

# Summarising datasets in Excel

This planning document is intended to support teachers who are delivering the NPA/PDA Data Science or for students who are learning independently. It also aligns with the Data Skills for Work framework.

**The lesson has been designed for learners using Microsoft Excel.** Most of the information in the lesson will work for other spreadsheets tools. However, if another tool is being used by the learners (such as Google Sheets) the step-by-step instructions will need to be adjusted.

## Contents

Lesson Description.....	1
Lesson Contents .....	2
Learning Intentions.....	2
Success Criteria .....	2
Knowledge Prerequisites.....	2
Lesson Requirements.....	3
Task-types.....	4
Worksheet .....	5
How you can use this lesson .....	6

## Lesson Description

<b>Lesson Overview</b>	Summarising by count, total, average, max and min Summarising within groups
<b>Topic</b>	Data manipulation/ Data analysis
<b>Book Chapter(s)</b>	“Data transformation and Manipulation”

<b>NPA level</b>	4, 5, 6
<b>PDA level</b>	7, 8
<b>Data skills for work level</b>	Core, Analysis

## Lesson Contents

This lesson consists of:

- A lesson plan (this document)
- A PowerPoint/PDF presentation, 'Summarising datasets in Excel'
- Question worksheet (for learners) on 'Summarising datasets in Excel' in Excel
- Answers worksheet (for teachers) on 'Summarising datasets in Excel' in Excel

## Learning Intentions

We will be learning to summarise datasets in Excel, specifically to

- calculate the **total, count, min/max** and **average** of rows data
- **group rows of data** based on logical criteria
- perform **calculations on grouped data**

## Success Criteria

I can *describe* how to summarise rows of data.

I can *describe* how to group rows of data based on logical criteria.

I can *group* and *summarise* rows of data in Excel.

## Knowledge Prerequisites

Learners should know:

- How to open/save an Excel file
- That Excel documents have worksheets and use rows/columns
- To be able to enter data into cells
- To be able to select/highlight sections of data
- Headers on worksheet (e.g., A, B, C, D, and rows 1,2,3,4)
- Excel has ribbons at the top for Home, Data, Formulas etc
- To be able to right-click on cells to see options

## Lesson Requirements

	<b>PDA</b>	<b>NPA</b>	<b>Data Skills for work</b>
<b>Qualification</b>	Yes	Yes	Yes
<b>Outcome ID(s)</b>	WD8.3c, CD8.1g, WD7.3d, WD7.2a, WD7.2b, CD7.3a	DS4.3b, DS5.3d, DS6.3d	C2.1, A2.1, A2.3
<b>Outcome description(s)</b>	<p>WD8.3c Transformations [...]</p> <p>CD8.1g Preparing data for visualisation,</p> <p>WD7.3d Data aggregation [...]</p> <p>WD7.2a Types of data transformation,</p> <p>WD7.2b Common transformations including [...] grouping,</p> <p>CD7.3a Preparing data for visualisation</p> <p>N.B. out of scope of this lesson,</p> <p><i>“WD8.3c ... including joins”</i></p> <p><i>“WD7.3d ... including pivot tables”</i></p> <p><i>“WD7.2b ... filtering, sorting, combining, separating”</i></p>	<p>DS4.3b Perform basic analyses including [...] group and summarise,</p> <p>DS5.3d Perform analyses including [...] group and summarise,</p> <p>DS6.3d Perform descriptive and predictive analyses on the data.</p> <p>N.B. out of scope of this lesson,</p> <p><i>“DS4.3b ... including sort, filter”</i></p> <p><i>“DS5.3d ... including query, sort, filter, consolidate, ...”</i></p>	<p>C2.1 Vocabulary used in data science and analytics,</p> <p>A2.1 Use of tools to analyse data,</p> <p>A2.3 Data calculation and manipulation</p>
<b>Level</b>	7, 8	4, 5, 6	Core, Analysis
<b>Software language</b>	Excel	Excel	Excel
<b>Required equipment /software for student</b>	Lesson: PowerPoint, Worksheet: Excel	Lesson: PowerPoint, Worksheet: Excel	Lesson: PowerPoint, Worksheet: Excel

## Task-types

In the worksheet for this lesson, there are up to 6 task-types to that become increasingly challenging to support the students learning. Based on the student's previous knowledge it is possible to select the task-types that are relevant to their stage.

Task-type	Description
<b>1. Recall</b>	To be able to recognise definitions or procedures.
<b>2. Define</b>	To be able to define definitions or procedures.
<b>3. Rephrase</b>	To be able to use their own words to describe definitions or procedures.
<b>4. Apply</b>	To be able to apply definitions or procedures to problem-solving activities.
<b>5. Create</b>	To be able to apply definitions or procedures and create their own solutions to a defined problem.
<b>6. Active</b>	Using knowledge from the lesson which they apply to scenarios they have researched/designed themselves.

## Worksheet

The worksheet associated with this lesson is available either in Excel or as a PDF that can be printed. The answer worksheet is available in both formats too.

Worksheet section ID	Description	Task-type	Number of questions
1.1	Summarise	Recall	2
1.2	Summarise	Rephrase	1
1.3	Summarise	Apply	4
2.1	Group	Recall	3
2.2	Group	Apply	2
2.3	Group	Apply	4
3.1	More grouping	Recall	2
3.2	More grouping	Apply	2
3.3	More grouping	Apply	2
3.4	More grouping	Active	2
<b>Total</b>			<b>24</b>

## How you can use this lesson

This lesson has been created by Effini in partnership with Data Education in Schools, The Data Lab and Data Skills for Work, with funding from the Scottish Government.

© 2021. This work is licensed under a [CC BY-NC-SA 4.0 license](https://creativecommons.org/licenses/by-nc-sa/4.0/).



You are free to:

- **Share** – copy and redistribute the material in any medium or format
- **Adapt** – remix, transform and build upon the material

Under the following terms:

- **Attribution** — You must give [appropriate credit](#), provide a link to the license, and [indicate if changes were made](#). You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.
- **NonCommercial** — You may not use the material for [commercial purposes](#).
- **ShareAlike** — If you remix, transform, or build upon the material, you must distribute your contributions under the [same license](#) as the original.