Qualitative & Quantitative 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.

Contents

Lesson Description

Lesson Overview	The difference between qualitative and quantitative data. The difference between discrete and continuous data.
Topic	Working with Data
Book Chapter(s)	Working with Data, Data types, formats and structure

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, 'Qualitative & Quantitative'
- Excel/PDF Question workbook on 'Qualitative & Quantitative' (for learners)
- Excel/PDF Answers workbook on 'Qualitative & Quantitative' (for teachers)

Note: if the learners are using the Excel versions of the Question-and-Answer workbooks in other software packages (such as Google sheets) the document may need to be adjusted.

Learning Intentions

We are learning about the types of data, specifically to understand,

- what is **quantitative** data, and that it can be continuous or discrete

- what is **qualitative** data, and that raw text data can be categorised to allow analysis

Success Criteria

I can *describe* the difference between qualitative and quantitative data.

I can *identify* continuous and discrete data.

Knowledge Prerequisites

Learners should know:

- what data is
- data can be transformed into valuable information
- data can be used to solve problems and find answers to questions

Lesson Requirements

	PDA	NPA	Data Skills for work
Qualification	Yes	Yes	Yes
Outcome ID(s)	WD7.1b (part)	DS4.2a, DS5.2a, DS6.2a (part)	C2.1, A1.1
Outcome description(s)	WD7. 1b Types of data (categorical and numerical data and their sub-types) WD8.2b Types of data (categorical and numerical data and their sub-types) *N.B. out of scope of this lesson, "WD7.1b Extract data from different sources"*	DS4.2a Describe common data types and data formats. DS5.2a Describe common data types and data formats. DS6.2a Describe common data types and data formats. *N.B. out of scope of this lesson, "DS6.2a … 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. The answer worksheet is available in both formats too.

Worksheet section ID	Description	Task-type	Number of questions
1.1	Qualitative vs. Quantitative	Recall	2
1.2	Qualitative vs. Quantitative	Define	1
1.3	Qualitative vs. Quantitative	Rephrase	2
1.4	Qualitative vs. Quantitative	Active	1
2.1	Discrete vs. Continuous	Recall	2
2.2	Discrete vs. Continuous	Define	2
2.3	Discrete vs. Continuous	Rephrase	1
2.4	Discrete vs. Continuous	Active	2
Total			**13**

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.

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