Computing Progression Document

National Curriculum Expectations		
Purpose Of Study : With technology playing a vital role in the local industry of Humberside and the wider world, we feel that a high-quality computing education is essential for children attending Riston in order to reach their full potential. We want our pupils to have a breadth of experience to develop their understanding of themselves as individuals within their community but also as members of a wider global community and as responsible digital citizens. Aims: In accordance with the 2014 National Curriculum, our lessons cover three core strands: Digital literacy (evaluating digital content and using technology safely and respectfully); information technology (using computer systems to store, retrieve and send information) and control systems (programming and understanding how digital systems work) .The objectives within each strand support the development of learning across the key stages, ensuring a solid grounding for future learning and beyond. Computing can provide a wealth of learning opportunities and transferable skills explicitly within the Computing lesson and across other curriculum subjects. Attainment Targets: By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.		
EYFS (Statutory Framework)	Key Stage 1	Key Stage Two

Within the new EYFS curriculum the ‘Technology’ strand has been removed from ‘Understanding the World’ and has not been replaced with any updated guidance. However, computing and technology are still vitally important subjects to teach to Foundation children. Teaching computing within the curriculum ensures that children enter Year 1 with a strong foundation of knowledge. Computing lessons in the EYFS also ensure that children develop listening skills, problem-solving abilities and thoughtful questioning — as well as improving subject skills across the seven areas of learning. We live in a technological world and there is no escape from the reality that technology is integrated into the lives of young children. Just as we ensure the children in our care are ready for the adult world by teaching them maths and literacy, we should	Pupils should 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	Pupils should 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

also make sure that they are fluent in computer literacy and all-important e-safety.			
Computing - where does it fit in?			
Cycle A	Autumn	Spring	Summer
EYFS			
Year 1/2	Digital Literacy- E-safety Use technology safely Log on to a computer Understand where/how to seek help when they have concerns about content	Information technology Use technology to create content Use technology to store digital content Use a mouse or trackpad effectively to navigate websites Save and reopen work on a digital device Create a simple animation using still images Take digital photographs and record video	Control systems Understand what algorithms are Create simple programmes Understand that programmes run by following precise instructions
Year 3/4	Digital Literacy- E-safety	Information technology	Control systems

	Use technology responsibly Identify a range of ways to share concerns about conduct Recognise the benefits and risks of different apps and websites Understand the importance of a good password Understand the dangers of spending too long online and the importance of regular screen breaks. Understand when to share personal information and when not to	Use search technology to communicate effectively Use technology to collect information Present data in a range of ways to convey information Use technology to collaborate on a task Edit digital content in response to feedback	Write programmes that create specific goals Use sequence in programmes Work with various forms of input and output
Year 5 / 6	<u>Digital Literacy- E-safety</u> Know where to find copyright free images and audio, and why this is important Beginning to question information based on author and location; recognise different viewpoints and the impact of incorrect data. Share and exchange ideas using emails/electronic communication respectfully.	<u>Information technology</u> Recognise an audience when designing and creating digital content Generate, amend and combine visual media from different sources for a specific audience or task. Capture/review different images, considering lighting, positioning and angle appropriate to a given	<u>Control systems</u> I can combine sequences of instructions to turn an external device on and off Use logical reasoning to detect errors in algorithms Understand how computer networks work including the internet Use selection within programs

	Understand the issues of copyright and the importance of acknowledging sources. Understand that everything we do online leaves a digital footprint that can last forever . Know what to do and who to contact if we see something that upsets / concerns us online. Understand privacy settings and what pictures are appropriate to share online. Discuss the benefits and dangers of communicating online/through different forms of technology. Know the meaning of common website extensions (.org, . net. Gov etc) Understand what makes a strong password and why this is important at school and in the wider world	task/audience. I can select and use suitable software and hardware to produce a multimedia soundtrack. Create a movie including still images and sound and add suitable titles and transitions. Understand the benefits of technology to collaborate with others - Safer Internet Day 2022 Understand how search results are ranked Select and combine software on a range of devices iPads and chromebook Use filters in a database to find out specific information Identify and use appropriate hardware and software to fulfil a specific task Create different types of graphs and charts that are appropriate	

		to the data I am using; I can use them to interpret and answer a specific question.- Science	
Cycle B	Autumn	Spring	Summer
EYFS			
Year 1/2	<u>Digital Literacy</u> Keep personal information private Recognise common uses of technology beyond school Use technology respectfully	<u>Information Technology</u> Use technology to create, communicate and collaborate Use ICT to source, generate and amend images. Begin to change or enhance photographs and pictures (crop, recolour). Use software to explore sound and musical phrases. Discuss and explore how to use ICT to organise, present and understand data as a simple graph.	<u>Control systems</u> Use logical reasoning to predict the behaviour of programmes Debug simple programmes Understand that algorithms are implemented as programmes on digital devices.
Year 3/4	<u>Digital Literacy</u> I recognise acceptable and unacceptable behaviour using technology	<u>Information Technology</u> Select and use software to accomplish given goals	<u>Control systems</u> I can experiment with variables to control models

	Compose emails Know how to respond to unpleasant communications via texts, IM, email or chat rooms. Understand the opportunities technology offers for communication Be discerning in evaluating digital content	Collect and present data in different ways Design and create digital content for a specific purpose Evaluate and analyse information Use technology to collaborate in different ways Use ICT to compose music or sounds including creating melodies Storyboard and shoot a short stop motion animated sequence. Use a range of tools to edit and enhance media for particular effect	Design, write and debug programmes that perform specific goals. Use sequence, selection and repetition in programs; work with variables. I can make accurate predictions about what I think will happen Understand what computer networks are, e.g. the internet
Year 5 / 6	<u>Digital Literacy</u> Critically evaluate websites for reliability of information/ bias and authenticity to include use of social media Demonstrate responsible use of online services and technologies, and know a	<u>Information Technology</u> Appreciate how search results are ranked Select and combine software on a range of devices	<u>Control Systems</u> Use logical reasoning to detect errors in algorithms Combine a variable with relational operators (< = >) to determine when a program changes, e.g. if score > 5, say “well done”

	range of ways to report concerns Understand the impact of an individual sending or uploading unkind or inappropriate content. I can produce formal or informal messages, appropriate to the task Understand what ‘Plagiarism’ means and that it is important to acknowledge sources. Understand that not all information on the internet is legal to use or copy Understand that we are all digital citizens and the potential impact and influence we can have on the outside world Know the meaning of common website extensions (.org, . net. Gov etc) Identify secure servers (padlock such as internet banking). Become increasingly savvy online consumers: know that algorithms are used to track online activities with a view to targeting advertising and information	Collaborate with individuals and groups to create digital content for a specific purpose. Discuss and explore the use of ICT to sort, organise and classify objects based on their properties. Use ICT to create and modify charts quickly and easily. Create databases, retrieve information and draw conclusions based on results entered. Find suitable images, video and sounds from appropriate sources, taking into account copyright issues. Remix and edit a range of media to create content. Use appropriate ICT resources to compose music or sounds to accompany a story. Choose appropriate hardware to capture and review a range of images, considering lighting,	Can design a physical computing system that uses sensors, e.g. using a flow chart Refine a program based on end user feedback. I can explore 'what if' questions by planning different scenarios for controlled devices

		positioning, sound quality and angle.	

Key Knowledge, Skills & Vocabulary

Knowledge, Skills, Vocabulary	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Control Systems		Understand what algorithms are	Understand that algorithms are implemented	Understand that programmes can be applied to various forms	Understand what computer networks are, e.g. the internet	Understand how computer networks work including the internet	Understand that sensors can be used within programmes.

		Create simple programmes	as programmes on digital devices. Understand that programmes run by following precise instructions Use logical reasoning to predict the behaviour of programmes Debug simple programmes	of input and output. Write programmes that create specific goals Use sequence in programmes Work with various forms of input and output	Experiment with variables to control models Design, write and debug programmes that perform specific goals. Use sequence, selection and repetition in programs; work with variables. Make accurate predictions about what I think will happen	Combine sequences of instructions to turn an external device on and off Use logical reasoning to detect errors in algorithms Use selection accurately within programs	I can explore 'what if' questions by planning different scenarios for controlled devices Use logical reasoning to detect errors in more complex algorithms Combine a variable with relational operators (< = >) to determine when a program changes, e.g. if score > 5, say “well done” Design a physical computing system that uses sensors, e.g. using a flow chart Refine a program based on end user feedback.

	Vocabulary	Algorithms, programmes, open and move.	(As before +) Logical, predict, debug, precise instructions.	(As before +) Create, specific goals, sequence, input and output.	(As before +) Experiment, variables, control, design, write, selection and repetition, accurate networks, internet.	(As before +) Combine, logical reasoning, external device, detect.	(As before +) Combine, relational operators (< = >), physical computing system, flow chart, end user.
Information Technology		Understand that technology can be used to create and store digital content Use technology to create content Use technology to store digital content Use a mouse or trackpad effectively to navigate websites	Understand that technology can be used edit, amend or adapt digital content. Discuss and explore how to use ICT to organise, present and understand data as a simple graph. Use technology to create, communicate	Understand that digital content can be used to find, retrieve and present information. Use search technology to communicate effectively Use technology to collect information Use a database to retrieve information Present data in a range of ways	Understand that information can be presented in different ways using various platforms and programmes. Select and use software to accomplish given goals Collect and present data in different ways Design and create digital content for a specific purpose	Understand that search results are ranked. Understand the benefits of technology to collaborate with others Recognise an audience when designing and creating digital content Select and combine software on a range of devices Generate, amend and combine visual	Understand and appreciate how search results are ranked and how this affects the end user. Discuss and explore the use of ICT to sort, organise and classify objects based on their properties. Select and combine software on a range of devices Collaborate with individuals and

		Save and reopen work on a digital device	and collaborate Use ICT to source, generate and amend images. Begin to change or enhance photographs and pictures (crop, recolour). Create a simple animation using still images Take digital photographs and record video Use software to explore sound and	to convey information Use technology to collaborate on a task Edit digital content in response to feedback	Evaluate and analyse information Use technology to collaborate in different ways Use ICT to compose music or sounds including creating melodies Storyboard and shoot a short stop motion animated sequence. Use a range of tools to edit and enhance media for particular effect	media from different sources for a specific audience or task. Create a movie including still images and sound and add suitable titles and transitions. Capture/review different images, considering lighting, positioning and angle appropriate to a given task/audience. Use filters in a database to find out specific information Identify and use appropriate hardware and software to fulfil a specific task Create different types of graphs and	groups to create digital content for a specific purpose. Use ICT to create and modify charts quickly and easily. Create databases, retrieve information and draw conclusions based on results entered. Find suitable images, video and sounds from appropriate sources, taking into account copyright issues. Remix and edit a range of media to create content. Use appropriate ICT resources to compose music or sounds to accompany a story.

			musical phrases.			charts that are appropriate to the data I am using; I can use them to interpret and answer a specific question. I can select and use suitable software and hardware to produce a multimedia soundtrack.	Choose appropriate hardware to capture and review a range of images, considering lighting, positioning, sound quality and angle.
		Computer, tablet, mouse, keyboard, website, technology, phone, click, scroll, type, enter, digital, website, save and reopen.	(As before +) Organise, create, communicate and collaborate, source, generate and amend, crop, recolour, animation, photographs and video, software,	(As before +) Collect, database, retrieve, task, edit, feedback.	(As before +) Select, specific purpose, evaluate, analyse, compose, storyboard, shoot, enhance, media.	(As before +) Search results, ranked, combine, generate, audience, movie, titles, transitions, capture, review, images, positioning, angle, filters (database), hardware, graphs and charts, multimedia, soundtrack..	(As before +) Organise and classify, modify, retrieve, draw conclusions, appropriate sources, remix, accompany, sound quality.

			present, data, simple graph.				
		Recognise common uses of technology beyond school Use technology safely Log on to a computer Keep personal information private	Understand where/how to seek help when they have concerns about content Use technology respectfully	Recognise the benefits and risks of different apps and websites Understand the importance of a good password Understand the dangers of spending too long online and the importance of regular screen breaks. Understand when to share personal information and when not to Use technology responsibly Identify a range of ways to share	Recognise acceptable and unacceptable behaviour using technology Understand the opportunities technology offers for communication Compose emails Know how to respond to unpleasant communications via texts, IM, email or chat rooms. Be discerning in evaluating digital content	Know where to find copyright free images and audio, and why this is important Understand the issues of copyright and the importance of acknowledging sources. Understand that everything we do online leaves a digital footprint that can last forever . Know what to do and who to contact if we see something that upsets / concerns us online. Understand privacy settings and what pictures are appropriate to share online.	Understand the impact of an individual sending or uploading unkind or inappropriate content. Understand what 'Plagiarism' means and that it is important to acknowledge sources. Understand that not all information on the internet is legal to use or copy Understand that we are all digital citizens and the potential impact and influence we can have on the outside world

				concerns about conduct		Discuss the benefits and dangers of communicating online/through different forms of technology. Know the meaning of common website extensions (.org, . net. Gov etc) Understand what makes a strong password and why this is important at school and in the wider world Beginning to question information based on author and location; recognise different viewpoints and the impact of incorrect data. Share and exchange ideas	Know the meaning of common website extensions (.org, . net. Gov etc) Identify secure servers (padlock such as internet banking). Become increasingly savvy online consumers: know that algorithms are used to track online activities with a view to targeting advertising and information Critically evaluate websites for reliability of information/ bias and authenticity to include use of social media Demonstrate responsible use of online services and

						using emails/electronic communication respectfully.	technologies, and know a range of ways to report concerns Produce formal or informal messages, appropriate to the task
		Log on, password, computer, age appropriate, personal information, private.	(As Before +) Respectful, concern, content.	(As Before +) Responsible, identify, recognise, benefits and risks, screen breaks, online.	(As Before +) Acceptable / unacceptable, email, texts, IM, chat rooms.	(As Before +) Copyright, images and audio, author, location, viewpoints, share, exchange, acknowledging sources, digital footprint, privacy settings, appropriate, website extensions.	(As Before +) Critically evaluate, bias, authenticity, demonstrate, impact, uploading, plagiarism, legal, secure servers, consumers, targeting advertising.