Sample Assessment Materials SAMs (holistic)

NCFE Level 3 Technical Occupational Entry for the Data Technician (Diploma)
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Contents

Evidence of a holistic approach to SAMs for Level 3 Data Technician

In this specific example, nearly all of unit 7 (Presentation and Communication of Data) is covered across the assessments set in other units. AC 1.3 would need further refining to ensure that all of the elements were clearly met within other assessments which would mean that it could then be entirely met via the assessment of other units.

Unit 1 tasks 1 & 2 meets Unit 7 AC1.2 and part of Unit 7 AC1.1 (written)

Unit 2 tasks 2a / 2b meets Unit 7 AC1.2 and part of Unit 7 AC1.3 (a – d)

Unit 2 task 3 meets Unit 7 AC 1.1 (verbal and non-verbal) and Unit 7 AC1.3 (a)

Unit 4 task 2 meets Unit 7 AC2.1 and Unit 7 AC2.2

Whilst the units themselves are numbered, there is no requirement to deliver the content sequentially. Centres may find that the delivery order of units may influence the most effective holistic assessment opportunities.

Unit 1 – data fundamentals

Project scenario

The college has noticed a decline in the number of students enrolling in digital programmes over the past five years. They believe this decline may be due to a decrease in the number of students taking computing GCSEs in school.

The college has a wealth of internal data collected over the past decade from their digital programmes. This data includes information on student enrolment, course performance, and job placement rates. However, the college is also interested in any external data that can help them determine if this is a nationwide issue.

By analysing this data, you can help the college better understand the decline in recruitment for digital programmes. You can also help them develop strategies to increase enrolment and improve student outcomes.

To help them understand the issue better, they have asked you to conduct research on the various types of data in relation to this.

Task 1 – overview task (LO1)

Your departmental manager has asked you to create an overview to present to the department head. You can present your findings in any written form that you feel appropriate to communicate this information (for example, but not limited to, a written report, PowerPoint slides, blog post).

To complete this task, you should create an overview which covers the following areas:

- the value of data to an organisation (Unit 1 AC1.1 / Unit 7 AC1.1 / Unit 7 AC1.2)
- how a range of qualitative and quantitative data can be used to highlight and explain trends (Unit 1 AC1.2)
- how common data sources can be used within an organisation (Unit 1 AC1.3)
- how trusted external or third-party data can be used to support an organisation’s data strategy (Unit 1 AC1.4)

The above task also meets Unit 7 AC1.1 (written) & Unit 7 AC1.2.

Submission:

A completed ‘overview’ in a format of your choosing

Learning outcomes (LOs) The learner will:	**Assessment criteria (AC)**	**Pass** The learner will be able to:	**Merit** The learner will be able to:	**Distinction** The learner will be able to:
1. Understand the value, types and sources of data	1.1 The value of data to an organisation	Describe the value of data to an organisation.	Explain the importance of using a range of qualitative and quantitative data to highlight trends and patterns with consideration of how this could bring value to an organisation.	Evaluate the importance of using a range of quantitative and qualitative data from various sources and how this can bring value to an organisation.
	1.2 How a range of quantitative and qualitative data can be used to highlight and explain trends	Outline how a range of quantitative and qualitative data can be used to highlight and explain trends.		
	1.3 How common sources of data are used within an organisation (for example, internal, external, open datasets, public and private)	Describe how common sources of data are used within an organisation.	Explain how an organisation could use different data sources to support their data strategy. Consideration should be given to any internal data available and the integration of trusted external or third-party data.	
	1.4 How trusted external or third-party data is used to support an organisation's data strategy	Outline how trusted external or third-party data is used to support an organisation's data strategy.		

Task 2 – research report (LO2)

Your manager has asked you to undertake some initial research to develop your knowledge around the use and extraction of data before you begin the practical element of this task. They have asked you to investigate and write a summary of the following areas:

- the purpose and use of a range of data types (Unit 1 AC2.1):
  - numeric
  - temporal
  - text
  - geospatial
  - media

  - logical
  - references
- the importance of selecting the most appropriate data suitable for analysis (Unit 1 AC2.2)
- how to access, extract and migrate data from a range of sources (Unit 1 AC2.3)

The above task also meets unit 7 AC1.1 & unit 7 AC1.2.

Submission:

A written summary of your research

Observation feedback for your practical task

Learning outcomes (LOs) The learner will:	**Assessment criteria (AC)**	**Pass** The learner will be able to:	**Merit** The learner will be able to:	**Distinction** The learner will be able to:
2. Understand the use of data and how to extract data from a range of sources	2.1 The purpose and use of data formats: • numeric • temporal • text • geospatial • media • logical • references	Outline the purpose and use of data formats (as identified in AC2.1).	Discuss a range of data types, comparing their use and suitability when preparing for analysis. Consideration should be given to issues faced by an individual/organisation when using, extracting and migrating data.	Justify why it is important to choose the right data and suitable methods for extracting it to meet specific requirements.
	2.2 The importance of selecting the most appropriate data suitable for analysis	Outline the importance of selecting the most appropriate data suitable for analysis.		
	2.3 How to access, extract	Outline how to access, extract		

	and migrate data from a range of sources	and migrate data from a range of sources.		

Unit 2 – data architecture and legislation

Project scenario

The college has questioned if their current data architecture is adequate and if it complies with internal and external policies and regulations. They are interested in exploring various frameworks that can help them meet all compliance requirements. To do this, they need more information on legal obligations, data security, and data ethics.

The following information has been provided by the college:

- legal obligations: the college is subject to a variety of laws and regulations that govern how they collect, use, and store data
    - these laws and regulations vary from country to country, so it is important for the college to understand the specific laws and regulations that apply to them
- data security: the college is responsible for protecting the data that they collect from students, staff, and other third parties
    - this includes protecting data from unauthorised access, use, disclosure, alteration, or destruction
- data ethics: the college is committed to using data in an ethical way
    - this means that they will only collect data that is necessary for their legitimate business purposes, and they will only use data in ways that are consistent with the expectations of the individuals whose data they collect

Task 2 – CPD materials

The college management wants to upskill all colleagues with easy-to-understand key factors relating to the most important areas of data compliance to ensure that all aspects of legal and regulatory requirements are being complied with.

Task 2a

You have been asked to help in the creation of CPD materials to be used at the next all-staff training day. You will need to create the following:

PowerPoint slides for your line manager to present which cover the following three areas (with sub-sections), including a short video to cover data compliance:

Legal requirements

- the purpose and use of legislation and standards to support the use of data (Unit 2 AC2.1):
    - The Data Protection Act 2018
    - Computer Misuse Act 1990
    - Copyright and Patents Act 1988
    - Payment Card Industry Data Security standard (PCI-DSS)
    - ISO27001

- the purpose and use of intellectual property rights to support the use of data (Unit 2 AC2.2)
- the purpose and use of the data sharing code of protection (Unit 2 AC2.3)
- the concept of marketing consent and how this applies to data analysis (Unit 2 AC2.4)
- how to define personally identifiable information (PII) and why it is important to protect this information (Unit 2 AC 2.5)
- the impact of non-compliance with legal and regulatory requirements on an organisation (Unit 2 AC2.6)

Data quality and security

- how to collect datasets in line with Data Standards Authority (DSA) recommendations (Unit 2 AC2.7)
- the purpose of security controls and procedures to ensure data security (Unit 2 AC2.8)

Task 2b – storage, management and distribution of data in compliance

As part of your day-to-day job, you need to store, manage, and distribute data safely and securely, meeting compliance regulations. The college wishes to promote this as best practice so to support this, your line manager has asked you to create a short instructional video demonstrating how you do this, whilst you explain how you are meeting compliance with legislation and regulation.

To complete this task, you will need to create an instructional video which should be embedded within the presentation slides. This video must demonstrate your ability to:

- store, manage and distribute data in compliance with data security standards and legislation (Unit 2 AC2.9)

The above tasks (2a / 2b) also meet Unit 7 AC1.2 & Unit 7 AC1.3.

Submission:

PowerPoint slides including embedded video

Learning outcomes (LOs) The learner will:	**Assessment criteria (AC)**	**Pass** The learner will be able to:	**Merit** The learner will be able to:	**Distinction** The learner will be able to:
2. Understand legal	2.1 The purpose and use of legislation and	Outline the purpose and use of legislation and	Explain the impact that legislation and standards can	Evaluate the importance of storing, managing,

and regulatory requirements and store, manage and distribute data in compliance with standards and legislation	standards to support the use of data: • Data Protection Act (DPA) 2018 • Computer Misuse Act 1990 • Copyright, Designs and Patents Act 1988 • Payment Card Industry Data Security Standard (PCI DSS) • ISO/IEC 27001	standards to support the use of data (as identified in AC2.1).	have upon an organisation and its employees.	and distributing data in compliance with relevant legislation, regulations and standards.
	2.2 The purpose and use of intellectual property rights (IPR) to support the use of data	Outline the purpose and use of IPR to support the use of data.		
	2.3 The purpose and use of the data sharing code of practice	Outline the purpose and use of the data sharing code of practice.		
	2.4 The concept of marketing consent and how this applies to data analysis	Outline the concept of marketing consent and how this applies to data analysis.	Discuss ways in which organisations can protect PII and techniques for mitigation against non-compliance.	
	2.5 How to define personally identifiable information (PII) and why it is important to protect this information	Outline how to define PII and why it is important to protect this information.		

	2.6 The impact of non-compliance with legal and regulatory requirements on an organisation	Identify the impact of non-compliance with legal and regulatory requirements on an organisation.	Explain the impact of non-compliance with legal and regulatory requirements on an organisation.	
	2.7 How to collect datasets in line with Data Standards Authority (DSA) recommendations (for example, transparency, accountability, fairness)	Outline how to collect datasets in line with DSA recommendations.	Discuss a range of security controls and procedures that can be applied to ensure data security and how this can be used to support adherence to DSA recommendations.	
	2.8 The purpose of security controls and procedures to ensure data security (for example, encryption, resilience)	Outline the purpose of security controls and procedures to ensure data security.		
	2.9 Store, manage and distribute data in compliance with data security standards and legislation	Demonstrate the ability to store, manage and distribute data in compliance with data security standards and legislation.		

Task 3 – data ethics

Your line manager has asked you to create a short training video (5 – 10 mins) outlining the ethical use of data.

To complete this task the video needs to cover the following two areas:

- the purpose and use of the Data Ethics Framework to support the use of data (Unit 2 AC3.1):
  - transparency
  - accountability
  - fairness

- the ethical considerations when working, gathering, analysing and presenting data (Unit 2 AC3.2)

The above task also meets Unit 7 AC1.1 (verbal / non-verbal) and Unit 7 AC1.3 (a).

Submission:

Training video

Learning outcomes (LOs) The learner will:	**Assessment criteria (AC)**	**Pass** The learner will be able to:	**Merit** The learner will be able to:	**Distinction** The learner will be able to:
3. Understand the ethical use of data	3.1 The purpose and use of the Data Ethics Framework to support the use of data: • transparency • accountability • fairness	Outline the purpose and use of the Data Ethics Framework to support the use of data (as identified in AC3.1).	Explain how the principles of the Data Ethics Framework can be implemented when gathering, analysing and presenting data.	Evaluate the importance of using data ethically, considering transparency, accountability and fairness, and potential impacts on individuals and organisations.
	3.2 The ethical considerations when gathering, analysing and presenting data (for example, consent, contract, legal obligations)	Outline the ethical considerations when gathering, analysing and presenting data.		

Unit 4 – blending and merging data

Project scenario

Your line manager has been contacted by the college marketing team who need some support with a data analysis project. They have noticed an increase in website visitors, but the number of applications received is lower than in previous years. They would like you to analyse the data they have provided, apply appropriate filters, and then blend and manipulate the data to gain a deeper understanding of the problem.

Task 2 – data blending and assessing

The college marketing department is looking at using data analysis to help them identify their website visitors, course enquires, course applications and potential students interested in attended taster days. This has resulted in them gathering a range of datasets (provided by your course leader).

They would like you to undertake the following actions on the data to prepare them for further analysis:

- using your own initiative, identify the most appropriate information and then, using the most appropriate blending technique, create a single dataset that provides the marketing department with the most useful information (Unit 4 AC2.3)
- apply the most appropriate manipulation techniques to link the datasets so that the department can see which visitor has enquired about a course, attended a taster day, and then completed an application. (Unit 4 AC2.5)

Once complete, you should write a report that assesses the integrity of the blended and manipulated data results to check they are valid, within the scope of the requirements and free from anomalies (Unit 4 AC2.6 and Unit 7 AC2.2) and identify why it is important that you produce a clear and concise technical document which communicates the gathered data (Unit 7 AC2.1).

Submission:

Single blended dataset

Single linked dataset

Report on the integrity of the dataset*

*This report will also be used for evidence for Unit 7 (AC2.1 & AC2.2)

Learning outcomes (LOs) The learner will:	**Assessment criteria (AC)**	**Pass** The learner will be able to:	**Merit** The learner will be able to:	**Distinction** The learner will be able to:
2. Understand the value of blended data and manipulate, link and audit data	2.1 The value of blended data (for example, deeper business insights)	Identify the value of blended data.	Discuss a range of blending, manipulating and linking data techniques and their importance in preparing data for analysis and auditing.	Evaluate the importance of blending, manipulating and linking data techniques when preparing data for analysis and auditing.
	2.2 The application of blending and manipulation techniques: • data joining (for example, inner, full) • consolidation (for example, combining separate worksheets into one worksheet) • merging dataset (for example, combining files with the same structure into one dataset)	Outline the application of blending and manipulation techniques (as identified in AC2.2).		
	2.3 Provide blended data from multiple sources in an appropriate format	Demonstrate the ability to provide blended data from multiple sources in an appropriate format.		
	2.4 The importance of manipulating and linking different datasets	Identify the importance of manipulating and linking different datasets.		
	2.5 Apply manipulation techniques to link different datasets and meet requirements	Demonstrate the ability to apply manipulation techniques to link different datasets and meet requirements.		

	2.6 Assess the integrity of blended and manipulated data results: • validity • scope • anomalies	Demonstrate the ability to assess the integrity of blended and manipulated data results (as identified in AC2.6).		

Unit 7 – present and communicate data to the appropriate audience (for reference only)

Learning outcomes (LOs) The learner will:	**Assessment criteria (AC)**	**Pass** The learner will be able to:	**Merit** The learner will be able to:	**Distinction** The learner will be able to:
1. Understand and apply communica-tion methods, formats and techniques appropriate for the use of data	1.1 The application of data communication methods: • written (for example, business case, report) • verbal (for example, public speaking, conversation) • non-verbal (for example, tone of voice, body language, active listening)	Outline the application of data communication methods (as identified in AC1.1).	Describe different ways of communicating information, including various methods, formats, and techniques, and how they are used in practice.	Compare a range of communication methods, formats and techniques to determine the most appropriate based on requirements.
	1.2 The application of a range of formats used in the communication of data (for example, presentation, emails, virtual/augmented reality)	Outline the application of a range of formats used in the communication of data.	Describe the use of a range of formats used to communicate data clearly and effectively to different audiences.	Analyse the importance of applying a range of formats when communicating data.
	1.3 The application of communication techniques: • technical / non-technical (for example, complexity levels of language) • active listening • tailoring to audience • use of open questioning • reflection and review	Outline the application of communication techniques (as identified in AC1.3).	Describe how different communication techniques can be applied to ensure information is clear and accurate.	Analyse the importance of applying various communication techniques.

	• storyboarding			
	1.4 The use of communication tools and technologies for collaborative working	Outline the use of communication tools and technologies for collaborative working.	Describe ways the communication tools and technologies are used for collaborative working.	Analyse the role of communication tools and technologies in supporting effective collaborative working.

Learning outcomes (LOs) The learner will:	**Assessment criteria (AC)**	**Pass** The learner will be able to:	**Merit** The learner will be able to:	**Distinction** The learner will be able to:
2. Understand technical documenta-tion and summarise data within a technical document	2.1 The importance of using clear and consistent technical documentation when communicating gathered data	Outline the importance of using clear and concise technical documentation when communicating gathered data.	Describe the importance of using clear and concise technical documentation to effectively communicate data analysis.	Evaluate the importance of clear and concise technical documentation in effectively communicating analysed data and insights.
	2.2 Apply initiative to analyse findings from gathered data and summarise within a clear and consistent technical document	Demonstrate the ability to apply initiative to analyse findings from gathered data and summarise within a clear and consistent technical document.		

Change history record

Version	Description of change	Approval	Date of Issue
v0.1	First draft (holistic SAMs)		November 2023
V0.2	Second draft		May 2025
V1.0	First publication		August 2025