

Reshaping datasets

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.

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Lesson Description

Lesson Overview	Definitions of wide and long data Reasons for reshaping data Examples where data will need to be wide or long
Topic	Data manipulation
Book Chapter(s)	Data transformation and Manipulation

NPA level	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, 'Reshaping datasets'
- Question worksheet (for learners) on 'Reshaping datasets' in Excel or PDF
- Answers worksheet (for teachers) on 'Reshaping datasets' in Excel or PDF

Learning Intentions

We will be learning what it means to reshape data, specifically,

- why we **reshape** data
- Understand what is meant by **long data**
- Understand what is meant by **wide data**

Success Criteria

I can *describe* the difference between long and wide data

I can *identify* when to use long and wide data

Knowledge Prerequisites

Learners should know:

- Data is used to solve problems
- Data items can be structured in datasets
- Data can be summarised and grouped

Lesson Requirements

	PDA	NPA	Data Skills for work
Qualification	Yes	Yes	Yes
Outcome ID(s)	WD8.3b, WD8.3c, CD8.1g, WD7.2a, WD7.2b, CD7.3a	DS5.3c, DS6.2b, DS6.3c	C2.1, A1.2, A1.3, A2.1, A2.3
Outcome description(s)	<p>WD8.3b Types of data transformation,</p> <p>WD8.3c Transformations [...]</p> <p>CD8.1g Preparing data for visualisation</p> <p>WD7.2a Types of data transformation.</p> <p>WD7.2b Common transformations [...]</p> <p>CD7.3a Preparing data for visualisation</p> <p>N.B. out of scope of this lesson,</p> <p><i>“WD7.2b ...filtering, sorting, combining, separating, and grouping”</i></p> <p><i>“WD8.3c ... including joins”</i></p>	<p>DS5.3c Perform routine data cleaning and structuring.</p> <p>DS6.2b Explain techniques for data capture, cleaning, and transformation</p> <p>DS6.3c Perform data transformation to complete, correct and structure data.</p>	<p>C2.1 Vocabulary used in data science and analytics</p> <p>A1.2 Data quality</p> <p>A1.3 Interpretation and insight</p> <p>A2.1 Use of tools to analyse data</p> <p>A2.3 Data calculation and manipulation</p>
Level	7, 8	5, 6	Core, Analysis
Software language	Excel	Excel	Excel
Required equipment /software for student	Lesson: PowerPoint/PDF, Worksheet: Excel or PDF/printed	Lesson: PowerPoint/PDF, Worksheet: Excel or PDF/printed	Lesson: PowerPoint/PDF, Worksheet: Excel or PDF/printed

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

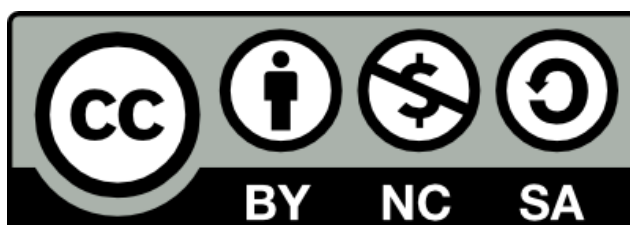
The worksheet associated with this lesson is available either in Excel or as a PDF that can be printed. The answer worksheet is available in both formats too.

Worksheet section ID	Description	Task-type	Number of questions
1.1	Wide and long datasets	Recall	2
1.2	Wide and long datasets	Recall	1
1.3	Wide and long datasets	Rephrase	3
1.4	Wide and long datasets	Active	1
2.1	Process for reshaping datasets	Recall	1
2.2	Process for reshaping datasets	Apply	2
2.3	Process for reshaping datasets	Apply	2
2.4	Process for reshaping datasets	Active	1
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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