Practise Creating Graphs in Excel (Part 2)

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

Version Control

Version number	Purpose/Change	By	Date
1.0	Published by Effini	Emma Nylk	23 May 2022

Lesson Description

Lesson Overview	Practise creating/amending different simple graphics types in Excel. In this lesson line graphs and scatterplots are covered.
Topic	Visualisation and Storytelling
Book Chapter(s)	Interpreting data

NPA level	4, 5, 6
PDA level	7, 8
Data skills for work level	Core, Analysis

Lesson Contents

This lesson consists of:

- A lesson plan (this document)
- A PowerPoint/PDF presentation, 'Practise Creating Graphs in Excel (part 2)'
- Question worksheet (for learners) on 'Practise Creating Graphs in Excel (part 2)' in Excel
- Answers worksheet (for teachers) on 'Practise Creating Graphs in Excel (Part 2)' in Excel

Note: Section 1 and 3 of the Question worksheet mirror the examples shown in the PowerPoint on how to amend the graphs. This means (if it is appropriate for the class) the learners can work through the worksheet in parallel to viewing the PowerPoint.

Learning Intentions

We will be learning more about creating line graphs and scatterplots in Excel, specifically,

- how to make standard changes to line graphs and scatterplots

- how to plot a line graph without date value variables

- how to add data labels

- how to amend data points

Success Criteria

I can *change* the font, colour, and display format of graphs in Excel

I can *add/remove* the gridlines and legends on graphs in Excel

I can *plot* line graphs without a date value variable

I can *add* data labels to a line graph

I can *change* the style and colour of data points on a scatterplot

Knowledge Prerequisites

Learners should know:

- what a dataset is
- data can be used to solve problems and find answers to questions
- that identifying patterns is part of the analysis steps
- how to create a basic line graph and scatterplots in Excel
- how to make appropriate chart and design choices

Lesson Requirements

	PDA	NPA	Data Skills for work
Qualification	Yes	Yes	Yes
Outcome ID(s)	CD7.3e, CD8.2h	DC4.3a, DC5.3c, DC6.3d	c2.1, a2.1, a2.2, a3.1, a3.2
Outcome description(s)	CD7.3e Creating visualisations using software CD8.2h Creating visualisations using software	DC4.3a Create visualisation to identify patterns and trends in the data DC5.3c Create appropriate visualisations from data. DC6.3d Create appropriate visualisations from data.	c2.1 Vocabulary used in data science and analytics a2.1 Use of tools to analyse data a2.2 Selecting suitable visualisations a3.1 Visualisation of data to provide insight a3.2 Visualisation of data to tell stories
Level	7, 8	4, 5, 6	Core, Analysis
Software language	Microsoft Excel	Microsoft Excel	Microsoft Excel
Required equipment /software for student	Lesson: PowerPoint/PDF, Worksheet: Excel	Lesson: PowerPoint/PDF, Worksheet: Excel	Lesson: PowerPoint/PDF, 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.

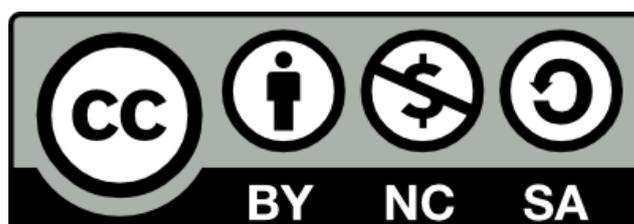| Task-type	Description
1. Recall	To be able to recognise definitions or procedures.
2. Define	To be able to define definitions or procedures.
3. Rephrase	To be able to use their own words to describe definitions or procedures.
4. Apply	To be able to apply definitions or procedures to problem-solving activities.
5. Create	To be able to apply definitions or procedures and create their own solutions to a defined problem.
6. Active	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	Line graphs with the PowerPoint	Apply	1
2	Amending a line graph	Apply	1
3	Scatterplot with the PowerPoint	Apply	1
4	Amending a scatterplot	Apply	1
5	Extension	Apply	1
Total			**5**

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.

Alternative format

If you require this document in an alternative format, such as large print or a coloured background, please contact

hello@effini.com

or

4th Floor, The Bayes Centre

47 Potterrow

Edinburgh

EH8 9BT