The structure and format of data

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 checked.

Contents

Lesson Description

Lesson Overview	Different structures for holding data. Difference between stored and display formats
Topic	Working with Data
Book Chapter(s)	"4. Working with Data, Data types, formats and structure"

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

Learning Intentions

We will be learning about the structure of data, specifically to,

- understand the difference between **structured** and **unstructured** data
- understand how computers have different **display formats** for data
- understand there are different **file formats** for storing and sharing information

Success Criteria

I can *describe* the difference between structured and unstructured data

I can *describe* common display formats

I can *recognise* different file formats

Knowledge Prerequisites

Learners should know:

- data can be used to solve problems and find answers to questions
- data can be categorised as quantitative or qualitative

Lesson Requirements

	PDA	NPA	Data Skills for work
Qualification	Yes	Yes	Yes
Outcome ID(s)	WD7.1c, WD8.2c	DS4.2a, DS4.2b, DS5.2a, DS6.2a	C2.1, A1.1
Outcome description(s)	WD7.1c Common data formats WD8.2c Data formats *N.B. out of scope of this lesson, "WD7.1c Extract data from different sources"* *"WD8.2c Extract data from a variety of sources."*	DS4.2a Describe common data types and data formats DS4.2b Describe structured and unstructured data DS5.2a Describe common data types and data formats. DS6.2a Describe common data types and data formats including structured and unstructured data.	C2.1 Vocabulary used in data science and analytics A1.1 Data types, quantitative and qualitative
Level	7, 8	4, 5, 6	Core, Analysis
Software language	N/A	N/A	N/A
Required equipment /software for student	Lesson: PowerPoint, Worksheet: Excel or pdf/printed	Lesson: PowerPoint, Worksheet: Excel or pdf/printed	Lesson: PowerPoint, Worksheet: Excel or pdf/printed

Task-types

In the worksheet for this lesson, there are up to 6 task-types 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.

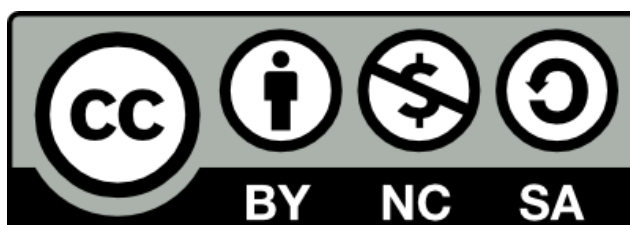| Task-type	Description
1. Recall	To be able to recognise definitions or procedures.
2. Define	To be able to define definitions or procedures.
3. Rephrase	To be able to use their own words to describe definitions or procedures.
4. Apply	To be able to apply definitions or procedures to problem-solving 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
1.1	Structure of data	Recall	1
1.2	Structure of data	Define	4
1.3	Structure of data	Rephrase	1
2.1	Display formats	Recall	1
2.2	Display formats	Define	1
2.3	Display formats	Rephase	2
3.1	File formats	Recall	1
3.2	File formats	Define	1
3.3	File formats	Rephase	2
Total			**14**

How you can use this lesson

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