

BWJS COMPUTING

Making a Spreadsheet Year Four

Unit Overview

This unit introduces children to using spreadsheets through Microsoft Excel.

Children will cover:

- Reading data from different pages in a spreadsheet file.
- Editing data in an existing spreadsheet.
- Creating simple spreadsheet documents using data they have collected or been supplied with.
- Creating simple graphs based on data they have inputted.
- Using a range of simple formulas to manipulate information within a spreadsheet.

Expectations	Curriculum Links	Prior Skills
<p>Children will be able to read and edit a spreadsheet they have been given. They will be able to create a spreadsheet by inputting data into cells and create a graph from this data.</p> <p>Children be be able to use simple formulas to manipulate the data within a spreadsheet.</p>	<p>This unit is based on the former spreadsheet unit we taught in Year 4. The former unit was related to a science unit called 'Keeping It Warm', and it allowed children to map science results gathered during experimentation. To make best use of this unit, tie it into science, or into data handling within maths.</p>	<p>Children may have some previous experience of data handling software, but they will not have used Excel in school before. Children should have prior experience of using charts and graphs within maths.</p> <hr/> <p>Software Used</p> <ul style="list-style-type: none">- Microsoft Excel

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Assessment Strands Relevant to this Unit

IT

Bronze	Silver	Gold
<p>Understand that you need a username and password to log on to an ICT system.</p> <p>Understand that your username and password is private.</p> <p>Be able to log on to an ICT system independently.</p> <p>Understand that ICT communications must be used appropriately.</p> <p>Save files to a specific location.</p> <p>Create a folder</p>	<p>Understand that passwords should be difficult to guess.</p> <p>Understand how to use ICT communications appropriately.</p> <p>Report inappropriate use of ICT communications.</p> <p>Copy or move files to new locations and rename them.</p> <p>Transfer files from a device to a computer.</p>	<p>Understand that passwords can be made of numbers, letters and symbols.</p> <p>Create your own online account.</p> <p>Independently organise files.</p> <p>Transfer files from a device to a computer in an organised way.</p>

Handling Data

Bronze	Silver	Gold
<p>Add data to a spreadsheet or database.</p> <p>Create a simple graph.</p> <p>Create a simple spreadsheet or database from scratch.</p> <p>Sort information in a spreadsheet or database.</p>	<p>Use a simple formula (+ / -) within a spreadsheet.</p> <p>Format a spreadsheet.</p> <p>Present data using an appropriate, labelled graph.</p>	<p>Use a wider range of formulas within a spreadsheet.</p> <p>Alter the format of specific cells.</p> <p>Collect data and present it using a spreadsheet, database or graph independently.</p>

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	Learning Objectives	Key Skills	Concepts	Lesson Content
	<i>The first lesson of this unit uses example resources that I have created. The question sheets will need printing before the lesson begins. You may want to tie this first session into a maths unit. The questions may need differentiating to the abilities of the children in your class. The example spreadsheet will need to be placed in Student Resources so your class can access it. Make sure the document is 'Read Only' so children can't change it.</i>			
1	<ul style="list-style-type: none"> - To open a spreadsheet and find information. 	<ul style="list-style-type: none"> - Open MS Excel. - Open an existing spreadsheet. - Move between sheets in a spreadsheet. 	<p>A spreadsheet allows you to present tables of data quickly and easily.</p> <p>Key vocabulary: row, column, cell.</p>	<p>Open the Lesson One example spreadsheet. Talk through the necessary vocabulary for spreadsheet work: column, row and cell. Show that each spreadsheet actually works as a book with separate pages, and show how to move between the pages.</p> <p>Brainstorm purposes of a spreadsheet.</p> <p>Children to load the example spreadsheet from the LearnersPool and interrogate it using provided questions.</p>
	<i>As with lesson one, example resources will need to be prepared before this lesson.</i>			
2	<ul style="list-style-type: none"> - To enter and change information in a spreadsheet cell. 	<ul style="list-style-type: none"> - Enter data into a spreadsheet. - Edit information in a spreadsheet cell. - Insert a row or column. - Save a spreadsheet. 	<p>A spreadsheet allows you to make changes to your information quickly and easily.</p> <p>When you are making changes to an existing document, you may want to 'Save As' instead of 'Save'. This means the old version of the document will not be replaced.</p>	<p>Open the example spreadsheet. Remind children how to navigate the sheet using arrow keys and mouse. Show what happens when you type into a cell, and when you type into a cell that already contains text (the existing text will be replaced - to edit text inside a cell, press F2). Show them how to insert a column or a row.</p> <p>Children to lead the example spreadsheet from the Student Resources and follow the instructions in modifying and correcting the information. Save the document with changes into 'My Documents' (use Save As for this – remind children why this is an important distinction to make!)</p>

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	<p><i>There is example data which can be used for this lesson, but it will have more of an impact if the data you are using is real, and relates to something from elsewhere in the curriculum. It may take time to collect this data – this may require another lesson, or it may be something that can be done in a maths or science lesson (for instance). In an ideal world, collect (or supply) a set of data which can be added to make a total – otherwise the final part of the lesson won't work!</i></p>			
3	<ul style="list-style-type: none"> - To create a simple spreadsheet of rows and columns. 	<ul style="list-style-type: none"> - Create a new spreadsheet. - Adjust column widths. - Format the appearance of spreadsheet cells. - Use a 'Sum' formula. 	<p>Using a formula in a spreadsheet allows you to make changes to your data which will then automatically update the total (or product, or whatever your formula will find).</p>	<p>Open a blank spreadsheet. Remind children of how a spreadsheet is laid out. Today, children need to input information into a spreadsheet of their own. Using data they have collected, or data you have supplied, children need to give two column headings, then fill in the relevant information. Allow children time to do this, and time to check their information is correct. (Children may vary the presentation of their spreadsheets slightly – this isn't a problem). Show children how to adjust their column widths to ensure all data fits within the columns. Once children have created their spreadsheets, allow them the chance to format the cells if time allows (colours, fonts, etc). At the end of the lesson, show children how to create a total from their data using the 'Sum' formula. Look at how the formula is written in the bar at the top of the sheet. Why is it better to use a formula for this function?</p>
	<p><i>This lesson requires demonstrating how to make a graph. For this, you will need an example spreadsheet. A spreadsheet for the information supplied last week is available.</i></p>			
4	<ul style="list-style-type: none"> - To present information as a bar graph. - To print work from a spreadsheet. 	<ul style="list-style-type: none"> - Present the information in a spreadsheet as a bar graph. - Add labels to a graph. - Print a spreadsheet and graph. 	<p>A graph created from a spreadsheet will be forever tied to the data it comes from – if the data is subsequently changed, the graph will change automatically to reflect the difference.</p>	<p>Open a spreadsheet from last week's session. Demonstrate how to run through the chart wizard to create a bar graph (the programme refers to these as 'column' graphs). Children to open their spreadsheets from last week and run through the chart wizard for themselves. Show children how to format the area of their graph, adding labels, etc. Demonstrate printing the spreadsheet and graph – allow children time to do this.</p>
	<p><i>You may want to repeat the session above so children have the opportunity to create more than one graph, especially if you have data to hand which can be used for this purpose. If doing so, you may want to investigate a different graph type – line graph instead of bar graph, etc.</i></p>			

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5	<ul style="list-style-type: none"> - To use a range of formulas in a spreadsheet. 	<ul style="list-style-type: none"> - Write formulas in a spreadsheet for the four operations. 		<p>Open the example spreadsheet for lesson 5. Children should recognise the concept as a 'Number of the Week' type task from their morning task time. What happens if the number is changed? (The four answers all change.) Why does this happen? (Children should realise that this is because the answers are linked to a formula.)</p> <p>Look at the typed content of the answer cells. What do they have in common, and how are they different? Children should see that the =(A3) is common to each cell – what is meant by A3? What do you notice about the operation commands? Talk especially about how multiplication and division are shown (* and /).</p> <p>Children to create their own 'Number of the Week' style sheet.</p>
6	<ul style="list-style-type: none"> - To write formulas into a spreadsheet which involve a variety of cells. 	<ul style="list-style-type: none"> - Write formulas in a spreadsheet referring to more than one cell. 		<p>Open the example spreadsheet for lesson 6. Children should recognise the concept as a Times Table grid. What happens if we change one of the numbers in the black edges? (The contents of the grid change). After last week's work, children should be able to see this link. Can children guess the formula needed for one of the interior boxes? Check answers by examining the cell. Can children follow this formula idea to create their own Times Table grid? Differentiate by number of X tables to be included.</p>