Highfield Level 3 End-Point Assessment for ST0795 Data Technician

End-Point Assessment Kit

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EPA Kit

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How to use this EPA Kit

Welcome to the Highfield End-Point Assessment Kit for the Data Technician apprenticeship standard.

Highfield is an independent end-point assessment organisation that has been approved to offer and carry out the independent end-point assessments for the Level 3 Data Technician apprenticeship standard. Highfield internally quality assures all end-point assessments in accordance with its IQA process, and additionally all end-point assessments are externally quality assured by the relevant EQA organisation.

The EPA Kit is designed to outline all you need to know about the end-point assessments for this standard and will also provide an overview of the on-programme delivery requirements. In addition, advice and guidance for trainers on how to prepare apprentices for the end-point assessment is included. The approaches suggested are not the only way in which an apprentice may be prepared for their assessments, but trainers may find them helpful as a starting point.

Key facts

Apprenticeship standard:	Data Technician
Level:	3
On-programme duration:	Typically, 24 months
End-point assessment window:	Typically, 3 months
Grading:	Pass/merit/distinction
End-point assessment methods:	Scenario demonstrations with questioning Professional discussion underpinned by a portfolio

In this kit, you will find:

- an overview of the standard and any on-programme requirements
- a section focused on delivery, where the standard and assessment criteria are presented in a suggested format that is suitable for delivery
- guidance on how to prepare the apprentice for gateway
- detailed information on which part of the standard is assessed by which assessment method
- suggestions on how to prepare the apprentice for each part of the end-point assessment
- a section focused on the end-point assessment method where the assessment criteria are presented in a format suitable for carrying out 'mock' assessments

Introduction

Standard overview

In their daily work, a data technician interacts with a wide range of stakeholders including colleagues, managers, customers, and internal and external suppliers. An employee in this occupation will be responsible for collecting and processing data under the guidance of a senior colleague or multiple colleagues across the business. A data technician would mainly be responsible for their own work but may have the opportunity to mentor others.

This occupation is found in all sectors where data is generated or processed, including but not limited to, finance, retail, education, health, media, manufacturing and hospitality. The broad purpose of the occupation is to source, format and present data securely in a relevant way for analysis using basic methods.

Data technicians will communicate outcomes appropriate to the audience, analyse structured and unstructured data to support business outcomes, blend data from multiple sources as directed, and apply legal and ethical principles when manipulating data.

On-programme requirements

Although learning, development and on-programme assessment is flexible, and the process is not prescribed, the following is the recommended baseline expectation for an apprentice to achieve full competence in line with the Data Technician apprenticeship standard.

The on-programme assessment approach will be agreed between the training provider and employer. The assessment will give an ongoing indication of an apprentice's performance against the final outcomes defined in the standard. The training provider will need to prepare the apprentice for the end-point assessment, including preparation for the scenario demonstrations and professional discussion and collation of the portfolio of evidence (such as a provision of recordings of professional discussions or workplace evidence).

The training programme leading to end-point assessment should cover the breadth and depth of the standard using suggested on-programme assessment methods that integrate the knowledge, skills and behaviour components, and which ensure that the apprentice is sufficiently prepared to undertake the end-point assessment. Training, development and ongoing review activities should include:

- achievement of level 2 English and maths. If the apprentice began their apprenticeship training before their 19th birthday, they will still be subject to the mandatory requirement to study towards and achieve English and maths. The requirements for English and maths are optional for apprentices aged 19+ at the start of their apprenticeship training.

- the completion of a portfolio through which the apprentice gathers evidence of their progress
- regular performance reviews undertaken by the employer
- structured one-to-one reviews of their progress with their employer and/or training provider

Throughout the period of learning and development, and at least every 2 months, the apprentice should meet with the on-programme assessor to record their progress against the standard. At these reviews, evidence should be discussed and recorded by the apprentice. The maintenance of an on-programme record is important to support the apprentice, on-programme assessor and employer in monitoring the progress of learning and development. This will determine when the apprentice has achieved full competence in their job role and is therefore ready for end-point assessment.

Portfolio of evidence

The apprentice must compile a portfolio of evidence during their time on-programme that is mapped against the knowledge, skills and behaviours assessed in the professional discussion underpinned by a portfolio.

It will typically contain **8 discrete pieces of evidence**. Evidence may be used to demonstrate more than **1 knowledge, skill or behaviour** as a qualitative approach is suggested as opposed to a quantitative approach.

Evidence sources for the portfolio may include:

- workplace documentation/records, policies and procedures
- witness statements
- annotated photographs
- video clips for a maximum duration of 5 minutes where the apprentice must be in view and identifiable at all times

This is **not** a definitive list and other evidence sources are possible. Given the breadth of context and roles in which this occupation works, the apprentice will select the most appropriate evidence based on the context of their practice against the relevant knowledge, skills and behaviours.

The portfolio should **not** include any methods of self-assessment or self-reflection. Any employer contributions should focus on direct observation of performance (for example, witness statements) rather than opinions.

The portfolio **must** be accompanied by a portfolio matrix. This can be downloaded from our website. The portfolio matrix **must** be fully completed, including a declaration by the employer and the apprentice, to confirm that the portfolio is valid and attributable to the apprentice.

The portfolio of evidence **must** be submitted to Highfield at gateway, except in cases where the apprentice is working in a confidential environment. The employer may insist

that the independent assessor reviews the portfolio at the employer's premises only and that the portfolio is not made available for review away from those premises. In such cases, Highfield and the independent assessor should use their discretion to make suitable arrangements to verify to their satisfaction that the portfolio was completed and available for review at gateway.

The portfolio is **not** directly assessed but underpins the professional discussion.

Use of artificial intelligence (AI) in the EPA

Where AI has been used as part of the apprentice's day-to-day work and forms part of a project report, presentation or artefact, it should be referenced as such within the work. AI must not be used to produce the report or portfolio.

Where AI has been used as part of a portfolio that underpins an interview or professional discussion or any other assessment method, it should be fully referenced within the portfolio.

Readiness for end-point assessment

For an apprentice to be ready for the end-point assessments:

- the apprentice must have achieved level 2 English and maths. The requirements for English and maths are mandatory for all apprentices aged between 16-18 at the start of their apprenticeship training. The requirements for English and maths are optional for apprentices aged 19+ at the start of their apprenticeship training.
- the apprentice must have gathered a **portfolio of evidence** against the required elements to be used as the basis for the professional discussion
- the line manager (employer) must be confident that the apprentice has developed all the knowledge, skills and behaviours defined in the apprenticeship standard and that the apprentice is competent in performing their role. To ensure this, the apprentice must attend a formal meeting with their employer to complete the Gateway Readiness Report.
- the apprentice and the employer should then engage with Highfield to agree a plan and schedule for each assessment activity to ensure all components can be completed within a **3-month** end-assessment window. Further information about the gateway process is covered later in this kit.

If you have any queries regarding the gateway requirements, please contact your EPA Customer Engagement Manager at Highfield Assessment.

Order of end-point assessments

There is **no** stipulated order of assessment methods. This will be discussed with the apprentice, training provider and/or employer with our scheduling team when scheduling the assessments, to ensure that the learner is provided with the best opportunity to attempt the assessment.

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The Highfield approach

This section describes the approach Highfield has adopted in the development of this end-point assessment in terms of its interpretation of the requirements of the end-point assessment plan and other relevant documents.

Documents used in developing this end-point assessment

Data Technician (2020)

Data Technician / Institute for Apprenticeships and Technical Education

End-point assessment plan (ST0795/v1.0)

https://www.instituteforapprenticeships.org/media/4612/st0795_data_technician_l3_assessment-plan-for-publication_c27_qm-adjustment-october-2020.pdf

Specific considerations

Highfield's approach does **not** deviate from the assessment plan.

The assessment plan states that within the scenario demonstration with questioning and the professional discussion underpinned by portfolio assessment methods, criteria K6 is split between both. However, for each assessment method K6 will assess for different knowledge. There is **no** carry-over of criteria between the assessment methods.

IfATE have released the following guidance, and it is expected that this approach to delivery is only applicable to the Royal Navy. Organisations can use their own EPAO if The Institute confirms that it is satisfied, having considered adequate evidence, that the following criteria has been met:

- all options supporting a fully independent model have been exhausted
- national security issues prevent remote end-point assessment
- the fair assessment of occupational competence can only be achieved in the apprentice's operating environment

IfATE must be satisfied that every possible way of having a fully independent end-point assessment has been considered and that the unique circumstances of the employer prevents any arrangements for a fully independent model being made. IfATE must also be satisfied that the end-point assessment meets all of its other requirements, including the delivery of valid and accurate judgements of occupational competence, such that all apprentices who complete the end-point assessment will be judged competent in the occupation regardless of who their employer is.

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Gateway

How to prepare for gateway

After apprentices have completed their on-programme learning, they should be ready to pass through 'gateway' to their end-point assessment.

Gateway is a meeting that should be arranged between the apprentice, their employer and training provider to determine that the apprentice is ready to undertake their end-point assessment. The apprentice should prepare for this meeting by bringing along work-based evidence, including:

- customer feedback
- recordings
- manager statements
- witness statements

As well as evidence from others, such as:

- mid and end-of-year performance reviews
- feedback to show how they have met the apprenticeship standards while on-programme

In advance of gateway, apprentices will need to have completed the following. The requirements for English and maths listed below are mandatory for all apprentices aged between 16-18 at the start of their apprenticeship training. The requirements for English and maths listed below are optional for apprentices aged 19+ at the start of their apprenticeship training.

- Achieved level 2 English
- Achieved level 2 maths
- Compiled a portfolio

Therefore, apprentices should be advised by employers and providers to gather this evidence and undertake these qualifications during their on-programme training. It is recommended that employers and providers complete regular checks and reviews of this evidence to ensure the apprentice is progressing and achieving the standards before the formal gateway meeting is arranged.

The gateway meeting

The gateway meeting should last around an hour and must be completed on or after the apprenticeship on-programme end date. It should be attended by the apprentice and the relevant people who have worked with the apprentice on-programme, such as the line manager/employer or mentor, the on-programme trainer/training provider and/or a senior manager (as appropriate to the business).

During the meeting, the apprentice, employer and training provider will discuss the apprentice's progress to date and confirm if the apprentice has met the full criteria of the apprenticeship standard during their on-programme training. The **Gateway Readiness Report** should be used to log the outcomes of the meeting and agreed by all **3** parties. This report is available to download from the Highfield Assessment website.

The report should then be submitted to Highfield to initiate the end-point assessment process. If you require any support completing the Gateway Readiness Report, please contact your EPA Customer Engagement Manager at Highfield Assessment.

Please note: a copy of the standard should be available to all attendees during the gateway meeting.

Reasonable adjustments and special considerations
Highfield Assessment has measures in place for apprentices who require additional support. Please refer to the Highfield Assessment Reasonable Adjustments policy for further information/guidance.

ID requirements
Highfield Assessment will need to ensure that the person undertaking an assessment is indeed the person they are claiming to be. All employers are, therefore, required to ensure that each apprentice has their identification with them on the day of the assessment so the end-point assessor can check.

Highfield Assessment will accept the following as proof of an apprentice's identity:

- a valid passport (any nationality)
- a signed UK photocard driving licence
- a valid warrant card issued by HM forces or the police
- another photographic ID card, such as an employee ID card or travel card

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The Data Technician apprenticeship standard

Below are the knowledge, skills and behaviours (KSBs) from the standard and related assessment criteria from the assessment plan. On-programme learning will be based upon the KSBs and the associated assessment criteria are used to assess and grade the apprentice within each assessment method.

<table>
<tr><th colspan="2">Data gathering</th></tr>
<tr><th colspan="2">Scenario demonstration with questioning</th></tr>
<tr><th>Knowledge</th><th>Skills</th></tr>
<tr><td>K2 How to access and extract data from a range of already identified sources.

K3 How to collate and format data in line with industry standards.

K6.1 How to undertake blending of data from multiple sources.</td><td>S1 Source and migrate data from already identified different sources.

S2 Collect, format and save datasets.

S3 Summarise and explain gathered data.

S4 Blend data sets from multiple sources and present in format appropriate to the task.

S5 Manipulate and link different data sets as required.

S6 Use tools and techniques to identify trends and patterns in data.</td></tr>
<tr><th>Pass criteria</th><th>Distinction criteria</th></tr>
<tr><td>DG1 Accesses, formats, collates, blends and extracts data from multiple identified sources in line with current industry standards. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6)</td><td>DG7 Critically analyses the reasons why data is gathered and the importance of using multiple sources. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6)</td></tr>
</table>

DG2 Locates and **migrates data** from already identified sources. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6) **DG3 Manipulates** and **links different data sets** using **tools** and **techniques** to identify trends and patterns. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6) **DG4** Presents data in a **format** appropriate to the task. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6) **DG5 Summarises** and **explains** the results of the **gathered data**. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6) **DG6** Identifies trends and patterns in data. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6)	
Professional discussion underpinned by a portfolio	
Knowledge	
K1: Range of **different types of existing data**. Common sources of data - **internal, external, open** data sets, public and private. **Data formats** and their **importance for analysis**. **Data architecture** - the framework against which **data is stored and structured** including on premises and cloud. **K4**: **Data formats and their importance for analysis.** Management and **presentation tools to visualise** and review the characteristics of data. Communication tools and technologies for collaborative working. **K6.2**: The value of data to the organisation. **K15**: The **role of data in the context of the digital world** including the use of external trusted open data sets, how data underpins every digital interaction and connectedness across the digital landscape including applications, devises, IoT, customer centricity.	
Pass criteria	***Distinction criteria***

DG8 Explains the different types of data sets and their **formats**. (K1, K4, K6.2, K15) **DG9** Describes the value of the data to the organisation and the **importance of analysis** management. (K1, K4, K6.2, K15) **DG10** Describes the **role of data** in the digital domain (including the use of external trusted data sets) and how it underpins every digital interaction including applications, devises, IoT and customer centricity. (K1, K4, K6.2, K15) **DG11** Explains the different types of **data formats** and **data architectures** including premises and cloud. (K1, K4, K6.2, K15) **DG12** Describes the characteristics of **presentation tools to visualise** and reviews the characteristics of data and communication tools and technologies for collaborative working. (K1, K4, K6.2, K15)	***DG13*** *Evaluates and justifies why using different data sets is important to the business and evaluates how incorrect data gathering can affect the output. (K1, K4, K6.2, K15)*

Amplification and guidance

Access and extract data from a range of already identified sources could include:

- the legitimacy, quality, ownership, age, organisation and structure of the data
- common examples of sources and formats of structured data such as in databases, proprietary and non-proprietary files and documents
- common examples of sources and formats of unstructured data such as videos and slide presentation
- methods for extraction of data and considerations before development of a methodology, for example, a snapshot versus a continuous feed
- methods of data access and extraction to consider and understand, depending on the level of complexity and other implications. Examples from relatively simple to advanced include:

- accessing data files on a shared network, or those sent via email or file sharing tools or systems
- accessing data from local or external databases and management information systems
- accessing and using pre-processed data from business intelligence or statistical software packages
- accessing data from external data sources such as government websites, open data stores or commercial sources
- use of application programming interfaces (APIs) for accessing and extracting data and the methods for how this can be performed.
- understand the principles of the use of extract, transform and load (ETL) tools

Collate and format data by compiling data from different sources and potentially different formats such as spreadsheets, database tables and other file formats.

Industry standards for the management or transfer of data, could include:

- comma separated values (CSV) and other delimiter-separated formats
- extensible markup language (XML) and other markup languages
- proprietary software data formats, such as statistical or business intelligence software packages
- database standard formats and software (such as MS Access, MS SQL and Oracle) and technologies to query them (such as SQL and PowerBI)

Blending of datasets from multiple sources may require the use of data conversion techniques to unify data formats. Awareness of the risks of data conversion which can include data loss or data rounding. Understand that data can come from a variety of sources and to consider:

- inconsistent quality, formats, time periods, precision, scales and data collection definitions or recording errors
- information collected for different purposes, with the possibility of bias or focus on specific criteria
- sufficiency of sample sizes

Blend data sets could include:

- the need for the analyst to understand the structure and format of the data sources, and how they may be able to interact with one another
- the possibility of inconsistent quality, formats, time periods, precision, scales and data collection definitions or recording errors, leading to the need for appropriate data cleansing
- information collected for different purposes, with the possibility of bias or focus on specific criteria
- sufficiency of sample sizes, and the impacts of being able to merge or align datasets
- how blending can lead to privacy or data security implications

Source and migrate data by understanding what a data source is, from the initial record of the data being created, through to the outputs of multiple processes and analysis.

Format data, could include:

- tabular, structured data that can be held in spreadsheets and statistical software
- unstructured data in images, slide presentations or images

Save datasets includes using file types and formats appropriate for the content.

Summarise and explain gathered data by using the key insights, patterns and trends in the data being analysed and present this using the appropriate formats and techniques. These can be through the models and methods used in descriptive statistics, segmenting, filtering and grouping, application of statistical models and qualitative analysis.

Gathered data, could include:

- digital and online methods such as social media, video sharing and web conferencing tools

- online methods, such as the publication of reports and data on public websites or company intranets
- audio-visual presentations
- documented reports with visualisations

Blend datasets from multiple sources may require the use of data conversion techniques to unify data formats. Awareness of the risks of data conversion which can include data loss or data rounding. Understand that data can come from a variety of sources and to consider:

- inconsistent quality, formats, time periods, precision, scales and data collection definitions or recording errors
- information collected for different purposes, with the possibility of bias or focus on specific criteria
- sufficiency of sample sizes

Blend data sets could include:

- the need for the analyst to understand the structure and format of the data sources, and how they may be able to interact with one another
- the possibility of inconsistent quality, formats, time periods, precision, scales and data collection definitions or recording errors, leading to the need for appropriate data cleansing
- information collected for different purposes, with the possibility of bias or focus on specific criteria
- sufficiency of sample sizes, and the impacts of being able to merge or align datasets
- how blending can lead to privacy or data security implications

Manipulate data will require standard cleansing of the data but also require conversion of data types so that formats, such as the keys, are synchronised, and conversion or aggregation to follow matching time periods.

Link different data sets require the identification of common fields or variables that can connect different data sets.

Tools and **techniques** could include:

- use of commercial databases to manage, structure and integrate data (for example, through the use of structured query language (SQL))
- data visualisation to help visualise the data in a format such as:
    - maps
    - graphs
    - tables
    - dashboards
- descriptive statistics to perform summary statistics to describe the data (mean, median and standard deviation):
    - statistics analyses and draws summaries and conclusions from data through the application of mathematical models
    - statistics analyses data to answer questions, identify relationships, patterns, behaviours and suggest solutions or the need for further data analysis
- machine learning application of algorithms to identify or predict trends statistics software and tools

Different types of existing data could include:

- **internal**, for example, internal to the business, held in various formats and levels of quality, such as internal performance indicator data, staff sickness or leave data.
- **external**, for example, specific sector, government, competitor and academic data. For example, published corporate financial figures, school progress and performance data.
- **open data,** for example, understanding of what open data is, how to access it, how it is licensed, how IP and copyright is managed. Understanding of why data is made open (for example, to facilitate science, because it was created via public funding, political reasons). Examples include real time public transport data and weather service data.

Data formats and the **importance for analysis** could include:

- the main types of data (such as nominal, ordinal, discrete and continuous) and why these matter in terms of collection, analysis and the application of statistical methods
- different data formats and how these impact on data consistency, aggregation and manipulation. Examples include:
    - date and time formats
    - characters and strings, including ASCII and ANSI codes, characters and symbols
    - the different number formats
    - the use of null values

Data architecture: understanding what data architecture is; a set of principles, rules, systems and processes relating to how data can be collected, stored and used. Considering data flows, access, confidentiality, security and integrity.

Data is stored and structured could include:

- understanding of structured and unstructured data storage and how these impact how the data is stored, general accessibility and accessibility for analysis.
- what relational data storage (databases) are and how these can be managed, normalised and structured. An understanding of the common relational database types and tools used to access their data.
- an understanding of the types of non-relational data storage, formats and databases such as NoSQL.
- the positives and negatives of the different types from a data storage and analysis point of view.
- an understanding of the concepts of data warehouses, data lakes and Big Data.
- impacts of data types, data storage methods and access, for on-premises and cloud-based hosting.

Data formats and their importance for analysis could include:

- the main types of data and an understanding of the different data formats and why these matter in terms of analysis, and the application of statistical methods

- understand and give examples of the different formats and how they can be used in data analysis, including the limitations and benefits of data in different data formats

Presentation tools to visualise could include a range of statistical graphics, such as:

- tables
- charts
- graphs
- quantifiable values
- outputs from database queries
- interactive methods like online portals and dashboards

This also involves the presentation of outputs as formal written documents and presentation files.

Role of data in the context of the digital world means all digital interactions are underpinned by data, whether that be through authentication, preferences, behavioural, logistical and other elements that build up a digital profile of an individual, service or a business. This means that all elements of the digital world link back to data, which has implications for security, data privacy, data sharing and data quality. But also provides a vital source for businesses to build successful digital and data strategies.

Data analysis and validation	
Scenario demonstration with questioning	
Knowledge	**Skills**
K7 Algorithms, and how they work using a step-by-step solution to a problem, or rules to follow to solve the problem and the potential to use automation. **K8** How to **filter details**, focusing on information relevant to the data project. **K9** Basic **statistical methods** and simple data modelling to extract relevant data and normalise unstructured data.	**S7** Apply basic **statistical methods** and algorithms to identify trends and patterns in data. **S8** Apply **cross checking** techniques for identifying faults and data results for data project requirements. **S9 Audit data results**. **S16 Clean data** i.e. remove duplicates, typos, duplicate entries, out of date data, parse data (e.g. format telephone numbers according to a national standard) and test and assess confidence in the data and its integrity.
Pass criteria	***Distinction criteria***
DA1 Applies algorithms and basic **statistical methods** to identify trends in data to **audit results**. (K7, K8, K9, S7, S8, S9, S16) **DA2** Cross checks and filters data to identify faults. (K7, K8, K9, S7, S8, S9, S16) **DA3** Cleans, tests and assesses the confidence and integrity of the data. (K7, K8, K9, S7, S8, S9, S16) **DA4** Identifies opportunities to use automation. (K7, K8, K9, S7, S8, S9, S16)	***DA5*** *Justifies why we undertake* ***crosschecking*** *of data. (K7, K8, K9, S7, S8, S9, S16)* ***DA6*** *Evaluates why we need to identify trends and faults in data. (K7, K8, K9, S7, S8, S9, S16)*

<table>
<tr><th colspan="2">Professional discussion underpinned by a portfolio</th></tr>
<tr><th colspan="2">Knowledge</th></tr>
<tr><td colspan="2">K10: The range of common data quality issues that can arise e.g. misclassification, duplicate entries, spelling errors, obsolete data, compliance issues and interpretation/ translation of meaning.

K11: Different methods of validating data and the importance of taking corrective action.</td></tr>
<tr><th>Pass criteria</th><th>Distinction criteria</th></tr>
<tr><td>DA7 Describes the methods of validating data how to identify common data quality issues and the importance of corrective action. (K10, K11)</td><td>No distinction criteria.</td></tr>
<tr><th colspan="2">Amplification and guidance</th></tr>
<tr><td colspan="2">Filter details to examine datasets to exclude, rearrange or apportion data according to certain requirements, could include:
enable processing of data to include or exclude certain values
modify, evaluate or remove data
allow searching and fine-tuning of data
sorting and grouping data for specific target audiences
Statistical methods helps to draw necessary conclusions from analysis activities. Examples of statistical methods include:
descriptive analysis
regression analysis
trend analysis
analysis of variance
cluster analysis</td></tr>
</table>

Cross checking is the process of verifying data by comparing it with other sources. The aim is to provide further validation and verification of outputs from the analysis. There are several techniques for cross checking including the following:

- simple validation methods – does the data fall within expected ranges, formats and rulesets?
- parallel processing – performing the same analysis on data but using different methods or toolsets, then checking for consistency and expected outcomes between both.
- use of data triangulation – the process of checking data by comparing results obtained from multiple sources.
- statistical analysis techniques – statistical analysis can help verify consistency and distribution of data.
- time-series analysis – cross check of data analysis against expected trends and patterns based on previous period analysis.

Audit data results include:

- appropriate planning, including the scope of the audit and the specific areas
- the skills described through cross checking, or some elements of the analysis may be repeated, perhaps on smaller sample sets or sub-sets of data
- reviewing the methodology, assumptions, data cleansing, validity of statistical methods applied and interpretation of findings to ensure that all meet the required standards of the analysis

Clean data could include:

- removal of duplicates, ensuring that no valid data is 'removed', and understanding the appropriate fields or values to identify the records as duplicates.
- correct misspellings and other formatting issues. For example, if a string field is being used to remove duplicates, then typos will have an impact on the cleaning.
- identify outliers and anomalies, and make decisions on how these should be treated.

- standardise data formats such as, data from different sources, data in different formats or stored as different types. For example, telephone numbers could be stored as strings or as numbers, and dates could be stored in different formats. An agreed, standardised format should be used to amend all records to ensure the same consistent format as part of the preparation.
- remove outdated data where applicable, such as data that is outside of the focused parameters analysis.
- parse data - breaking down complex records into their constituent parts.

The next steps in the cleaning and preparation of data could include testing and assessing the confidence in the data, such as:

- reviewing the source
- reviewing the size of the dataset
- checking that none of the cleansing has affected the integrity of the data
- checking the consistency

Data quality includes 6 elements:

- accuracy: how accurate the data is, and the potential for recording, processing or blending errors.
- completeness: considerations for how the data reflects reality – sample size, bias in data collection methods and gaps in data collection.
- consistency.
- timeliness: age of data.
- validity: considerations such as subjectivity or non-quantifiable bias as part of the data collection, unknown or unconfirmed origins of data. How the data is stored or processed.
- uniqueness: the potential for duplication.

Distribution and dissemination	
Professional discussion underpinned by a portfolio	
Knowledge	**Skills**
K5: Communication methods, **formats and techniques**, including: written, verbal, non-verbal, presentation, email, conversation, audience and active listening. Range of roles within an organisation, including: customer, manager, client, peer, technical and non-technical. **K12**: Communicating the results through **basic narrative.** **K13**: Legal and regulatory requirements e.g. **Data Protection**, Data Security, **Intellectual Property Rights (IPR),** Data sharing, marketing consent, personal data definition. The **ethical use of data**. **K14**: The **significance** of end user issues, problems, organisation value, brand awareness, cultural awareness/diversity, accessibility, internal/external audience, level of technical knowledge and profile in an organisation context.	**S10**: Demonstrate the different ways of **communicating meaning from data** in line with audience requirements. **S11**: Produce **clear and consistent technical documentation** using standard organisational templates. **S12**: **Store, manage and distribute** in compliance with data security standards and legislation. **S13**: **Explain data and results to different audiences** in a way that aids understanding.
Pass criteria	***Distinction criteria***
DD1 Describes communication methods, **formats and techniques** commonly used and how these have been applied in a range of roles including customer, manager, client, peer, technical and	***DD7*** *Critically evaluates why we communicate data and why we utilise different communications methods. (K5, K12, K13, K14, S10, S11, S12, S13)*

nontechnical. (K5, K12, K13, K14, S10, S11, S12, S13) **DD2** Explains the legal requirements of using data and the importance of using data ethically. (K5, K12, K13, K14, S10, S11, S12, S13) **DD3** Describes how they have communicated the results of data analysis to different audiences that assists understanding. (K5, K12, K13, K14, S10, S11, S12, S13) **DD4** Explains the significance of customer/end user issues, problems, value to the organisation, brand awareness, cultural awareness/ diversity, accessibility to both an internal and external audience. (K5, K12, K13, K14, S10, S11, S12, S13) **DD5** Explains how they have stored, managed and distributed data in line with data security standards and legislation. (K5, K12, K13, K14, S10, S11, S12, S13) **DD6** Explains how they have produced **clear and consistent technical documentation**. (K5, K12, K13, K14, S10, S11, S12, S13)	***DD8*** *Evaluates why we need to* ***store, manage and distribute*** *data and justifies the importance of maintaining ethical and security standards. (K5, K12, K13, K14, S10, S11, S12, S13)*
Amplification and guidance	
Formats and techniques could include: • digital and online methods such as social media, video sharing and web conferencing tools • online methods, such as the publication of reports and data on public websites or company intranets • audio-visual presentations, support with associated technologies such as presentation software • documented reports with associated visualisations to support any findings • ensuring the delivery is aligned to the level of understanding of the audience	

- identifying and clarifying key messages, and understanding how the analysis supports or does not support these key messages

Basic narrative or story constructed around data to provide insights could include:

- data visualisation
- context analysis
- slide deck presentations
- written reports
- visualisation software
- verbal presentations

Data protection could include legislation such as General Data Protection Regulation (GDPR), and the principles of the regulation. This includes:

- what personal data is
- principles such as fairness, transparency, purpose limitation, data minimisation, accuracy, security, confidentiality and accountability
- lawful basis for data processing
- the distinction between data controllers and processors
- individual rights
- other legislation such as Privacy and Electronic Communications Regulations (PECR), as it relates to marketing and other uses of personal data
- sharing of data with third parties, suppliers and other parties
- legal frameworks and contractual requirements around areas of data sharing and personal data management

Intellectual Property Rights (IPR) influences the ability to perform an analysis of data. The main concepts of IPR are copyright, trademarks and patents. It is important to consider who owns any resource or system as this may govern how or even if the resource can be used, how the resources can be shared and who with, and how the outputs can be used. There should also be consideration of how data can be licensed and whether this is available as open or public data, or used under license with the associated costs.

Ethical use of data is important to consider data ownership, transparency and privacy, and intention and outcomes. There should also be consideration of the use of artificial intelligence (AI) derived data or information.

Other legislation related to the use of data and information includes:

- Computer Misuse Act
- Privacy and Electronic Communications Regulation (PECR)
- Copyright, Designs and Patents Act
- Freedom of Information Act
- The Waste Electrical and Electronic Regulation
- Payment Card Industry Data Security Standards

Significance that data plays in a business context is to understand customer dynamics, support adherence to GDPR and other legislation, reviewing marketing and product awareness, and to support internal structures and relationships.

Communicating meaning from data could include the use of visualisation tools, such as, graphs and charts, business intelligence dashboards and presentation software. The types of visualisations may differ depending on the data type, for example, qualitative data may lend itself to being presented as thematic illustrations, word clouds, icons and quantitative data through charts, graphs and tables.

Using a range of different methods of communication could include:

- documentation
- emails
- business intelligence dashboards
- visual and audio presentations

Consider the different levels of understanding and technical awareness.

Clear and consistent technical documentation conveys information effectively. Using standard templates ensures that documentation aligns to the organisation's labelling and classification policies, such as:

- versioning
- structure
- metadata
- citation use

Considerations include:

- awareness of technical understanding and the interest from the audience, such as expectations in the findings and technical competence
- document structure and layout
- visual elements
- appropriate language and terminology
- the appropriate level of detail, aligned to the customer and business' expectation
- quality assurance and audit following organisational standards

Store, manage and distribute data could include:

- collecting and processing that requires appropriate consent or contractual agreements with the supplier or individual

- secure access to data systems, with strong passwords, multi-factor authentication and role-based permission access, and basic secure working such as locking screens
- storing files and folders in approved and maintained locations, where backups and secure storage have been configured by the business
- awareness of cyber security threats and likely vectors for their transmission, and technology such as anti-virus, encryption and malware protection
- awareness of consent and approval to distribute findings of the analysis, such as the use of aggregated and anonymised information
- awareness of the impacts of analysis outcomes on stakeholders, including ethical considerations

Explain data and results to different audiences to aid understanding, could include:

- digital and online methods
- audio-visual presentations
- documented reports with supported visualisations
- ensuring the delivery is aligned to the level of understanding of the audience
- identifying and clarifying key messages
- choosing the appropriate communication strategy for the audience
- choosing the appropriate communication strategy for the formality or culture of the business

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	S15: **Keep up to date with developments in technologies, trends and innovation using a range of sources.** **S17**: **Operate as part of a multi-functional team.**	**B5**: Work with a range of internal and external customers. **B6**: Value difference and be sensitive to the needs of others.

Pass criteria	***Distinction criteria***
AW4 Describes how they have reviewed their own development and kept **up to date with developments in technologies, trends and innovation**. (K16, S14, S15, S17, B1, B5, B6) **AW5** Explains how they have integrated into a **multi-functional team** both internally and externally to their organisation. (K16, S14, S15, S17, B1, B5, B6) **AW6** Describes how they have worked in an inclusive manner. (K16, S14, S15, S17, B1, B5, B6) **AW7** Works independently to meet required deadlines, managing stakeholder expectations. (K16, S14, S15, S17, B1, B5, B6)	*No distinction criteria.*

Amplification and guidance

Prioritise within the context of a project could include:

- defining the critical path – this helps to identify which tasks and activities are essential to meet the objectives of the project and which are not.
- aligning to the critical path to analyse dependencies – some tasks are dependent on outputs or completion of others, such as the requirement for data cleaning before analysis, which drives the critical path. These tasks and dependencies can be visualised using tools such as a Gantt chart.
- staff and other resource availability along with which activities should be prioritised.

- at project level, the business, or its representative, will set the project and output requirements and priorities. Techniques for this include the MoSCoW technique.
- checkpoints or milestones where work completed can be reviewed, discussed with business representatives and re-prioritised if required.

Sources of knowledge include 5 main sources:

- experience
- authority
- deductive reasoning
- inductive reasoning
- scientific approach

Review own development needs to assess current and future skills and needs, considering the following internal and external influences:

- identified skills gaps through appraisal systems, performance reviews, and job description or skills scan
- business goals and objectives and perform a gap analysis to review where any objectives cannot be met by current understanding or technical competence
- horizon scanning to review likely future skill requirements, such as new technology changes that will impact on the data analysis sector

Learning and development needs can be defined with specific learning objectives (SMART objectives), with appropriate ways to measure and evaluate progress and return on investment.

Keep up to date with developments in technologies, trends and innovation using a range of sources could include:

- subscribing to blogs, social media and news feeds in the relevant areas that specialise in the sector of the business, or within data analysis

- podcasts and webinars, now a very common method for specialist companies to engage with customers and provide information on new innovations, legislation and technology
- many free or subscription-based learning platforms, including many online courses in technologies
- networking events and expos, such as industry-based conferences, that allow for networking with peers, vendors and customers

Operate as part of a multi-functional team could include:

- good communication and collaboration, whether working remotely or hybrid. Through regular updates, discussions, documentation and visualisation sessions. These can be used to discuss objectives, challenges, risks, support arrangements and to gain further understanding of the functions of the team.
- recognise the value of the different skills and experience across the team and identify ways that these can be leveraged. This is linked to the recognition of the roles in the team and what each person or group's scope is.
- use of appropriate tools and software to manage the team function, such as project management software, database tools, statistical software, documentation tools and video conferencing tools.
- ability to peer review work, which having a team allows for. This can be through all stages of the data lifecycle, including through demonstration sessions.
- working closely with 'product owners' and business representatives ensures that the focus of the team and the analysis remains on track, aligned to the goals required.

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Assessment summary

The end-point assessment for the Data Technician apprenticeship standard is made up of 2 assessment methods:

1. Two 45-minute scenario demonstrations with questioning
2. A 60-minute professional discussion underpinned by a portfolio

As an employer/training provider, you should agree a plan and schedule with the apprentice to ensure all assessment components can be completed effectively.

Each component of the end-point assessment will be assessed against the appropriate criteria laid out in this kit, which will be used to determine a grade for each individual assessment method. The grade will be determined using the combined grades.

Scenario demonstrations with questioning

All assessment methods are weighted equally. Apprentices will be marked against the pass and distinction criteria outlined in this kit.

- To achieve a **pass**, apprentices must achieve all of the pass criteria
- To achieve a **distinction**, apprentices must achieve all of the pass criteria **and** all of the distinction criteria
- **Unsuccessful** apprentices will not have achieved all of the pass criteria

The scenario demonstrations with questioning should be conducted in a suitable location such as an employer's or training provider's premises. The scenario demonstrations can be conducted face to face or remotely via live streaming.

Professional discussion underpinned by a portfolio

All assessment methods are weighted equally. Apprentices will be marked against the pass and distinction criteria outlined in this kit.

- To achieve a **pass**, apprentices must achieve all of the pass criteria
- To achieve a **distinction**, apprentices must achieve all of the pass criteria **and** all of the distinction criteria
- **Unsuccessful** apprentices will not have achieved all of the pass criteria

The professional discussion may be conducted using technology such as video link, as long as fair assessment conditions can be maintained.

Grading

The apprenticeship includes pass, merit and distinction grades, with the final grade based on the apprentice's combined performance in each assessment method.

To achieve a pass, the apprentice is required to pass each of the 2 assessment methods.

To achieve a distinction, the apprentice must achieve a distinction in each of the 2 assessment methods.

If a pass is achieved in 1 assessment method and a distinction in the other, the apprentice will achieve a merit overall.

The overall grade for the apprentice is determined using the matrix below:

Scenario demonstrations with questioning	Professional discussion underpinned by a portfolio	Overall grade awarded
Fail any of the 2 assessment methods		**Fail**
Pass	Pass	**Pass**
Pass	Distinction	**Merit**
Distinction	Pass	**Merit**
Distinction	Distinction	**Distinction**

Retake and resit information

If an apprentice fails an end-point assessment method, it is the employer, provider and apprentice's decision whether to attempt a resit or retake. If a resit is chosen, please call the Highfield scheduling team to arrange the resit. If a retake is chosen, the apprentice will require a period of further learning and will need to complete a retake checklist. Once this is completed, please call the Highfield scheduling team to arrange the retake.

When undertaking a resit or retake, the assessment method(s) will need to be reattempted in full, regardless of any individual assessment criteria that were passed on any prior attempt. New scenarios **must** be used for the scenario demonstrations with questioning assessment method. Any assessment method resit or retake must be taken during the maximum EPA period, otherwise the entire EPA must be taken again.

Apprentices should have a supportive action plan to prepare for the resit/retake.

Apprentices who achieve a pass grade cannot resit or retake the EPA to achieve a higher grade.

Where any assessment method must be resat or retaken, the apprentice will be awarded a maximum grade of distinction, unless there are exceptional circumstances that are beyond the control of the apprentice as determined by Highfield.

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Assessing the scenario demonstrations with questioning

The assessor will observe the apprentice completing **2** scenario demonstrations and ask questions. The scenario demonstrations will allow the apprentice to be presented with scenarios that cover the breadth and depth of practice required and will avoid situations where occupational activities are not available.

The scenario demonstrations with questioning will last a total of **90 minutes**, with **45 minutes** allocated for each scenario demonstration, and questioning taking place during each demonstration. The assessor can increase the time by **up to 10%** to allow the apprentice to complete a task or respond to a question.

The apprentice will be provided with a guidance document that will have information on the format of the test, including timescales, **1 week** prior to the scenario demonstrations with questioning assessment method. The apprentice will be provided with both written and verbal instructions on the tasks they must complete in their scenario demonstrations, including the timescales they are working to.

The scenario demonstrations with questioning may **not** be split other than to allow for comfort breaks as necessary and to allow the apprentice to move from 1 location to another where required. Breaks will **not** count towards the total assessment time.

The scenario demonstrations with questioning will take place in a controlled environment. There will be **2** scenarios, one requiring the apprentice to conduct data gathering operations and the other requiring data analysis and validation operations. The apprentice will be provided with a **250-word** description, accompanied by annexes containing relevant information, at the beginning of each scenario they are about to be observed in.

The apprentice will be presented with scenarios relevant to their normal sphere of work, or sufficiently similar as to be equivalent in complexity, but which may use data sets that are in a different business domain to the one in which they normally work.

The following activities **must** be observed during the scenario demonstrations:

- access multiple different data sources
- examine data retrieved from sources using appropriate tools
- make adjustments to a data set, for example, to correct obvious errors or to filter a data set to a required subset of records and/or fields
- save a data set to a required location in a specified format
- make notes on observations and actions taken
- identify and explain key characteristics of a data set, relevant to the stated purpose

Examples of the types of scenario demonstrations an apprentice could be given are:

- scenario demonstration 1 - data gathering example content:
    - access multiple data sets from different sources
    - blend or correlate these data sets via common fields to generate an aggregated data set – store this aggregated data set for later analysis
    - review the aggregated data set for obvious trends or patterns, documenting the findings for use by those conducting analysis on it – value of data to the organisation
- scenario demonstration 2 - data analysis and validation example content:
    - access a data set and filter it to contain only those records stated as being relevant for the purpose
    - examine the filtered data set and document primary statistics about the records and their most important fields (as related to the stated data purpose)
    - cleanse the filtered data set of errors, correcting those where appropriate (for example, removing duplicates and fixing spelling mistakes), highlighting others for further review (for example, outliers) and documenting all actions taken
    - conduct field encoding and/or structural normalisation actions to improve efficiency of storage and/or analysis

Questions will be asked during the scenario demonstrations to assess the apprentice's breadth and depth of competence against the grading descriptors. Questioning will also be allowed at the end of the demonstrations to allow for any criteria to be achieved that was not evidenced during the demonstrations. The assessor will ask a **minimum of 10 questions** across both scenarios. Follow-up questions will be asked where required. The questioning will be within the 90 minutes total time for the scenario demonstration.

Before the assessment

Employers/training providers should:

- ensure the apprentice knows the date, time and location of the assessment
- ensure the apprentice knows which data technician criteria will be assessed (outlined on the following pages)
- encourage the apprentice to reflect on their experience and learning on-programme to understand what is required to meet the standard and identify real-life examples
- be prepared to provide clarification to the apprentice, and signpost them to relevant parts of their on-programme experience as preparation for this assessment

Scenario demonstrations with questioning mock assessment

It is the employer/training provider's responsibility to prepare apprentices for their end-point assessment. Highfield recommends that the apprentice experiences mock scenario demonstrations with questioning in advance of the end-point assessment, with the training provider/employer giving feedback on any areas for improvement.

In designing a mock assessment, the employer/training provider should include the following elements in its planning:

- the mock scenario demonstrations with questioning should take place in a suitable location.
- a 90-minute time slot should be available for the scenario demonstrations with questioning, if it is intended to be complete mock scenario demonstrations with questioning covering all relevant standards (outlined in the following pages). However, this time may be split up to allow for progressive learning.
- consider a video or audio recording of the mock scenario demonstrations with questioning and allow it to be available to other apprentices, especially if it is not practicable for the employer/training provider to carry out a separate mock observation with questions with each apprentice.
- ensure that the apprentice's performance is assessed by a competent trainer/assessor, and that feedback is shared with the apprentice to complete the learning experience. Mock assessment sheets are available to download from the Highfield Assessment website and may be used for this purpose.
- use structured, 'open' questions that do not lead the apprentice but allows them to give examples for how they have met each area in the standard. For example:
    - tell me how you have formatted data taken from multiple different sources.
    - what tools and techniques do you use to link different data sets to identify trends?
    - what is the importance of using multiple sources when gathering data?
    - how do you apply algorithms to identify trends in data to audit results?
    - how do you assess the integrity of data?
    - can you explain why we undertake cross checking of data?
    - can you explain why we need to identify trends data?
    - tell me how you prioritise multiple data sets.
    - can you give me an example of a time when you have worked independently to complete prioritised tasks on time?
    - how do you evaluate the prioritisation of tasks within a project?

Scenario demonstrations with questioning criteria

Throughout the **90-minute** scenario demonstrations with questioning, the assessor will review the apprentice's competence in the criteria outlined below.

Apprentices should prepare for the scenario demonstrations with questioning by considering how the criteria can be met.

Data gathering
To pass, the following must be evidenced.
DG1 Accesses, formats, collates, blends and extracts data from multiple identified sources in line with current industry standards. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6)
DG2 Locates and migrates data from already identified sources. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6)
DG3 Manipulates and links different data sets using tools and techniques to identify trends and patterns. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6)
DG4 Presents data in a format appropriate to the task. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6)
DG5 Summarises and explains the results of the gathered data. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6)
DG6 Identifies trends and patterns in data. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6)
To gain a distinction, the following must be evidenced.
DG7 *Critically analyses the reasons why data is gathered and the importance of using multiple sources. (K2, K3, K6.1, S1, S2, S3, S4, S5, S6)*

Data analysis and validation
To pass, the following must be evidenced.
DA1 Applies algorithms and basic statistical methods to identify trends in data to audit results. (K7, K8, K9, S7, S8, S9, S16)
DA2 Cross checks and filters data to identify faults. (K7, K8, K9, S7, S8, S9, S16)
DA3 Cleans, tests and assesses the confidence and integrity of the data. (K7, K8, K9, S7, S8, S9, S16)
DA4 Identifies opportunities to use automation. (K7, K8, K9, S7, S8, S9, S16)

To gain a distinction, the following must be evidenced.
DA5 *Justifies why we undertake crosschecking of data. (K7, K8, K9, S7, S8, S9, S16)*
DA6 *Evaluates why we need to identify trends and faults in data. (K7, K8, K9, S7, S8, S9, S16)*

Approach to work
To pass, the following must be evidenced.
AW1 Prioritises multiple data sets within the given task using own initiative. (S18, B2, B3, B4)
AW2 Works independently, following standard procedures to complete prioritised tasks on time. (S18, B2, B3, B4)
To gain a distinction, the following must be evidenced.
AW3 *Evaluates the prioritisation of tasks within a project. (S18, B2, B3, B4)*

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Assessing the professional discussion underpinned by a portfolio

In the professional discussion underpinned by a portfolio of evidence, the assessor and the apprentice will have a formal two-way conversation. It will consist of the independent assessor asking the apprentice questions to assess their competence against the relevant criteria outlined in this kit.

The apprentice will have access to their portfolio and can draw on the contents of the portfolio to underpin the discussion, selecting items to inform and enhance their answers. However, the portfolio of evidence is **not** directly assessed.

It will take place in a suitable environment and can be conducted by video conferencing. It will last for **60 minutes**. The independent assessor can increase the time of the professional discussion by up to 10% to allow the apprentice to complete their last answer.

The assessor will ask **a minimum of 10 open questions**.

Before the assessment

Employers/training providers should:

- ensure the apprentice knows the date, time and location of the assessment
- ensure the apprentice knows which criteria will be assessed (outlined on the following pages)
- encourage the apprentice to reflect on their experience and learning on-programme to understand what is required to meet the standard
- be prepared to provide clarification to the apprentice, and signpost them to relevant parts of their on-programme experience as preparation for this assessment

Grading the professional discussion underpinned by a portfolio

Apprentices will be marked against the pass and distinction criteria included in the tables on the following pages (under 'Professional discussion underpinned by a portfolio of evidence criteria').

- To achieve a **pass**, apprentices must achieve all of the pass criteria
- To achieve a **distinction**, apprentices must achieve all of the pass criteria **and** all of the distinction criteria
- **Unsuccessful** apprentices will have not achieved all of the pass criteria

Professional discussion underpinned by a portfolio mock assessment

It is the employer/training provider's responsibility to prepare apprentices for their end-point assessment. Highfield recommends that the apprentice experiences a mock professional discussion underpinned by a portfolio in preparation for the real thing. The most appropriate form of mock professional discussion underpinned by a portfolio of evidence will depend on the apprentice's setting and the resources available at the time.

In designing a mock assessment, the employer/training provider should include the following elements in its planning:

- the mock professional discussion underpinned by a portfolio should take place in a suitable location.
- a 60-minute time slot should be available to complete the professional discussion underpinned by a portfolio, if it is intended to be a complete professional discussion covering all relevant standards. However, this time may be split up to allow for progressive learning.
- consider a video or audio recording of the mock professional discussion underpinned by a portfolio and allow it to be available to other apprentices, especially if it is not practicable for the employer/training provider to carry out a separate mock assessment with each apprentice.
- ensure that the apprentice's performance is assessed by a competent trainer/assessor, and that feedback is shared with the apprentice to complete the learning experience. Mock assessment sheets are available to download from the Highfield Assessment website and may be used for this purpose.
- use structured, 'open' questions that do not lead the apprentice but allows them to express their knowledge and experience in a calm and comfortable manner. For example:
    - explain some of the different types of data sets
    - explain the importance of analysis management
    - describe how digital data underpins every digital interaction
    - explain the different types of data formats
    - explain why using different data sets is important to the business
    - describe a method of validating data
    - explain how you have produced clear technical documentation
    - tell me how you have integrated internally into a multi-functional team
    - describe a communication method that is commonly used across a range of roles including technical and non-technical
    - explain why it is important to store and distribute data

Professional discussion underpinned by a portfolio criteria

Throughout the **60-minute** professional discussion underpinned by a portfolio, the assessor will review the apprentice's competence in the criteria outlined below.

Apprentices should prepare for the professional discussion underpinned by a portfolio by considering how the criteria can be met.

Data gathering
To pass, the following must be evidenced.
DG8 Explains the different types of data sets and their formats. (K1, K4, K6.2, K15) **DG9** Describes the value of the data to the organisation and the importance of analysis management. (K1, K4, K6.2, K15) **DG10** Describes the role of data in the digital domain (including the use of external trusted data sets) and how it underpins every digital interaction including applications, devises, IoT and customer centricity. (K1, K4, K6.2, K15) **DG11** Explains the different types of data formats and data architectures including premises and cloud. (K1, K4, K6.2, K15) **DG12** Describes the characteristics of presentation tools to visualise and reviews the characteristics of data and communication tools and technologies for collaborative working. (K1, K4, K6.2, K15)
To gain a distinction, the following must be evidenced.
***DG13** Evaluates and justifies why using different data sets is important to the business and evaluates how incorrect data gathering can affect the output. (K1, K4, K6.2, K15)*

Data analysis and validation
To pass, the following must be evidenced.
DA7 Describes the methods of validating data how to identify common data quality issues and the importance of corrective action. (K10, K11)
To gain a distinction, the following must be evidenced.
No distinction criteria.

Approach to work
To pass, the following must be evidenced.
AW4 Describes how they have reviewed their own development and kept up to date with developments in technologies, trends and innovation. (K16, S14, S15, S17, B1, B5, B6)

Approach to work
To pass, the following must be evidenced.
AW5 Explains how they have integrated into a multi-functional team both internally and externally to their organisation. (K16, S14, S15, S17, B1, B5, B6) **AW6** Describes how they have worked in an inclusive manner. (K16, S14, S15, S17, B1, B5, B6) **AW7** Works independently to meet required deadlines, managing stakeholder expectations. (K16, S14, S15, S17, B1, B5, B6)
To gain a distinction, the following must be evidenced.
No distinction criteria.

Distribution and dissemination
To pass, the following must be evidenced.
DD1 Describes communication methods, formats and techniques commonly used and how these have been applied in a range of roles including customer, manager, client, peer, technical and nontechnical. (K5, K12, K13, K14, S10, S11, S12, S13) **DD2** Explains the legal requirements of using data and the importance of using data ethically. (K5, K12, K13, K14, S10, S11, S12, S13) **DD3** Describes how they have communicated the results of data analysis to different audiences that assists understanding. (K5, K12, K13, K14, S10, S11, S12, S13) **DD4** Explains the significance of customer/end user issues, problems, value to the organisation, brand awareness, cultural awareness/ diversity, accessibility to both an internal and external audience. (K5, K12, K13, K14, S10, S11, S12, S13) **DD5** Explains how they have stored, managed and distributed data in line with data security standards and legislation. (K5, K12, K13, K14, S10, S11, S12, S13) **DD6** Explains how they have produced clear and consistent technical documentation. (K5, K12, K13, K14, S10, S11, S12, S13)
To gain a distinction, the following must be evidenced.
DD7 *Critically evaluates why we communicate data and why we utilise different communications methods. (K5, K12, K13, K14, S10, S11, S12, S13)* ***DD8*** *Evaluates why we need to store, manage and distribute data and justifies the importance of maintaining ethical and security standards. (K5, K12, K13, K14, S10, S11, S12, S13)*

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