



Computing Scheme of Work

Unit 2.3 – Spreadsheets



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Introduction

2Calculate is a simple to use spreadsheet 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.

The lessons assume that children are logged onto 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.

Differentiation

If children are not familiar with computer keyboards and mice and are going to be using 2Calculate on computers rather than tablets, then they would benefit from doing some work to familiarise themselves with the keys such as the arrow keys, enter and space.

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 details.

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

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

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Medium-Term Plan

Lesson	Title	Learning Objectives	Success Criteria
1	Introduction to Spreadsheets	- To understand what a spreadsheet is used for. - To understand what a spreadsheet looks like. - To be able to navigate around a spreadsheet and enter data. - To learn new vocabulary related to spreadsheets.	- Children can navigate around a spreadsheet. - Children can explain what rows and columns are. - Children can enter data into cells.
2	Adding Images to a Spreadsheet	- To add different types of images to a spreadsheet. - To use images as calculation aids. - To use the 'move cell' tool to make images draggable	- Children can use the menu buttons to add different types of images. - Children can use the apparatus images to solve maths questions. - Children can use the 'equal to' tool to check their calculations.
3	Using clipart images in a spreadsheet	- To use clipart images in a spreadsheet. - To assign values to images. - To use assigned values in calculations.	- Children can use the clipart gallery to add images to a spreadsheet. - Children can give images a value. - Children can make use of the values given to images in calculations.
4	Totalling tools	- To use 2Calculate totalling tools. - To use 2Calculate to solve a simple puzzle.	- Children can use tools in a spreadsheet to automatically total rows and columns. - Children can use a spreadsheet to solve a mathematical puzzle.
5	Using the 'Speak' and 'Count' Tools to Count Items	To use the 'speak' and 'count' tools in 2Calculate to count items.	- Children can use the count tool to count items. - Children can use the speak tool so that the items are counted out loud
6	Creating a Table and Block Graph	- To add and edit data in a table layout. - To find out how spreadsheet programs can automatically create graphs from data.	- Children can create a table of data on a spreadsheet. - Children can use a spreadsheet program to automatically create charts and graphs from data.

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Lesson 1 – Introduction to Spreadsheets

Learning Objectives

- To understand what a spreadsheet is used for.
- To understand what a spreadsheet looks like.
- To be able to navigate around a spreadsheet and enter data.
- To learn new vocabulary related to spreadsheets.

Success Criteria

- Children can navigate around a spreadsheet.
- Children can explain what rows and columns are.
- Children can enter data into cells.

Resources

All resources can be found on the Purple Mash page for this lesson. From here they can be set as 2Dos for children if required.

- 2Calculate tool: This is found in the Tools area of Purple Mash.
- Starter spreadsheet

Preparation

- Set the Starter spreadsheet as a 2Do for the class. They can then open it directly from their 2Dos. You can select the following objectives when setting the 2Dos to make future assessment easier:

Edit Objectives ✕

Year:	Y2	✓
Subject:	Computing	✓
Strand:	IT	✓

Use technology purposefully to create, organise, store, manipulate and retrieve digital content. ☒

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Activities

Lesson Objectives	Slide 2	Display and outline the lesson aims.
Success Criteria	Slide 3	Display and outline the success criteria.
Vocabulary	Slide 4	This slide can be used to introduce vocabulary. The new vocabulary is repeated at the end of the lesson where it can be used to review lesson vocabulary
What are spreadsheets?	Slide 5	Click through the slide to explain a bit about what spreadsheets do.
What are spreadsheets?	Slide 6	Ask the class - What could also be included on a spreadsheet for a party?
2Calculate	Slide 7	Click to point out the areas of a spreadsheet and associated vocabulary.
Activity 1: Writing Numbers & Letters	Slide 8	The example program is a blank spreadsheet, setting it as a 2Do makes it easier for children to open and for you to mark and assess. Ensure that children understand what 'delete' means.
Activity 2: Selecting Cells	Slide 9	Selecting cells is an important skill. Encourage children to experiment with colouring groups of cells or adding borders. Do they realise that only cuboid areas can be selected not irregular shapes?
Activity 3: Adding and Removing Cells	Slide 10	Ensure that children can add and remove cells. If they accidentally remove cells with data in, they can reopen the file from their saved work. Use this as an opportunity to show the importance of saving regularly.
Activity 4: Calculator	Slide 11	Encourage the children to explore carrying out calculations with a spreadsheet. You could turn this into a fastest-fingers-first style activity with the teacher posing questions and children putting their hands up as quickly as possible with the answer. Remind children to save at the end of the activity.
Extension	Slide 12	Challenge children to add to their file with different types of calculations.
Vocabulary Review	Slide 13	The slide can be used to review new vocabulary encountered in the lesson. Click on the words to reveal the definitions.
Review Success Criteria	Slide 14	Review the success criteria. Children could rate how well they achieved this using a show of hands.

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Lesson 2 – Adding Images to a Spreadsheet

Learning Objectives

- To add different types of images to a spreadsheet.
- To use images as calculation aids.
- To use the 'move cell' tool to make images draggable

Success Criteria

- Children can use the menu buttons to add different types of images.
- Children can use the apparatus images to solve maths questions.
- Children can use the 'equal to' tool to check their calculations.

Resources

All resources can be found on the Purple Mash page for this lesson. From here they can be set as 2Dos for children if required.

- Practical maths place value apparatus that children are familiar with including dienes block and number counters.
- Prepared resources Using Apparatus: (This is blank but will allow easier access to the spreadsheet and facilitate assessment.), Make Ten, Lesson 2 Extension (optional) and Demonstration file for teacher (this is accessed via slide 7)

Preparation

- Set Using Apparatus file as a 2Do. This is blank but will allow easier access to the spreadsheet and facilitate assessment.
- Set Equal to as a 2Do.
- You can select the following objectives when setting the 2Dos to make future assessment easier:

Edit Objectives ✕

Year:	Y2	▼
Subject:	Computing	▼
Strand:	IT	▼
Use technology purposefully to create, organise, store, manipulate and retrieve digital content. ☒		

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Activities

Lesson Objectives	Slide 2	Display and outline the lesson aims.
Success Criteria	Slide 3	Display and outline the success criteria.
Vocabulary	Slide 4	This slide can be used to introduce vocabulary. The new vocabulary is repeated at the end of the lesson where it can be used to review lesson vocabulary
Using images in 2Calculate	Slide 5	Open 2Calculate and show on the board the process of adding money images; click to reveal the steps. The purpose of these images will be explored in a later slide.
	Slide 6	Go through process of adding apparatus images; click to reveal the steps. Discuss children's familiarity with these apparatus as physical items in the classroom. The purpose of these images will be explored in a later slide.
Image values	Slide 7	Open the demonstration spreadsheet to demonstrate. The demonstration file has notes for the teacher to demonstrate. The image above shows the outcome of the demonstration. As part of this demonstration, show children how to scroll down and across the spreadsheet. NOTE: See info about formatting (on the slide) in case this occurs.
Activity 1: Using Apparatus and Money for Maths	Slide 8	Can children make use of the spreadsheet functionality to do some maths? Encourage the use of physical equipment for those who need support. Remind children how to add more cells to their spreadsheet. Note the file is blank but will allow easier access to the spreadsheet and facilitate assessment.
'Equal to' tool	Slides 9-10	Click to reveal the steps, then watch the short video linked from slide 10.
Extension	Slide 12	Challenge pupils to re-order and then lock the coins in a prepared spreadsheet.
Vocabulary Review	Slide 13	The slide can be used to review new vocabulary encountered in the lesson. Click on the words to reveal the definitions.
Review Success Criteria	Slide 14	Review the success criteria. Children could rate how well they achieved this using a show of hands.

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Lesson 3 – Using Clipart Images in a Spreadsheet

Learning Objectives

- To use clipart images in a spreadsheet.
- To assign values to images.
- To use assigned values in calculations.

Success Criteria

- Children can use the clipart gallery to add images to a spreadsheet.
 - Children can give images a value.
- Children can make use of the values given to images in calculations.

Resources

All resources can be found on the Purple Mash page for this lesson. From here they can be set as 2Dos for children if required.

- Toy Shop file
- Demonstration file: this is linked to on slide 7.

Preparation

- Set Toy Shop as a 2Do. You can select the following objectives when setting the 2Dos to make future assessment easier:

Edit Objectives ✕

Year:	Y2	▼
Subject:	Computing	▼
Strand:	IT	▼

Use technology purposefully to create, organise, store, manipulate and retrieve digital content. ✓

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Activities

Lesson Objectives	Slide 2	Display and outline the lesson aims.
Success Criteria	Slide 3	Display and outline the success criteria.
Vocabulary	Slide 4	This slide can be used to introduce vocabulary. The new vocabulary is repeated at the end of the lesson where it can be used to review lesson vocabulary
Wrapping text	Slide 5	Wrapping text is likely to be useful to children in this lesson. Watch the short videos to demonstrate by clicking on them.
Using Clipart In 2Calculate	Slide 6	Click to reveal details. If children have used the clipart gallery before, talk about how they have used it.
	Slide 7	Click to reveal details, this could be demonstrated in 2Calculate though the whole class activity on the next slide will also do this.
Activity 1: Whole Class Activity	Slide 8	Open the example spreadsheet to demonstrate. Using the associated costs at the top of the spreadsheet, you need to give each picture a value. The spreadsheet will work out the total cost.
Activity 2: Toy Shop	Slide 9	Instruct children to open the toy shop file from their 2Dos, Look at how much each toy costs and add the value to the sums. Remind them that they do not need to include 'p' when writing the value.
Vocabulary Review	Slide 10	The slide can be used to review new vocabulary encountered in the lesson. Click on the words to reveal the definitions.
Review Success Criteria	Slide 11	Review the success criteria. Children could rate how well they achieved this using a show of hands.

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Lesson 4 – Totalling tools

Lesson Objectives

- To use 2Calculate totalling tools.
- To use 2Calculate to solve a simple puzzle.

Success Criteria

- Children can use tools in a spreadsheet to automatically total rows and columns.
- Children can use a spreadsheet to solve a mathematical puzzle.

Resources

All resources can be found on the Purple Mash page for this lesson. From here they can be set as 2Dos for children if required.

- 2Calculate
- Completed Magic Squares file for teacher display.

Preparation

- Set the 2Calculate tool as a 2Do.
- You can select the following objectives when setting the 2Dos to make future assessment easier:

Edit Objectives

Year:

Y2

▼

Subject:

Computing

▼

Strand:

IT

▼

Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

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Activities

Lesson Objectives	Slide 2	Display and outline the lesson objectives.
Success Criteria	Slide 3	Display and outline the success criteria.
Vocabulary	Slide 4	This slide can be used to introduce vocabulary. The new vocabulary is repeated at the end of the lesson where it can be used to review lesson vocabulary
Magic Squares	Slide 5	Click to reveal information about magic squares. Can children answer the questions?
Opening a blank spreadsheet	Slide 6	This slide introduces the look of 2Calculate when opened as an app, this is to facilitate children navigating to 2Calculate and creating their own spreadsheets in future.
Totalling tools	Slide 7	Click through the slide, you could demonstrate in 2Calculate itself.
	Slide 8	Read through the slide, you could demonstrate in 2Calculate itself. Clicking reveals the answer.
Activity 1: Make a Magic Square	Slide 9	Assist children in following the activity steps, if you wish children to go at their own pace, you could print out copies of this slide and the next for children. Activity continues on the next slide.
	Slide 10	Assist children in following the activity steps, if you wish children to go at their own pace, you could print out copies of this slide and the previous one for children. Display the first page of the Completed Magic Squares when you feel children are ready for the solution, they can then try recreating one on their file.
Extension	Slide 11	Some solutions can be found on page 2 of the Completed Magic Squares file when you feel children are ready for the solution, they can then try recreating one on their file.
Vocabulary Review	Slide 12	The slide can be used to review new vocabulary encountered in the lesson. Click on the words to reveal the definitions.
Review Success Criteria	Slide 13	Review the success criteria. Children could rate how well they achieved this using a show of hands.

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Lesson 5 – Using the ‘Speak’ and ‘Count’ Tools to Count Items

Lesson Objectives

- To use the ‘speak’ and ‘count’ tools in 2Calculate to count items.

Success Criteria

- Children can use the count tool to count items.
- Children can use the speak tool so that the items are counted out loud.

Resources

All resources can be found on the Purple Mash page for this lesson. From here they can be set as 2Dos for children if required.

- Teacher demonstration file.
- Animal counting starter file.

Preparation

- Set the Animal counting starter file as a 2Do.
- You can select the following objectives when setting the 2Dos to make future assessment easier:

Edit Objectives ✕

Year:	Y2	▼
Subject:	Computing	▼
Strand:	IT	▼

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Activities

Lesson Objectives	Slide 2	Display and outline the lesson objectives.
Success Criteria	Slide 3	Display and outline the success criteria.
Vocabulary	Slide 4	This slide can be used to introduce vocabulary. The new vocabulary is repeated at the end of the lesson where it can be used to review lesson vocabulary.
Counting machine	Slide 5	Launch the starter counting machine for demonstration. Go through the teaching points on each of the numbered post it notes. Delete the post it notes once this is done. Note: the clipart gallery icon image has been used to represent 'any image' in fact, any image could be inserted in place of this, and the counting machine will still work.
The count tool	Slide 6	Show children how to insert the count tool.
Counting	Slide 7	Demonstrate what the count tool does. Click to reveal the outcome and further actions.
Activity 1: Counting Animals	Slide 8	Show children how to save their work once they have finished.
The speak tool	Slide 9	Use the demonstration file to show children how to insert and test the speak tool.
Activity 2: Counting Animals Aloud	Slide 10	Show children how to save their work once they have finished.
Adding different counts	Slide 11	Use the demonstration file and show children the process, this continues on the next slide.
	Slide 12	Use the demonstration file and show children the process.
Activity 3: Sorting the Animals	Slide 13	Remind children to save their work once they have finished.
Vocabulary Review	Slide 14	The slide can be used to review new vocabulary encountered in the lesson. Click on the words to reveal the definitions.
Review Success Criteria	Slide 15	Review the success criteria. Children could rate how well they achieved this using a show of hands.

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Lesson 6 – Creating a Table and Block Graph

Lesson Objectives

- 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

All resources can be found on the Purple Mash page for this lesson. From here they can be set as 2Dos for children if required.

- Favourite Flavours
- Demonstration file (see slide 9)

Preparation

- Set Favourite Flavours as a 2Do for the class.
- You can select the following objectives when setting the 2Dos to make future assessment easier:

Edit Objectives ✕

Year:	Y2	▼
Subject:	Computing	▼
Strand:	IT	▼

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Activities

Lesson Objectives	Slide 2	Display and outline the lesson objectives.
Success Criteria	Slide 3	Display and outline the success criteria.
Vocabulary	Slide 4	This slide can be used to introduce vocabulary. The new vocabulary is repeated at the end of the lesson where it can be used to review lesson vocabulary
What is data?	Slide 5	Read through the slide together
Data tables	Slide 6	Click to reveal points, Ensure that children understand how to 'read' the tables and why 2 is best for the question posed.
Activity 1: Favourite Flavours	Slide 7	Collect the data as a class using the whiteboard, if children have completed unit 1.3, they will have collected data for pictograms before. Children will not have used tally charts, so an alternative way of recording is suggested unless children have encountered tally charts in other contexts in school. 1) Decide upon a selection of favourites; not too many obscure flavours as it will be too difficult for children to complete the spreadsheet in time. 2) Display a class list of names on the whiteboard as each child to choose their favourite and write the name of it next to the child's name. 3) Help children to work out the totals.
What does the data show?	Slide 8	Show children how to alter the formatting to see the data clearly. When children discuss what the data shows, emphasise the lack of sorting so it's harder to see the most or least popular flavour.
Graphs and charts	Slide 9	Open the demonstration file using the link and click through to reveal the steps, these continue on the next slides.
	Slide 10	Open the demonstration file using the link and click through to reveal the steps and discuss the question. Introduce the idea of sorting the data with the most popular pet first and the least popular last. Continue on the next slide
	Slide 11	Click through to reveal the steps. Continue on the next slide.
	Slide 12	Click through to reveal the steps. And demonstrate.
Activity 2: Creating a Graph	Slide 13	Children should complete the activity with their ice cream data. Discuss the results.
Extension	Slide 14	Explain to children that they are to attempt to collect data using the two tables given and create into block graph.
Vocabulary Overview	Slide 15	The slide can be used to review new vocabulary encountered in the lesson. Click on the words to reveal the definitions.

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Review Success Criteria	Slide 16	Review the success criteria. Children could rate how well they achieved this using a show of hands.
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Assessment Guidance

The unit overview for year 2 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	With support, children can open, edit and save sheets in 2Calculate (Throughout Unit 2.3). Children can enter a small set of data into cells (Throughout Unit 2.3). With support, they can allocate a value to an image (Unit 2.3 Lesson 3) and manipulate data using tools allowing them to solve puzzles (Unit 2.3 Lesson 4). Children use images and can present data in a simple way (Unit 2.3 Lessons 2 and 6).
Expected	Using the 2Calculate spreadsheet, children can open, edit and save sheets (Throughout Unit 2.3). Children can enter data into cells (Throughout Unit 2.3), allocate a value to an image (Unit 2.3 Lesson 3) and manipulate data using tools, allowing them to solve puzzles (Unit 2.3 Lesson 4). Children use images and can present data in a variety of ways (Unit 2.3 Lessons 2, 3 and 5). Most children will be able to create a spreadsheet which includes a graph based on simple data collected. Their planned spreadsheet and graph are likely to contain pre-compiled shared data. They can add colour and appropriate labels to their spreadsheet and graph respectively (Unit 2.3. Lesson 6).
Exceeding	Using the 2Calculate spreadsheet, children can independently open, edit and save sheets and support others in doing this (Throughout Unit 2.3). Children can enter data into cells (throughout Unit 2.3), allocate a value to an image (Unit 2.3 Lesson 3) and manipulate data seamlessly using the available tools, allowing them to solve puzzles (Unit 2.3 Lesson 4). Children use images and can present data in a variety of ways (Unit 2.3 Lesson 6). Children will demonstrate greater depth by explaining the data and summarising this into simple statements (Unit 2.3 Lesson 6).

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