Qualification specification

NCFE Level 3 Technical Occupational Entry for the Data Technician (Diploma)
QN: 610/4006/X

Qualification summary

Qualification title	NCFE Level 3 Technical Occupational Entry for the Data Technician (Diploma)		
Ofqual qualification number (QN)	610/4006/X	**Aim reference**	6104006X
Guided learning hours (GLH)	360	**Total qualification time (TQT)**	480
Minimum age	19		
Qualification purpose	This qualification is designed to provide learners with the knowledge, skills and behaviours (KSBs) relevant to developing competence in data. This qualification will provide employers with reliable evidence of a learner's attainment against occupational standard KSBs that form the minimum requirements for entry into occupation.		
Grading	Not yet achieved/pass/merit/distinction.		
Assessment method	Internally assessed and externally quality assured portfolio of evidence.		
Occupational standards	This qualification is mapped against the following occupational standard: ST0795: Data Technician (Level 3) Version 1.0 A mapping document is available on the qualification's page on the NCFE website.		
UCAS	Please refer to the UCAS website for further details of points allocation and the most up-to-date information.		
Regulation information	This is a regulated qualification. The regulated number for this qualification is 610/4006/X		
Funding	This qualification may be eligible for funding. For further guidance on funding, please contact your local funding provider.		

Contents

Section 1: introduction

Please note this is a draft version of the qualification specification and is likely to be subject to change before the final version is produced for the launch of the qualification.

If you are using this qualification specification for planning purposes, please make sure that you are using the most recent version.

Aims and objectives

This qualification aligns to the knowledge, skills and behaviours (KSBs) in the ST0795: Data Technician (Level 3) Version 1.0 occupational standard. The aim of this qualification is to enable entry to the associated occupation, providing entry competence. Further learning may be required in the workplace to reach full occupational competence.

Support handbook

This qualification specification must be used alongside the mandatory support handbook, which can be found on the NCFE website. This contains additional supporting information to help with planning, delivery and assessment.

This qualification specification contains all the qualification-specific information you will need that is not covered in the support handbook.

Guidance for entry and registration

This qualification is designed as an occupational entry technical qualification for adults.

Registration is at the discretion of the centre in accordance with equality legislation and should be made on the Portal.

There are no specific prior skills/knowledge a learner must have for this qualification. However, learners may find it helpful if they have already achieved a level 2 qualification.

Centres are responsible for ensuring that all learners are capable of achieving the learning outcomes (LOs) and complying with the relevant literacy, numeracy and health and safety requirements.

Learners registered on this qualification should not undertake another qualification at the same level, or with the same/a similar title, as duplication of learning may affect funding eligibility.

Achieving this qualification

To be awarded this qualification, learners are required to successfully achieve **8** graded mandatory units.

Please refer to the list of units in appendix A or the unit summaries in section 2 for further information.

To achieve this qualification, learners must successfully demonstrate their achievement of all LOs of the units as detailed in this qualification specification.

Progression

Learners who achieve this qualification could progress to the following:

- employment:
  - data support analyst
  - data technician
  - junior data analyst
  - junior information analyst

Progression to higher level studies

Level 3 qualifications can support progression to higher level study, which requires knowledge and skills different from those gained at levels 1 and 2. Level 3 qualifications enable learners to:

- apply factual, procedural and theoretical subject knowledge
- use relevant knowledge and methods to address complex, non-routine problems
- interpret and evaluate relevant information and ideas
- understand the nature of the area of study or work
- demonstrate an awareness of different perspectives and approaches
- identify, select and use appropriate cognitive and practical skills
- use appropriate research to inform actions
- review and evaluate the effectiveness of their own methods

Resource requirements

There are no mandatory resource requirements for this qualification, but centres must ensure learners have access to suitable resources to enable them to cover all the appropriate LOs.

How the qualification is assessed

Assessment is the process of measuring a learner's skill, knowledge and understanding against the standards set in a qualification.

This qualification is internally assessed and externally quality assured.

The assessment consists of one component:

- an internally assessed portfolio of evidence, which is assessed by centre staff and externally quality assured by NCFE (internal quality assurance (IQA) must still be completed by the centre as usual)

Learners must be successful in this component to gain the Level 3 Technical Occupational Entry for the Data Technician (Diploma).

All the evidence generated by the learner will be assessed against the standards expected of a level 3 learner for each LO.

Unless otherwise stated in this specification, all learners taking this qualification must be assessed in English and all assessment evidence presented for external quality assurance must be in English.

Internal assessment

We have created some sample tasks for the internally assessed 8 units, which can be found within a separate document in the member's area of our website. These tasks are not mandatory. You can contextualise these tasks to suit the needs of your learners to help them build up their portfolio of evidence. The tasks have been designed to cover all knowledge LOs for 8 units and provide opportunities for stretch and challenge. For further information about contextualising the tasks, please contact the provider development team.

Each learner must create a portfolio of evidence generated from appropriate assessment tasks to demonstrate achievement of all the LOs associated with each unit. The assessment tasks should allow the learner to respond to a real-life situation that they may face when in employment. On completion of each unit, learners must declare that the work produced is their own and the assessor must countersign this. Examples of suitable evidence for the portfolio for each unit are provided in section 2.

If a centre needs to create their own internal assessment tasks, there are 4 essential elements in the production of successful centre-based assessment tasks; these are:

- ensuring the assessment tasks are meaningful with clear, assessable outcomes
- appropriate coverage of the assessment criteria (AC)
- having a valid and engaging context or scenario
- including sufficient opportunities for stretch and challenge for higher attainers

External quality assurance (EQA)

Summatively assessed and internally quality assured grades for completed units must be submitted via the Portal, prior to an external quality assurance (EQA) review taking place. Following the EQA review, the unit grades will either be accepted and banked by your external quality assurer or, if they disagree with the grades, they will be rejected. More detailed guidance on this process and what to do if your grades are rejected can be found in the support handbook and on the NCFE website.

Grading information

Each unit of the qualification is graded using a structure of not yet achieved, pass, merit, distinction.

Grading internally assessed units

The grading descriptors for each unit have been included in the qualification specification. Grading descriptors have been written for each AC within the units. Assessors must be confident that, as a minimum, all AC have been evidenced and met by the learner. Assessors must make a judgement on the evidence produced by the learner to determine the grading decision for the unit.

Once assessors are confident that all the pass descriptors have been met, they can move on to decide if the merit descriptors have been met. If the assessor is confident that all the merit descriptors have been met, they can decide if the distinction descriptors have been met. As the grading descriptors build up from the previous grade's criteria, the evidence must meet 100% of the grade's descriptors to be awarded that grade for the unit.

If the learner has insufficient evidence to meet the pass criteria, a grade of not yet achieved must be awarded for the unit.

Centres must then submit each unit grade via the Portal. The grades submitted will be checked and confirmed through the EQA process. This is known as 'banking' units. Once a learner's grade has been banked, they are permitted one opportunity to revise and redraft their work; more detail on this process can be found in the support handbook.

The internal assessment component is based on performance of open-ended tasks that are assessed holistically against the grading descriptors to achieve a grade. Each unit of the qualification is internally assessed and will be allocated a weighting based on the GLH and a score based on the holistic grade. The overall grade achieved for each unit is converted to a uniform mark scale (UMS) score. The UMS score for each unit is then combined and converted into an overall qualification grade.

All of the AC need to be evidenced in the learner's portfolio, but the grade awarded is based on the standard of work for the LO as a whole. This allows for increased professional judgement on the part of the assessor in terms of the learner's overall level of performance against the LOs.

Awarding the final grade

The final qualification grade is calculated by combining the UMS scores for each unit. The total UMS will then be converted into a grade based on the following fixed thresholds:

	Max	P	M	D
Unit 01 Data fundamentals	12.5%	1	3	5
Unit 02 Data architecture and legislation	12.5%	1	3	5
Unit 03 Data cleansing	12.5%	1	3	5
Unit 04 Blending and merging data	12.5%	1	3	5

Unit 05 Statistical analysis	12.5%	1	3	5
Unit 06 Data visualisation	12.5%	1	3	5
Unit 07 Presentation and communication of data	12.5%	1	3	5
Unit 08 Collaboration and continuing professional development (CPD)	12.5%	1	3	5

The table below shows how the accumulation of each unit grade is aggregated to form the overall qualification grade:

Total score	Grade
33–40	D
17–32	M
8–16	P
0–7	Not yet achieved

The final grade for the qualification is based on a structure of not yet achieved, pass, merit and distinction and will be issued to the centre by NCFE upon the centre claiming the learner's certificate on the Portal.

For further information on assessment, please refer to the user guide to the external quality assurance review report.

NCFE does not anticipate any changes to our aggregation methods or any overall grade thresholds; however, there may be exceptional circumstances in which it is necessary to do so to secure the maintenance of standards over time. Therefore, overall grade thresholds published within this qualification specification may be subject to change.

Section 2: unit content and assessment guidance

This section provides details of the structure and content of this qualification.

The types of evidence listed are for guidance purposes only. Within learners' portfolios, other types of evidence are acceptable if all learning outcomes (LOs) are covered, and if the evidence generated can be internally and externally quality assured. For approval of methods of internal assessment other than portfolio building, please contact your external quality assurer.

The explanation of terms explains how the terms used in the unit content are applied to this qualification. This can be found in section 3.

Unit 01 Data fundamentals (A/651/1111)

Unit summary			
The learner will gain an understanding of the value, types and sources of data. The learner will understand the use of data and how to extract data from identified trusted sources. They will go on to understand how data is collected through customer centric interactions in a secure manner and how data underpins digital interactions. The learner will also be able to collect, collate and format data and save to meet requirements.			
Assessment			
This unit is internally assessed and externally quality assured.			
Mandatory	**Graded P/M/D**	**Level 3**	**45 GLH**

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 show evidence of:
1. Understand the value, types and sources of data	1.1 The value of data to an organisation	Identify the value of data to an organisation.	Describe 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, using working examples where appropriate.	Detailed discussion of the value, types and sources of data, with strong justifications, logical reasoning and evidence of relevant research throughout.
	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)	Identify common sources of data and describe how these 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	

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 show evidence of:
	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.	the integration of trusted external or third-party data. Where relevant, examples should be used to demonstrate the effectiveness of diverse data sources.	
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.	Detailed understanding of the use of data and data extraction, through research evidence, supported through working examples where appropriate and resulting in a justified conclusion.
	2.2 The importance of selecting the most appropriate data suitable for analysis	Explain the importance of selecting the most appropriate data suitable for analysis.		
	2.3 How to access, extract and migrate data from a range of sources	Outline how to access, extract and migrate data from a range of sources.		

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 show evidence of:
3. Understand how data underpins digital interactions and how it is obtained through customer centric interactions	3.1 The significance of data and how it underpins digital interactions and connections across the digital landscape (for example, transactional or booking data)	Outline the significance of data and how it underpins digital interactions and connections across the digital landscape.	Discuss a range of ways that customer centric data can be obtained and the benefits this data offers to an organisation. Working examples should be used where appropriate to support the evidence.	Conduction of in-depth research on how data underpins digital interactions and how it is obtained through customer centric interactions, with all findings and exemplars explained with strong justifications and logical reasoning.
	3.2 How data can be obtained through customer centric interactions: • applications • devices • internet of things (IoT)	Identify how data can be obtained through customer centric interactions (as identified in AC3.2).		
4. Understand and be able to collect, collate and format data and save to meet requirements	4.1 How to collate data from multiple sources to produce a dataset to meet requirements	Outline how to collate data from multiple sources to produce a dataset to meet requirements.	Explain techniques that could be used to identify the most relevant data and methods that could be used to collate it.	Thorough research into collecting, collating and formatting data and strong justifications that have been presented for all decisions made and actions taken.
	4.2 Collect data from a range of sources and migrate, format and save the new dataset	Demonstrate the ability to collect data from a range of sources and migrate, format and save the new dataset.		

Unit 02 Data architecture and legislation (D/651/1112)

Unit summary			
The learner will gain an understanding of data architecture and the frameworks against which data is stored, managed and distributed, in line with requirements informed by relevant regulatory and legal standards and industry best practice. This unit will provide the learner with the knowledge and skills required to store, manage and distribute data in compliance with data security standards and legislation.			
Assessment			
This unit is internally assessed and externally quality assured.			
Mandatory	**Graded P/M/D**	**Level 3**	**45 GLH**

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 show evidence of:
1. Understand data architecture	1.1 The role of data architecture frameworks (for example, The Open Group Architecture Framework (TOGAF)) in supporting business strategy	Outline the role of data architecture frameworks in supporting business strategy.	Discuss the purpose of data architecture, considering the many ways it is used to support the organisation. The use of working examples should be used to illustrate key information.	Evidence-based research into data architecture, with all conclusions justified and any recommendations made fully supported.
	1.2 The function of data architecture frameworks in supporting an organisation's data architecture strategy (for example, access, managed, shared)	Outline the function of data architecture frameworks in supporting an organisation's data architecture strategy.		
	1.3 The types of data architecture (for example, warehouse,	Identify the types of data architecture and their		

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 show evidence of:
	mart, lake) and their different uses within an organisation	different uses within an organisation.		
	1.4 The characteristics of data architecture (for example, governance, compliance, security)	Outline the characteristics of data architecture.		
2. Understand legal and regulatory requirements and store, manage and distribute data in compliance with standards and legislation	2.1 The purpose and use of legislation and 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	Outline the purpose and use of legislation and standards to support the use of data (as identified in AC2.1).	Explain the impact that legislation and standards can have upon an organisation and its employees, using real-world examples where possible.	Research into legal and regulatory requirements that is present throughout, resulting in suggested recommendations that are fully justified and lead to a strong conclusion.
	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.		

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 show evidence of:
	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.		
	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 with 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.		

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 show evidence of:
	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.		
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 using real-world examples that clearly illustrate its use when gathering, analysing and presenting data.	Research into the ethical use of data that is present throughout and supports all findings.
	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 03 Data cleansing (F/651/1113)

Unit summary			
The learner will gain an understanding of common data quality issues and will be able to apply cleansing measures and test and assess confidence and integrity in data. The learner will go on to understand and apply cross-checking methods to identify faults.			
Assessment			
This unit is internally assessed and externally quality assured.			
Mandatory	**Graded P/M/D**	**Level 3**	**45 GLH**

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 show evidence of:
1. Understand common data quality issues, apply data cleansing measures and test and assess confidence and integrity in data	1.1 The characteristics and impact of common data quality issues: • inconsistent data (for example, duplicate entries, out-of-date data) • human error (for example, spelling errors, introduction of bias) • compliance issues (for example, the Data Protection Act 2018)	Outline the characteristics and impact of common data quality issues (as identified in AC1.1).	Explore a wide range of quality issues and cleansing methods that are used to ensure data quality. This is supported through illustrative examples where relevant.	Research into common data quality issues, data cleansing measures and data integrity that is present throughout and supports all findings.
	1.2 The application of data cleansing methods, including:	Outline the application of a range of data cleansing		

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 show evidence of:
	• correction of typos • removal of duplicate entries • excluding out-of-date data • parse data • replacing null/missing values	methods (as identified in AC1.2).		
	1.3 The importance of data quality in ensuring confidence and integrity: • usability • validity • reliability • repeatability • source of data (for example, primary or secondary data) • appropriateness to task based on bias identified within the dataset	Outline the importance of data quality in ensuring confidence and integrity (as identified in AC1.3).		
	1.4 Apply appropriate data cleansing measures	Demonstrate the ability to apply appropriate data cleansing measures.		

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 show evidence of:
	1.5 Test and assess confidence and integrity in the data	Demonstrate the ability to test and assess confidence and integrity in the data.		
2. Understand and apply cross-checking methods	2.1 The application of cross-checking methods for validation and verification: • validation (for example, length, format, data type) • verification: ○ double keying ○ proofreading data	Outline the application of cross-checking methods for validation and verification (as identified in AC2.1).	Discuss a range of validation and verification techniques, providing examples of how and where these are effectively used.	Research into cross-checking methods that has been conducted and findings that have been used to support the discussion.
	2.2 The importance of taking corrective action when validating data	Identify the importance of taking corrective action when validating data.		
	2.3 Apply cross-checking methods to identify faults and data results to meet requirements	Demonstrate the ability to apply cross-checking methods to identify faults and data results to meet requirements.		

Unit 04 Blending and merging data (H/651/1114)

Unit summary			
The learner will understand how to filter data to meet project requirements. The learner will also understand the value of blended data and the importance of manipulating and linking different datasets whilst ensuring that accuracy and consistency is maintained to meet requirements. The learner will be able to blend data by combining data from various sources and formats to explore its relevance and to present it in an appropriate format.			
Assessment			
This unit is internally assessed and externally quality assured.			
Mandatory	**Graded P/M/D**	**Level 3**	**54 GLH**

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 show evidence of:
1. Understand how to filter data	1.1 The importance of filtering data (for example, accuracy, reliability)	Identify the importance of filtering data.	Explain a range of techniques used when filtering data to meet requirements.	Research into filtering data that has been conducted and findings that have been used to support the explanation.
	1.2 How to filter data to meet project requirements	Outline how to filter data to meet project requirements.		
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 and manipulation techniques, providing working examples where appropriate and considering the use of Structured Query Language (SQL) commands used to achieve the desired outcomes.	Proficient use of SQL that demonstrates an understanding of the blending and manipulation of data. This is supported, where appropriate, using annotated working examples.
	2.2 The application of blending and manipulation techniques: • data joining (for example, inner, full)	Outline the application of blending and manipulation techniques (as identified in 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 show evidence of:
	• consolidation (for example, combining separate worksheets into one worksheet) • merging dataset (for example, combining files with the same structure into one dataset)			
	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	Demonstrate the ability to assess the integrity of blended and manipulated data results (as identified in AC2.6).		

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 show evidence of:
	• scope • anomalies			

Unit 05 Statistical analysis (J/651/1115)

Unit summary			
The learner will understand and be able to apply modelling statistical methods and algorithms. Learners will also be able to normalise data with the purpose of identifying trends and patterns to support business outcomes using statistical methods to analyse the data.			
Assessment			
This unit is internally assessed and externally quality assured.			
Mandatory	**Graded P/M/D**	**Level 3**	**54 GLH**

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 show evidence of:
1. Understand and apply data modelling, statistical methods and algorithms	1.1 The application of data modelling techniques to extract relevant data: • conceptual • logical • physical	Outline the application of data modelling techniques to extract relevant data (as identified in AC1.1).	Clearly explain how data modelling techniques are used and form a basis to support the process of data normalisation. Working examples should be included to support a detailed explanation for the use of multiple statistical methods.	Research into data modelling, statistical methods and algorithms that has been conducted and provides a solid foundation for any actions, recommendations and conclusions made.
	1.2 The application of statistical methods to normalise data and to identify trends and patterns: • standard deviation – measures the variance from the mean • linear regression – identifies relationship	Outline the application of statistical methods to normalise data and to identify trends and patterns (as identified in AC1.2).		

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 show evidence of:
	between data variables • clustering – used to group related data points within a dataset • time series modelling – identifies patterns over time (for example, weekly or monthly trends) • correlation – identifies a relationship between datasets			
	1.3 The process of data normalisation to remove redundancy and improve integrity	Identify the process of data normalisation to remove redundancy and improve integrity.		
	1.4 The features and function of algorithms to solve problems within data (for example, identifying patterns and trends, provides predictive analytics)	Identify the features and function of algorithms to solve problems within data.		
	1.5 Apply appropriate data modelling techniques and	Demonstrate the ability to apply appropriate data modelling techniques and		

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 show evidence of:
	algorithms to identify trends and patterns in data	algorithms to identify trends and patterns in data.		
	1.6 Apply an appropriate statistical method to interpret trends and patterns in data	Demonstrate the ability to apply an appropriate statistical method to interpret trends and patterns in data.		

Unit 06 Data visualisation (K/651/1116)

Unit summary			
The learner will understand data management and visualisation tools used to present data in an appropriate format for review and analysis, and to communicate results to meet technical and non-technical audience requirements. The learner will be able to present data for review and analysis by others.			
Assessment			
This unit is internally assessed and externally quality assured.			
Mandatory	**Graded P/M/D**	**Level 3**	**36 GLH**

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 show evidence of:
1. Understand data management and visualisation tools and apply visualisation tools and techniques to communicate data	1.1 The use of data management tools to govern, process, secure and store data	Outline the use of data management tools to govern, process, secure and store data.	Explore how data management tools can be used when preparing data for visualisation. There should be consideration of a range of visualisation tools and techniques, clearly explaining how these are used when presenting findings.	Research that has been undertaken into data management and visualisation tools and techniques, providing a solid foundation for the exploration. Working examples may be used, where appropriate, to support findings.
	1.2 The use of data visualisation tools to manage, summarise and display data (for example, Power BI, Microsoft Excel)	Outline the use of data visualisation tools to manage, summarise and display data.		
	1.3 The use of presentation tools to review and communicate data (for example, Microsoft PowerPoint, Canva)	Outline the use of presentation tools to review and communicate data.		
	1.4 The application of visualisation techniques used to	Outline how visualisation techniques are used to		

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 show evidence of:
	present data for specific audiences (for example, charts/graphs, tables, infographics)	present data for specific audiences.		
	1.5 Apply a range of visualisation tools and techniques to identify trends and patterns in data and communicate results to meet technical and non-technical audience requirements	Demonstrate the ability to apply a range of visualisation tools and techniques to identify trends and patterns in data and communicate results to meet technical and non-technical audience requirements.	Accurately apply a range of visualisation tools and techniques to identify trends and patterns in data and communicate results to meet technical and non-technical audience requirements.	Rigorous application of a range of visualisation tools and techniques to identify trends and patterns in data and communicate results to meet technical and non-technical audience requirements.

Unit 07 Presentation and communication of data (L/651/1117)

Unit summary			
The learner will gain an understanding of the knowledge and skills required to present and communicate data in line with audience requirements. The learner will be able to apply different techniques and tools to communicate findings from gathered data and provide a summary through clear and consistent reports and technical documentation that is tailored to meet the needs of the audience.			
Assessment			
This unit is internally assessed and externally quality assured.			
Mandatory	**Graded P/M/D**	**Level 3**	**36 GLH**

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 show evidence of:
1. Understand and apply communication 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).	Compare a range of communication methods, formats and techniques, clearly identifying the most appropriate use of each, using relevant working examples.	Research into communication methods, formats and techniques appropriate for the use of data that is present and clearly provides evidence to support any recommendations and conclusions made. In all instances, these are fully justified.
	1.2 The application of a range of formats used in the	Outline the application of a range of formats used in the communication of data.	Outline clearly the application of a range of	Comprehensive outlining of the application of a range of formats used in

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 show evidence of:
	communication of data (for example, presentation, emails, virtual/augmented reality)		formats used in the communication of data.	the communication of 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 • storyboarding	Outline the application of communication techniques (as identified in AC1.3).	Outline clearly the application of communication techniques.	Comprehensive outlining of the application of communication techniques.
	1.4 The use of communication tools and technologies for collaborative working	Outline the use of communication tools and technologies for collaborative working.	Outline clearly the use of communication tools and technologies for collaborative working.	Comprehensive outlining of the use of communication tools and technologies for collaborative working.
2. Understand technical	2.1 The importance of using clear and	Identify the importance of using clear and concise	Explore a range of technical documentation	Research into summarising data within a

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 show evidence of:
documentation and summarise data within a technical document	consistent technical documentation when communicating gathered data	technical documentation when communicating gathered data.	and identify techniques that have been used to ensure that these are clear and concise.	technical document that is present and evidenced through working examples where appropriate.
	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.		

Unit 08 Collaboration and continuing professional development (CPD) (M/651/1118)

Unit summary			
The learner will gain an understanding of digital transformation and the skills required to engage with technical and non-technical stakeholders at all levels in a timely and professional manner. The learner will understand and be able to review their own development needs to remain up to date with developments in technologies, trends and innovation affecting data analysis.			
Assessment			
This unit is internally assessed and externally quality assured.			
Mandatory	**Graded P/M/D**	**Level 3**	**45 GLH**

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 show evidence of:
1. Understand digital transformation	1.1 The impact of digital transformation (for example, new IT system) on data related occupations and within an overall business context: • customer issues and problems • business value • brand awareness • cultural/diversity awareness • internal and external stakeholders:	Outline the impact of digital transformation on data related occupations and within an overall business context (as identified in AC1.1).	Discuss ways in which the impact of digital transformation can be managed effectively, ensuring minimal disruption. This should be supported through examples where possible.	Research that supports findings in relation to understanding the impact of digital transformation. This will provide a sound basis for the evidence and enhance a factual discussion.

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 show evidence of:
	○ user experience ○ accessibility ○ level of technical knowledge			
2. Understand learning techniques and sources of knowledge, and review own development needs	2.1 How learning techniques (for example, evaluation and reflection) support and contribute to continuing professional development (CPD) of data related occupations	Outline how learning techniques contribute to CPD of data related occupations.	Compare different types of learning techniques, identifying the appropriateness of these in relation to CPD.	A comprehensive understanding of learning techniques, sources of knowledge and the ability to review own development needs that is evident through the use of research which supports any comparisons and justified conclusions. Relevant examples should be included where appropriate.
	2.2 The use of a range of sources of knowledge and verified information applicable to data related occupations (for example, professional networks, academic publications)	Demonstrate the ability to use a range of sources of knowledge and verified information applicable to data related occupations.	Assess the reliability, validity and bias for a range of sources of knowledge used to support own CPD.	
	2.3 Review own development needs and use a range of sources to keep up	Demonstrate the ability to review own development needs and use a range of sources to keep up to date		

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 show evidence of:
	to date with developments in technologies, trends and innovation	with developments in technologies, trends and innovation.		
3. Understand multidisciplinary teams and working with others	3.1 The purpose of a multidisciplinary team	Outline the purpose of a multidisciplinary team.	Clearly explain the benefits and limitations of implementing multidisciplinary teams, using relevant working examples.	Research that is present and supports a comprehensive understanding of multidisciplinary teams, which provides a foundation for any recommendations, justifications or conclusions that are made.
	3.2 How the roles within a multidisciplinary team are identified	Identify how the roles within a multidisciplinary team are identified.		
	3.3 The value of communication within multidisciplinary teams	Outline the value of communication within multidisciplinary teams.		
	3.4 The importance of valuing difference and being sensitive to the needs of others	Identify the importance of valuing difference and being sensitive to the needs of others.		
4. Understand technical and non-technical stakeholders and apply prioritisation skills within a project	4.1 A range of technical and non-technical stakeholders within an organisation: • customer/client • management • peer/colleague	Outline a range of technical and non-technical stakeholders within an organisation (as identified in AC4.1).	Compare a range of technical and non-technical stakeholders, considering the importance of time management and prioritisation skills when working on a project.	Research into technical and non-technical stakeholders and the application of prioritisation skills within a project that is present throughout, with strong justification and logical reasoning.
	4.2 The benefits of taking a thorough and organised approach when	Identify the benefits of taking a thorough and organised approach when working within a project.		

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 show evidence of:
	working within a project			
	4.3 Apply prioritisation and time management skills to meet the requirements of a project	Evidence the ability to apply prioritisation and time management skills to meet the requirements of a project.		

Assessment strategies and principles relevant to this qualification

The key requirements of the assessment strategies or principles that relate to units in this qualification are summarised below.

The centre must ensure that individuals undertaking assessor or quality assurer roles within the centre conform to the assessment requirements for the unit they are assessing or quality assuring.

NCFE assessment strategy

Knowledge learning outcomes (LOs):

- assessors will need to be both occupationally knowledgeable and qualified to make assessment decisions
- internal quality assurers will need to be both occupationally knowledgeable and qualified to make quality assurance decisions

Skills learning outcomes (LOs):

- assessors will need to be both occupationally competent and qualified to make assessment decisions
- internal quality assurers will need to be both occupationally knowledgeable and qualified to make quality assurance decisions

Section 3: explanation of terms

This table explains how the terms used at **level 3** in the unit content are applied to this qualification (not all terms are used in this qualification).

Analyse	Break down the subject into separate parts and examine each part. Show how the main ideas are related and why they are important. Reference to current research or theory may support the analysis.
Apply	Explain how existing knowledge can be linked to new or different situations in practice.
Clarify	Explain the information in a clear, concise way.
Classify	Organise according to specific criteria.
Collate	Collect and present information arranged in sequential or logical order.
Compare	Examine the subjects in detail and consider the similarities and differences.
Consider	Think carefully and write about a problem, action or decision.
Create	Make or produce an artefact as required.
Critically compare	This is a development of 'compare' where the learner considers the positive aspects and limitations of the subject.
Demonstrate	Show an understanding by describing, explaining or illustrating using examples.
Describe	Write about the subject giving detailed information in a logical way.
Develop (a plan/idea)	Expand a plan or idea by adding more detail and/or depth of information.
Diagnose	Identify the cause based on valid evidence.
Differentiate	Identify the differences between 2 or more things.
Discuss	Write a detailed account giving a range of views or opinions.
Distinguish	Explain the difference between 2 or more items, resources or pieces of information.
Draw conclusions	Make a final decision or judgement based on reasons.
Estimate	Form an approximate opinion or judgement using previous knowledge or considering other information.

Evaluate	Examine strengths and weaknesses, arguments for and against and/or similarities and differences. Judge the evidence from the different perspectives and make a valid conclusion or reasoned judgement. Reference to current research or theory may support the evaluation.
Explain	Provide detailed information about the subject with reasons showing how or why. Responses could include examples to support these reasons.
Extrapolate	Use existing knowledge to predict possible outcomes that might be outside the norm.
Identify	Recognise and name the main points accurately (some description may also be necessary to gain higher marks when using compensatory marking).
Implement	Explain how to put an idea or plan into action.
Interpret	Explain the meaning of something.
Judge	Form an opinion or make a decision.
Justify	Give a satisfactory explanation for actions or decisions.
Outline	Identify or describe the main points.
Perform	Carry out a task or process to meet the requirements of the question.
Plan	Think about and organise information in a logical way using an appropriate format.
Provide	Identify and give relevant and detailed information in relation to the subject.
Reflect	Learners should consider their actions, experiences or learning and the implications of this for their practice and/or professional development.
Review and revise	Look back over the subject and make corrections or changes.
Select	Make an informed choice for a specific purpose.
Show	Supply evidence to demonstrate accurate knowledge and understanding.
State	Give the main points clearly in sentences or paragraphs.
Summarise	Give the main ideas or facts in a concise way.
Test	Complete a series of checks utilising a set procedure.

Section 4: support

Support materials

The following support materials are available to assist with the delivery of this qualification and are available on the NCFE website:

- evidence and grading tracker
- learning resources
- qualification factsheet

Other support materials

The resources and materials used in the delivery of this qualification must be age-appropriate and due consideration should be given to the wellbeing and safeguarding of learners in line with your institute's safeguarding policy when developing or selecting delivery materials.

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Information in this qualification specification is correct at the time of publishing but may be subject to change.

To continue to improve our levels of customer service, telephone calls may be recorded for training and quality purposes.

Appendix A: units

To simplify cross-referencing assessments and quality assurance, we have used a sequential numbering system in this document for each unit.

Mandatory units

Unit number	Regulated unit number	Unit title	Level	GLH
Unit 01	A/651/1111	Data fundamentals	3	45
Unit 02	D/651/1112	Data architecture and legislation	3	45
Unit 03	F/651/1113	Data cleansing	3	45
Unit 04	H/651/1114	Blending and merging data	3	54
Unit 05	J/651/1115	Statistical analysis	3	54
Unit 06	K/651/1116	Data visualisation	3	36
Unit 07	L/651/1117	Presentation and communication of data	3	36
Unit 08	M/651/1118	Collaboration and continuing professional development (CPD)	3	45

The units above may be available as stand-alone unit programmes. Please visit our website for further information.