work the learner will also include evidence of being able to:</p> <ul style="list-style-type: none"> • Outline the significance of using a spreadsheet application • Outline the common uses and features of a spreadsheet application • Explain the key terminology associated with spreadsheet applications • Distinguish between the different types of data entered into a spreadsheet • Outline the benefits of using functions over formula. 	

Skills Demonstration	40%
<p>The learner will complete two skills demonstrations at appropriate intervals during the programme and will be allowed 20 minutes per skills demonstration. Evidence of the Skills Demonstrations must be included in the assessment portfolio. The evidence may be photographs, video, audio or digital evidence, or other appropriate evidence of the learner completing the tasks.</p>	
<p>In carrying out the following Skills Demonstration/s, the learner will complete the following tasks:</p> <p>Skills Demonstration 1 (20%)</p> <ul style="list-style-type: none"> • Opening an existing spreadsheet provided on removable media or in a designated exam folder on the local hard disk • Insert a row/column and enter specified data (labels, numbers) ensuring formatting conventions of existing spreadsheet are followed • Delete a row/column • Apply appropriate data type formatting, at least 2 different types of data in the spreadsheet • Spell check and proofread the spreadsheet, correcting at least 2 deliberate spelling mistakes • Change the page orientation before printing • Save the spreadsheet on removable disk or specified folder location on the local disk • Print a specified range of data (set print area) • <i>Note: the candidate must enter their name and the date of assessment at the end of the spreadsheet</i> • <i>All printouts must be signed by the candidate.</i> <p>Skills Demonstration 2 (20%)</p> <ul style="list-style-type: none"> • Create a new spreadsheet • Enter given data into the spreadsheet following exact layout design given (at least 4 columns by 6 rows) • Perform at least two simple calculations on data from the following - addition, subtraction, multiplication, division • Format data using two out of the following - bold, italic, underlined • Align data using at least 2 alignment types - left, centre, right • Merge the spreadsheet heading • Spell check and proofread the spreadsheet • Save the spreadsheet onto removable storage /specified folder location on the local disk • Print the spreadsheet in portrait • <i>Note: the candidate must enter their name and the date of assessment at the end of the spreadsheet</i> • <i>All printouts must be signed by the candidate.</i> <p>Evidence of this Skills Demonstration must include the completed file on an appropriate storage device and in print out form.</p>	

11b Assessment – General Information – Spreadsheets 3N0542

All instructions for the learner should be clearly outlined in an Assessment Brief.

Mapping Each Learning Outcome to an Assessment Technique	
Learning Outcome	Assessment Technique
1. Outline the significance of using spreadsheet applications in terms of their common uses and features.	Collection of Work
2. Explain rudimentary terminology associated with spreadsheets including workbook, worksheet, cell, tab, formula, filtering, sorting, function, and chart.	Collection of Work
3. Use a spreadsheet application to open an existing workbook, access a worksheet, print a hardcopy of the worksheet and exit the application.	Collection of Work Skills Demonstration
4. Enter data to a spreadsheet to include formatting rows and columns, applying data formats, inserting and deleting rows columns and worksheets, and moving information within the worksheet.	Collection of Work Skills Demonstration
5. Use formulae to perform simple calculations including addition, subtraction, multiplication and division.	Collection of Work Skills Demonstration
6. Produce a hardcopy printout from a spreadsheet taking all required steps including creating a workbook, entering data into a worksheet, applying suitable formatting, previewing and printing the cell range, saving the workbook, and closing the spreadsheet application.	Skills Demonstration
7. Apply appropriate health, safety and personal hygiene procedures when working in an ICT environment.	Collection of Work

Grading

At Level 3 a Learner is graded as Successful or Referred.

Successful means that ALL the learning outcomes from the Component Specification have been demonstrated to an appropriate standard in the Learner's portfolio of assessment.

Referred means that the portfolio of assessment needs further work by the Learner before s/he can demonstrate the standard and achieve certification from QQI.



Level 3 Spreadsheets 3N0542

Learner Marking Sheet

Learner's Name: _____

Learner's PPSN: _____

The learner will be able to:	Evidence of the following is included in the assessment portfolio:	✓ If present in portfolio	Please indicate where evidence is to be found
1. Outline the significance of using spreadsheet applications in terms of their common uses and features.	<ul style="list-style-type: none"> • Outline the significance of using a spreadsheet application • Outline common uses of a spreadsheet application • Outline common features of a spreadsheet application 		
2. Explain rudimentary terminology associated with spreadsheets including workbook, worksheet, cell, tab, formula, filtering, sorting, function, and chart.	Explain the following terminology: <ul style="list-style-type: none"> • Workbook • Worksheet • Tab • Cell • Cell address/reference • Formula • Function • Filtering data • Sorting data • Charts 		
3. Use a spreadsheet application to open an existing workbook, access a worksheet, print a hardcopy of the worksheet and exit the application.	<ul style="list-style-type: none"> • Open an existing spreadsheet from a removable disk and/or hard drive • Enter basic data into the spreadsheet • Save a spreadsheet with correct naming convention • Print a hardcopy of a spreadsheet in portrait and landscape • Close a spreadsheet and exit the application 		
4. Enter data to a spreadsheet to include formatting rows and columns, applying data formats, inserting and deleting rows columns	Learners are to create at least 5 spreadsheets to include work related and personal use. Use combinations of the following steps: <ol style="list-style-type: none"> 1. Spreadsheet creation <ul style="list-style-type: none"> • Create a new spreadsheet 		

<p>and worksheets, and moving information within the worksheet.</p>	<ul style="list-style-type: none"> • Enter data into a spreadsheet • Apply data types to specified data 2. Inserting/Deleting <ul style="list-style-type: none"> • Insert a row(s) and a column(s) • Delete a row(s) and a column(s) • Insert a new worksheet • Rename a worksheet 3. Moving data within a spreadsheet <ul style="list-style-type: none"> • Cut data in a spreadsheet and paste it to another location in the spreadsheet • Copy data in a spreadsheet and paste it to another location in the spreadsheet • Cut/Copy data in one worksheet and paste it to another worksheet 4. Apply formatting <ul style="list-style-type: none"> • Change font sizes and font styles within a spreadsheet • Applying Bold, Italic and Underlining to text • Merge spreadsheet headings 5. Printing <ul style="list-style-type: none"> • Print in landscape and portrait • Print specified cell range 		
<p>5. Use formulae to perform simple calculations including addition, subtraction, multiplication and division.</p>	<p>Incorporate simple calculations:</p> <ul style="list-style-type: none"> • Addition (at least 4) • Subtraction (at least 4) • Multiplication (at least 2) • Division (at least 2). 		
<p>6. Produce a hardcopy printout from a spreadsheet taking all required steps including creating a workbook, entering data into a worksheet, applying suitable formatting, previewing and printing the cell range, saving the workbook, and</p>	<p>Produce 2 spreadsheets using a combination of the following criteria:</p> <ul style="list-style-type: none"> • Access and open or create a spreadsheet application • Enter data according to specification • Format data according to specification (at least 2) • Align data to specification (at least 2) • Merge data to specification (at least 1) • Apply data types to specification (at least 2) 		

closing the spreadsheet application.	<ul style="list-style-type: none"> ● Insert row(s) or column(s) ● Delete row(s) or column(s) ● Insert a worksheet ● Save spreadsheet on a local hard disk in an appropriate folder and/or removable disk ● Preview the spreadsheet before printing, adjust as necessary ● Change page orientation ● Spell check and proofread the spreadsheet ● Print specified cell range 		
7. Apply appropriate health, safety and personal hygiene procedures when working in an ICT environment.	<ul style="list-style-type: none"> ● Apply appropriate health procedures when working with a computer ● Apply appropriate safety procedures when working with a computer ● Apply appropriate personal hygiene procedures when working with a computer. 		

This is to state that the evidence presented in the attached portfolio is complete and is the work of the named learner.

Learner's Signature: _____

Date: _____

Assessor's Signature: _____

Date: _____

External Authenticator's Signature: _____

Date: _____