

# The analysis process

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

<b>Lesson Overview</b>	The analysis steps Visual inspection
<b>Topic</b>	Analysis
<b>Book Chapter(s)</b>	Analysing data

<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, 'The analysis process'
- Question worksheet (for learners) on 'The analysis process' in Excel/PDF
- Answers worksheet (for teachers) on 'The analysis process' in Excel/PDF

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

## Learning Intentions

We will be learning what is involved in the analysis process, specifically to,

- what we **mean by analysis**
- a structured way of performing analysis (**the analysis steps**)
- how to understand data through **visual inspection**

## Success Criteria

I can *describe* what is meant by analysis

I can *describe/explain* a structured way of performing analysis (the analysis steps)

I can *describe* what it means to visually inspect data as part of the data understanding step

I can *perform* a visual inspection of a simple dataset

## Knowledge Prerequisites

Learners should know:

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

## 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>	WD7.2d, WD8.3g	DC4.2b, DC5.2b, DC6.2b	A1.2, A1.3, A3.1, C2.1
<b>Outcome description(s)</b>	WD7.2d Data loading, WD8.3g Data loading	DS4.2b Describe how data can be analysed,  DC5.2b Explain how data can be analysed,  DC6.2b Explain how data can be analysed	A1.2 Data quality  A1.3 Interpretation and insight  A3.1 Visualisation of data to provide insight  C2.1 Vocabulary used in data science and analytics
<b>Level</b>	7, 8	4, 5, 6	Core, Analysis
<b>Software language</b>	N/A	N/A	N/A
<b>Required equipment /software for student</b>	Lesson: PowerPoint/PDF, Worksheet: Excel/PDF	Lesson: PowerPoint/PDF, Worksheet: Excel/PDF	Lesson: PowerPoint/PDF, Worksheet: Excel/PDF

## 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	Data analysis	Recall	2
1.2	Data analysis	Define	1
1.3	Data analysis	Rephrase	1
2.1	Analysis example	Apply	1
3.1	Data visual inspection	Recall	2
3.2	Data visual inspection	Apply	5
4.0	Extension	Apply	1
<b>Total</b>			<b>13</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.

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