HAYDN PRIMARY SCHOOL
Nottingham City Council Children's Services

COMPUTING POLICY 2023

'A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world.' *Computing programme of Study, DfE, 2013*

Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.
At Haydn, we believe that Computing is an integral part of preparing children to live in a world where technology is continuously and rapidly evolving, so much so that children are being prepared to work with technology that doesn't even exist yet. For this reason, we feel that it is important that children are able to participate in the creation of these new tools to fully grasp the relevance of and the possibilities of emerging technologies thus preparing them for the world of work.

Computing Intent

At the Haydn Primary School, we want our pupils to be Masters of Computing and technology. We recognise that, whilst some of our pupils seem to naturally flourish in Computing, others need more support to reach their full potential. At our school, we aim to give every pupil an outstanding Computing education, opening up future study and employment routes and closing attainment gaps. One way we achieve this is by providing opportunities for our learners to use Computing effectively in their everyday lives.

At Haydn, we have implemented the Teach Computing scheme. By doing so, we hope to raise the profile of Computing within our school and develop a lifelong passion for Computing. Our pupils will be taught Computing in a way that ensures progression of skills in digital literacy, computer science, information technology and online safety to ensure that all pupils become competent in safely using, as well as understanding, technology. We achieve this by following a sequence of lessons that build on previous learning; equipping them for an ever-changing digital world. Pupils work with a range of equipment including: iPads, iPods, chrome books, computers and Beebots, and have opportunities to use ICT outside the timetabled lesson slot.

Within Teach Computing, units are revisited repeatedly to ensure the learning is embedded and skills are successfully developed. Each unit follows a sequence of lessons that build on previous learning and enhance the pupils' computational and analytical thinking. Our pupils will gain experience and skills of a wide range of technology, through accessible applications, software and programs, in a way that will enhance their learning opportunities. Our intention is that Computing also supports pupils' creativity, problem solving, analytical thinking and cross curricular learning to: engage pupils, ensure they make progress and enrich their experiences in school.

At Haydn, we recognise that Computer science, the subject's underlying subject discipline, is now an explicit part of the curriculum, alongside digital skills and competence and our broad curriculum reflects this. We encourage staff to embed Computing across the whole curriculum to make learning creative and accessible to all pupils, and pride ourselves in providing opportunities for all pupils to apply their knowledge creatively; in turn helping our pupils to become skilful computer scientists. We

also want our pupils to be fluent with a range of tools to best express their understanding, and hope by Upper Key Stage 2, pupils have the independence and confidence to choose the best tool to fulfil the task and challenge set by teachers.

We also firmly believe the importance of delivering a high-quality Online Safety curriculum, alongside the core values of the three stands. Online safety is embedded throughout the Computing curriculum and supports and consolidates the strong presence of Online safety within our PSHE curriculum. As technology develops, so does the need for a better understanding of how to use it in a responsible manner. We encourage all staff to model and educate our pupils on how to use technology positively, responsibly and safely. The education of Online safety is therefore essential, to ensure pupils are equipped with the skills to recognise risks online, to be critically aware of the materials and content they access online, along with guidance on how to accurately validate information accessed via the internet. As part of our Online Safety provision, the whole school take part in a 'Safer Internet' day in February to reinforce the importance of using technology responsibly.

1.1 A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology.

1.2 The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.

1.3 Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Aims and objectives

2.1 Our aim is to develop children's computational thinking and problem solving so that they can succeed in and contribute to our rapidly changing world.

2.2 To achieve this aim we will follow the 2014 National Curriculum for computing which aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are competent, confident and creative users of information and communication technology
- are aware of safe and responsible computing practices (see separate e-safety policy and ICT Acceptable Use Policy)

Computing Implementation - Organisation of Teaching and Learning

3.1 As the aims of Computing are to equip children with the skills necessary to use technology to become independent learners, the teaching style that we adopt is as active and practical as possible. While at times we do give children direct instruction on how to use hardware or software, the main emphasis of our teaching in Computing is for individuals or groups of children to use computers and computing to help them in whatever they are trying to study.

3.2 We recognise that all classes have children with widely differing Computing abilities. This is especially true when some children have access to Computing equipment at home, while others do

not. We provide suitable learning opportunities for all children by matching the challenge of the task to the ability and experience of the child. We achieve this in a variety of ways by:

- setting common tasks which are open-ended and can have a variety of responses
- setting tasks of increasing difficulty (not all children complete all tasks)
- grouping children by ability in the room and setting different tasks for each ability group
- grouping children by mixed ability to enable peer support
- providing resources of different complexity that are matched to the ability of the child;
- using classroom assistants to support the work of individual children or groups of children

Computing curriculum

The curriculum is carefully planned at Haydn and set out in Long, medium and short term plans in line with the NCCE Teach Computing curriculum. Progression through these can be seen on Appendix 1 which is our Long term Curriculum map, and also in Appendix 2 which is our Progression Framework for Computing.
In broad terms though at Haydn:

Early Years Foundation Stage

The positive and noticeable benefits of young children using Computing are similar to those of the older pupil. Thinking and problem solving skills are developed through a structured focus which is stimulating and linked to other activities. Children will have Computing experiences indoors, outside and through role play in both child-initiated and teacher directed time. The Computing Co-ordinator will work with the EYFS Co-ordinator to ensure that resources are appropriate to the needs of the pupils in order to enhance life skills and support the six areas of Learning and Development.

In line with the statutory requirements of the 2014 National Curriculum, Key Stage 1 pupils will be taught to:

- understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

In line with the statutory requirements of the 2014 National Curriculum, Key stage 2 pupils will be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- use search technologies effectively; appreciate how results are selected and ranked; and be discerning in evaluating digital content

- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

The contribution of Computing to teaching in other curriculum areas

5.1 Computing is used to enhance teaching and learning across all curriculum areas, challenging the most able while supporting those with learning difficulties. Opportunities for embedding Computing to support learning and teaching across the curriculum are identified in the school's planning format.

5.2 Literacy
Computing is integral to the teaching and learning of communication, language and literacy skills. For example in speaking and listening, the use of digital and visual media enhances communication both face-to face and remotely. Writing can be explored using different media including webpages, blogging and multimodal formats that combine text and images, video or sound clips.

5.3 Mathematics
Many computational thinking activities will enhance the mathematical skills of the children. Children will also develop their computing skills in mathematics to collect data, make predictions, analyse results, and present information graphically.

5.4 Personal, social and health education (PSHE) and citizenship
Computing makes a contribution to the teaching of PSHE and citizenship as children learn to work together in a collaborative manner. They develop a sense of global citizenship by using the Internet and e-mail. Through the discussion of moral issues related to electronic communication, children develop a view about the use and misuse of Computing, and they also gain a knowledge and understanding of the interdependence of people around the world.

5.5 Geography
Geography provides a meaningful context to practise and apply computing skills. Websites, such as Google Earth or Digimaps, allow children to experience online mapping. This can help them better understand a locality they are investigating or reflect on what they have learned after an off-site visit.

5.6 Science
Children use and apply mathematics in a variety of ways when solving problems using ICT. Younger children use ICT to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results or when creating repeating patterns, such as tessellations. Key Stage 2 use Mathletics to enhance and develop mental maths skills and revise work on different areas both at school and home.

Inclusion

6.1 At our school all learners, regardless of race, gender, culture or disability shall have the opportunities to develop their Computing capability. Computing forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our Computing teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Assessment against the National Curriculum allows us to consider each child's attainment and progress.

6.2 When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively. This ensures that our teaching is matched to the child's needs.

6.3 Children identified with special educational needs and needing additional support will be provided with an Individual Provision Map (IPM). The IPM may include, as appropriate, specific targets relating to Computing, for example the use of a brailant to support visual impairment. In some instances the use of Computing has a considerable impact on the quality of work that children produce; it increases their confidence and motivation.

6.4 We enable pupils to have access to the full range of activities involved in learning Computing. Where children are to participate in activities outside the classroom, we carry out a risk assessment, if appropriate, prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

Computing Impact

After each unit of work, teachers will make a judgement on whether pupils have met, exceeded or are working towards the objectives set. This will also provide information for the subject leader and will be submitted for analysis to track and monitor achievement and progress and the impact that this has had.

Evidence of progression and achievement will be seen in examples of pupils' work stored on the server. As a result of effective implementation, pupils will be able to apply their skills and knowledge in other areas of learning. Pupils will be able to share their knowledge of how to be a responsible user of technology through discussion when questioned. They will be prepared for the next stage in their lives, knowing how to be a responsible user of technology in the wider world and most importantly, know where to seek support. Pupils will be familiar with and will discuss their understanding of the three main strands and will know key vocabulary associated with these.

Confidence in this subject will also mean that pupils are able to be more independent and competent in life skills such as problem solving and logical thinking.

Assessment and recording

8.1 It must be remembered the process more than the outcome is the important issue when assessing Computing. Wherever possible assessment will be planned into schemes of work and will be used both formatively and diagnostically, helping teachers to meet the developmental needs of each child.

8.2 A skills ladder has been developed to set out the expectations in computing in each year group. Attainment of pupils is monitored against these expectations.

8.2 A portfolio containing examples of work in Computing is kept during the school year. Key stage two keep termly logs in the form of a PowerPoint presentation, this will include evidence of the work that has been completed in computing lessons and comments from both the child and the teacher.

Resources

9.1 Resources are purchased to meet the requirements of the Foundation Stage Curriculum and the National Curriculum and a Computing asset register is maintained by the School Business/ Office Manager.

Currently teaching and learning hardware includes four PCs and an interactive whiteboard in each classroom throughout school and nursery. The school also has a suite of PCs, a set of laptops and a set of iPads for whole class use. All PCs have internet access and the use of network printers.

9.2 Along with the computers, the school has a variety of other Computing equipment to meet the needs of the curriculum.

Health and safety (see e-safety policy)

Age appropriate class and safety rules are displayed in the learning environment.

Equipment is maintained to meet agreed safety standards.

When the Internet is being used, the School's Acceptable Use Policy will always be strictly adhered to.

Monitoring and review

The monitoring of the standards of the children's work and of the quality of teaching in Computing is the responsibility of the Computing subject leader. The Computing subject leader is also responsible for supporting colleagues in the teaching of Computing, for keeping informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The Computing subject leader has specially-allocated time for carrying out the vital task of reviewing samples of the children's work and for visiting classes to observe the teaching of Computing. The computing leader keeps a subject portfolio with samples of pupils work which are referenced against the subject specific strands to demonstrate typical progress through our computing curriculum.

This policy will be reviewed annually by the Computing co-ordinator and leadership team and shared with all stakeholders.

Signed:

Date:

Teach Computing Curriculum Journey

Download the curriculum resources: ncce.io/get_tcc

Key

- **AL** Algorithms
- **CS** Computing systems
- **CM** Creating media
- **DI** Data and information
- **DD** Design and development
- **ET** Effective use of tools
- **IT** Impact of technology
- **NW** Networks
- **PG** Programming
- **SS** Safety and security

Computing
GCSE CS: Programming
GCSE CS: Theory

T level
BTEC
Apprenticeship
A level

Next steps

Physical computing project **CS, PG**
Cybersecurity **NW, SS**
Networks **NW, CS**
Impacts of technology **IT, CS**
OOP (optional) **AL, PG**
HTML **AL, PG**
IT project management **ET, DD**
Spreadsheets **DI, DD**
Media **CM, DD**

Year 11

Databases and SQL **PG, DI**
Programming: part 6 **PG, AL**
Programming: parts 1–5 **PG, AL**
IT and the world of work **DD, IT**
Online safety **IT, SS**
Data representations **DI, AL**
Algorithms **PG, AL**
Computer systems **CS, AL**

KS4

KS3

Year 10

Physical computing **CS, PG**
Representations: going audiovisual **AL, PG**
Media: animations **ET, CM**
Introduction to Python programming **AL, PG**
Mobile app development **ET, PG**

Year 9

Python programming with sequences of data **AL, PG**
Data science **DD, DI**
Cybersecurity **SS, IT**

Year 8

Representations: from clay to silicon **CS, DI**
Computing systems **PG, CS**
Developing for the web **CM, PG**
Media: vector graphics **CM, ET**
Modelling data: spreadsheets **ET, CM**
Programming essentials: part II **AL, PG**
Programming essentials: part I **AL, PG**
Using media: gaining support for a cause **IT, ET**
From semaphores to the internet **NW, CS**
Collaborating online respectfully **ET, SS**

Year 7

Sensing **PG, CS**
3D modelling **ET, CM**
Variables in games **PG, DD**
Introduction to spreadsheets **ET, DI**
Webpage creation **CM, DD**

KS2

Year 6

Internet communication **NW, ET**
Selection in quizzes **AL, PG**
Vector drawing **ET, CM**
Flat-file databases **DI, ET**
Selection in physical computing **PG, CS**
Video production **CM, DD**
Sharing information **NW, ET**

Year 5

Repetition in games **PG, DD**
Photo editing **ET, CM**
Data logging **CS, DI**
Repetition in shapes **AL, PG**
The internet **NW, SS**
Audio production **ET, CM**

Year 4

Events and actions in programs **PG, DD**
Branching databases **DI, ET**
Stop-frame animation **ET, CM**
Desktop publishing **ET, CM**
Sequencing sounds **PG, DD**
Connecting computers **NW, CS**

Year 3

Programming quizzes **PG, DD**
Making music **CM, DD**
Robot algorithms **AL, PG**
Pictograms **DI, ET**
Information technology around us **NW, CS**
Digital photography **ET, CM**

KS1

Year 2

Digital writing **ET, CM**
Moving a robot **AL, PG**
Technology around us **CS, AL**
Programming animations **PG, DD**
Grouping data **DI, AL**
Digital painting **ET, CM**

Year 1

National Centre for Computing Education

Raspberry Pi Foundation

Teach Computing Progression Journeys

Key Stage 1
file:///Users/staff/Library/CloudStorage/OneDrive-SharedLibraries-SchoolsIT/Haydn - Documents/Computing/NCCE Resources/KS1/KS1 TCC Curriculum map.xlsx

Key Stage 2
file:///Users/staff/Library/CloudStorage/OneDrive-SharedLibraries-SchoolsIT/Haydn - Documents/Computing/NCCE Resources/KS2/KS2 TCC Curriculum map.xlsx

Haydn Primary School
Computing Curriculum Progression

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	EYFS (Area/s of Learning)	KS1		KS2			
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Key concepts (Substantive *Knowledge*)	**Digital Literacy** I know what to do if I see something that worries me when I am using a digital device.	**Digital Literacy** I can identify rules that help keep us safe and healthy in and beyond the home when using technology. I can give some simple examples. I know that the work I create belongs to me. I can name my work so that others know it belongs to me.	**Digital Literacy** To use technology to take photos and edit them. To display data in a pictorial method. To use technology to create music.	**Digital Literacy** Explain why copying someone else's work from the internet without permission can cause problems and give examples. When searching on the internet for content to use, explain why you need to consider who owns it. Give examples of content that is permitted to be reused.	**Digital Literacy** To describe how networks physically connect to other networks. To recognise how networked devices make up the internet. To outline how websites can be shared via the World Wide Web. To describe how content can be added and accessed on the World Wide Web. To recognise how the content of the WWW is created by people. To evaluate the consequences of unreliable content. To explain that digital images can be changed.	**Digital Literacy** To evaluate my vector drawing. To use tools to achieve a desired effect. To create a vector drawing by combining shapes. To group objects to make them easier to work with. To design a physical project that includes selection. To relate that a conditional statement connects a condition to an outcome. To design a program which uses selection. To create a program which uses selection.	**Digital Literacy** To recognise why the order of results is important, and to whom. To use a computer to create and manipulate three-dimensional (3D) digital objects. To identify questions which can be answered using data. To create a spreadsheet to plan an event. To choose how to improve a game by using variables. To design a project that uses inputs and outputs on a controllable device.
	Computer Science I can explore programmable toys such as Botley, Beebot or Cod-eapillar. I can use some words like forwards and backwards to describe how I want to make a programmable toy move. I can give a simple set of instructions e.g., how to brush your teeth.	**Computer Science** I can predict the outcome of a command on a device. I can recall words that can be acted out. I can compare forwards and backwards movements. I can start a sequence from the same place. I can compare left and right turns. I can experiment with turn and move commands to move a robot. I can predict the outcome of a sequence involving up to four commands. I can explain what my program should do. I can compare different programming tools. To show that a series of commands can be joined together. To explain that each sprite has its own instructions.	**Computer Science** I can show the difference in outcomes between two sequences that consist of the same commands. I can follow a sequence. I can predict the outcome of a sequence. I can compare my prediction to the program outcome. I can explain the choices I made for my mat design. I can identify different routes around my mat. I can test my mat to make sure that it is usable. I can explain what my algorithm should achieve. I can create an algorithm to meet my goal. I can use my algorithm to create a program.	**Computer Science** Understand how event blocks can be used to start a project in a variety of different ways. Learn how to create sequence of commands. Understand how to programme movement.	**Computer Science** To identify that accuracy in programming is important. To explain what 'repeat' means. To decompose a program into parts. To develop the use of count-controlled loops in a different programming environment. To explain that in programming there are infinite loops and count-controlled loops. To develop a design that includes two or more loops which run at the same time. To modify an infinite loop in a given program. To design a project that includes repetition.	**Computer Science** To explain that computers can be connected together to form systems. To recognise the role of computer systems in our lives. To recognise how information is transferred over the internet. To explain how sharing information online lets people in different places work together. To contribute to a shared project online.	**Computer Science** To construct a digital 3D model of a physical object design a digital model by combining 3D objects. To develop and improve a digital 3D model. To plan the features of a web page. To define a 'variable' as something that is changeable. To create a program to run on a controllable device.
	Information Technology I can name some sources of IT from home and school. I know that typing using a keyboard is another way of writing information. I know that digital devices can be used to create pictures. I know that things can be similar or different in lots of ways and can talk about some of these similarities and differences.	**Information Technology** Identify IT in the home and beyond school. Explain how IT benefits us. Recognise how IT can change the way we work. Understand that some digital software can create art. Explain reasoning behind text choices e.g., colour, size and font. I can explain what the keys that I have learnt about already do. I can say what tool I used to change the text. I can compare using a computer with using a pencil and paper. I can describe objects using labels. I can describe an object. I can describe a property of an object. I can find objects with similar properties. I can choose how to group objects. I can describe groups of objects. I can record how many objects are in a group. I can decide how to group objects to answer a question. I can compare groups of objects.	**Information Technology** I can identify examples of computers. I can describe some uses of computers. I can identify that a computer is a part of information technology. I can explain the purpose of information technology in the home. I can talk about uses of information technology. I can compare types of information technology. I can list different uses of information technology. I can recognise how to use information technology responsibly. I can say how those rules/guides can help me. I can identify the choices that I make when using information technology. I can explain simple guidance for using information technology in different environments and settings. I can enjoy a variety of activities. I can sort devices into old and new. I can talk about how to take a photograph. I can explain the process of taking a good photograph. I can identify what is wrong with a photograph. I can discuss how to take a good photograph. I can improve a photograph by retaking it. I can explore the effect that light has on a photo. I can connect images with sounds. I can identify that music is a sequence of notes. I can recognise that images can be changed.	**Information Technology** To understand how a digital device works and what parts make up a digital device. Understanding how digital devices help us and how computers are connected. Understand what a branching database is.	**Information Technology** To identify that sound can be digitally recorded. To explain that a digital recording is stored as a file. To explain that audio can be changed through editing. To show that different types of audio can be combined and played together. To evaluate editing choices made. To describe how images can be changed for different uses. To make good choices when selecting different tools. To evaluate how changes can improve an image. To explain that data gathered over time can be used to answer questions. To explain that a data logger collects 'data points' from sensors over time. To identify the data needed to answer questions.	**Information Technology** To identify that drawing tools can be used to produce different outcomes. To recognise that vector drawings consist of layers. To recognise video as moving pictures, which can include audio, To identify digital devices that can record video. To recognise the features of an effective video. To identify that video can be improved through reshooting and editing. To explain that a loop can stop when a condition is met, e.g., number of times. To conclude that a loop can be used to repeatedly check whether a condition has been met. To explain how selection is used in computer programs.	**Information Technology** To explain how search results are ranked. To compare working digitally with 2D and 3D graphics. To identify that physical objects can be broken down into a collection of 3D shapes. To review an existing website and consider its structure. To explain that objects can be described using data. To explain why a variable is used in a program. To explain that selection can control the flow of a program.
	Digital Safety I know what to do if I see something that worries me when I am using a digital device.	**Digital Safety** **Chn can use technology safely (Project Evolve unit)** **Chn understand that they should keep personal information private.** **Chn recognise common uses of information technology beyond school (e.g., Digital alarm clock, digital TV, iPad game, Sat Nav: how much technology have they used before getting to school?)**	**Digital Safety** **Chn can use technology respectfully (Project Evolve unit)** **Chn can identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies**	**Digital Safety** **Chn can use technology responsibly (Project Evolve unit)** **Chn can identify a range of ways to report concerns about contact (e.g., and adult, the website host, Childline etc)**	**Digital Safety** **Chn can identify a range of ways to report concerns about content (Project Evolve unit)** **Chn can recognise acceptable and unacceptable behaviour online.** **Chn understand that not everything they see on the internet is true and ways in which to spot false information.** **Chn understand the importance of respecting copyright (e.g., they learn to use the tag cc (creative commons) when searching for digital images)**	**Digital Safety** **Chn understand the opportunities computer networks offer for communication (e.g., email, video conferencing, blogs, forums, social networks)** **Chn can recognise acceptable and unacceptable behaviour on the whole range of digital media.**	**Digital Safety** **Chn understand the opportunities computer networks offer for collaboration (e.g., Wikis including Wikipedia, collaborative editing, Creative Commons Media, open-source software, forums etc)** **Chn are discerning in evaluating digital content**

Haydn Primary School
Computing Curriculum Progression

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Disciplinary Knowledge ***Code:*** Using and writing codes to produce instructions and algorithms; to solve problems; to test and use logic and sequences against inputs and outputs. ***Connect:*** Being able to safely, efficiently and confidently digitally connect with others. ***Communicate:*** Being able to safely, efficiently and confidently use apps and information technology to communicate ideas. ***Collect:*** Being able to find, evaluate, store, sort and use appropriate data safely, efficiently and confidently.	**Code** I can push a button to make a programmable toy move. I can find a power button on a programmable toy and that I need to switch it on to make it work.	**Code** I can run a command on a device. I can follow an instruction. I can give directions. I can find the commands to move a sprite. I can use commands to move a sprite.	**Code** I can follow instructions given by someone else. I can choose a series of words that can be enacted as a sequence. I can give clear and unambiguous instructions. I can create different algorithms for a range of sequences (using the same commands). I can use an algorithm to program a sequence on a floor robot. I can plan algorithms for different parts of a task. I can test and debug each part of the program. I can put together the different parts of my program.	**Code** Use code to make a musical instrument. Learn how to debug a programme.	**Code** To create a program in a text-based language. To modify a count-controlled loop to produce a given outcome. To create a program that uses count-controlled loops to produce a given outcome. To create a project that includes repetition.	**Code** To write a program that includes count-controlled loops. To explain how selection directs the flow of a program.	**Code** To design a [variable game] project that builds on a given example. To use my design to create a project. To evaluate my project. To update a variable with a user input. To use a conditional statement to compare a variable to a value. To develop a program to use inputs and outputs on a controllable device.
	Connect I can find and start a favourite app on a digital device. I can search for things I like with support on a child-safe search engine.	**Connect** Use a mouse in different ways. Use a keyboard to type and edit text. Use a computer to paint a picture. Selecting and opening a programme or application. Saving and closing a programme or application.	**Connect** I can find examples of information technology. I can recognise that images can be changed.	**Connect** Managing online information Use key phrases in search engines. Use search technologies effectively. Copyright and ownership Use of search tools to find and access online content which can be reused by others.	**Connect** To understand that any personal information they put online can be seen and used by others. To recognise the effect their writing or images might have on others.	**Connect** To consider the impact of the choices made when making and sharing a video.	**Connect** To identify how to use a search engine. To consider the ownership and use of images (copyright).
	Communicate I can select letters on a keyboard to write simple words and sentences. I am learning where the spacebar and enter button are and what they can do. I can use a mousepad to move a click a cursor, or my finger on a touchscreen to move and select.	**Communicate** I can open a word processor. I can recognise keys on a keyboard. I can enter text into a computer. I can use letter, number, and space keys. I can use backspace to remove text. I can type capital letters I can identify the toolbar and use bold, italic, and underline. I can select a word by double-clicking. I can select all of the text by clicking and dragging. I can change the font. I can use 'undo' to remove change. I can write a message on a computer and on paper.	**Communicate** I can open a file. I can move and resize images. I can demonstrate how information technology is used in a shop. I can recognise that information technology can be connected. I can explain how information technology helps people. I can capture digital photos and talk about my experience. I can take photos in both landscape and portrait format. I can focus on an object. I can use a computer to experiment with pitch and duration.	**Communicate** Learn how to make a stop-frame animation or other type of presentation. Use text and images to communicate clearly. Use return, backspace and shift keys. Learn how to create a magazine.	**Communicate** To use a digital device to record sound. To change the composition of an image.	**Communicate** To evaluate different ways of working together online.	**Communicate** To recognise how we communicate using technology. To recognise the need to preview pages. To outline the need for a navigation path. To recognise the implications of linking to content owned by other people. To choose suitable ways to present data.
	Collect I can sort a group of objects using two given criteria e.g. feathers and fur or curved and straight edges.	**Collect** I can match objects to groups. I can count objects. I can group objects. I can count a group of objects. I can group similar objects. I can group objects in more than one way. I can count how many objects share a property.	**Collect** I can record data in a tally chart. I can represent a tally count as a total. I can compare totals in a tally chart. I can enter data onto a computer. I can use a computer to view data in a different format. I can use pictograms to answer simple questions about objects. I can organise data in a tally chart. I can use a tally chart to create a pictogram. I can explain what the pictogram shows. I can tally objects using a common attribute. I can create a pictogram to arrange objects by an attribute. I can answer 'more than'/'less than' and 'most/least' questions about an attribute. I can choose a suitable attribute to compare people. I can collect the data I need. I can create a pictogram and draw conclusions from it. I can use a computer program to present information in different ways. I can share what I have found out using a computer. I can give simple examples of why information should not be shared.	**Collect** Create a branching database. Use a branching database to answer questions.	**Collect** To use a digital device to collect data automatically. To use data collected over a long duration to find information. To use collected data to answer questions.	**Collect** To capture video using a digital device.	**Collect** To describe how search engines select results. To explain that formula can be used to produce calculated data. To apply formulas to data, including duplicating.

Haydn Primary School
Computing Curriculum Progression

	EYFS	KS1		KS2			
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
What Computing looks like at Haydn	Within themes all year	• Bebots linked with under the sea. • Polar bear e-books. • Word processing about forests.	• Finding Sherwood on maps and locating our area on a map online. • Jamaica and Nottingham comparison PowerPoints. • Building excitement around Scratch.	• Developing scratch skills. • Stop-motion clay videos. • Digimaps, plotting routes around Nottingham.	• Stykz Egyptian videos. • Reports written on word processing applications about Anglo Saxons. • Introduction to Kodu programming.	• Advanced Scratch programming. • Introduction to invention of the internet. • Video editing Shakespeare scenes.	• Coding brought to life, powering Nottingham Goose Fair rides. • Dyson Project. • 3D modelling.
Key Vocabulary (Comprehensive)	Computer mouse click keyboard headphones laptop monitor type tablet	technology tools, line, shape, fill, undo, erase, brush sound effects, digitally pictogram, data, collate action, algorithm, bug, character, code block, command, debug/ debugging, input, object, properties, repeat, computer, laptop, desktop, keyboard, screen, click, drag, mouse, program, type, save, edit, file, cursor, delete, text, Log in, username, password, log out, notification, save tools, line, shape, fill, undo, erase, brush keys Sort, criteria, data, collate, object Instruction, algorithm, program, debug, direction, arrow, undo, forward, backwards, right turn, left turn Animation, sound effect		computer virus, cookies, copyright, digital footprint, email, identity theft, malware, phishing, plagiarism, spam, motherboard, CPU, RAM, Graphics Card, Network, Card, monitor, speakers keyboard and mouse Pitch, rhythm, pulse, tempo, dynamics, melody, rippler, texture Animation, background, frame, flipbook, onion skinning, stop motion, play, sound, video clip Average, copy and paste, columns, cells, charts, equals tool, formula, formula wizard, move cell tool, random tool, rows, spin tool, spreadsheet, timer Logo, BK, FD, RT, LT, REPEAT, SETPC, SETPS, PU, PD Action, alert, algorithm, code design, control, command, debug/ debugging, design mode, event, flowchart bug, get input, If, If/Else, input, object, repeat, selection, computer simulation, simulation, timer, variable		Search, search engine, address bar, ranking, privacy, security Physical, virtual, 2D / 3D, view / angle, manipulate, model Website, web pages, page, address, link, HTML, fair use / copyright, home page Spreadsheet, data set, row, column, format, calculation, formula, cell, chart / graph Game, variable, control, input, score, algorithm Input, process, sense, variable, data flow, device	
	Right choices kind private safe	Cyber bullying e-safety appropriate websites email privacy digital-footprint keyword-searching sources		e-safety age-appropriate password report abuse content screen-time blog safety respect		e-safety age-appropriate cyber-bullying forums social-media email bugs scam phishing filters reporting copyright image editing fact checking	
Experiences – *what helps them remember?*	Continuous provision, embedding the use of technology into play and enquiry.	First use of their own accounts, ownership of devices and the responsibility of being in 'big school'	Seeing coding and computer-based work come to life, building a portfolio and sharing with the class.	Stop-motion videos linked with DT project involving clay. Work shared in assemblies and with headteacher. Children take pride in their work.	Podcast creation and interviewing each other. Feel of real-life computing and how it will apply to the real world.	Green screen recording and video editing, children get to see magic that cameras and technology can do.	3D printing, seeing thewir work made in real life. Coding project that makes their own fairground ride and really works!
Texts Used – What beautiful and varied texts have you used to give reading a purpose? (SIP)