NextGen: HN unit specification

Data Skills (SCQF level 7)

Unit code: J869 47

SCQF level: 7 (8 SCQF credit points)

Valid from: August 2026

This unit specification provides detailed information about the unit to ensure consistent and transparent assessment year on year. It is for lecturers and assessors, and contains all the mandatory information you need to deliver and assess the unit.

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Contents

Unit purpose

This non-specialist unit is designed for a wide range of learners with varying vocational interests. The unit develops data skills that can help learners' academic progression and be used in a range of occupations. The unit requires no prior knowledge or experience of data analysis, although basic numeracy is assumed.

The unit aims to provide learners with the foundational knowledge and skills they need to understand, use and communicate data in various contexts. They learn about the:

- nature and types of data
- data lifecycle
- ethical and legal issues related to data
- tools and techniques for statistical analysis and data visualisation

Learners develop practical abilities in capturing, cleaning, transforming, analysing and visualising data. They apply their learning to real-world scenarios and problems in their own fields of interest.

Learners can use the knowledge and skills they gain in other units in a Higher National Qualification. On completion of the unit, they can progress to further studies in data analysis, such as Data Science at SCQF level 7.

Unit outcomes

Learners who complete this unit can:

1. describe data and its characteristics, sources and formats
2. apply basic statistical concepts and methods to summarise and interpret data
3. use software tools to capture, store, manipulate, and analyse data
4. create data visualisations and communicate data findings and insights
5. identify ethical and legal implications of data collection, storage, use and sharing

Evidence requirements

Learners must provide product evidence, including:

1. a data capture form
2. an original data set
3. an analysed data set
4. visualisations
5. a presentation or report

Learners' evidence must collectively demonstrate that they can:

1. capture primary data
2. store data
3. clean and format data
4. calculate relevant descriptive statistics
5. create appropriate visualisations
6. communicate findings and insights

Learners must explain any security, legal or ethical considerations involved in the capture, storage, analysis and communication of the data.

There is no set requirement for the scale and scope of the data set, but the data must be relevant to learners' vocational interests or programme of learning. The data set must be sufficiently complex to allow learners to demonstrate their ability to clean, format, analyse, visualise and present data.

Learners must produce evidence over an extended period in lightly-controlled conditions, or generate it in conjunction with other units in a qualification.

You must authenticate the evidence. The Guide to Assessment provides further advice on methods of authentication.

Learners can present their evidence in an e-portfolio.

The standard of evidence should be consistent with the SCQF level of this unit.

Knowledge and skills

Knowledge	Skills
Learners should understand: • growth in data volume • the value of data to the individual, groups and organisations • sources of data • the data lifecycle • data types and structures • data formats • data quality, including data bias • data management, from capture to analysis • descriptive statistics: measures of central tendency and measures of dispersion • data analysis tools and techniques • charts and graphs • misleading visualisations • how to communicate messages from data • data ethics and legal considerations	Learners can: • capture data • access data from external sources • acquire and manage data securely and ethically • use software tools to clean and transform data for analysis • use software tools to analyse data and produce statistical summaries • use software tools to select and produce visualisations • communicate the conclusions from a data analysis study

Meta-skills

You must give learners opportunities to develop their meta-skills throughout this unit. We have suggested how to incorporate the most relevant ones into the unit content, but you may find other opportunities.

Throughout the unit, learners develop meta-skills to enhance their employability in their chosen sector.

Your delivery and assessment of the unit contributes to learners' natural development of the meta-skills of self-management, social intelligence and innovation. You should encourage learners to develop a minimum of one area in each of these three categories, but they do not need to cover all suggested subsections. The following suggestions may help shape your delivery and assessment.

Self-management

This includes focusing, integrity, adapting and initiative. The most relevant are:

- focusing:
    - managing time to complete work by required deadlines
- integrity:
    - acting in an ethical and legal manner when gathering, storing and processing data
    - developing good working relationships with peers
- adapting:
    - acquiring new ideas and knowledge about issues or topics
    - using a range of data analysis techniques to complete assessments
    - reflecting on own performance to improve approach

- initiative:
    - developing own ideas and areas of enquiry
    - making informed decisions when gathering data

Social intelligence

This includes communicating, feeling, collaborating and leading. The most relevant are:

- communicating:
    - explaining ideas
    - producing suitable, understandable conclusions from analysis of data
    - sharing ideas and opinions on ethical issues in the use of data
- collaborating:
    - working with others on presentations
    - taking account of others in planning and carrying out tasks
    - building relationships with peers

Innovation

This includes curiosity, creativity, sense-making and critical thinking. The most relevant are:

- curiosity:
    - gathering and sourcing data independently
    - using software tools to explore patterns in data
- sense-making:
    - identifying features in data
    - drawing conclusions from data
    - presenting data visualisations

- critical thinking:
    - making logical connections and reasoned judgements from data
    - reviewing and evaluating own work and progress

Learners may develop other meta-skills throughout the unit, depending on the learning and practical activities in which they are involved. These include:

- social intelligence:
    - feeling
    - leading
- innovation:
    - creativity

Learning for Sustainability

Throughout this unit, you should encourage learners to develop their skills, knowledge and understanding of sustainability.

This includes:

- a general understanding of social, economic and environmental sustainability
- a general understanding of the United Nations Sustainable Development Goals (SDGs)
- a deeper understanding of subject-specific sustainability
- the confidence to apply the skills, knowledge, understanding and values they develop in the next stage of their life

Delivery of unit

You can deliver the unit as part of a qualification. You can combine delivery with other units that provide opportunities for learners to further develop the knowledge and skills in the unit through practice.

The unit is a stand-alone unit.

You should deliver outcomes in a sequential order. While the exact time allocated to the unit is at your centre's discretion, the notional design length is 40 hours. We suggest the following distribution of time:

Outcome 1 — Describe data and its characteristics, sources and formats
(5 hours)

Outcome 2 — Apply basic statistical concepts and methods to summarise and interpret data (10 hours)

Outcome 3 — Use software tools to capture, store, manipulate, and analyse data (10 hours)

Outcome 4 — Create data visualisations and communicate data findings and insights
(10 hours)

Outcome 5 — Identify ethical and legal implications of data collection, storage, use and sharing (5 hours)

Additional guidance

The guidance in this section is not mandatory.

Content and context for this unit

Your approach to the topics below depends on the context in which you deliver the unit. For example, you could use data sets from social science or health studies, or technology topics such as engineering or computing. Similarly, your choice of software could be determined by learners' level of digital skills, ranging from no-code applications to the use of a coding platform.

You could introduce the topics in the following order:

1. What is data?

You introduce learners to the concept and types of data, such as quantitative, qualitative, structured, unstructured, primary and secondary data.

2. The data lifecycle

You give learners an overview of the stages and processes involved in creating, collecting, storing, processing, analysing, visualising and communicating data.

3. Data ethics and law

Learners should discuss the ethical principles and legal regulations that govern data practices, such as privacy, consent, security, ownership, quality and accountability.

4. Data collection

You give learners an overview of survey design and data capture using online forms.

5. Data software tools

You provide a practical introduction to the software tools and techniques for working with data, such as spreadsheets, databases, programming languages, or statistical software.

6. Data analysis tools

You provide a practical introduction to techniques for working with data, including data analysis methods (descriptive statistics) and data visualisation tools (for example charting tools).

7. Descriptive statistics

You introduce basic statistical methods, including mean, median, mode, percentiles, range and standard deviation.

8. Data applications

This topic should include a series of case studies and projects that demonstrates how data can be used to solve problems, answer questions and generate insights in various domains and disciplines, such as social and health science, technology, engineering, and services.

Resources

There is a wide variety of resources that could help you to deliver the unit. They include free software tools, worked examples, and open-access data sets. You could use:

Software tools

- spreadsheet applications that allow you to create, edit and share data online. You can also use spreadsheets to perform basic statistical functions and create charts and graphs. Spreadsheets support importing and exporting data in a variety of common formats
- data visualisation tools that allow you to create interactive dashboards and stories using data from various sources, such as spreadsheets, databases, web pages, and more. These tools usually provide a gallery of examples and tutorials to help you learn and explore data visualisation techniques
- survey tools: easy-to-use forms to collect survey data and export for further analysis
- notebooks: interactive web-based environments that allow you to write and run code, display outputs, and document your work. Notebooks support multiple languages, such as Python

Worked examples

We recommend that you use step-by-step tutorials and examples of how to use data tools and techniques in different contexts and scenarios.

Most providers of software tools for data offer a collection of online courses and guides that teach you how to use the software tool for various purposes, such as creating formulas; formatting data; sorting and filtering data; working with charts and graphs; and collaborating with others.

The Kaggle data analysis learning path provides worked examples using Kaggle's data sets.

Data sets

You can use the following sources to find free and open data sets on various topics and domains that you can use for your projects and assignments:

- Kaggle: a platform for data science and machine learning that hosts thousands of data sets on various topics, such as health, education, sports, entertainment, business, and social media. You can also join competitions, explore notebooks, and learn from courses on Kaggle

Approaches to delivery

You should structure the learning and teaching programme to allow time for meta-skills development. You should also allow for assessment practice within the hours suggested. Learners can benefit from a varied and active learning approach, where they engage in supported, independent and collaborative learning. You should encourage learners to take a participative and practical approach. Delivery methods you could use include, but are not limited to:

- demonstrations
- individual and group tasks
- presenting findings
- use of a virtual learning environment (VLE)
- digital tools and social media
- film and visual images

You should deliver the unit in the way that best suits your expertise, learners' needs, and time constraints.

Approaches to assessment

You should design an appropriate assessment based on a method that allows learners to meet the evidence requirements. Learners must show that they have met all evidence requirements. Ideally, they should complete assessment tasks

individually. If you use a group task, learners must show individual coverage of all evidence requirements.

We recommend a practical assignment. The assignment would require learners to capture data, carry out an analysis on the data, produce appropriate visualisations, and communicate findings.

For example, learners carrying out a social science programme of learning could create a form to collate attitudes towards a current social issue, such as climate change. The form could be completed by learners in the college. The resulting data set could be cleaned and loaded into a spreadsheet for future analysis. The analysis could summarise demographics and identify patterns and trends in the data set. Alternatively, learners carrying out a business administration programme of learning could create a form to collate attitudes towards cryptocurrency, with subsequent activities following the example above.

Learners could generate appropriate visualisations and communicate their findings in a presentation or a report.

In these scenarios, learners would need the following products (assuming they use spreadsheet software):

1. a printed or digital copy of the survey questions (or URL)
2. a printed or digital copy of the original responses in a CSV file
3. a printed or digital copy of the cleaned and transformed data set
4. a printed or digital copy of the analysed data set
5. a printed or digital copy of the visualisations
6. a printed or digital copy of the presentation

Equality and inclusion

This unit is designed to be as fair and as accessible as possible with no unnecessary barriers to learning or assessment.

You must consider the needs of individual learners when planning learning experiences, selecting assessment methods or considering alternative evidence.

Guidance on assessment arrangements for disabled learners and those with additional support needs is available on the assessment arrangements web page.

Information for learners

Data Skills (SCQF level 7)

This information explains:

- what the unit is about
- what you should know or be able to do before you start
- what you need to do during the unit
- opportunities for further learning and employment

Unit information

This non-specialist unit gives you an accessible introduction to data skills that are essential for modern professional and academic contexts, regardless of your discipline or vocational interests. You don’t need prior knowledge or experience of data analysis for the unit, although basic numeracy is assumed.

Data skills are among the most sought-after skills in today’s job market. Data skills can help you improve your performance, productivity, decision-making,

problem-solving and communication. Data skills can also help you to advance your career or pursue further studies in data analysis or related fields.

In the unit, you learn about the:

- concept and types of data, and why data is valuable
- sources and formats of data, and how to access and manage data securely and ethically
- tools and techniques for data analysis, and how to use available software tools
- basic statistical concepts and methods for summarising and interpreting data
- principles and practices of data visualisation, and how to create charts and graphs that are truthful and effective
- skills and strategies for communicating data insights and findings to different audiences

- applications and challenges of data analysis in real-world scenarios and problems in your own fields of interest

Meta-skills

Throughout this unit, you develop meta-skills that are useful for your chosen sector.

Meta-skills are transferable behaviours and abilities that help you adapt and succeed in life, study and work. There are three categories of meta-skills: self-management, social intelligence and innovation.

Self-management

This meta-skill includes:

- focusing:
    - managing time to complete work by required deadlines
- integrity:
    - acting in an ethical and legal manner when gathering, storing and processing data
    - developing good working relationships with peers
- adapting:
    - acquiring new ideas and knowledge about issues or topics
    - using a range of data analysis techniques to complete assessments
    - reflecting on own performance to improve approach
- initiative:
    - developing own ideas and areas of enquiry
    - making informed decisions when gathering data

Social intelligence

This meta-skill includes:

- communicating:
    - explaining ideas
    - producing suitable, understandable conclusions from analysis of data
    - sharing ideas and opinions on ethical issues in the use of data
- collaborating:
    - working with others on presentations
    - taking account of others in planning and carrying out tasks
    - building relationships with peers

Innovation

This meta-skill includes:

- curiosity:
    - gathering and sourcing data independently
    - using software tools to explore patterns in data
- sense-making:
    - identifying features in data
    - drawing conclusions from data
    - presenting data visualisations
- critical thinking:
    - making logical connections and reasoned judgements from data
    - reviewing and evaluating own work and progress

Learning for Sustainability

Throughout this unit, you develop skills, knowledge and understanding of sustainability.

You learn about social, economic and environmental sustainability principles and how they relate to your chosen sector. You also develop an understanding of the United Nations Sustainable Development Goals.

Administrative information

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Superclass: CB

History of changes

Version	Description of change	Date

Please check our website to ensure you are using the most up-to-date version of this unit.