Digi

Trailblazers

Qualification Specification

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CONTENTS

About NCC Education

NCC Education is a UK awarding body, active in the UK and internationally. Originally part of the UK National Computing Centre, NCC Education started offering Computing qualifications in 1976 and from 1997 developed its portfolio to include Business qualifications, Computing qualifications for school children and a range of Foundation qualifications.

With Centres around the world, NCC Education aims to employ the latest technologies for learning, assessment and support. NCC Education is regulated by Ofqual (the Office of Qualifications and Examinations Regulation, see www.ofqual.gov.uk).

Why choose this qualification?

NCC Education's Digi-Trailblazers:

- is suitable for candidates at **Key Stage 3** of the English national curriculum (ages 11–14) as well as older (including adult) learners
- builds on students' understanding of **digital safety and security** while also allowing them to practise the application of computational thinking and problem-solving to produce exciting digital artefacts and computer programs
- prepares candidates to be the **next generation of digital innovators** – Digi-Trailblazers not only deepens students' understanding so that they can be critical consumers of hardware and software but also greatly improves their computational thinking, programming skills and ability to manage digital projects, which will continue to lay the foundation for them to become **active producers of new and imaginative software**.
- provides teachers with a **fresh and innovative syllabus** containing all the concepts, activities and resources to be able to deliver with confidence the new programming elements of the English national curriculum
- is **quality assured** by a UK awarding body with considerable expertise in providing high-quality IT/Computing qualifications and programmes
- sits within NCC Education's well-established suite of Computing and Business qualifications, which are **recognised and valued** by employers and universities worldwide

Structure and Assessment for the Qualification

Assessment objectives

Digi-Trailblazers is assessed by a single online multiple-choice question (MCQ) examination once candidates have completed their preparation. Prior to taking the online MCQ examination, candidates must also complete a class activity assigned by NCC Education. All Learning Outcomes are assessed through the combination of the online MCQ examination and the class activity.

The online MCQ examination tests the theoretical aspects of the qualification's Learning Outcomes and the class activity focuses on the practical elements. This means that candidates can successfully demonstrate their knowledge and comprehension of the subject matter in addition to computational problem-solving and practical skills.

Overview of Digi-Qualifications Assessment

Qualification	Online MCQ Examination: Theoretical Component
Level 1 – Digi-Explorers	40 multiple-choice questions with a time-limit of 60 minutes
Level 2 – Digi-Navigators	40 multiple-choice questions with a time-limit of 60 minutes
Level 3 – Digi-Trailblazers	40 multiple-choice questions with a time-limit of 60 minutes

An online MCQ examination is a time-constrained assessment that will take place during specified weeks in an NCC Education Centre. Randomised questions are generated from the questions bank to minimise malpractice.

The 'Theoretical Component' of the online MCQ examination refers to questions which require candidates to recall relevant information and choose the correct answer online.

The 'Practical Component' of the class activity refers to a computer (lab) based task or tasks which require candidates to individually produce a particular digital artefact or artefacts.

Candidates will get their results from their respective centre. The result is calculated based wholly on the online MCQ examination. The 'Practical Component' which is performed in class, must be completed prior to candidates taking the online exam as it evidences their ability to apply the knowledge gained from the course. The practical components require candidates to produce a digital artefact and centre staff are required to keep a copy of candidates' work as proof of completion.

A specimen of online MCQ examination and answers are available on NCC Education's Virtual Learning Environment (VLE) for Centres to access.

Accessibility of Assessment

We review our guidelines on assessment practices to ensure compliance with equality law and to confirm assessment for our components is fit for purpose.

Reasonable Adjustments and Special Consideration

NCC Education is committed to providing reasonable adjustments and special consideration to ensure disabled candidates, or those facing exceptional circumstances, are not disadvantaged in demonstrating their knowledge, skills and understanding.

Further information on NCC Education's arrangements for giving reasonable adjustments and special consideration can be found in the NCC Education *Reasonable Adjustments and Special Considerations Policy*.

Supervision and Authentication of Assessment

Centres are required to organise all assessment activities for this specification according to NCC Education's Policies and Regulations.

Candidates' identity and the authenticity of their work (class activity) is verified to reflects the standard achieved by candidates, relevant to the specification Learning Outcomes and Assessment Criteria. Detailed guidance on this process is given in NCC Education's *Assessment Instructions*.

Administration

Assessment Cycles

Four assessment cycles are offered throughout the year, in March, June, September and December. Centre must make sure candidates have completed the assigned class activity (practical component) prior to taking part in the online MCQ examination.

Examination dates are published in the NCC Education *Activity Schedule*, which is provided to Centres by NCC Education Centre Support. It is also available on NCC Education's Candidate Registration Portal.

The *Activity Schedule* also gives the key dates for registering candidates for assessment cycles, and the dates when Centres can expect to complete the Digi e-assessment and the assessment results from NCC Education.

Language of Assessment

All assessment is conducted in English.

Candidates

NCC Education's qualifications are available to those Centre candidates who satisfy the entry requirements as stated in this specification.

Qualification and Unit Entry Requirements

Entry Requirements
The Digi-Trailblazers syllabus and assessment is suitable for candidates aged 11–14 (at Key Stage 3 of the English national curriculum) as well as older (including adult) learners. It is expected that candidates who are non-native English speakers are able to cope with the demands of preparing for and taking the Digi-Trailblazers assessment in English.

Candidate Entry

Candidates are registered by Centres for assessment via NCC Education's Candidate Registration Portal.

Further details can be found in NCC Education's *Centre Handbook*.

Syllabus

Syllabus overview

The Digi-Trailblazers syllabus contains the following topics, topic sections and Learning Outcomes. Syllabus topics may be covered in any order (as best suits the requirements of the candidates and their wider curriculum).

Syllabus content		
Topic	**Syllabus Section**	**Learning Outcomes**
Digital Safety and Security	Using Computers Safely and Security	• Know how to work safely and securely. • Know how to report concerns about online safety or security.
	Keeping Yourself and Your Friends Safe Online	• Understand the consequences to users of not using technology safely, respectfully, responsibly and securely. • Know how to work respectfully and responsibly online.
Solving Problems with Algorithms	Understanding and Developing Algorithms	• Understand that there are different types of algorithm. • Know how to develop algorithms that fulfil a range of functions.
	Comparing and Evaluating Algorithms	• Understand that a single problem can be solved by using several different algorithms.
Computer Instructions and Data Types	Storing and Executing Computer Instructions	• Understand how instructions are stored and executed within a computer system.
	Representing and Manipulating Different Types of Data	• Understand how different data types can be represented and manipulated.
Designing and Developing Computer Programs	Designing Computer Programs	• Know how to create plans that outline the steps that a computer program will need to follow in order to solve a problem. • Understand programming terminology.
	Creating Computer Programs	• Know how to write in code using appropriate data structures.
	Testing and Improving a Computer Program	• Know how to correct errors in syntax and meaning in a program.
Exploring Computer Logic and Number Representation	Boolean Logic and its Uses	• Understand the purpose and application of Boolean logic.
	Binary Numbers and Calculations	• Understand the term binary. • Know how to convert binary and decimal numbers.

Computational Thinking	Understanding Computer Models and Simulations	• Understand that there are different types of computer models and simulations.
	Designing Computer Models and Simulations	• Understand that computer models can be used to break down tasks and problems into manageable parts. • Know how to design and construct computer models and simulations that represent real-world problems.
	Using and Evaluating Computer Models	• Know how to use computer models and understand how they model problems and systems. • Assess the accuracy and make improvements to computer models that represent real-world problems and physical systems.
Discovering How Computer Hardware and Software works	Computer Components and Peripherals	• Understand that there are different types of computer system. • Understand how internal hardware components work and communicate with each other.
	Understanding How Software Works	• Understand the functions of different types of software. • Understand the interaction between hardware and software components.
	Discovering How Computers Communicate With Other Systems	• Understand the interaction between a computer system and a network.
Managing a Digital Project	Collecting and Analysing Data	• Understand how to use appropriate methods and devices to collect and analyse data.
	Presenting Data Digitally	• Know how to present information clearly and effectively for a designated target audience.
Developing a Digital Artefact	Designing a Digital Artefact	• Know how to design a digital artefact for a particular target audience.
	Creating a Digital Artefact	• Understand how to use appropriate techniques and technologies to create a digital artefact.
	Reusing or Repurposing a Digital Artefact	• Understand how to revise or repurpose a digital artefact.

Results and Certificates

An overall numerical mark is awarded to candidates. The pass marks for Digi Trailblazers is 40%. All candidates who obtain marks below 40% are classed as *failed* in the examination.

The Digi e-assessment is auto marked by the VLE with grading as below:

- 0% – 39 % - Fail
- 40 % – 59 % - Pass
- 60 % – 69 % - Merit
- 70% and above - Distinction

After each assessment cycle, results slips are issued (in an electronic format) which detail the final mark. Electronic certificates will be issued for the centre to print.

Further Information

For more information about any of NCC Education's products, please contact customer.support@nccedu.com or, alternatively, visit www.nccedu.com to find out more about our suite of high-quality British qualifications.

Appendix 1 Qualification Documentation

The following NCC Education documentation has been referred to in this specification:

- Centre Handbook
- Assessment Instructions
- Reasonable Adjustments and Special Considerations Policy

All documentation, together with access to NCC Education's online resources, is available to Centres and (where applicable) candidates who have registered for assessment.