



# **Computing Scheme of Work**

## **Unit 3.3 –**

## **Spreadsheets**



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# Introduction

2Calculate is a simple-to-use spreadsheet (and more!) for beginners and beyond.

A user guide can be found at [2Calculate User Guide](#).

The following guide contains a Scheme of Work for teaching the use of spreadsheets as part of the Computing curriculum. It uses some content from the lessons within 2Calculate and some new content.

The lessons show a progression of knowledge and skills from lesson to lesson and year to year. Children who have not used 2Calculate before should use the crash course lesson plans instead of this unit. Teachers who are not familiar with the tools in 2Calculate might find reviewing the lessons for younger children helpful to build up their own knowledge.

The lessons assume that children are logged on to Purple Mash with their own individual usernames and passwords, so their work will be saved in their own folders automatically and can be easily reviewed and assessed by the class teacher.

If you are currently using a single login per class or group and would like to set up individual logins yourself, then please see our guide to doing so at [Create and Manage Users](#). Alternatively, please contact support at [support@2simple.com](mailto:support@2simple.com) or 0208 203 1781.

If children have not used and logged on to Purple Mash before, then they will need to spend some time learning how to do this before starting these lessons. Young children can be supported by having their printed logon cards (produced using [Create and Manage Users](#)) to hand.

**Note:** To force links within this document to open in a new tab, right-click on the link and then select 'Open link in new tab'.



# Medium-Term Plan

Lesson	Title	Success Criteria
<u>1</u>	Creating Pie Charts and Bar Graphs	<ul style="list-style-type: none"> <li>Children can create a table of data on a spreadsheet.</li> <li>Children can use a spreadsheet program to automatically create charts and graphs from data.</li> </ul>
<u>2</u>	Using more than and Spin Button Tools	<ul style="list-style-type: none"> <li>Children can use the 'more than', 'less than' and 'equals' tools to compare different numbers and help to work out solutions to calculations.</li> <li>Children can use the 'spin' tool to count through times tables.</li> </ul>
<u>3</u>	Advanced Mode and Cell Addresses	<ul style="list-style-type: none"> <li>Children can describe a cell location in a spreadsheet using the notation of a letter for the column followed by a number for the row.</li> <li>Children can find specified locations in a spreadsheet.</li> </ul>

## Differentiation

The use of spreadsheets has a strong link to mathematics. Some children might have difficulty with the mathematical concepts in some lessons and might need guidance with this aspect. For example, in lessons where spreadsheets are being used to add up prices, children who are not familiar with converting pence (45p) to pounds (£0.45) might need this aspect explained in more detail. In lessons dealing with percentages and fractions, some children might need extra support for the mathematical concepts.

Where appropriate, guidance has been given on how to simplify tasks within lessons or challenge those who are ready for more stretching tasks.

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# Lesson 1 – Creating Pie Charts and Bar Graphs

## Aims

- To add and edit data in a table layout.
- To find out how spreadsheet programs can automatically create graphs from data.

## Success Criteria

- Children can create a table of data on a spreadsheet.
- Children can use a spreadsheet program to automatically create charts and graphs from data.

## Resources

Unless otherwise stated, all resources can be found on the [main unit 3.3 page](#). From here, click on the icon to set a resource as a 2do for your class. Use the links below to preview the resources; right-click on the link and 'open in new tab' so you don't lose this page.

**\*You need to have collected data already or decide what data to use with the class and how you organise data collection.**

- [Bird Data file \(challenge activity 1\)](#).
- [Cars Data files \(challenge activity 2\)](#).

## Activities

Introduction	Display <b>slide 2</b> and outline the lesson aims. Display <b>slide 3</b> and outline the success criteria.
Background: Creating Pie Charts & Bar Graphs	Use <b>slide 4</b> to introduce key vocabulary for the session as it reveals on the slide.
Activity 1: Collecting Data into a Table	Reveal <b>slide 5</b> . Remind children how to launch 2Calculate in the Maths tools on Purple Mash (Launcher on slide top right). Launch a blank small square new sheet. Children enter data you have decided upon into a 2-column table as displayed on the slide on their devices.
Activity 2: Creating Charts	Display <b>slide 6</b> . Demonstrate creating a chart using the chart creation tool. Then children have a go and answer questions revealed on the slide through clicking.

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Activity 3: Changing Data	Display <b>slide 7</b> . Go through the questions as they are revealed, prompting the children to observe what happens to the chart when data in the table is changed and increasing chart range by adding further rows.
Activity 4: Extension	Display <b>slide 8</b> . Children to turn given tables into charts and make observations on data. <b>*Launch charts (challenges) from slide to demonstrate. Children should have these set as a 2Do.</b>
Review Success Criteria	Display <b>slide 9</b> . Review the success criteria from <b>slide 3</b> . Children could rate how well they achieved this using a show of hands.



# Lesson 2 – More Than, Less Than and Spin Button Tools

## Aims

- To introduce the 'more than', 'less than' and 'equals' tools.
- To introduce the 'spin' tool and show how it can be used to count through times tables.

## Success Criteria

- Children can use the 'more than', 'less than' and 'equals' tools to compare different numbers and help to work out solutions to calculations.
- Children can use the 'spin' tool to count through times tables.

## Resources

Ideally, this session should use computers / laptops rather than iPads, due to the need for repeated moving of cell contents.

Unless otherwise stated, all resources can be found on the [main unit 3.3 page](#). From here, click on the icon to set a resource as a 2do for your class. Use the links below to preview the resources; right-click on the link and 'open in new tab' so you don't lose this page.

- [Tool Example 1](#)
- [Tool Example 2](#)
- [Times table machine example file \(for use on iPads\)](#)

## Activities

Introduction	Display <b>slide 2</b> and outline the lesson aims. Display <b>slide 3</b> and outline the success criteria.
Background: Key tasks, Vocabulary and Tools	Use <b>slide 4</b> to share today's key task, mathematical vocabulary and the tools.
Activity 1: Creating a Number Line	Display <b>slide 5</b> . Launch example on slide (top right). Model the example spreadsheet and go through the questions. Show how the 'tool' helps us check the numbers are correctly located.
	Reveal <b>slide 6</b> . Go through the steps. Children to create their own number line adding the 'great than, less than, equal' tool to compare. They will need to make numbers movable.

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Activity 2: Estimations and Indications	<p>Display <b>slide 7</b> and launch the example file from the slide (top right). Children use estimation and indications from the 'greater than, less than &amp; equals to' tool to help solve the calculations.</p> <p><b>*Example file 2 should be set as 2Do or in a shared folder.</b></p>
Activity 3: Spin Tool	<p>Reveal <b>slide 8</b>. Share with children how to create a 2x table machine using the 'Spin' tool.</p> <p><b>*iPad friendly file can be launched from slide.</b></p>
Review Success Criteria	<p>Display <b>slide 9</b>. Review the success criteria from <b>slide 3</b>. Children could rate how well they achieved this using a show of hands.</p>





# Lesson 3 – Advanced Mode and Cell Addresses

## Aims

- To introduce the Advanced mode of 2Calculate.
- To learn about describing cells using their addresses.

## Success Criteria

- Children can describe a cell location in a spreadsheet using the notation of a letter for the column followed by a number for the row.
- Children can find specified locations in a spreadsheet.

## Resources

For these activities we recommend using a desktop / laptop machine where possible to achieve maximum performance.

Unless otherwise stated, all resources can be found on the [main unit 3.3 page](#). From here, click on the icon to set a resource as a 2do for your class. Use the links below to preview the resources; right-click on the link and 'open in new tab' so you don't lose this page.

- [Advanced Mode example 1.](#)
- [Advanced Mode example 2.](#); you will need to save this as a 2Do for your class.
- [Advanced Mode example2 Completed](#)
- [Advanced Mode example 3.](#) Set this as a 2Do for the class.

## Activities

Introduction	Display <b>slide 2</b> and outline the lesson aims.  Display <b>slide 3</b> and outline the success criteria.
Advanced Mode	Use <b>slide 4</b> and launch a blank spread sheet. Show switching to advance mode displays column and row labels which give us cell addresses. Ensure children know we find a cell address by column then row. Children practise finding a few cell addresses.

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Activity 1: Creating a Picture	<p>Use <b>slide 5</b>. Launch example 1 (top right of slide). As a class, create a picture from cell addresses given on sheet.</p> <p>Children then have a go on example 2 on their own (In pairs) <b>*set as 2Do or place in shared folder.</b></p>
Activity 2: Treasure Maps	<p>Display <b>slide 6</b>. Children to open example 3. Children enter correct cell locations for items on the map.</p> <p><b>*set as 2Do or place in shared folder.</b></p>
Activity 3: Extension	<p>Use <b>slide 7</b> to display an extension activity. Children add more items to the map with cell addresses. Children expected to use the quiz tool. <b>*Note it is possible to copy and paste on iPad by holding finger on cell until copy and paste option appears.</b></p>
Review Success Criteria	<p>Display <b>slide 8</b>. Review the success criteria from <b>slide 3</b>. Children could rate how well they achieved this using a show of hands.</p>



# Assessment Guidance

The unit overview for year 3 contains details of national curricula mapped to the Purple Mash Units. The following information is an exemplar of what a child at an expected level would be able to demonstrate when completing this unit with additional exemplars to demonstrate how this would vary for a child with emerging or exceeding achievements.

Assessment Guidance	
Emerging	<p>Children know that they can use a spreadsheet to present their collected data as a chart or graph (lesson 1). With support, they can create and begin to interpret graphs of simple data.</p> <p>They are beginning to understand the use of symbols to represent more than, less than and equals to and use the spreadsheet tools to explore the outcome of comparing numbers and calculations (lesson 2).</p> <p>Children can find specific cell locations within a spreadsheet (lesson 3).</p>
Expected	<p>Most children can create a table of data on a spreadsheet and can use this to automatically create charts/graphs from data. Children will be able to select the most suitable type of chart to use for their data, edit headers and apply axis labels (Unit 3.3. Lesson 1). Children can create their own number lines within 2Calculate including 'more than', 'less than' and 'equal' tools (Unit 3.3. Lesson 2).</p> <p>Children can collect and enter data within 2Calculate, they are able to use the graphing tool to create suitable graphical representations of the data they have within a table (Unit 3.3. Lesson 1).</p>
Exceeding	<p>Children demonstrating greater depth will explore more complex functioning of the 2Calculate tools to create their own spreadsheets to explore number and interpret their own data.</p>