



Raspberry Pi

Lesson 1: Spreadsheet warm-up

Introduction

In this lesson learners will revisit their spreadsheet skills, check their understanding of the layout of a spreadsheet, and refamiliarise themselves with formulae. The topic will be a television talent show, *Rock Star Challenge*. Viewers will be invited to phone in and vote for their favourite bands; the phone votes generate income, and a percentage of this income will be donated to charity. Learners will implement a spreadsheet solution to track voting for the talent show, calculate income from mobile and landline votes, and determine how much will be donated to charity.

Learning objectives

- Create a spreadsheet model for a given scenario
- Demonstrate how to utilise formulae to perform calculations
- Apply cell formatting

Key vocabulary

Formula, relative formula, absolute formula, ADD, SUM, MULTIPLY

Preparation

Subject knowledge:

Use of common functions, e.g. ADD, SUM. How to create and use an ABSOLUTE formula and how this differs from a RELATIVE formula. How to calculate a percentage and subtract a percentage amount from a total.

You will need:

- Slides
- A0 Resource: Lesson 1 starter
- A0 Solutions – Lesson 1 starter
- A1 Resource: RSC voting
- A1 Worksheet – Voting data
- A2 Worksheet – Charity donation and profit
- A2 Solutions – RSC voting

Assessment opportunities

Introduction: This lesson is very much about ensuring that learners are confident in their use of a spreadsheet, understand common formulae and terminology, and are able to use spreadsheet techniques. Questioning learners and feedback from them will help to establish the skill levels.

Starter activity: This should give some guidance to the skill level of learners – all should be able to identify the labels and formulae correctly. The last task is a little more tricky as learners must study the spreadsheet in order to see what is wrong: column C is formatted as currency, which is incorrect. The outcome in column D is not affected by this formatting error.

Outline plan

Please note that the slide deck labels the activities in the top right-hand corner to help you navigate the lesson.

**Timings are rough guides*

<p>Starter activity (Slide 3)</p> <p>15 mins</p>	<p>Starter</p> <p>An exercise where learners label a spreadsheet to reconnect with some of the common spreadsheet terminology, and fault-find a spreadsheet table.</p> <p>Learners should open and complete the Starter activity</p> <p>A0 Resource – Lesson 1 starter</p>
<p>Activity 1 (Slides 4–8)</p> <p>15 mins</p>	<p>Open the spreadsheet and Activity sheet</p> <p>Open the spreadsheet A1 Resource – RSC voting Open the document A1 Worksheet – Voting data</p> <p>Enter data and formulae</p> <p>Using the data from the document ‘A1 Worksheet – Voting data’, complete the D and H columns of the spreadsheet.</p> <p>For less able learners you may want to create a partly completed version of the spreadsheet.</p> <p>See A1 Worksheet – Voting data</p>
<p>Activity 2 (Slides 9, 10)</p> <p>20 mins</p>	<p>Charity donation</p> <p><i>I’m a Celebrity 2019</i> donated 15p from every vote to the Make A Wish charity. Of course, <i>Rock Star Challenge</i> wants to do the same. For every vote RSC will donate 15p to charity.</p>

	<p>Calculate the profit</p> <p>Knowing how much will be donated to charity, the profit RSC will make can now be calculated.</p> <p>Formatting</p> <p>The spreadsheet needs to be formatted to make it easy to read, and the data needs to be formatted correctly – data that is money should be formatted to reflect this.</p> <p>See A2 Solution – RSC voting for ideas on how to format the spreadsheet. Cells C1–L2 have been merged and filled. The font size has been enlarged. Cells A3–B3 have been merged and filled. Borders have been added to the section. Other headings have been formatted in a similar way. Cells which contain money have been formatted as currency.</p> <p>See A2 Worksheet – Charity donation and profit</p>
<p>Activity 3 (Slide 11)</p> <p>5 mins</p>	<p>Scenarios</p> <p>Encourage learners to experiment with various values in cells B4, B5, and K4 to see what effect this has on income, charity donation, and profit for the production company.</p>
<p>Plenary</p> <p>5 mins</p>	<p>In this lesson learners have added data and formulae to a spreadsheet to calculate income from telephone and text votes for the show <i>Rock Star Challenge</i>. A charitable donation has been calculated and various scenarios have been investigated.</p> <p>Question</p> <p>What is the difference between a RELATIVE formula and an ABSOLUTE formula? Can you give an example?</p> <p>Answer</p> <p>A RELATIVE formula looks similar on each row in a column, but each time the row will change. Example: =A1+B1, =A2+B2, etc. An ABSOLUTE formula always refers to the same cell, for example if we have a cell which holds the VAT rate or interest rate. Example: =A1*\$J\$1, A2*\$J\$1, etc.</p>

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