Northern Ireland Curriculum for Digital Progression Pathways

Rewarding Learning

Digital skills are an increasingly important part of modern life. At CCEA, we want to make sure that our learners are equipped with the skills needed to fully participate in society, learning and employment.

The Northern Ireland Curriculum and CCEA qualifications provide experiences for learners in many aspects of digital skills, enabling them to become **digital citizens, digital workers and digital makers.**

There are many routes through education that a learner can take. They will build on skills that they have already developed and complete qualifications before entering the world of work.

This document illustrates the opportunities for digital skills development that the Northern Ireland Curriculum offers. It suggests potential progression pathways through learning that can lead to qualifications.

Digital Skills in the Northern Ireland Curriculum

Progression Pathway:

Digital Technology – making and building

Progression Pathway:

Creative Technologies

COMING SOON

Progression Pathway:

Digital for Life and Work

Digital Skills in the Northern Ireland Curriculum

Learners develop their digital skills through the statutory Cross-Curricular Skill of Using ICT from Year 1 to Year 12 (Foundation Stage to Key Stage 4).

Each stage of the Northern Ireland Curriculum addresses digital skills in ways that are suited to learners in the classroom.

There is a clear progression of learners' digital skills from Foundation Stage to post-16.

The statutory curriculum requirements for Using ICT are set out under the 5 'E's.

The 5 'E's are broad, over-arching statements which describe the general aspects of Using ICT'. This allows them to remain applicable as software and hardware changes over time.

The statements in the table below are the **statutory** statements which apply from Foundation Stage to Key Stage 3, and learners will experience these at a level suited to their age and ability.

As you move through the key stage pages of this document, we have rewritten the statements to describe what each statutory statement 'looks like' in practice.

At each key stage, across the curriculum and at a level appropriate to their ability, pupils should be enabled to:

Explore 1	access, select, interpret and research information from safe and reliable sources;
Explore 2	investigate, make predictions and solve problems through interaction with digital tools;
Express	create, develop, present and publish ideas and information responsibly using a range of digital media and manipulate a range of assets to produce multimedia products;
Exchange	communicate safely and responsibly using a range of contemporary digital methods and tools, exchanging, sharing, collaborating and developing ideas digitally;
Evaluate	talk about, review and make improvements to work, reflecting on the process and outcome and consider the sources and resources used, including safety, reliability and acceptability; and
Exhibit	manage and present their stored work and showcase their learning across the curriculum, using ICT safely and responsibly.

Teachers should also give pupils opportunities to develop knowledge and understanding of e-safety and acceptable online behaviour.

Pre-School

There are no statutory curriculum requirements for Using ICT at pre-school.

It is likely that children will have experienced a wide range of ICT at home and in the community before they come to pre-school.

ICT is often embedded in their everyday experiences, for example using mobile devices, watching streaming media services and playing interactive games. In a supportive environment, ICT has the potential to extend children's understanding and gives them the chance to come up with ideas, try things out and problem solve as they play. In pre-school, children explore and investigate a range of ICT resources such as digital cameras, electronic toys and old mobile phones and use these resources in their play.

Pre-school staff should encourage children to observe and talk about the use of ICT in their world. They need to see ICT used in meaningful contexts and for real purposes with an emphasis on exploration through play.

Foundation Stage

Using ICT (the 5 'E's) is statutory in the Foundation Stage.

At this stage, the focus is on developing children's understanding and use of digital devices and environments in purposeful ways. This can be seen in the descriptors below:

Foundation Stage Description	
Explore 1	With the teacher's help or independently as appropriate, children explore and talk about websites or apps.
Explore 2	With the teacher's help or independently as appropriate, children use devices and software such as an interactive whiteboard, Bee-Bot or drawing app.
Express	Children understand that ICT can be used to make, for example, pictures, photos and voice recordings.
Exchange	Children understand that ICT is used to communicate, and they can talk about this and use it during role-play.
Evaluate	Children can talk about their own work using ICT vocabulary to name things and answer simple questions about what they have done.
Exhibit	Children understand that their digital work can be printed and turned into a hard copy or posted online using an app such as Seesaw.

In the Foundation Stage, through these statutory 5 'E's, children may gain experience of the following types of ICT. It is up to teachers to decide which types of ICT they will teach in order to cover the statutory requirements. Select the links below for more information.

Computational Thinking and Coding

Managing Data

Digital Storytelling: Publishing

Digital Storytelling: Presenting

Digital Storytelling: Film and Animation

Digital Audio: Music and Sound

Digital Art and Design

In our progression pathways, we have mapped out how experiencing these types of ICT throughout the key stages gives learners opportunities to become digital makers in different pathways through learning.

Key Stage 1

Using ICT (the 5 'E's) is statutory at Key Stage 1.

At this stage, children begin to work more independently. They use technology purposefully in relevant contexts that the teacher has set, and they have opportunities to develop their knowledge and understanding of basic digital concepts. This can be seen in the descriptors below:

Key Stage 1 Description	
Explore 1	Children develop their skills in looking for, finding, choosing and using information from digital sources. For example, they can look at some websites that the teacher has chosen and find information to use related to a topic.
Explore 2	Children solve simple problems by planning a series of instructions using digital tools. For example, children might use coding apps or floor robots to program a journey. They may also produce a simple graph based on data they have collected, such as a traffic survey or favourite foods.
Express	Children have the opportunity to use ICT to be creative. The teacher supports and encourages them to plan, develop and present their ideas with a variety of media. For example, they can tell a story using simple animation tools or they can plan and create a digital presentation on what they have learned in a class topic.
Exchange	Teachers can use tools such as video conferencing or email to give children the opportunity to begin communicating online in meaningful learning contexts. For example, children may share their work in a virtual learning environment or using an app such as Seesaw, contribute to a class email to an author or sing songs to children in a partner school through video conferencing.
Evaluate	Children begin to talk about how they can improve their digital work and discuss with their teacher or friends how they might do it differently next time. For example, they might realise that the image they have used isn't relevant for their text, and learn how they can select a better one next time.
Exhibit	Children learn how to save their work and know how to find and open it again.

In Key Stage 1, through these statutory 5 'E's, children may gain experience of the following types of ICT. It is up to teachers to decide which types of ICT they will teach in order to cover the statutory requirements. Select the links below for more information.

Computational Thinking and Coding

Managing Data

Digital Storytelling: Publishing

Digital Storytelling: Presenting

Digital Storytelling: Film and Animation

Digital Audio: Music and Sound

Digital Art and Design

In our progression pathways, we have mapped out how experiencing these types of ICT throughout the key stages gives learners opportunities to become digital makers in different pathways through learning.

Key Stage 2

Using ICT (the 5 'E's) is statutory at Key Stage 2.

At this stage, ICT can enable children to become independent, self-motivated and flexible learners. This can be seen in the descriptors below:

Key Stage 2 Description	
Explore 1	Children continue to develop their research skills, selecting and editing text from reliable sources and using it in a meaningful way. They are able to select and download high-quality images, sounds or video in an appropriate format.
Explore 2	Children interact with tools such as spreadsheets, databases, block-based coding or robots. For example, they may create a coding project, working out what different parts of the program must do and using logical reasoning to predict the commands that are required, making their code more efficient.
Express	Children develop a greater awareness of audience and purpose in how they present and communicate their work. They produce their own products, such as sound files and images, and use these in their ICT work. For example, they could create and edit a short film or create a tri-fold leaflet to advertise a school open day.
Exchange	Children play a more active role in communicating, collaborating and exchanging work in supervised online activities. For example, they may navigate to a discussion on volcanoes that the teacher has set up on the school's virtual learning environment, read and reply to the teacher's message and upload work so that others can see it.
Evaluate	Children are able to use a range of ICT tools to make improvements to their work. They begin to evaluate the process as well as the product, when reflecting on how they carried out an activity. For example, they might make edits to a podcast to improve the volume of background music or consider if they could have made their code more efficient in a coding activity.
Exhibit	Children learn how to save their work with meaningful filenames and continue to develop the ability to store and organise their work. For example, they may save using filenames into a given folder or, if using an app, export into the location the teacher provides. They become more familiar with the need to save and export a piece of ICT work in an appropriate file format so that a different user can open it on a different device.

In Key Stage 2, through these statutory 5 'E's, children may gain experience of the following types of ICT. It is up to teachers to decide which types of ICT they will teach in order to cover the statutory requirements. Select the links below for more information.

Computational Thinking and Coding

Managing Data

Digital Storytelling: Publishing

Digital Storytelling: Presenting

Digital Storytelling: Film and Animation

Digital Audio: Music and Sound

Digital Art and Design

In our progression pathways, we have mapped out how experiencing these types of ICT throughout the key stages gives learners opportunities to become digital makers in different pathways through learning.

Key Stage 3

Using ICT (the 5 'E's) is statutory at Key Stage 3.

Teachers have a responsibility to provide pupils with experiences of Using ICT that are appropriate to their subject. They should also help pupils to acquire and develop the skills necessary to become informed and responsible users of digital technology. This can be seen in the descriptors below:

Key Stage 3 Description	
Explore 1	Pupils build on the skills they have learned in primary school by drawing up search criteria and reviewing various sources to gather relevant and meaningful information. They look at examples to inform their ideas and help them plan their own work.
Explore 2	Pupils investigate and solve problems in a range of digital environments using relevant planning tools such as storyboards and flowcharts. They demonstrate a clear understanding of the audience and purpose of their work while they plan and make changes.
Express	Pupils create, develop, present and publish ideas using a range of digital media. They use assets such as text, data, sound, and still and moving images to produce multimedia products that demonstrate a clear understanding of audience and purpose. For example, they might create a website, which includes suitable images and videos, or they might produce a 3D computer-aided design (CAD) drawing of a product they are making in Technology and Design.
Exchange	Throughout Key Stage 3, pupils use a range of contemporary digital methods to communicate, exchange and share their work, collaborating online with peers. In particular, pupils use collaborative tools such as Google for Education and Microsoft Office 365 to transform how they learn in the classroom.
Evaluate	Using appropriate ICT tools and features, pupils carry out ongoing improvements. They reflect on their own work or their peers' work, identifying where there is merit and considering ways of making improvements.
Exhibit	Pupils organise, store and maintain their work within a personalised area to showcase learning digitally across the curriculum. Pupils might use the school's virtual learning environment or a tool such as Google Sites to create their own portfolio.

In Key Stage 3, through these statutory 5 'E's, pupils may gain experience of the following types of ICT. It is up to teachers to decide which types of ICT they will teach in order to cover the statutory requirements.

The following types of ICT can be delivered through any of the Areas of Learning. Select the links below for more information.

Computational Thinking and Coding

- *Exploring Programming*
- *Game Making*

Managing Data

- *Data Handling*
- *Simulation*
- *Using Modelling*
- *Measurement and Data Logging*

Digital Storytelling: Publishing

- *Desktop Publishing*
- *Website Development*

Digital Storytelling: Presenting

- *Presentation*

Digital Storytelling: Film and Animation

- *Working with Moving Images/Animation*

Digital Audio: Music and Sound

- *Working with Sound*
- *Music Technology*

Digital Art and Design

- *Working with Images*
- *2D CAD*
- *3D CAD*

In our progression pathways, we have mapped out how experiencing these types of ICT throughout the key stages gives learners opportunities to become digital makers in different pathways through learning.

Key Stage 4

The structure of the curriculum changes at Key Stage 4. As pupils work towards qualifications, teachers change their teaching and learning priorities.

The 5 'E's are not followed at Key Stage 4, but every subject teacher at this stage still has a responsibility for developing pupils' Using ICT skills in a way that enhances their learning experiences.

To meet the requirements of the Key Stage 4 Entitlement Framework, each school must offer a range of qualifications for pupils to choose from. Pupils must use a variety of digital skills to successfully complete any of the courses that they follow. These include researching information online and presenting information in a written report or presentation.

Teachers should enable pupils to develop skills in making effective use of information and communications technology in a wide range of contexts to access, manage, select and present information, including mathematical information. Teachers will address this statutory requirement in ways that are appropriate to the content of their subjects, ensuring that pupils continue to have opportunities to develop their digital skills.

Key Stage 4 pupils who want to continue following a digital-related route can choose from our qualifications that have a more explicit link to higher level digital skills. You can find out more about these qualifications in our progression pathways.

Post-16

There is no statutory requirement for pupils to study Using ICT or digital skills at post-16.

Post-16 pupils who want to continue following a digital-related route can choose from our qualifications that have a more explicit link to higher level digital skills. You can find out more about these qualifications in our progression pathways.

Progression Pathway: Digital Technology – making and building

The Northern Ireland Curriculum and CCEA qualifications provide opportunities for our learners to develop a broad range of digital skills, enabling them to become a Digital Maker.

This pathway sets out the **potential, non-statutory** journey of a learner as they become a Digital Maker through the strand of Coding, and Database and Website Development. **This strand is made up of:**

- **Computational Thinking and Coding**
- **Managing Data**
- **Digital Storytelling: Publishing (which includes aspects of website development).**

From Foundation Stage to Key Stage 3, and in order to provide opportunities for pupils to develop their skills in the statutory 5 'E's, teachers may choose to teach some or all of these types of ICT throughout the key stage.

At Key Stage 4, students can choose to study GCSE Digital Technology.

At post-16, they can choose to study GCE Digital Technology or GCE Software Systems Development.

Foundation Stage

In providing opportunities for pupils to develop their skills in the statutory 5 'E's, teachers may choose to teach some or all of the following types of ICT throughout the key stage. Potential learning outcomes are listed below:

Type of ICT	Learning Outcomes
Computational Thinking and Coding	As children progress through the Foundation Stage, they may: • be introduced to the concept of an algorithm by creating sets of instructions for normal everyday activities; • explore interactive games or apps, making choices by clicking or tapping different buttons or images onscreen to create different outcomes; • explore a digital device or environment using simple commands, for example after discussion make a robot move; • use simple game-based programming apps to develop their understanding of the creation of simple lines of code; • use pre-existing commands in a coding app to make a sprite move, change its appearance or change direction; • use motion blocks and look or sound blocks in coding software to control a sprite; • with teacher help, identify why some instructions or commands haven't worked and fix them (debug);
Managing Data	• explore a given digital database with the rest of the class and make observations about the names of the fields; • with teacher support, enter information into a given database; • explore interactive graphing software or apps to produce simple pictograms and block graphs; • make choices by clicking different buttons or images onscreen to create a graph or chart from given data;
Digital Storytelling: Publishing	• look at, respond to and talk about examples of digital publishing, using terms such as text, image and page to describe what they see; • find and select an image and a sound (if appropriate) from a source the teacher provides and, with teacher help, insert these into appropriate publishing software; • create a simple phrase or sentence to accompany the image (and sound); and • share and talk about their digital work.

Key Stage 1

In providing opportunities for pupils to develop their skills in the statutory 5 'E's, teachers may choose to teach some or all of the following types of ICT throughout the key stage. Potential learning outcomes are listed below:

Type of ICT	Learning Outcomes
Computational Thinking and Coding	As children progress through the Key Stage 1, they may: • know that any activity (including coding) can be broken down into smaller parts (decomposition); • plan what they want to happen in a coding project and write a set of instructions (algorithm) for this; • use robots, onscreen turtle or block-based coding; • enter instructions or commands to make a computer solve problems; and • use their algorithm and logical reasoning to: – make a robot or onscreen character move to a specific location; or – code a range of motion, looks and sound commands that control a sprite;
Managing Data	• look at and talk about ways to collect data linked to a class topic; • collect the data that needs to be analysed, for example use a given data collection sheet; • enter the collected data into a database or other graphing software; • produce a graphical representation such as a block graph, simple pictogram or diagram with title and labels; • discuss and interpret information from their graph or database;
Digital Storytelling: Publishing	• look at, respond to and talk about examples of digital publishing, beginning to think about placement of text and images; • find and select images and, if appropriate, sounds from a given source that will be suitable for their work and combine these with their own or found text; • create a digital publishing product, for example a poster, ticket or e-book; • consider layout and adjust placement for best effect; • explore and choose a font, adjusting their text size and colour to suit; and • resize images by dragging from a corner handle so they are not stretched or distorted, and be able to move them around the page.

Key Stage 2

In providing opportunities for pupils to develop their skills in the statutory 5 'E's, teachers may choose to teach some or all of the following types of ICT throughout the key stage. Potential learning outcomes are listed below:

Type of ICT	Learning Outcomes
Computational Thinking and Coding	As children progress through Key Stage 2, they may use programmable devices and robots, onscreen turtle or block-based coding to: • solve a given problem using commands in a programming environment; • look at and talk about examples of coding projects, including the use of procedures, motion, looks, lights or sounds, sensors and control; • talk about how these projects are composed of different components and break the larger task into smaller manageable tasks (decomposition); • plan and storyboard their own coding project, working out what different parts of the program must do and using logical reasoning to discuss and compare the commands that are required for their algorithm and predict the outcome; • use a range of commands to create a project including triggering commands such as 'broadcast' and 'when I receive' that allow scripts to continue across different sprites and backgrounds to facilitate a more efficient method of interaction; • use selection and repetition such as 'if...then', 'if...else' and 'loop until' (or equivalent), which allow code to be more efficient; and • test and debug at regular intervals and collaborate with others to solve problems as they arise.
Managing Data	As children progress through Key Stage 2, they may: • use a range of sources, such as catalogues, websites, tables or lists, to research the data needed to solve a problem; • with teacher guidance, discuss what information they will need to collect for a project; • discuss what questions to use and create a survey using digital tools such as SurveyMonkey, Google Forms or Office 365 Forms and use to collect data; • present their data in suitable graphical format such as a spreadsheet and relate it to the purpose of their project; • answer simple questions by using SORT or using simple formulae such as + and −; • use features such as simple queries in a database to interrogate data organised in table format;
Digital Storytelling: Publishing	• look at, respond to and talk about examples of digital publishing, beginning to think about elements of good design and functionality; • plan and create a web page, website or blog, showing an awareness of the purpose of their product and its intended audience in their choice of format or content; • download assets in a file format suitable for publication; • create text or edit found text and format it using features such as alignment, justification, numbering, paragraphs, columns and word wrap and text wrap or flow; • use text boxes and format them appropriately, for example using a border, making it transparent or rotating the box for effect; • use design elements such as alignment, proximity (grouping related items together, moving them closer to each other so they are seen as a cohesive group rather than unrelated parts), contrast, borders or page numbers to enhance the document; and • save and export the publication in an appropriate file format so that a different user can open it on a different device.

Key Stage 3

In providing opportunities for pupils to develop their skills in the statutory 5 'E's, teachers may choose to teach some or all of the following types of ICT throughout the key stage. The following types of ICT can be delivered through any of the Areas of Learning. Potential learning outcomes are listed below:

Type of ICT	Learning Outcomes
Computational Thinking and Coding	As pupils progress through Key Stage 3, they should have opportunities to solve a variety of computational problems. This may include: • designing a solution for the problem using computational thinking: decomposition, abstraction, algorithms, generalisation and evaluation; • building a solution based on their design using appropriate tools and techniques; • testing and evaluating the solution against their original plan (which might include designing, drafting and refining their work to make it relevant for the audience and purpose described in the task brief, and they might ask peers to test and give feedback on their solution to elicit suggestions for improvements); and • using a range of contemporary digital methods to communicate, exchange and share their work, collaborating online with peers to create and improve their solution. As pupils progress through Key Stage 3, they may learn about: • the three constructs of programming: sequence, selection (IF statements) and iteration (repetition using loops); • data types and their uses: integer, float, Boolean and strings; • variables; • outputting information to a screen; • user input and the user interface; • operators: arithmetic, comparison and logical; and • creating user-defined blocks of code (custom blocks in Scratch or Snap!, procedures, functions or methods).
Managing Data (Database Development)	As children progress through Key Stage 3, they may: • research, select, edit, use and evaluate information from a range of digital sources to help with designing and/or collecting data to store in the database; • use a range of software tools and features such as tables, queries, forms and reports to develop a database that solves a problem, showing a clear understanding of audience; • create a database that demonstrates a clear understanding of the audience and purpose defined in the task brief (which might include using appropriate field names, types and sizes, selecting one or more suitable primary keys to help with storing data in the underlying tables and using queries with criteria to allow them to process the data into meaningful information displayed clearly in a report format, including a logo); • use a range of contemporary digital methods to communicate, exchange and share their information and multimedia products, collaborating online with their peers; • use the 'plan, do, review' cycle to improve their work (which might include designing, drafting and refining their work to make it relevant for the audience and purpose described in the task brief, and they might ask peers to test and give feedback on their database to elicit suggestions for improvements); • organise, store and maintain the database and any associated files and/or materials in a personalised area to showcase learning digitally across the curriculum;
Digital Storytelling: Publishing (Website Development)	• research and select relevant information, images, sounds or moving images from a range of digital sources to edit and include in their work (which might include tables, external hyperlinks, hotspots and anchors); • create a multipage website that demonstrates a clear understanding of the audience and purpose defined in the task brief (which might include enhancing the website for the audience and purpose by including more appropriate assets, editing images, embedding objects and using cascading style sheets (CSS)); • use a range of contemporary digital methods to communicate, exchange and share their information and multimedia products, collaborating online with their peers; • use the 'plan, do, review' cycle to improve their work (which might include designing, drafting and refining their work to make it relevant for the audience and purpose described in the task brief, and they might ask peers to test and give feedback on their website to elicit suggestions for improvements); and • organise, store and maintain the website and any associated files or materials in a personalised area to showcase learning digitally across the curriculum.

Key Stage 4

Key Stage 4 pupils who want to continue following a digital-related route can choose from our qualifications that have a more explicit link to higher level digital skills and potentially achieve the following learning outcomes:

Type of ICT	Learning Outcomes
Computational Thinking and Coding *Applicable to:* **(GCSE Digital Technology Programming route)**	After choosing and completing this qualification, students should be able to: • use algorithms to design a fully decomposed solution to a given problem, specifying the data requirements for the solution and including suitable input, output and navigation design; • use validation and error trapping proposals in the design to improve the potential robustness of the system; • refine the design solution based on issues identified during the design process; • use the following features of a programming language to build a solution from a structured design: data types, control structures, functions, data structures, string handling (using simple string handling functions), basic arithmetic, and logical and relational operators; • test and document the solution using a test plan that incorporates black box and white box testing, uses appropriate test data, shows expected output, identifies run-time and logic errors, reflects the general robustness of the system and measures the extent to which the solution meets the user requirements; • evaluate the solution, referring to user requirements, refinements required following testing and possible improvements to the solution;
Database Development *Applicable to:* **(GCSE Digital Technology Multimedia route)**	• specify the user requirements and target audience to design a solution to a given problem, using storyboards, prototyping and suitable input, output, processing, data and navigation design; • use suitable testing methods, for example A/B testing, to ensure the design solution meets user requirements, after considering end user feedback; • use the following features of a database application to support the implementation of a solution from a design document: relationships, simple and complex queries using SELECT, FROM and WHERE Structured Query Language (SQL) statements, menus and macros, validation, lookup lists, input masks, forms, subforms and reports; • test and document the solution using a test plan that uses appropriate test data, shows expected output, identifies errors and performance issues, reflects the general robustness of the system and measures the extent to which the solution meets the user requirements; • evaluate the solution, referring to user requirements, refinements required following testing and possible improvements to the solution;
Website Development *Applicable to:* **(GCSE Digital Technology Multimedia route)**	• specify the user requirements and target audience to design a solution to a given problem, using storyboards and prototyping; • refine and evaluate the design solution; • use the following features of a multimedia authoring package to support the creation of an interactive solution from a design document: templates, hypertext, optimised media types, scripted elements that enhance the interactivity of the package and a range of accessibility elements; • test the navigational elements, interactive elements and the load time of any assets used in the solution; • measure the extent to which the solution meets the user requirements; and • evaluate the solution, referring to user requirements and possible improvements to the solution.

Post-16

There is no statutory requirement for pupils to study Using ICT or digital skills at post-16.

However, pupils who want to continue following a digital pathway can choose from our qualifications that are related to digital skills and potentially achieve the following learning outcomes:

Type of ICT	Learning Outcomes
Computational Thinking and Coding *Applicable to:* **(GCE Software Systems Development)**	After choosing and completing this qualification, students should be able to: • demonstrate their understanding and use of graphical user interface (GUI) objects in the implementation of an event driven application; • demonstrate and apply their understanding of events and multiple forms to design and implement an event driven application using triggers, for example button, mouse clicks or key presses, and appropriate navigation such as menus, toolbars and buttons; • develop storyboards for an event driven application with respect to user requirements and functionality; • implement text files, binary files and object files (object serialisation); • apply the concepts of error trapping techniques from an object perspective and try/catch (blocks); • design and apply a suitable test strategy to an event driven application, documenting, interpreting and evaluating the test results; • evaluate an event driven application in terms of requirements, features and functionality;
Database Development *Applicable to:* **(GCE Digital Technology)**	• produce a Gantt chart to schedule a project; • identify internal and external constraints that may impact on the solution; • detail user requirements in terms of inputs, processes and outputs, prioritising these into essential and non-essential; • use analysis tools such as data flow diagrams (DFD) (level 0 and level 1) to illustrate the flow of data through the information system and the processes required; • produce an overall design for the system, including a detailed design of each user interface, appropriate validation and the required queries and reports; • use data modelling techniques to produce an entity-relationship (ER) diagram for a fully relational database; • show in detail how the database solution is normalised to 3NF; • use Structured Query Language (SQL) to create tables and to retrieve, update, insert and delete data in a relational database; • test the software solution using a comprehensive test plan; • document a strategy for system implementation; • evaluate the solution against the user requirements, identifying possible extensions to the system; • develop an electronic guide, accessible from the user interface, that explains how to use the application;
Website Development *Applicable to:* **(GCE Digital Technology)**	• explain how web pages are created using Hypertext Markup Language (HTML); • understand the purpose of a range of HTML tags: paragraph, image, anchor, ordered list, unordered list and hyperlinks; • explain how cascading style sheet (CSS) is used in web development; • distinguish between client-side and server-side processing; and • evaluate methods of ensuring security over the internet: encryption (including public and private keys), hypertext transfer protocol secure (https), Secure Sockets Layer (SSL), digital signature or digital certificate.

Progression Pathway: Creative Technologies

The Northern Ireland Curriculum and CCEA qualifications provide opportunities for our learners to develop a broad range of digital skills, enabling them to become a Digital Maker.

This pathway sets out the non-statutory journey of a learner as they become a Digital Maker through the strand of Creative Technologies.
This strand is made up of:

- **Digital Storytelling: Publishing**
- **Digital Storytelling: Presenting**
- **Digital Storytelling: Film and Animation**
- **Digital Audio: Music and Sound**
- **Digital Art and Design.**

From the Foundation Stage to Key Stage 3, in a way that is relevant to their age and ability, pupils experience these through key aspects of the Cross-Curricular Skill of Using ICT.

At Key Stage 4 and post-16, students can choose to study GCSEs and GCEs that may naturally lead on from some of these experiences.

Foundation Stage

In providing opportunities for pupils to develop their skills in the statutory 5 'E's, teachers may choose to teach some or all of the following types of ICT throughout the key stage. Potential learning outcomes are listed below:

Type of ICT	Learning Outcomes
Digital Storytelling: Publishing	As children progress through the Foundation Stage, they may: • look at, respond to and talk about examples of digital publishing, using terms such as text, image and page to describe what they see; • find and select an image and a sound (if appropriate) from a source the teacher provides and, with teacher help, insert these into appropriate publishing software; • create a simple phrase or sentence to accompany the image (and sound); • share and talk about their digital work;
Digital Storytelling: Presenting	• find and select an image and a sound and, with teacher help, insert these into appropriate presentation software; • create a simple phrase or sentence to accompany the image and sound or add a voiceover; • with teacher help, save the work;
Digital Storytelling: Film and Animation	• look at photographs the teacher has taken and tell the story of what they can see or view a short animated film and talk about what it shows and how it makes them feel; • take photographs or select from given still images to create a collection of images suitable for a class topic; • with teacher help, use suitable software to arrange and order still images to tell a story; • add a sound or narration to their photo story; • decide what to include to tell a story and help the teacher film a classroom activity, such as construction play, or describe a part of their school day;
Digital Audio: Music and Sound	• listen to a range of digital sounds, for example playground sounds or traffic, and identify and talk about them; • explore and interact with a digital device, for example click on images and objects, and use virtual musical instruments in a sound app or software to create their own music and sounds; • with help, use a USB microphone, tablet or computer to record sounds, such as voice, a musical performance or sound effects, in real time for a class story;
Digital Art and Design	• talk about images and artworks, beginning to think about elements of art such as colour, shape or texture; • with teacher help, take photographs with a tablet or camera to create a collection of images suitable for a class discussion or to respond to a challenge to capture images, such as finding a specific colour, shape or texture, and view on screen; • use software or an app to create their own digital artwork, which could be 3D, exploring tools such as the pencil, paintbrush, stickers and stamp and also use the undo button; and • use visual language to describe their images when talking about their work, for example the colours, shapes and textures.

Key Stage 1

In providing opportunities for pupils to develop their skills in the statutory 5 'E's, teachers may choose to teach some or all of the following types of ICT throughout the key stage. Potential learning outcomes are listed below:

Type of ICT	Learning Outcomes
Digital Storytelling: Publishing	As children progress through Key Stage 1, they may: • look at, respond to and talk about examples of digital publishing, beginning to think about placement of text and images; • find and select images and, if appropriate, sounds from a given source that will be suitable for their work and combine these with their own or found text; • create a digital publishing product, for example a poster, ticket or e-book; • consider layout and adjust placement for best effect; • explore and choose a font, adjusting their text size and colour to suit; • resize images by dragging from a corner handle so they are not stretched or distorted, and be able to move them around the page;
Digital Storytelling: Presenting	• find and select images and sounds from a given source that will be suitable for their work and combine these with their own text and/or a voiceover; • consider layout and adjust placement for best effect and explore backgrounds and fonts; • adjust the text size and colour to suit and resize images by dragging from a corner handle so they are not stretched or distorted; • select and use a simple transition; • consider how best to arrange their slides in order to tell their story or present their facts effectively;
Digital Storytelling: Film and Animation	• look at and talk about examples of short films, animations or screencasts, for example advertisements, cartoons, film clips or instructional video, and tell the story of what they can see, where the story is set, or pick out a number of key events or characters in scenes; • plan and create a simple film or animation, adding a title and/or music, if they can; • use suitable software to work with pre-loaded still images and arrange them into a sequence to tell a story and record a voiceover or add music; • create an animation by taking still images of objects or clay models in graduated poses or positions; • work in small groups and tell a story with some structure or organisation, for example by making an unedited short film (less than a minute);
Digital Audio: Music and Sound	• listen to a range of sounds or music to develop awareness of audio features such as high or low (pitch), loud or soft (dynamics), fast or slow (tempo) and reverb (echo); • with teacher help, carry out simple edits such as copying and pasting sound files to repeat a sequence in their project; • be aware that digital sounds can be manipulated by, for example, changing the pitch or volume of sounds in the software or app they are using; • with more independence, record in real time, for example capture voice, musical performance or sounds with a USB microphone, tablet or computer; • experiment with using sound effects in their software or app to change their recording, for example make a voice sound;
Digital Art and Design	• look at, respond to and talk about examples of photographic images and artworks, thinking about specific elements of art such as colour, line, shape, form, space and texture or pattern; • take photographs with some control, thinking about framing (for example, not chopping off parts of the subject) and focus; • review the shot and decide if they need to take it again; • use software to review images provided by the teacher and, if desired, edit these using tools in the software, for example crop the image or add a filter or effect; and • use software or an app to create their own digital artwork, which could be 3D, using more control and a wider range of tools such as fill, shape and special effects and beginning to consider elements of art such as colour, line, shape, form, space and texture or pattern.

Key Stage 2

In providing opportunities for pupils to develop their skills in the statutory 5 'E's, teachers may choose to teach some or all of the following types of ICT throughout the key stage. Potential learning outcomes are listed below:

Type of ICT	Learning Outcomes
Digital Storytelling: Publishing	As children progress through Key Stage 2, they may: • look at, respond to and talk about examples of digital publishing, beginning to think about elements of good design and functionality; • plan and create a web page, website or blog, showing an awareness of the purpose of their product and its intended audience in their choice of format or content; • download assets in a file format suitable for publication; • create text or edit found text and format it using features such as alignment, justification, numbering, paragraphs, columns and word wrap and text wrap or flow; • use text boxes and format them appropriately, for example using a border, making it transparent or rotating the box for effect; • use design elements such as alignment, proximity (grouping related items together, moving them closer to each other so they are seen as a cohesive group rather than unrelated parts), contrast, borders or page numbers to enhance the document;
Digital Storytelling: Presenting	• plan and create a presentation or digital story, showing an awareness of audience and purpose; • research and select found and/or self-produced assets, such as text, still and/or moving images, maps, graphs, tables or sounds; • be able to add appropriate websites to favourites or bookmarks, save their assets and research into a folder and be aware that not all sources are reliable; • download assets in a format suitable for using in presenting software; • create text or edit found text and format it using features such as text boxes, borders, bullets and numbering; • explore how using custom animation can affect the order images and text appear in on the slide; • use design features such as templates, colour, borders or themes; • use one or more transitions between slides to make the presentation suitable for the content and context;
Digital Storytelling: Film and Animation	• view and talk about selected film clips using film language such as scene, setting, plot, costume, props, close-up, mid shot, long shot, camera angle, soundtrack, atmosphere, style or genre and consider how these are used to tell the story, convey different emotions and engage the audience; • plan and storyboard a short film or animation, showing an awareness of audience and consideration of plot; • shoot scenes, considering what to add to or omit from their original plan and import into an appropriate software package; • edit the film, making decisions about what to omit and what to include and experiment with adding a variety of features such as titles, transitions, backgrounds, effects and credits relevant to the style and content of their film, saving their work as they edit, and describe editing decisions using the language of film such as trim, split, cut, crop or fade; • add appropriate sound effects, music or narration, considering timing;
Digital Audio: Music and Sound	• listen to music clips or podcasts and identify features such as layers, the tempo, pitch, dynamics or atmosphere, or the elements that make up a podcast such as its structure, the use of more than one track, voiceover, interviews, backing track or sound bed, length or sound effects; • plan, storyboard and create a soundscape, digital music composition or podcast-style project, using more than one layer (track) that combines sound files from a range of sources; • create music or sound clips and edit these for use in their project, considering how to manipulate their sounds to suit the audience and purpose of their product; • use music and sound language when reviewing and editing their work, for example describe editing decisions using language such as track, layer, trim, split, cut, crop, reverb, tempo and dynamics; and • make clear editing decisions, for example deciding what to omit or include during the editing process.

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Key Stage 2

Type of ICT	Learning Outcomes
Digital Art and Design	As children progress through Key Stage 2, they may: • take photographs with purpose and control, showing greater understanding of how to compose their shot, for example finding a point of interest and deciding how to position it in their frame, checking the background isn't cluttered or distracting, considering using the rule of thirds and choosing a perspective that appeals to them; • edit images to enhance them, for example by applying filters, adjusting contrast or resizing proportionally; and • create a digital artwork with control, which may include their own artwork or scanned images, photos or stills from a film, for a given audience or purpose, possibly combining work from different apps or software to best effect or including the use of layers, or creating a 3D digital artwork using appropriate tools and options, considering the elements of art.

Key Stage 3

In providing opportunities for pupils to develop their skills in the statutory 5 'E's, teachers may choose to teach some or all of the following types of ICT throughout the key stage. The following types of ICT can be delivered through any of the Areas of Learning. Potential learning outcomes are listed below:

Type of ICT	Learning Outcomes
Digital Storytelling: Publishing	As children progress through Key Stage 3, they may: • research, find and review examples of publications relevant to their work and identify the key characteristics that make them effective, considering any audience and purpose defined in a project brief; • create a publication that combines a range of features to demonstrate a clear understanding of the audience and purpose (which might include using margins, columns, justification, tabs, linked text boxes, grouping, text wrapping and pagination); • use a range of contemporary digital methods to communicate, exchange and share their work, collaborating online with their peers; • use the 'plan, do, review' cycle to improve their work (which might include designing, drafting and refining their work to make it relevant for the audience and purpose described in a task brief, and they might ask peers to test and give feedback on their publication to elicit suggestions for improvements);
Digital Storytelling: Presenting	• find and review examples of presentations relevant to their work and identify the key characteristics that make them effective, considering any audience and purpose defined in a project brief; • research and select relevant information, images, sounds and/or moving images from a range of digital sources to edit and include in their work; • create a multimedia presentation that combines a range of features to demonstrate a clear understanding of the audience and purpose defined in a task brief (which might include enhancing the presentation for the audience and purpose by using more appropriate assets, editing images, embedding objects, using hyperlinks etc.); • use a range of contemporary digital methods to communicate, exchange and share their presentation, collaborating online with their peers; • use the 'plan, do, review' cycle to improve their work (which might include designing, drafting and refining their work to make it relevant for the audience and purpose described in a task brief, and they might ask peers to test and give feedback on their presentation to elicit suggestions for improvements).
Digital Storytelling: Film and Animation	• research, find and review examples of moving image or animation products relevant to their work and identify the key characteristics that make them effective, considering any audience and purpose defined in a task brief; • create a moving image or animation product that demonstrates a clear understanding of the audience and purpose, by planning, shooting and editing footage, showing an awareness of pace, rhythm and tempo (which might include preparing additional assets such as titles and captured sound); • use a range of contemporary digital methods to communicate, exchange and share their film, collaborating online with their peers; • use the 'plan, do, review' cycle to improve their work (which might include designing, drafting and refining their moving image or animation to make it relevant for the audience and purpose described in a task brief, and they might ask peers to test and give feedback on their film to elicit suggestions for improvements);
Digital Audio: Music Technology and Sound	• research, find and review examples of music tracks or sound products relevant to their work and identify the key characteristics that make them effective, considering any audience and purpose defined in a task brief; • create a multitrack sound product using a digital audio workstation (DAW) (which might include using digital effects to demonstrate a clear understanding of the audience and purpose, arranging sound clips in a particular sequence and controlling the balance in the finished mix); • use a range of contemporary digital methods to communicate, exchange and share their music or sound product, collaborating online with their peers; • use the 'plan, do, review' cycle to improve their work (which might include designing, drafting and refining work to make it relevant for the audience and purpose described in a task brief, and they might ask peers to test and give feedback on their music or sound product to elicit suggestions for improvements); and • organise, store and maintain the music or sound product and any associated files or materials in a personalised area to showcase learning digitally across the curriculum.

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Key Stage 3

Type of ICT	Learning Outcomes
Digital Art and Design	As children progress through Key Stage 3, they may: • research, find and review examples of images, artwork or designs relevant to their work and identify the key characteristics that make them effective, considering any audience and purpose defined in a task brief; • make a collage by combining images in layers, manipulating the images to enhance them, taking account of audience and purpose (which might include repositioning individual layers' content, using masks to hide and reveal parts of an image, or blending between layers); • create a CAD drawing that combines a range of features to demonstrate a clear understanding of the audience and purpose defined in a task brief (which might include using a range of software features and tools such as extrude, fillet, chamfer and emboss, along with fully annotated drawings using dimensions and text); • use a range of contemporary digital methods to communicate, exchange and share their work, collaborating online with their peers; • use the 'plan, do, review' cycle to improve their work (which might include designing, drafting and refining work to make it relevant for the audience and purpose described in a task brief, and they might ask peers to test and give feedback on their image, artwork or design to elicit suggestions for improvements); and • organise, store and maintain their work and any associated files or materials in a personalised area to showcase learning digitally across the curriculum.

Key Stage 4

Key Stage 4 pupils who want to continue following a digital-related route can choose from our qualifications that have a more explicit link to higher level digital skills and potentially achieve the following learning outcomes:

Type of ICT		Learning Outcomes
Digital Storytelling: Publishing	Applicable to	Students following a variety of courses at Key Stage 4 will have opportunities to demonstrate their digital skills by creating, for example, essays, reports, brochures, flyers, advertisements, leaflets or newspapers.
Digital Storytelling: Presenting		Students following a variety of courses at Key Stage 4 will be required to create presentations to communicate information for a range of audiences and purposes.
Digital Storytelling: Film and Animation		<u>GCSE Moving Image Arts</u> Students who choose to study this applied qualification work on a range of creative, critical and technical tasks. These include planning and creating moving image products. Students have the opportunity to: • develop ideas by investigating and experimenting with film-making techniques and processes; • develop the ability to manage resources, processes and equipment at different stages of moving image production; • create complete moving image products; • develop technical competence in using film-making techniques; and • evaluate the effectiveness of their practice as film-makers.
Digital Audio: Music Technology and Sound		<u>GCSE Music</u> Students who choose to study our GCSE in Music can make effective use of digital technology in a wide range of contexts, for example: • using technology in the research of the Areas of Study and materials selected for performance and composition; • experiencing live and recorded music, and understanding the use of digital technology in the design and delivery of music; • exploring a range of music software including Logic and GarageBand or notation software such as Sibelius in the creation and presentation of their composition; • exploring the effects of multimedia and ICT on music; • recording performance work using digital technology; and • creating scores, lead sheets or written accounts. <u>GCSE Journalism in the Media and Communications Industry</u> Students who choose to study this vocationally orientated course have the chance to learn about and practice the core journalism skills of interviewing, writing and reporting. It maximises the use of technology, enabling students to carry out and present their work using a range of different digital platforms, including an online examination. Students make effective use of ICT in a range of contexts, for example, they access a range of secondary sources online, record and edit audio and/or audiovisual interviews with primary sources and format news pages.

Continued overleaf

Key Stage 4

Type of ICT		Learning Outcomes
Digital Art and Design	Applicable to	<u>GCSE Art and Design</u> Students who choose to study our GCSE in Art and Design can become confident in taking risks and learn from experience when working with ideas, media, materials, processes and technologies. Students can be involved with a range of digital formats, including: • digital graphic design; • website design; • video art; • animation; • using social media; and • experimenting with relevant software to help explore and realise creative intentions. <u>GCSE Technology and Design</u> Students who choose to study our GCSE in Technology and Design have the opportunity to use a broad range of materials, components and technologies, as well as practical skills, to develop and produce high-quality, imaginative and functional prototypes. Students following this course make effective use of digital technology in a wide range of contexts, for example: • applying computer-aided design (CAD), computer numerical control and computer-aided manufacture in product manufacture; • producing, drawing and analysing Gantt charts; • using computer modelling and CAD; • designing and analysing printed circuit boards; and • developing skills and expertise using 2D and 3D design software, and programming and control software.

Post-16

There is no statutory requirement for pupils to study Using ICT or digital skills at post-16.

However, pupils who want to continue following a digital pathway can choose from our qualifications that are related to digital skills and potentially achieve the following learning outcomes:

Type of ICT		Learning Outcomes
Digital Storytelling: Publishing	Applicable to	Students following a variety of courses at post-16 will have opportunities to demonstrate their digital skills by creating, for example, essays, reports, brochures, flyers, advertisements, leaflets or newspapers.
Digital Storytelling: Presenting		Students following a variety of courses at post-16 will be required to create presentations to communicate information for a range of audiences and purposes.
Digital Storytelling: Film and Animation		GCE Moving Image Arts Students who choose to study Moving Image Arts will be ideally placed to pursue a career in the creative industries, which value and promote independence, originality, creative enterprise and technical skill. The course develops creative and critical abilities in writing, directing, editing, producing and analysing films from a range of contexts and disciplines.
Digital Audio: Music Technology and Sound		GCE Music Students who choose to study our GCE in Music can make effective use of digital technology in a range of contexts. As part of this GCE, students have the option to use sequencing technology, multitrack recording technology or a combination of both to create arrangements. GCE Journalism in the Media and Communications Industry Students who choose to study this qualification are encouraged to apply their skills to print and feature portfolio work and to research, develop and present their findings in formats including print, online and broadcast platforms. They learn about the skills required in both journalism and photojournalism, producing cross-platform feature portfolios in written, audio or audiovisual formats.
Digital Art and Design		GCE Art and Design Students who choose to study this qualification create a pathway to a career in a creative industries-related field. Students may follow a broad pathway through Art, Craft and Design – Combined Studies, or choose from one of three specialisms: • Photography and Lens-Based Media; • Three-Dimensional Design; or • Textiles. GCE Technology and Design Students who choose to study our GCE in Technology and Design will have an interest in engineering, in products in general or in product design and development in particular. The AS units include a common core of design and materials and a specialised study of: • systems and control (either electronic and microelectronic systems or mechanical and pneumatic systems); or • product design. Students who continue to A2 explore systems and control (either electronic and microelectronic systems or mechanical and pneumatic systems) or product design in greater detail than at AS level.

Types of ICT (Foundation–Key Stage 2)

	Foundation Stage	Key Stage 1	Key Stage 2
Computational Thinking and Coding	In the Foundation Stage, children begin to explore programming in their physical environment and through play-based learning. Children can develop computational thinking skills throughout the Physical Development and Movement Area of Learning by following instructions such as take three steps forward then jump on the spot. This may progress into giving a similar set of simple instructions for a friend to follow. Children can also use simple game-based programming apps such as Bugs and Buttons, Daisy the Dinosaur or 2Simple 2Go to develop their understanding of creating simple lines of code.	At Key Stage 1, children enter instructions or commands to make a computer solve problems. They can control devices such as Bee-Bot or Sphero and explore apps such as Scratch Jr or Kodable. For example, children plan and carry out a series of commands to move a Bee-Bot to fairy tale houses on a floor mat.	At Key Stage 2, children begin to solve increasingly complex problems and create interactive programs with more efficient use of coding commands in Logo or block-based coding apps or environments such as Scratch, Tynker or Hopscotch. For example, they could use Scratch to code an interactive quiz about the Victorians.
Managing Data	As children progress through the Foundation Stage, they can use programs to enter data to produce simple pictograms and block graphs.	Children can enter data into a database or other software package and produce a graphical representation. For example, they might use software to create a tally chart and graph about birds they have observed in the playground.	Children may collect their own data, possibly using online survey tools, then present and analyse it. They move on to solving problems using some of the tools in a database or spreadsheet. They begin to adapt formulae to solve problems, make observations and draw conclusions. For example, children may use simple formulae in a spreadsheet that the teacher has given them to calculate price increases when planning a class trip.
Digital Storytelling: Publishing	Children can use presentation apps and software to design simple posters and e-books from a bank of images that the teacher has created.	Children use software to communicate information through traditional printed materials or digital publications. They learn to combine text and images to create a simple poster, invitation or e-book (which can also include sounds). For example, children could create an invitation to a fairy tale character's party.	Children plan and create, with increasing competence, documents such as a poster, tri-fold leaflet or newspaper page, electronic publication, such as an interactive e-book or web page, website or blog, showing an awareness of the purpose of their product and its intended audience in their choice of format or content.
Digital Storytelling: Presenting	Children can use a range of apps to sequence familiar stories. They may also add a short phrase or sentence, such as adding text to a speech bubble.	Children enter text and insert images or sounds into presenting software to help deliver a story or presentation. For example, children add and format text and insert a sound file or record speech onto a prepared presentation.	Children plan and create a presentation, showing an awareness of audience and purpose, using carefully selected images, audio and video. They are able to use tools such as custom animation, transitions, templates or themes.

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← Back to Key Stage 2

Types of ICT (Foundation–Key Stage 2)

	Foundation Stage	Key Stage 1	Key Stage 2
Digital Storytelling: Film and Animation	With the teacher's help, groups of children can create a short, simple animation using moving images.	Children may work together in groups and, with the teacher's help, plan and create a moving image story using a video camera or an animation app, or by taking photos of a clay model in different positions to create a stop-motion animation. For example, they can sequence photos that the teacher has provided to tell a story.	Children may plan and create films, using still or moving images, or animations. They plan their productions, including storyboarding and using moving image language such as close-up and long shot, as part of this process when appropriate. For example, they could create a stop-motion animation about summer safety on the farm.
Digital Audio: Music and Sound	With the teacher's help, small groups of children can record voice and sound effects, such as adding animal noises to a digital storybook or recording musical instruments as part of a sound story.	Children develop their skills in sound recording and creating simple digital music and effects using apps, microphones and simple editing software. For example, children record jungle sounds using percussion instruments.	Children may begin to create increasingly complex sound files by using multiple tracks, balancing sound levels and demonstrating appropriate use of effects. For example, they could compose music to accompany an Eco School poem and use features in GarageBand, such as loops and volume control, to edit and produce a song.
Digital Art and Design	With the teacher's help, children can be introduced to the process of taking digital photographs and creating digital drawings.	Children begin to develop their skills in taking digital photographs and creating digital drawings, paintings or collages. For example, children use a drawing program on the computer to draw themselves.	Children further develop their skills in taking digital photographs and creating digital drawings, paintings or collages. They acquire a more varied visual vocabulary to describe their work. They begin to understand how to use focal points in a photocomposition or experiment with using layers in a digital art app such as Brushes.

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Types of ICT (Key Stage 3)

	Key Stage 3
Computational Thinking and Coding • *Exploring Programming* • *Game Making*	Pupils create computer programs for a variety of purposes, for example controlling physical devices, storing information, or creating interactive games, stories or animations. They extend their ability to solve problems using computational thinking and may begin to use text-based coding languages such as Python or C#.
Managing Data • *Data Handling* • *Simulation* • *Using Modelling* • *Measurement and Data Logging*	Pupils extend their ability to use databases to solve real-world problems by storing information on products, recording results from a survey, storing contact details of a group or set of people, or linking products with a customer database. They begin to use more technical language and create their own databases using dedicated database software such as Microsoft Access.
Digital Storytelling: Publishing • *Desktop Publishing* • *Website Development*	Pupils plan and create publications for a variety of purposes, for example brochures, flyers, advertisements, leaflets, magazines, blogs or e-books. They are able to identify the key characteristics that will make their publication effective and create it using appropriate applications, demonstrating a clear understanding of the audience and purpose.
Digital Storytelling: Presenting • *Presentation*	Pupils use presentations to communicate important information to an audience. They plan and create a presentation that combines a range of features to demonstrate a clear understanding of the audience and purpose. This might include enhancing the presentation by using more appropriate assets, editing images, embedding objects or inserting hyperlinks.
Digital Storytelling: Film and Animation • *Working with Moving Images/Animation*	Pupils plan and create films such as documentaries, movies, advertisements, news or sports reports, and animations. They extend their use of moving image language and create a film that demonstrates a clear understanding of the audience and purpose by planning, shooting and editing footage, showing an awareness of pace, rhythm and tempo.
Digital Storytelling: Music and Sound • *Working with Sound* • *Music Technology*	Pupils work with sound for a variety of purposes, for example creating podcasts and advertisements, or to compose a song, make a soundtrack or record and edit a musical performance. They use a digital audio workstation (DAW) to create multitrack recordings that use digital effects to demonstrate a clear understanding of the audience and purpose.
Digital Art and Design • *Working with Images* • *2D CAD* • *3D CAD*	Pupils extend their digital photography skills and their ability to create digital artwork by enhancing images using advanced techniques, such as masks to hide and reveal parts of an image, or blending between layers. They also begin to use CAD software to produce designs for manufacturing or to simulate how a design will perform in real life.

← Back to Key Stage 3

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