East Midlands Academy Trust

Primary Computing Curriculum Overview

Why Teach Computing?

Technology is everywhere and will play an important part in students' lives, therefore, we aim to prepare our learners for their future by giving them the opportunities to gain knowledge and develop skills that will equip them for an ever-changing digital world. Knowledge and understanding of ICT is of increasing importance for children's future both at home and for employment.

Our Computing curriculum focuses on a progression of understanding in:

- digital literacy
- computer science
- information technology
- online safety to ensure that children become competent in safely using, as well as understanding, technology.

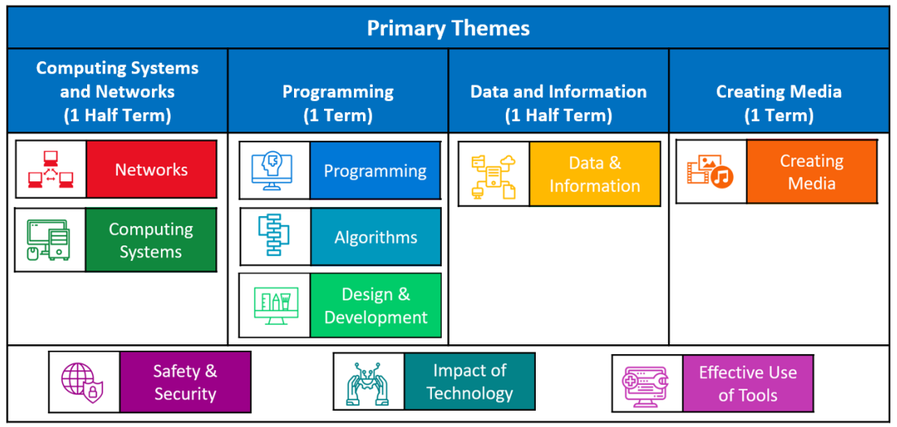
These strands are revisited repeatedly through a range of themes during children's time in school to ensure the learning is embedded and skills are successfully developed. Our intention is that Computing also supports children's creativity and cross curricular learning to engage children and enrich their experiences in school.

E-Safety

E-Safety is an element of the computing curriculum which will be taught both within the curriculum and as a discrete subject. Teaching will promote positive uses of technology and will acknowledge the large role that technology plays in children's everyday lives. Children will understand how to use technology safely, respectfully and responsibly to deal with a variety of situations which may occur in or out of school. Children will be able to identify acceptable and unacceptable behaviours and will have a variety of strategies they are familiar with to report concerns about content and contact.

Curriculum Organisation

There are four themes taught throughout each year. The big ideas feature across most themes but are predominantly focussed on as follows.



Assessment

Assessment in primary computing is primarily formative, taking place continuously within lessons through questioning, observation, discussion, and evaluation of pupil work. This approach enables teachers to respond to individual learning needs and adapt teaching accordingly. Summative assessment is used more selectively, typically at the end of units, to review pupils' understanding of key concepts and skills.

Pedagogy

Underpinned by the research carried out by the National Centre for Computing Education, our curriculum is based around 12 key pedagogical principles. These principles allow teachers to use a range of strategies to deliver computing effectively, encouraging computation thinking and problem-solving.

Lead with concepts	Structure lessons	Make concrete
Unplug, unpack, repack	Work together	Read and explore first
Create projects	Model everything	Get hands-on
Challenge misconceptions	Add variety	Foster program comprehension

The 10 Big Ideas

Curriculum maps detail the sequencing of substantive knowledge to enable pupils to build schemata of important concepts over time through ten 'big ideas'

NW	Networks	Understand how networks can be used to retrieve and share information and come with associated risks
CM	Creating Media	Select and create a range of media including text, images, sounds and video
DI	Data & Information	How is data stored, organised and used to represent real world artefacts and scenarios
DD	Design & Development	The activities involved in planning, creating and evaluating computing artefacts
CS	Computing Systems	What is a computer, how do it's constituent parts function together as a whole
IT	Impact of Technology	How individuals, systems and society as a whole interact with computer systems
AL	Algorithms	Being able to comprehend, design, create and evaluate algorithms
PG	Programming	Creating software to allow computers to solve problems
ET	Effective Use of Tools	Use software tools to support computing work
SS	Safety & Security	Understanding risks when using technology and how to protect individuals and systems

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Substantive Curriculum Content Overview

Networks | Creating Media | Data and Information | Design and Development | Computing Systems | Impact of Technology | Algorithms | Programming | Effective Use of Tools | Safety and Security

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	**Programming A** **Moving a robot** Writing short algorithms and programs for floor robots and predicting program outcomes AL DD IT PG	**Creating Media** **Making Music** Using a computer as a tool to explore rhythms and melodies, before creating a musical comparison CM DD ET	**Data and Information** **Branching databases** Building and using branching databases to group objects using yes/no questions. DD DI ET	**Data and Information** Data logging Recognising how and why data is collected over time, begin using data loggers to carry out an investigation. CS DI ET	**Creating media** Vector drawing Creating images in a drawing program by using layers and groups of objects. CM DD DI ET	**Programming A** Variables in games Exploring variables when designing and coding a game DD PG
Autumn 2	**Creating Media** Digital painting Choosing Appropriate tools in a program to create art and making comparisons with working non-digitally. CM DD ET	**Data and Information** Pictograms Collecting data in tally charts and using attributes to organise and present data on a computer. DD ET SS DI	**Creating Media** Stop-frame animation Capturing and editing digital still images to produce a stop-frame animation that tells a story. CM DD ET	**Programming A** Repetition in shapes Using a text-based programming language to explore count-controlled loops when drawing shapes. AL ET PG	**Programming A** Selection in physical computing Exploring conditions and selection using a programmable microcontroller. CS DD PG	**Computing systems and networks** Internet communication Recognising how the WWW can be used to communicate and be searched to find information. CS ET IT NW DI
Spring 1	**Data and Information** Grouping data Exploring object labels, then using them to sort and group objects by properties. DI	**Programming A** Robot algorithms Creating and debugging programs and using logical reasoning to make predictions. AL DD PG	**Programming A** Sequencing Sounds Creating sequences in a block-based programming language to make music. AL CM DD ET PG	**Creating Media** Photo editing Manipulating digital images and reflecting in the impact of changes and whether the required purpose is fulfilled. CM DD ET IT	**Data and Information** Flat-file databases Using a database to order data and create charts to answer questions. DD DI ET	**Creating Media** Webpage creating Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation. CM DD ET IT NW SS
Spring 2	**Programming B** Programming animations Designing and programming the movement of a character on screen to tell stories. AL DD PG	**Creating Media** Digital Photography 2 Capturing and changing digital photographs for different purposes. CM CS DD ET	**Creating Media** Desktop Publishing Creating documents by modifying text, images, and page layouts for a specified purpose. CM DD ET IT	**Programming B** Repetition in games Using a block-based programming language to explore count-controlled and infinite loops when creating a game. AL DD PG	**Programming B** Selection in quizzes Exploring selection in programming to design and code an interactive quiz. AL DD PG	**Programming B** Sensing Designing and coding a project that captures inputs from a physical device. CS DD PG
Summer 1	**Creating Media** **Digital writing** Using a computer to create and format text, before comparing to writing non-digitally. CM DI ET	**Programming B** Programming quizzes Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz. DD PG	**Programming B** Events and actions in programs Writing algorithms and programs that use a range of events to trigger sequences of actions. DD ET PG	**Creating Media** Audio editing Capturing and editing audio to produce a podcast, ensuring that copyright is considered. CM CS DD DI ET	**Creating Media** Video editing Planning, capturing, and editing video to produce a short film. CM CS DD ET SS	**Data and Information** Introduction to spreadsheets Answering questions by using spreadsheets to organise and calculate data. CM DI ET PG
Summer 2	**Computer systems and networks** Technology around us Recognising technology in school and using it responsibly. CS ET IT SS	**Computing Systems and networks** Technology around us Recognising technology in school and using it responsibly. CS IT NW SS	**Computing systems and networks** Connecting computers Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks. CS IT NW	**Computing systems and networks** The internet Recognising the internet as a network of networks including the WWW, and why we should evaluate online content. CM IT NW SS	**Computer systems and networks** Sharing information Identifying and exploring how information is shared between digital systems. CS DD ET IT NW	**Creating Media** 3D Modelling Planning, developing and evaluating 3D computer models of physical objects. CM DD ET

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Computing Curriculum Map – EYFS

Understanding the World

People, Culture and Communities | **Past and Present** | **The Natural World** | **Technology**

Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children's personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary will support later reading comprehension.

		Autumn 1	Spring 1	Summer 1
Key Knowledge and Skills	People, Culture and Communities	- Explore and recognise that people have different beliefs and celebrate special times in different ways (experience of relevant festivals and celebrations) making links to the children's own experiences linking to below - Discuss members of the immediate family and community. How are we the same and different? - Discuss similarities and differences between people and the lives they live (jobs/houses/appearance/family etc) - Name and describe people who are familiar to us - Comment on images of familiar situations in the past - Explore and describe the immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps. - Create graphical representations, drawings and maps based on own life, immediate environment and experiences	- Explore and recognise that people have different beliefs and celebrate special times in different ways (experience of relevant festivals and celebrations) gaining an increased understanding that we all celebrate different events linking to below - Explore, discuss and recognise similarities, differences between themselves and others and among families, communities and traditions. - Understand that some places are special to members of their community - Compare and contrast characters from stories, including figures from the past - Explore and describe the school and local environment using knowledge from observation, discussion, stories, non-fiction texts and maps. - Create graphical representations, drawings and maps based on the school and areas of the local community	- Explore, discuss and recognise that people have different beliefs and celebrate special times in different ways (experience of relevant festivals and celebrations) making connections between our own experiences and those of other's people linking to below - Recognise and discuss some similarities and differences between different religious and cultural communities in this country, drawing on own experiences and reading - Explore, discuss and explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and – when appropriate – maps.
	Past and Present	- Discuss about past and present events in own life and the lives of their family - Discuss the lives of people around them and their roles in society	- Recognise some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class	- Understand the past through settings, characters and events encountered in books read in class and storytelling - Discuss and encourage children to understand what is the past, present and future in simple terms
	The Natural World	- Record patterns in weather and explore features of Autumn/Winter - Explore and discuss features of materials and states of matter - Explore a range of objects and materials in the immediate environment and from nature and recognise and discuss their features - Discuss and explain some of the things they have observed such as plants, animals, natural and found objects - Play with small world reconstructions, building on first-hand experiences, e.g. visiting farms, garages, train tracks, walking by river or lake - Discuss and learn to show care and concern for living things and the environment	- Record patterns in weather and explore features of Winter/Spring - Explore changes in states of matter through cooking and materials (e.g. paint, clay, ice) - Explore the natural world around them, making observations and drawing pictures of animals and plants - Experience panting and growing of bulbs and seeds - Explore and recognise growth, decay and changes over time	- Record patterns in weather and explore features of Spring/Summer and compare over time - Discuss and explain changes in states of matter - Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. - Develop an understanding of the effect their behaviour can have on the environment
	Technology	- Explore and use a range of different basic technology - Know how to operate simple equipment, e.g. uses a remote control, can navigate touch-capable technology with support - Explore making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images	- Explore and play with technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets - Play with a range of materials to learn cause and effect, e.g. makes a string puppet using dowels and string to suspend the puppet - Explore and discuss why things happen and how things work - Model the correct use of technology including care for equipment, ipads, cameras, computer keyboards and mice.	- Use digital devices and the internet to retrieve and record information relevant to learning

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Computing Curriculum Map – EYFS into Key Stage 1

Networks	Creating Media	Data and Information	Design and Development	Computing Systems	Impact of Technology	Algorithms	Programming	Effective Use of Tools	Safety and Security

EYFS

There are no Early Learning Goals for Technology and no references in 'Development Matters'

Birth to 5 'Technology'
Level 5 children (nursery) will be learning to:

- Toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as tablets
- Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support
- Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images
- Knows that information can be retrieved from digital devices and the internet
- Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet

Birth to 5 'Technology'
Level 6 children (Reception) will be learning to:

- Completes a simple program on electronic devices
- Uses ICT hardware to interact with age- appropriate computer software
- Can create content such as a video recording, stories, and/or draw a picture on screen
- Develops digital literacy skills by being able to access, understand and interact with a range of technologies
- Can use the internet with adult supervision to find and retrieve information of interest to them

Typical learning experiences include:

– Beebots, remote control cars, and other programmable toys.
– iPads & cameras to record their own learning. Aids reflecting and reviewing.
– Audio players.
– Interactive whiteboard screen for drawing or playing other child accessible games and practicing mark making skills.
– Internet safety stories, being able to tell an adult if something is bothering them.
– Use of old real technology e.g.,old hair dryers, old remote controls, old mobile phones etc.
– Light box – turning it on and off.
– Torches.

	Year 1	Year 2
Computing Systems and Networks	• Identify technology • Identify a computer and its main parts • Use a mouse in different ways • Use a keyboard to type on a computer • Use the keyboard to edit text • Create rules for using technology responsibly CS ET IT SS	• Recognise the uses and features of information technology • Identify the uses of information technology in the school • Identify information technology beyond school • Explain how information technology helps us • Explain how to use information technology safely • Recognise that choices are made when using information technology CS IT NW SS
Programming	• Explain what a given command will do • Act out a given word • Combine forwards and backwards commands to make a sequence • Combine four direction commands to make sequences • Plan a simple program • Find more than one solution to a problem AL DD IT PG	• Describe a series of instructions as a sequence • Explain what happens when we change the order of instructions • Use logical reasoning to predict the outcome of a program (series of commands) • Explain that programming projects can have code and artwork • Design an algorithm • Create and debug a program that I have written AL DD PG
Programming	• Choose a command for a given purpose • Show that a series of commands can be joined together • Identify the effect of changing a value • Explain that each sprite has its own instructions • Design the parts of a project • Use my algorithm to create a program AL DD PG	• Explain that a sequence of commands has a start • Explain that a sequence of commands has an outcome • Create a program using a given design • Change a given design • Create a program using my own design • Decide how my project can be improved DD PG
Data and Information	• Label objects • Identify that objects can be counted • Describe objects in different ways • Count objects with the same properties • Compare groups of objects • Answer questions about groups of objects DI	• Use a digital device to take a photograph • Make choices when taking a photograph • Describe what makes a good photograph • Decide how photographs can be improved • Use tools to change an image. • Recognise that photos can be changed DD ET SS
Creating Media	• Describe what different freehand tools do • Use the shape tool and the line tools • Make careful choices when painting a digital picture • Explain why I chose the tools I used • Use a computer on my own to paint a picture • Compare painting a picture on a computer and on paper CM DD ET	• Use a digital device to take a photograph • Make choices when taking a photograph • Describe what makes a good photograph • Decide how photographs can be improved • Use tools to change an image • Recognise that photos can be changed CM CS DD ET
Creating Media	• Use a computer to write • Add and remove text on a computer • Identify that the look of text can be changed on a computer • Make careful choices when changing text • Explain why I used the tools that I chose • Compare typing on a computer to writing on paper CM DI ET	• Say how music can make us feel • Identify that there are patterns in music • Show how music is made from a series of notes • Show how music is made from a series of notes • Create music for a purpose • Review and refine our computer work CM DD ET

Every child deserves to be the best they can be

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Computing Curriculum Map – Progression

Networks	Creating Media	Data and Information	Design and Development	Computing Systems	Impact of Technology	Algorithms	Programming	Effective Use of Tools	Safety and Security

Computing Systems and Networks

Year 1
- Identify technology
- Identify a computer and its main parts
- Use a mouse in different ways
- Use a keyboard to type on a computer
- Use the keyboard to edit text
- Create rules for using technology responsibly

CS ET IT SS

Year 2
- Recognise the uses and features of information technology
- Identify the uses of information technology in the school
- Identify information technology beyond school
- Explain how information technology helps us
- Explain how to use information technology safely
- Recognise that choices are made when using information technology

CS IT NW SS

Year 3
- Explain how digital devices function
- Identify input and output devices
- Recognise how digital devices can change the way we work
- Explain how a computer network can be used to share information
- Explore how digital devices can be connected
- Recognise the physical components of a network

CS IT NW

Year 4
- Describe how networks physically connect to other networks
- Recognise how networked devices make up the internet
- Outline how websites can be shared via the World Wide Web (WWW)
- Describe how content can be added and accessed on the World Wide Web (WWW)
- Recognise how the content of the WWW is created by people
- Evaluate the consequences of unreliable content

CM IT NW SS

Year 5
- Explain that computers can be connected together to form systems
- Recognise the role of computer systems in our lives
- Recognise how information is transferred over the internet
- Explain how sharing information online lets people in different places work together
- Contribute to a shared project online
- Evaluate different ways of working together online

CS DD ET IT NW

Year 6
- Identify how to use a search engine
- Describe how search engines select results
- Explain how search results are ranked
- Recognise why the order of results is important, and to whom
- Recognise how we communicate using technology
- Evaluate different methods of online communication

CS ET IT NW DI

Programming

Year 1
- Explain what a given command will do
- Act out a given word
- Combine forwards and backwards commands to make a sequence
- Combine four direction commands to make sequences
- Plan a simple program
- Find more than one solution to a problem

AL DD IT PG

- Choose a command for a given purpose
- Show that a series of commands can be joined together
- Identify the effect of changing a value
- Explain that each sprite has its own instructions
- Design the parts of a project
- Use my algorithm to create a program

AL DD PG

Year 2
- Describe a series of instructions as a sequence
- Explain what happens when we change the order of instructions
- Use logical reasoning to predict the outcome of a program (series of commands)
- Explain that programming projects can have code and artwork
- Design an algorithm
- Create and debug a program that I have written

AL DD PG

- Explain that a sequence of commands has a start
- Explain that a sequence of commands has an outcome
- Create a program using a given design
- Change a given design
- Create a program using my own design
- Decide how my project can be improved

DD PG

Year 3
- Explore a new programming environment
- Identify that commands have an outcome
- Explain that a program has a start
- Recognise that a sequence of commands can have an order
- Change the appearance of my project
- Create a project from a task description

AL CM DD ET PG

- Explain how a sprite moves in an existing project
- Create a program to move a sprite in four directions
- Adapt a program to a new context
- Develop my program by adding features
- Identify and fix bugs in a program
- Design and create a maze-based challenge

DD ET PG

Year 4
- Identify that accuracy in programming is important
- Create a program in a text-based language
- Explain what 'repeat' means
- Modify a count-controlled loop to produce a given outcome
- Decompose a task into small steps
- Create a program that uses count-controlled loops to produce a given outcome

AL ET PG

- Develop the use of count-controlled loops in a different programming environment
- Explain that in programming there are infinite loops and count controlled loops
- Develop a design that includes two or more loops which run at the same time
- Modify an infinite loop in a given program
- Design a project that includes repetition
- Create a project that includes repetition

AL DD PG

Year 5
- Control a simple circuit connected to a computer
- Write a program that includes count-controlled loops
- Explain that a loop can stop when a condition is met
- Explain that a loop can be used to repeatedly check whether a condition has been met
- Design a physical project that includes selection
- Create a program that controls a physical computing project

CS DD PG

- Explain how selection is used in computer programs
- Relate that a conditional statement connects a condition to an outcome
- Explain how selection directs the flow of a program
- Design a program which uses selection
- Create a program which uses selection
- Evaluate my program

AL DD PG

Year 6
- Define a 'variable' as something that is changeable
- Explain why a variable is used in a program
- Choose how to improve a game by using variables
- Design a project that builds on a given example
- Use my design to create a project
- Evaluate my project

DD PG

- Create a program to run on a controllable device
- Explain that selection can control the flow of a program
- Update a variable with a user input
- Use a conditional statement to compare a variable to a value
- Design a project that uses inputs and outputs on a controllable device
- Develop a program to use inputs and outputs on a controllable device

CS DD PG

Data and Information

Year 1
- Label objects
- Identify that objects can be counted
- Describe objects in different ways
- Count objects with the same properties
- Compare groups of objects
- Answer questions about groups of objects

DI

Year 2
- Use a digital device to take a photograph
- Make choices when taking a photograph
- Describe what makes a good photograph
- Decide how photographs can be improved
- Use tools to change an image
- Recognise that photos can be changed

DD ET SS

Year 3
- Create questions with yes/no answers
- Identify the object attributes needed to collect relevant data
- Create a branching database
- Explain why it is helpful for a database to be well structured
- Identify objects using a branching database
- Compare the information shown in a pictogram with a branching database

DD DI ET

Year 4
- Explain that data gathered over time can be used to answer questions
- Use a digital device to collect data automatically
- Explain that a data logger collects 'data points' from sensors over time
- Use data collected over a long duration to find information
- Identify the data needed to answer questions
- Use collected data to answer questions

CS DI ET

Year 5
- Use a form to record information
- Compare paper and computer-based databases
- Outline how grouping and then sorting data allows us to answer questions
- Explain that tools can be used to select specific data
- Explain that computer programs can be used to compare data visually
- Apply my knowledge of a database to ask and answer real-world questions

DD DI ET

Year 6
- Identify questions which can be answered using data
- Explain that objects can be described using data
- Explain that formulas can be used to produce calculated data
- Apply formulas to data, including duplicating
- Create a spreadsheet to plan an event
- Choose suitable ways to present data

CM DI ET PG

Creating Media

Year 1
- Describe what different freehand tools do
- Use the shape tool and the line tools
- Make careful choices when painting a digital picture
- Explain why I chose the tools I used
- Use a computer on my own to paint a picture
- Compare painting a picture on a computer and on paper

CM DD ET

- Use a computer to write
- Add and remove text on a computer
- Identify that the look of text can be changed on a computer
- Make careful choices when changing text
- Explain why I used the tools that I chose
- Compare typing on a computer to writing on paper

CM DI ET

Year 2
- Use a digital device to take a photograph
- Make choices when taking a photograph
- Describe what makes a good photograph
- Decide how photographs can be improved
- Use tools to change an image
- Recognise that photos can be changed

CM CS DD ET

- Say how music can make us feel
- Identify that there are patterns in music
- Show how music is made from a series of notes
- Show how music is made from a series of notes
- Create music for a purpose
- Review and refine our computer work

CM DD ET

Year 3
- Explain that animation is a sequence of drawings or photographs
- Relate animated movement with a sequence of images
- Plan an animation
- Identify the need to work consistently and carefully
- Review and improve an animation
- Evaluate the impact of adding other media to an animation

CM DD ET

- Recognise how text and images convey information
- Recognise that text and layout can be edited
- Choose appropriate page settings
- Add content to a desktop publishing publication
- Consider how different layouts can suit different purposes
- Consider the benefits of desktop publishing

CM DD ET IT

Year 4
- Identify that sound can be digitally recorded
- Use a digital device to record sound
- Explain that a digital recording is stored as a file
- Explain that audio can be changed through editing
- Show that different types of audio can be combined and played together
- Evaluate editing choices made

CM CS DD DI ET

- Explain that digital images can be changed
- Change the composition of an image
- Describe how images can be changed for different uses
- Make good choices when selecting different tools
- Recognise that not all images are real
- Evaluate how changes can improve an image

CM DD ET IT

Year 5
- Explain what makes a video effective
- Identify digital devices that can record video
- Capture video using a range of techniques
- Create a storyboard
- Identify that video can be improved through reshooting and editing
- Consider the impact of the choices made when making and sharing a video

CM CS DD ET SS

- Identify that drawing tools can be used to produce different outcomes
- Create a vector drawing by combining shapes
- Use tools to achieve a desired effect
- Recognise that vector drawings consist of layers
- Group objects to make them easier to work with
- Evaluate my vector drawing

CM DD DI ET

Year 6
- Review an existing website and consider its structure
- Plan the features of a web page
- Consider the ownership and use of images (copyright)
- Recognise the need to preview pages
- Outline the need for a navigation path
- Recognise the implications of linking to content owned by other people

CM DD ET IT NW SS

- Use a computer to create and manipulate three-dimensional (3D) digital objects
- Compare working digitally with 2D and 3D graphics
- Construct a digital 3D model of a physical object
- Identify that physical objects can be broken down into a collection of 3D shapes
- Design a digital model by combining 3D objects
- Develop and improve a digital 3D model

CM DD ET

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Computing Curriculum Map – National Curriculum Coverage

Key Stage 1 National Curriculum Statements		Year 1						Year 2					
		Au1	Au2	Sp1	Sp2	Su1	Su2	Au1	Au2	Sp1	Sp2	Su1	Su2
		Moving a Robot	Digital Painting	Grouping Data	Programming Animations	Digital Writing	Technology Around Us	Making Music	Pictograms	Robot Algorithms	Digital Photography	Programming Quizzes	Technology Around Us
1.1	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions	✓			✓					✓		✓	
1.2	Create and debug simple programs	✓			✓					✓		✓	
1.3	Use logical reasoning to predict the behaviour of simple programs	✓			✓		✓			✓		✓	
1.4	Use technology purposefully to create, organise, store, manipulate and retrieve digital content		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
1.5	Recognise common uses of information technology beyond school	✓					✓				✓		✓
1.6	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			✓		✓			✓		✓		✓

Key Stage 2 National Curriculum Statements		Year 3						Year 4						Year 5						Year 6					
		Au1	Au2	Sp1	Sp2	Su1	Su2	Au1	Au2	Sp1	Sp2	Su1	Su2	Au1	Au2	Sp1	Sp2	Su1	Su2	Au1	Au2	Sp1	Sp2	Su1	Su2
		Branching Databases	Stop-Frame Animation	Sequencing Sounds	Desktop Publishing	Events and Actions in Programmes	Connecting Computers	Data logging	Repetition in Shapes	Photo Editing	Repetition in Games	Audio Editing	The Internet	Vector Drawing	Selection in Physical Computing	Flat-File Databases	Selection in Quizzes	Video Editing	Sharing Information	Variables in Games	Internet Communication	Webpage Creating	Sensing	Introduction to Spreadsheets	3D modelling
2.1	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts			✓		✓			✓		✓				✓		✓		✓	✓	✓		✓		
2.2	Use sequence, selection, and repetition in programs; work with variables and various forms of input and output			✓		✓	✓	✓	✓		✓				✓		✓		✓	✓			✓		
2.3	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs			✓		✓			✓		✓				✓		✓			✓			✓		
2.4	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						✓						✓						✓		✓				
2.5	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content				✓					✓		✓	✓			✓		✓			✓	✓			
2.6	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	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.7	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		✓							✓		✓	✓					✓	✓		✓	✓			✓

East Midlands Academy Trust
Computing Curriculum Map – Year 1

Networks	Creating Media	Data and Information	Design and Development	Computing Systems	Impact of Technology	Algorithms	Programming	Effective Use of Tools	Safety and Security

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Name	**Programming A Moving a robot**	**Creating media – Digital painting**	**Data and information – Grouping data**	**Programming B – Introduction to animation**	**Creating media – Digital writing**	**Computing systems and networks – Technology**
Learning Objectives	1. To explain what a given command will do 2. To act out a given word 3. To combine forwards and backwards commands to make a sequence 4. To combine four direction commands to make sequences 5. To plan a simple program 6. To find more than one solution to a problem	1. To describe what different freehand tools do 2. To use the shape tool and the line tools 3. To make careful choices when painting a digital picture 4. To explain why I chose the tools I used 5. To use a computer on my own to paint a picture 6. To compare painting a picture on a computer and on paper	1. To label objects 2. To identify that objects can be counted 3. To describe objects in different ways 4. To count objects with the same properties 5. To compare groups of objects 6. To answer questions about groups of objects	1. To choose a command for a given purpose 2. To show that a series of commands can be joined together 3. To identify the effect of changing a value 4. To explain that each sprite has its own instructions 5. To design the parts of a project 6. To use my algorithm to create a program	1. To use a computer to write 2. To add and remove text on a computer 3. To identify that the look of text can be changed on a computer 4. To make careful choices when changing text 5. To explain why I used the tools that I chose 6. To compare typing on a computer to writing on paper	1. To identify technology 2. To identify a computer and its main parts 3. To use a mouse in different ways 4. To use a keyboard to type on a computer 5. To use the keyboard to edit text 6. To create rules for using technology responsibly
Success Criteria	1. I can match a command to an outcome I can predict the outcome of a command on a device I can run a command on a device 2. I can follow an instruction I can give directions I can recall words that can be acted out 3. I can compare forwards and backwards movements I can predict the outcome of a sequence involving forwards and backwards commands I can start a sequence from the same place 4. 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 5. I can choose the order of commands in a sequence I can debug my program I can explain what my program should do 6. I can identify several possible solutions I can plan two programs I can use two different programs to get to the same place	1. I can draw lines on a screen and explain which tools I used I can make marks on a screen and explain which tools I used I can use the paint tools to draw a picture 2. I can make marks with the square and line tools I can use the shape and line tools effectively I can use the shape and line tools to recreate the work of an artist 3. I can choose appropriate shapes I can create a picture in the style of an artist I can make appropriate colour choices 4. I can choose appropriate paint tools and colours to recreate the work of an artist I can say which tools were helpful and why I know that different paint tools do different jobs 5. I can change the colour and brush sizes I can make dots of colour on the page I can use dots of colour to create a picture in the style of an artist on my own 6. I can explain that pictures can be made in lots of different ways I can say whether I prefer painting using a computer or using paper I can spot the differences between painting on a computer and on paper	1. I can describe objects using labels I can identify the label for a group of objects I can match objects to groups 2. I can count a group of objects I can count objects I can group objects 3. I can describe an object I can describe a property of an object I can find objects with similar properties 4. I can count how many objects share a property I can group objects in more than one way I can group similar objects 5. I can choose how to group objects I can describe groups of objects I can record how many objects are in a group 6. I can compare groups of objects I can decide how to group objects to answer a question I can record and share what I have found	1. I can compare different programming tools I can find which commands to move a sprite I can use commands to move a sprite 2. I can run my program I can use a Start block in a program I can use more than one block by joining them together 3. I can change the value I can find blocks that have numbers I can say what happens when I change a value 4. I can add blocks to each of my sprites I can delete a sprite I can show that a project can include more than one sprite 5. I can choose appropriate artwork for my project I can create an algorithm for each sprite I can decide how each sprite will move 6. I can add programming blocks based on my algorithm I can test the programs I have created I can use sprites that match my design	1. I can identify and find keys on a keyboard I can open a word processor I can recognise keys on a keyboard 2. I can enter text into a computer I can use backspace to remove text I can use letter, number, and space keys 3. I can explain what the keys that I have learnt about already do I can identify the toolbar and use bold, italic, and underline I can type capital letters 4. I can change the font I can select all of the text by clicking and dragging I can select a word by double clicking 5. I can decide if my changes have improved my writing I can say what tool I used to change the text I can use 'undo' to remove changes 6. I can explain the differences between typing and writing I can make changes to text on a computer I can say why I prefer typing or writing	1. I can explain how these technology examples help us I can explain technology as something that helps us I can locate examples of technology in the classroom 2. I can name the main parts of a computer I can switch on and log into a computer I can use a mouse to click and drag 3. I can click and drag to make objects on a screen I can use a mouse to create a picture I can use a mouse to open a program 4. I can save my work to a file I can say what a keyboard is for I can type my name on a computer 5. I can delete letters I can open my work from a file I can use the arrow keys to move the cursor 6. I can discuss how we benefit from these rules I can give examples of some of these rules I can identify rules to keep us safe and healthy when we are using technology in and beyond the home
N/C Links	1.1 1.2 1.3 1.5	1.4	1.4 1.6	1.1 1.2 1.3 1.4	1.4 1.6	1.3 1.4 1.5
Big Ideas	AL DD IT PG	CM DD ET	DI	AL DD PG	CM DI ET	CS ET IT SS

East Midlands Academy Trust
Computing Curriculum Map – Year 2

Networks	Creating Media	Data and Information	Design and Development	Computing Systems	Impact of Technology	Algorithms	Programming	Effective Use of Tools	Safety and Security

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Name	**Creating media – Making music**	**Data and information – Pictograms**	**Programming A – Robot algorithms**	**Creating media – Digital photography**	**Programming B – An introduction to quizzes**	**Computing systems and networks – IT around us**
Learning Objectives	1. To say how music can make us feel 2. To identify that there are patterns in music 3. To show how music is made from a series of notes 4. To show how music is made from a series of notes 5. To create music for a purpose 6. To review and refine our computer work	1. To recognise that we can count and compare objects using tally charts 2. To recognise that objects can be represented as pictures 3. To create a pictogram 4. To select objects by attribute and make comparisons 5. To recognise that people can be described by attributes 6. To explain that we can present information using a computer	1. To describe a series of instructions as a sequence 2. To explain what happens when we change the order of instructions 3. To use logical reasoning to predict the outcome of a program (series of commands) 4. To explain that programming projects can have code and artwork 5. To design an algorithm 6. To create and debug a program that I have written	1. To use a digital device to take a photograph 2. To make choices when taking a photograph 3. To describe what makes a good photograph 4. To decide how photographs can be improved 5. To use tools to change an image 6. To recognise that photos can be changed	1. To explain that a sequence of commands has a start 2. To explain that a sequence of commands has an outcome 3. To create a program using a given design 4. To change a given design 5. To create a program using my own design 6. To decide how my project can be improved	1. To recognise the uses and features of information technology 2. To identify the uses of information technology in the school 3. To identify information technology beyond school 4. To explain how information technology helps us 5. To explain how to use information technology safely 6. To recognise that choices are made when using information technology
Success Criteria	1. I can describe how music makes me feel, e.g. happy or sad I can identify simple differences in pieces of music I can listen with concentration to a range of music (links to the Music curriculum) 2. I can create a rhythm pattern I can explain that music is created and played by humans I can play an instrument following a rhythm pattern 3. I can identify that music is a sequence of notes I can refine my musical pattern on a computer I can use a computer to create a musical pattern using three notes 4. I can identify that music is a sequence of notes I can refine my musical pattern on a computer I can use a computer to create a musical pattern using three notes 5. I can describe an animal using sounds I can explain my choices I can save my work 6. I can explain how I made my work better I can listen to music and describe how it makes me feel I can reopen my work	1. I can compare totals in a tally chart I can record data in a tally chart I can represent a tally count as a total 2. 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 3. I can explain what the pictogram shows I can organise data in a tally chart I can use a tally chart to create a pictogram 4. I can answer 'more than'/'less than' and 'most/least' questions about an attribute I can create a pictogram to arrange objects by an attribute I can tally objects using a common attribute 5. 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 6. I can give simple examples of why information should not be shared I can share what I have found out using a computer I can use a computer program to present information in different ways	1. I can choose a series of words that can be enacted as a sequence I can follow instructions given by someone else I can give clear and unambiguous instructions 2. I can create different algorithms for a range of sequences (using the same commands) I can show the difference in outcomes between two sequences that consist of the same commands I can use an algorithm to program a sequence on a floor robot 3. I can compare my prediction to the program outcome I can follow a sequence I can predict the outcome of a sequence 4. 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 5. I can create an algorithm to meet my goal I can explain what my algorithm should achieve I can use my algorithm to create a program 6. I can plan algorithms for different parts of a task I can put together the different parts of my program I can test and debug each part of the 'program	1. I can explain what I did to capture a digital photo I can recognise what devices can be used to take photographs I can talk about how to take a photograph 2. I can explain the process of taking a good photograph I can explain why a photo looks better in portrait or landscape format I can take photos in both landscape and portrait format 3. I can discuss how to take a good photograph I can identify what is wrong with a photograph I can improve a photograph by retaking it 4. I can experiment with different light sources I can explain why a picture may be unclear I can explore the effect that light has on a photo 5. I can explain my choices I can recognise that images can be changed I can use a tool to achieve a desired effect 6. I can apply a range of photography skills to capture a photo I can identify which photos are real and which have been changed I can recognise which photos have been changed	1. I can identify that a program needs to be started I can identify the start of a sequence I can show how to run my program 2. I can change the outcome of a sequence of commands I can match two sequences with the same outcome I can predict the outcome of a sequence of commands 3. I can build the sequences of blocks I need I can decide which blocks to use to meet the design I can work out the actions of a sprite in an algorithm 4. I can choose backgrounds for the design I can choose characters for the design I can create a program based on the new design 5. I can build sequences of blocks to match my design I can choose the images for my own design I can create an algorithm 6. I can compare my project to my design I can debug my program I can improve my project by adding features	1. I can describe some uses of computers I can identify examples of computers I can identify that a computer is a part of IT 2. I can identify examples of IT I can identify that some IT can be used in more than one way I can sort school IT by what it's used for 3. I can find examples of information technology I can sort IT by where it is found I can talk about uses of information technology 4. I can demonstrate how IT devices work together I can recognise common types of technology I can say why we use IT 5. I can list different uses of information technology I can say how rules can help keep me safe I can talk about different rules for using IT 6. I can explain the need to use IT in different ways I can identify the choices that I make when using IT I can use IT for different types of activities
N/C Links	1.4	1.4 | 1.6	1.1 | 1.2 | 1.3 | 1.4	1.4 | 1.5 | 1.6	1.1 | 1.2 | 1.3	1.4 | 1.5 | 1.6
Big Ideas	CM | DD | ET	DI | ET | SS	AL | DD | PG	CM | CS | DD | ET	DD | PG	CS | IT | NW | SS

East Midlands Academy Trust
Computing Curriculum Map – Year 3

Networks	Creating Media	Data and Information	Design and Development	Computing Systems	Impact of Technology	Algorithms	Programming	Effective Use of Tools	Safety and Security

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Name	**Data and information – Branching databases**	**Creating media – Animation**	**Programming A – Sequence in music**	**Creating media – Desktop publishing**	**Programming B – Events and actions**	**Computing systems and networks – Connecting computers**
Learning Objectives	1. To explain how digital devices function 2. To identify input and output devices 3. To recognise how digital devices can change the way we work 4. To explain how a computer network can be used to share information 5. To explore how digital devices can be connected 6. To recognise the physical components of a network	1. To explain that animation is a sequence of drawings or photographs 2. To relate animated movement with a sequence of images 3. To plan an animation 4. To identify the need to work consistently and carefully 5. To review and improve an animation 6. To evaluate the impact of adding other media to an animation	1. To explore a new programming environment 2. To identify that commands have an outcome 3. To explain that a program has a start 4. To recognise that a sequence of commands can have an order 5. To change the appearance of my project 6. To create a project from a task description	1. To create questions with yes/no answers 2. To identify the object attributes needed to collect relevant data 3. To create a branching database 4. To explain why it is helpful for a database to be well structured 5. To identify objects using a branching database 6. To compare the information shown in a pictogram with a branching database	1. To recognise how text and images convey information 2. To recognise that text and layout can be edited 3. To choose appropriate page settings 4. To add content to a desktop publishing publication 5. To consider how different layouts can suit different purposes 6. To consider the benefits of desktop publishing	1. To explain how a sprite moves in an existing project 2. To create a program to move a sprite in four directions 3. To adapt a program to a new context 4. To develop my program by adding features 5. To identify and fix bugs in a program 6. To design and create a maze based challenge
Success Criteria	1. I can explain that digital devices accept inputs I can explain that digital devices produce outputs I can follow a process 2. I can classify input and output devices I can describe a simple process I can design a digital device 3. I can explain how I use digital devices for different activities I can recognise similarities between using digital devices and nondigital tools I can suggest differences between using digital devices and nondigital tools 4. I can discuss why we need a network switch I can explain how messages are passed through multiple connections I can recognise different connections 5. I can demonstrate how information can be passed between devices I can explain the role of a switch, server, and wireless access point in a network I can recognise that a computer network is made up of a number of devices 6. I can identify how devices in a network are connected together I can identify networked devices around me I can identify the benefits of computer networks	1. I can create an effective flip book—style animation I can draw a sequence of pictures I can explain how an animation/flip book works 2. I can create an effective stopframe animation I can explain why little changes are needed for each frame I can predict what an animation will look like 3. I can break down a story into settings, characters and events I can create a storyboard I can describe an animation that is achievable on screen 4. I can evaluate the quality of my animation I can review a sequence of frames to check my work I can use onion skinning to help me make small changes between frames 5. I can evaluate another learner's animation I can explain ways to make my animation better I can improve my animation based on feedback 6. I can add other media to my animation I can evaluate my final film I can explain why I added other media to my animation	1. I can explain that objects in Scratch have attributes (linked to) I can identify the objects in a Scratch project (sprites, backdrops) I can recognise that commands in Scratch are represented as blocks 2. I can choose a word which describes an onscreen action for my plan I can create a program following a design I can identify that each sprite is controlled by the commands I choose 3. I can create a sequence of connected commands I can explain that the objects in my project will respond exactly to the code I can start a program in different ways 4. I can combine sound commands I can explain what a sequence is I can order notes into a sequence 5. I can build a sequence of commands I can decide the actions for each sprite in a program I can make design choices for my artwork 6. I can identify and name the objects I will need for a project I can implement my algorithm as code I can relate a task description to a design	1. I can create two groups of objects eparated by one attribute I can investigate questions with yes/no answers I can make up a yes/no question about a collection of objects 2. I can arrange objects into a tree structure I can create a group of objects within an existing group I can select an attribute to separate objects into groups 3. I can group objects using my own yes/no questions I can prove my branching database works I can select objects to arrange in a branching database 4. I can compare two branching database structures I can create yes/no questions using given attributes I can explain that questions need to be ordered carefully to split objects into similarly sized groups 5. I can create questions and apply them to a tree structure I can select a theme and choose a variety of objects I can use my branching database to answer questions 6. I can compare two ways of presenting information I can explain what a branching database tells me I can explain what a pictogram tells me	1. I can explain the difference between text and images7 I can identify the advantages and disadvantages of using text and images I can recognise that text and images can communicate messages clearly 2. I can change font style, size, and colours for a given purpose I can edit text I can explain that text can be changed to communicate more clearly 3. I can create a template for a particular purpose I can define the term 'page orientation' I can recognise placeholders and say why they are important 4. I can choose the best locations for my content I can make changes to content after I've added it I can paste text and images to create a magazine cover 5. I can choose a suitable layout for a given purpose I can identify different layouts I can match a layout to a purpose 6. I can compare work made on desktop publishing to work created by hand I can identify the uses of desktop publishing in the real world I can say why desktop publishing might be helpful	1. I can choose which keys to use for actions and explain my choices I can explain the relationship between an event and an action I can identify a way to improve a program 2. I can choose a character for my project I can choose a suitable size for a character in a maze I can program movement 3. I can choose blocks to set up my program I can consider the real world when making design choices I can use a programming extension 4. I can build more sequences of commands to make my design work I can choose suitable keys to turn on additional features I can identify additional features (from a given set of blocks) 5. I can match a piece of code to an outcome I can modify a program using a design I can test a program against a given design 6. I can evaluate my project I can implement my design I can make design choices and justify them
N/C Links	2.6	2.6 / 2.7	2.1 / 2.2 / 2.3 / 2.6	2.5 / 2.6	2.1 / 2.2 / 2.3 / 2.6	2.2 / 2.4 / 2.6
Big Ideas	DD / DI / ET	CM / DD / ET	AL / CM / DD / ET / PG	CM / DD / ET / IT	DD / ET / PG	CS / IT / NW

East Midlands Academy Trust
Computing Curriculum Map – Year 4

Networks	Creating Media	Data and Information	Design and Development	Computing Systems	Impact of Technology	Algorithms	Programming	Effective Use of Tools	Safety and Security

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Name	**Data and information – Data logging**	**Programming A – Repetition in shapes**	**Creating media – Photo editing**	**Programming B – Repetition in games**	**Creating media – Audio editing**	**Computing systems and networks – The Internet**
Learning Objectives	1. To explain that data gathered over time can be used to answer questions 2. To use a digital device to collect data automatically 3. To explain that a data logger collects 'data points' from sensors over time 4. To use data collected over a long duration to find information 5. To identify the data needed to answer questions 6. To use collected data to answer questions	1. To identify that accuracy in programming is important 2. To create a program in a text-based language 3. To explain what 'repeat' means 4. To modify a count-controlled loop to produce a given outcome 5. To decompose a task into small steps 6. To create a program that uses count-controlled loops to produce a given outcome	1. To explain that digital images can be changed 2. To change the composition of an image 3. To describe how images can be changed for different uses 4. To make good choices when selecting different tools 5. To recognise that not all images are real 6. To evaluate how changes can improve an image	1. To develop the use of countcontrolled loops in a different programming environment 2. To explain in programming there are infinite loops and count controlled loops 3. To develop a design that includes two or more loops which run at the same time 4. To modify an infinite loop in a given program 5. To design a project that includes repetition 6. To create a project that includes repetition	1. To identify that sound can be digitally recorded 2. To use a digital device to record sound 3. To explain that a digital recording is stored as a file 4. To explain that audio can be changed through editing 5. To show that different types of audio can be combined and played together 6. To evaluate editing choices made	1. To describe how networks physically connect to other networks 2. To recognise how networked devices make up the internet 3. To outline how websites can be shared via the World Wide Web (WWW) 4. To describe how content can be added and accessed on the World Wide Web (WWW) 5. To recognise how the content of the WWW is created by people 6. To evaluate the consequences of unreliable content
Success Criteria	1. I can choose a data set to answer a given question I can identify data that can be gathered over time I can suggest questions that can be answered using a given data set 2. I can explain that sensors are input devices I can identify that data from sensors can be recorded I can use data from a sensor to answer a given question 3. I can identify a suitable place to collect data I can identify the intervals used to collect data I can talk about the data that I have captured 4. I can import a data set I can use a computer program to sort data I can use a computer to view data in different ways 5. I can plan how to collect data using a data logger I can propose a question that can be answered using logged data I can use a data logger to collect data 6. I can draw conclusions from the data that I have collected I can explain the benefits of using a data logger I can interpret data that has been collected using a data logger	1. I can create a code snippet for a given purpose I can explain the effect of changing a value of a command I can program a computer by typing commands 2. I can test my algorithm in a textbased language I can use a template to create a design for my program I can write an algorithm to produce a given outcome 3. I can identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves I can identify patterns in a sequence I can use a count controlled loop to produce a given outcome 4. I can choose which values to change in a loop I can identify the effect of changing the number of times a task is repeated I can predict the outcome of a program containing a count controlled loop 5. I can explain that a computer can repeatedly call a procedure I can identify 'chunks' of actions in the real world I can use a procedure in a program 6. I can design a program that includes count controlled loops I can develop my program by debugging it I can make use of my design to write a program	1. I can explain the effect that editing can have on an image I can explore how images can be changed in real life I can identify changes that we can make to an image 2. I can change the composition of an image by selecting parts of it I can consider why someone might want to change the composition of an image I can explain what has changed in an edited image 3. I can choose effects to make my image fit a scenario I can explain why my choices fit a scenario I can talk about changes made to images 4. I can choose appropriate tools to retouch an image I can give examples of positive and negative effects that retouching can have on an image I can identify how an image has been retouched 5. I can combine parts of images to create new images I can sort images into 'fake' or 'real' and explain my choices I can talk about fake images around me 6. I can compare the original image with my completed publication I can consider the effect of adding other elements to my work I can evaluate the impact of my publication on others through feedback	1. I can list an everyday task as a set of instructions including repetition I can modify a snippet of code to create a given outcome I can predict the outcome of a snippet of code 2. I can choose when to use a countcontrolled and an infinite loop I can modify loops to produce a given outcome I can recognise that some programming languages enable more than one process to be run at once 3. I can choose which action will be repeated for each object I can evaluate the effectiveness of the repeated sequences used in my program I can explain what the outcome of the repeated action should be 4. I can explain the effect of my changes I can identify which parts of a loop can be changed I can reuse existing code snippets on new sprites 5. I can develop my own design explaining what my project will do I can evaluate the use of repetition in a project I can select key parts of a given project to use in my own design 6. I can build a program that follows my design I can evaluate the steps I followed when building my project I can refine the algorithm in my design	1. I can identify digital devices that can record sound and play it back I can identify the inputs and outputs required to play audio or record sound I can recognise the range of sounds that can be recorded 2. I can discuss what other people include when recording sound for a podcast I can suggest how to improve my recording I can use a device to record audio and play back sound 3. I can discuss why it is useful to be able to save digital recordings I can plan and write the content for a podcast I can save a digital recording as a file 4. I can discuss ways in which audio recordings can be altered I can edit sections of of an audio recording I can open a digital recording file 5. I can choose suitable sounds to include in a podcast I can discuss sounds that other people combine I can use editing tools to arrange sections of audio 6. I can discuss the features of a digital recording I like I can explain that digital recordings need to be exported to share them I can suggest improvements to a digital recording	1. I can demonstrate how information is shared across the internet I can describe the internet as a network of networks I can discuss why a network needs protecting 2. I can describe networked devices and how they connect I can explain the internet is used to provide many services I can recognise the World Wide Web contains websites and web pages 3. I can describe how to access websites on the WWW I can describe where websites are stored when uploaded to the WWW I can explain the types of media that can be shared on the WWW 4. I can explain internet services can be used to create content online I can explain what media can be found on websites I can recognise I can add content to the WWW 5. I can explain there are rules to protect content I can explain websites and their content are created by people I can suggest who owns the content on websites 6. I can explain not everything on the World Wide Web is true I can explain why I need to think carefully before I share or reshare content I can explain why some information online may not be honest, accurate, or legal
N/C Links	2.2 2.6	2.1 2.2 2.3 2.6	2.5 2.6 2.7	2.1 2.2 2.3	2.5 2.6 2.7	2.4 2.5 2.6 2.7
Big Ideas	CS DI ET	AL ET PG	CM DD ET IT	AL DD PG	CM CS DD DI ET	CM IT NW SS

East Midlands Academy Trust
Computing Curriculum Map – Year 5

Networks	Creating Media	Data and Information	Design and Development	Computing Systems	Impact of Technology	Algorithms	Programming	Effective Use of Tools	Safety and Security

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Name	**Creating Media** **Vector Drawing**	**Programming A** **Selection in Physical Computing**	**Data and Information** **Flat-file Databases**	**Programming B** **Selection in Quizzes**	**Creating Media** **Video Editing**	**Computing systems and networks** **Sharing information**
Learning Objectives	1. To identify that drawing tools can be used to produce different outcomes 2. To create a vector drawing by combining shapes 3. To use tools to achieve a desired effect 4. To recognise that vector drawings consist of layers 5. To group objects to make them easier to work with 6. To evaluate my vector drawing	1. To control a simple circuit connected to a computer 2. To write a program that includes count-controlled loops 3. To explain that a loop can stop when a condition is met 4. To explain that a loop can be used to repeatedly check whether a condition has been met 5. To design a physical project that includes selection 6. To create a program that controls a physical computing project	1. To use a form to record information 2. To compare paper and computer-based databases 3. To outline how grouping and then sorting data allows us to answer questions 4. To explain that tools can be used to select specific data 5. To explain that computer programs can be used to compare data visually 6. To apply my knowledge of a database to ask and answer real-world questions	1. To explain how selection is used in computer programs 2. To relate that a conditional statement connects a condition to an outcome 3. To explain how selection directs the flow of a program 4. To design a program which uses selection 5. To create a program which uses selection 6. To evaluate my program	1. To explain what makes a video effective 2. To identify digital devices that can record video 3. To capture video using a range of techniques 4. To create a storyboard 5. To identify that video can be improved through reshooting and editing 6. To consider the impact of the choices made when making and sharing a video	1. To explain that computers can be connected together to form systems 2. To recognise the role of computer systems in our lives 3. To recognise how information is transferred over the internet 4. To explain how sharing information online lets people in different places work together 5. To contribute to a shared project online 6. To evaluate different ways of working together online
Success Criteria	1. I can discuss how a vector drawing is different from paper-based drawings I can identify the main drawing tools I can recognise that vector drawings are made using shapes 2. I can explain that each element added to a vector drawing is an object I can identify the shapes used to make a vector drawing I can move, resize, and rotate objects I have duplicated 3. I can explain how alignment grids and resize handles can be used to improve consistency I can modify objects to create different effects I can use the zoom tool to help me add detail to my drawings 4. I can change the order of layers in a vector drawing I can identify that each added object creates a new layer in the drawing I can identify which objects are in the front layer or in the back layer of a drawing 5. I can copy part of a drawing by duplicating several objects I can group to create a single object I can reuse a group of objects to further develop my vector drawing 6. I can apply what I have learned about vector drawings I can suggest improvements to a vector drawing I create alternatives to vector drawings	1. I can create a simple circuit and connect it to a microcontroller I can explain what an infinite loop does I can program a microcontroller to make an LED switch on 2. I can connect more than one output component to a microcontroller I can design sequences that use count-controlled loops I can use a count-controlled loop to control outputs 3. I can design a conditional loop I can explain that a condition is either true or I can program a microcontroller to respond to an input 4. I can explain that a condition being met can start an action I can identify a condition and an action in my project I can use selection (an 'if…then…' statement) to direct the flow of a program 5. I can create a detailed drawing of my project I can describe what my project will do I can identify a real-world example of a condition starting an action 6. I can test and debug my project I can use selection to produce an intended outcome I can write an algorithm that describes what my model will do	1. I can create multiple questions about the same field I can explain how information can be recorded I can order, sort, and group my data cards 2. I can choose which field to sort data by to answer a given question I can explain what a 'field' and a 'record' is in a database I can navigate a flat-file database to compare different views of information 3. I can combine grouping and sorting to answer more specific questions I can explain how information can be grouped I can group information to answer questions 4. I can choose multiple criteria to answer a given question I can choose which field and value are required to answer a given question I can outline how 'AND' and 'OR' can be used to refine data selection 5. I can explain the benefits of using a computer to create graphs I can refine a chart by selecting a particular filter I can select an appropriate chart to visually compare data 6. I can ask questions that will need more than one field to answer I can present my findings to a group I can refine a search in a real-world context	1. I can identify conditions in a program I can modify a condition in a program I can recall how conditions are used in selection 2. I can create a program with different outcomes using selection I can identify the condition and outcomes in an 'if… then… else…' statement I can use selection in an infinite loop to check a condition 3. I can design the flow of a program which contains 'if… then… else…' I can explain that program flow can branch according to a condition I can show that a condition can direct program flow in one of two ways 4. I can identify the outcome of user input in an algorithm I can outline a given task I can use a design format to outline my project 5. I can implement my algorithm to create the first section of my program I can share my program with others I can test my program 6. I can extend my program further I can identify the setup code I need in my program I can identify ways the program could be improved	1. I can compare features in different videos I can explain that video is a visual media format I can identify features of videos 2. I can experiment with different camera angles I can identify and find features on a digital video recording device I can make use of a microphone 3. I can capture video using a range of filming techniques I can review how effective my video is I can suggest filming techniques for a given purpose 4. I can create and save video content I can decide which filming techniques I will use I can outline the scenes of my video 5. I can explain how to improve a video by reshooting and editing I can select the correct tools to make edits to my video I can store, retrieve, and export my recording to a computer 6. I can evaluate my video and share my opinions I can make edits to my video and improve the final outcome I can recognise that my choices when making a video will impact on the quality of the final outcome	1. I can describe that a computer system features inputs, processes, and outputs I can explain that computer systems communicate with other devices I can explain that systems are built using a number of parts 2. I can explain the benefits of a given computer system I can identify tasks that are managed by computer systems I can identify the human elements of a computer system 3. I can explain that data is transferred over networks in packets I can explain that networked digital devices have unique addresses I can recognise that data is transferred using agreed methods 4. I can explain that the internet allows different media to be shared I can recognise that connected digital devices can allow us to access shared files stored online I can send information over the internet in different ways 5. I can compare working online with working offline I can make thoughtful suggestions on my group's work I can suggest strategies to ensure successful group work 6. I can explain how the internet enables effective collaboration I can identify different ways of working together online I can recognise that working together on the internet can be public or private
N/C Links	2.6	2.1 2.2 2.3 2.6	2.5 2.6	2.1 2.2 2.3 2.6	2.5 2.6 2.7	2.1 2.2 2.4 2.6 2.7
Big Ideas	CM DD DI ET	CS DD PG	DD DI ET	AL DD PG	CM CS DD ET SS	CS DD ET IT NW

East Midlands Academy Trust
Computing Curriculum Map – Year 6

Networks	Creating Media	Data and Information	Design and Development	Computing Systems	Impact of Technology	Algorithms	Programming	Effective Use of Tools	Safety and Security

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Name	Programming A Variable in Games	Computing Systems and Networks Communication	Creating Media Web Page Creation	Programming B Sensing	Data and Information Spreadsheets	Creating Media 3D modelling
Learning Objectives	1. To define a 'variable' as something that is changeable 2. To explain why a variable is used in a program 3. To choose how to improve a game by using variables 4. To design a project that builds on a given example 5. To use my design to create a project 6. To evaluate my project	1. To identify how to use a search engine 2. To describe how search engines select results 3. To explain how search results are ranked 4. To recognise why the order of results is important, and to whom 5. To recognise how we communicate using technology 6. To evaluate different methods of online communication	1. To review an existing website and consider its structure 2. To plan the features of a web page 3. To consider the ownership and use of images (copyright) 4. To recognise the need to preview pages 5. To outline the need for a navigation path 6. To recognise the implications of linking to content owned by other people	1. To create a program to run on a controllable device 2. To explain that selection can control the flow of a program 3. To update a variable with a user input 4. To use an conditional statement to compare a variable to a value 5. To design a project that uses inputs and outputs on a controllable device 6. To develop a program to use inputs and outputs on a controllable device	1. To create a program to run on a controllable device 2. To explain that selection can control the flow of a program 3. To update a variable with a user input 4. To use an conditional statement to compare a variable to a value 5. To design a project that uses inputs and outputs on a controllable device 6. To develop a program to use inputs and outputs on a controllable device	1. To use a computer to create and manipulate three-dimensional (3D) digital objects 2. To compare working digitally with 2D and 3D graphics 3. To construct a digital 3D model of a physical object 4. To identify that physical objects can be broken down into a collection of 3D shapes 5. To design a digital model by combining 3D objects 6. To develop and improve a digital 3D model
Success Criteria	1. I can explain that the way that a variable changes can be defined I can identify examples of information that is variable I can identify that variables can hold numbers or letters 2. I can explain that a variable has a name and a value I can identify a program variable as a placeholder in memory for a single value I can recognise that the value of a variable can be changed 3. I can decide where in a program to change a variable I can make use of an event in a program to set a variable I can recognise that the value of a variable can be used by a program 4. I can choose the artwork for my project I can create algorithms for my project I can explain my design choices 5. I can choose a name that identifies the role of a variable I can create the artwork for my project I can test the code that I have written 6. I can extend my game further using more variables I can identify ways that my game could be improved I can share my game with others	1. I can compare results from different search engines I can complete a web search to find specific information I can refine my search 2. I can explain why we need tools to find things online I can recognise the role of web crawlers in creating an index I can relate a search term to the search engine's index 3. I can explain that a search engine follows rules to rank relevant pages I can explain that search results are ordered I can suggest some of the criteria that a search engine checks to decide on the order of results 4. I can describe some of the ways that search results can be influenced I can explain how search engines make money I can recognise some of the limitations of search engines 5. I can choose methods of communication to suit particular purposes I can explain the different ways in which people communicate I can identify that there are a variety of ways of communicating over the internet 6. I can compare different methods of communicating on the internet I can decide when I should and should not share I can explain that communication on the internet may not be private	1. I can discuss the different types of media used on websites I can explore a website I know that websites are written in HTML 2. I can draw a web page layout that suits my purpose I can recognise the common features of a web page I can suggest media to include on my page 3. I can describe what is meant by the term 'fair use' I can find copyright-free images I can say why I should use copyright-free images 4. I can add content to my own web page I can evaluate what my web page looks like on different devices and suggest/make edits I can preview what my web page looks like 5. I can describe why navigation paths are useful I can explain what a navigation path is I can make multiple web pages and link them using hyperlinks 6. I can create hyperlinks to link to other people's work I can evaluate the user experience of a website I can explain the implication of linking to content owned by others	1. I can apply my knowledge of programming to a new environment I can test my program on an emulator I can transfer my program to a controllable device 2. I can determine the flow of a program using selection I can identify examples of conditions in the real world I can use a variable in an if, then, else statement to select the flow of a program 3. I can experiment with different physical inputs I can explain that if you read a variable, the value remains I can use a condition to change a variable 4. I can explain the importance of the order of conditions in else, if statements I can modify a program to achieve a different outcome` I can use an operand (e.g. <>=) in an if, then statement 5. I can decide what variables to include in a project I can design the algorithm for my project I can design the program flow for my project 6. I can create a program based on my design I can test my program against my design I can use a range of approaches to find and fix bugs	1. I can answer questions from an existing data set I can ask simple relevant questions which can be answered using data I can explain the relevance of data headings 2. I can apply an appropriate number format to a cell I can build a data set in a spreadsheet application I can explain what an item of data is 3. I can construct a formula in a spreadsheet I can explain the relevance of a cell's data type I can identify that changing inputs changes outputs 4. I can apply a formula to multiple cells by duplicating it I can create a formula which includes a range of cells I can recognise that data can be calculated using different operations 5. I can apply a formula to calculate the data I need to answer questions I can explain why data should be organised I can use a spreadsheet to answer questions 6. I can produce a graph I can suggest when to use a table or graph I can use a graph to show the answer to questions	1. I can discuss the similarities and differences between 2D and 3D shapes I can explain why we might represent 3D objects on a computer I can select, move, and delete a digital 3D shape 2. I can change the colour of a 3D object I can identify how graphical objects can be modified I can resize a 3D object 3. I can position 3D objects in relation to each other I can rotate a 3D object I can select and duplicate multiple 3D objects 4. I can create digital 3D objects of an appropriate size I can group a digital 3D shape and a placeholder to create a hole in an object I can identify the 3D shapes needed to create a model of a real-world object 5. I can choose which 3D objects I need to construct my model I can modify multiple 3D objects I can plan my 3D model 6. I can decide how my model can be improved I can evaluate my model against a given criterion I can modify my model to improve it
N/C Links	2.1 2.2 2.3 2.6	2.1 2.4. 2.5 2.6 2.7	2.5 2.6 2.7	2.1 2.2 2.3 2.6	2.6	2.6 2.7
Big Ideas	DD PG	CS ET IT NW DI	CM DD ET IT NW SS	CS DD PG	CM DI ET PG	CM DD ET

Computing Rocket Words

East Midlands Academy Trust

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	Programming A - Moving a Robot AL DD IT PG	Creating Media – Making Music CM DD ET	Data and Information – Branching Databases DD DI ET	Data Information – Data Logging CS DI ET	Creating Media – Vector Drawing CM DD DI ET	Programming A – variables in games DD PG
	Instructions	Feelings/emotions	Database	Data / Table	Vector / Move	Variable / Set
	Command	Dynamics	Attribute	Logged / Interview	Drawing tools / Modify	Change / Program
	Algorithm	Pitch	Value	Data Logger	Toolbar / Align	Debug / Algorithm
	Directions	Tempo	Questions	Data Point	Object / Reflection	Project / Design
	Program	Rhythm	Table	Collection	Rotate / Zoom	Test
	Left	Pulse	Objects	Analyse	Colour / Layers	Name
	Right		Variety	Review	Resize / Group	Value
	Turn			Conclusion	Order / Ungroup	Code
Autumn 2	Creating Media – Digital Painting CM DD ET	Data and Information - Pictograms DD ET SS	Creating Media – Stop Frame Animation CM DD ET	Programming A – Repetition in Shapes AL ET PG	Programming A – Selection in physical computing CS DD PG	Computing systems and networks – Internet communication CS ET IT NW DI
	Tool	Organise	Animation	Turtle / Code Snippet	Microcontroller / LED	Search / Links
	Brush	Data	Flip Book	Commands / Algorithm	Motor / Condition	Search Engine / Content Creator
	Undo	Tally Chart	Media	Pattern	Connection / Crocodile Clips	Refine / Selection
	Erase	Votes	Transition	Repeat /Repetition	Infinite loop / Program	Index / Public
	Shape	Group	Onion skinning	Count-controlled loop	Components	Web Crawler / Private
	Fill	Pictogram	Consistency	Trace	Count-controlled loop	Bot / One-to-one/many
	Pictures	Block Diagram		Debug	Repetition	Ranking
	Evaluate	Sharing		Procedure	Debug	Optimisation
Spring 1	Data and Information – Grouping Data DI	Programming A – Robot Algorithms AL DD PG	Programming A – Sequencing Sounds AL CM DD ET PG	Creating Media – Photo Editing CM DD ET IT	Data and Information – Flat-File Databases DD DI ET	Creating Media – Webpage creation CM DD ET IT NW SS
	Object	Instruction	Programming	Image / Arrange	Database / Record	Website / Media
	Label	Sequence	Background/Backdrop	Edit / Crop	Filed / Criteria	Web page / Subpage
	Group	Algorithm	Costume	Undo	Search	Browser / Copyright
	Search	Program	Stage	Adjustments	Value	Media / Fair use
	Count/Tally	Prediction	Sprite	Illustrator	Record	HTML / Home page
	Value / Data set	Debugging	Event	Layer	Graph	Navigation / Hyperlink
	Most / Fewest	Decomposition	Task	Elements	Chart	Embed / External Link
	Least / The same		Code	Border	Presentation	Header / Device
Spring 2	Programming B – Programming Animations AL DD PG	Creating Media – Digital Photography CM CS	Creating Media – Desktop Publishing DD ET CM	Programming B – Repetition in Games DD ET IT AL DD	Programming B – Selection in quizzes PG AL DD PG CS	Programming B - Sensing DD PG AL DD
	Algorithm	Device / Photography	Text	Code	Selection / Condition	Micro:bit / Variable
	Sprite	Capture	Image	Loop / Infinite Loop	True / False	MakeCode / Random
	Command	Image	Communicate	Repeat	Algorithm / Program	Input / If then else
	Programming	Digital	Font	Value	Count-controlled loop	Process / Selection
	Programming area	Framing	Copy	Animate	Debug	Output / Accelerometer
	Block	Subject	Paste	Event Block	Implement	USB / Value
	Background	Editing	Publish	Modify	Outcome	Trace / Sensing
	Effect	Filter		Duplicate	Test/Run	Condition
Summer 1	Creating Media – Digital Writing CM DI ET	Programming B – Programming Quizzes DD PG	Programming B – Events and Actions in Programs DD ET PG	Creating Media – Audio Editing CM CS DD DI ET	Creating Media – Video Editing CM CS DD ET SS	Data and Information – Introduction to spreadsheets CM DI ET PG
	Word Processor	Sequence / Program	Algorithm	Audio	Video / Audio	Data / Range
	Keyboard/Keys	Run	Sprite	Input device	Panning / Close Up	Structure / Duplicate
	Type	Start	Logic	Output device	Static / Tilt	Spreadsheet / Sigma
	Bold	Sprite	Pen up/down	Microphone	Zoom / Storyboard	Cell / Chart
	Italic	Algorithm	Debug	Headphones	Import	Cell reference
	Underline	Design	Actions	Speaker / Edit	Trim	Data item
	Font	Debug	Events	Playback / Export	Clip	Format
	Format	Evaluate	Setup	Evaluate / Feedback	reshoot	Formula
Summer 2	Computing Systems and Networks – Technology Around us CS ET IT SS	Computing Systems and Networks – Technology around us CS IT NW SS	Computing Systems and Networks – Connecting Computers CS IT NW	Computing Systems and Networks – The Internet CM IT NW SS	Computing Systems and Networks – Sharing Information CS DD ET IT NW	Creating media – 3D modelling CM DD ET
	Technology	Information Technology	Digital Device	Internet / Router	System	Select / Rotate
	Computer	Device	Non-digital	Security / Network	Connection	Move / Duplicate
	Mouse	Monitor	Input Process	Website / Web page	Process	Perspective / Modify
	Trackpad	Keyboard	Output	Web address / Information	Input / Output	Handles / Placeholder
	Double click	Online Safety	Network Cables	Web browser	Explore	Resize / Hollow
		Passwords	Network Sockets	Sharing	Remix / Reuse	Life / Lower
		Protect		Accurate	Collaboration	Recolour / Construct

Computing Glossary

Term	Key Stage	Definition
Algorithm	1&2	A precise set of ordered steps that can be followed by a human or a computer to achieve a task
Attribute (property)	1&2	A word or a phrase that can be used to describe an **object** such as its colour, size, or price
Browser	2	SEE: Web browser
Code	1&2	The **commands** that a **computer** can **run**
Code snippet	1&2	A section of a **program** viewed in isolation
Command	1&2	A single instruction that can be used in a **program** to control a **computer**
Computer	1&2	A **programmable** machine that accepts and **processes inputs** and produces **outputs** (input, process, output; IPO)
Computer network	2	A group of interconnected computing devices
Computer system	2	A combination of **hardware** and **software** that can have **data input** to it, which it then **processes** and **outputs**. It can be **programmed** to perform a variety of tasks.
Condition	2	A statement that can be either True or False
Condition-controlled loop	2	SEE: Loop (condition-controlled)
Count-controlled loop	2	SEE: Loop (count-controlled)
Data	1&2	A letter, word, number etc. that has been collected for a purpose, but **stored** without context
Data set	2	A collection of related **data**
Debugging	1&2	The process of finding and correcting errors in a **program**
Decompose	2	To break down a task into smaller, more achievable steps
Digital device	2	A computer or a device with a computer inside that has been programmed for a specific task
Domain name	2	The part of a **website**'s **URL** that is user friendly and identifies that it is under the control of a particular person or organisation e.g. raspberrypi.org
Execute (run)	2	SEE: Run
Hardware	2	The physical parts of a **computer system**
HTML (HyperText Markup Language)	2	A standardised language used to define the structure of **web pages**
Hyperlink	2	(Also: link, weblink) Text or media that when clicked, takes the user to another specified location (**URL**)
Infinite loop	2	SEE: Loop (infinite)
Information	1&2	**Data** put into a context that provides meaning
Information technology	1	The study, use, and development of **computer systems** for storing, processing, retrieving, and sending information
Input	2	**Data** that is sent to a **program** to be **processed**
Input device	2	A piece of **hardware** used to control, or send **data** to, a **computer**
Internet	2	The global system of interconnected **computer networks**
Loop	2	(**Count-controlled**, **condition-controlled**, or **infinite**) **Commands** that repeatedly **run** a defined section of **code**
Loop (condition-controlled)	2	A **command** that repeatedly **runs** a defined section of **code** until a **condition** is met
Loop (count-controlled)	2	A **command** that repeatedly **runs** a defined section of **code** a predefined number of times
Loop (infinite)	2	A **command** that repeatedly **runs** a defined section of **code** indefinitely
Network	2	SEE: Computer network
Object	1	Something that can be named and has other **attributes** (**properties**), which can be labelled
Object	2	Something that is uniquely identifiable and has **attributes**
Output	2	The result of **data processed** by a **computer**
Output device	2	A piece of **hardware that** is controlled by **outputs** from a **computer**
Procedure	2	A named set of **commands** that can be called multiple times throughout a **program**. This type of **subroutine** does not return a value.
Process	2	A **program**, or part of a **program**, that is running on a **computer**
Program	1&2	A set of ordered **commands** that can be **run** by a **computer** to complete a task
Property (attribute)	1	A word or a phrase that can be used to describe an **object** such as its colour, size, or price
Repetition	2	Part of a **program** where one or more **commands** are **run** multiple times in a **loop**
Router	2	A device that manages the flow of data between **computer networks**
Run (execute)	1&2	To action the **commands** in a **program**
Selection	2	Part of a **program** where if a **condition** is met, then a set of **commands** is **run**
Server	2	A networked **computer** that manages, **stores,** and provides **data** such as files to other computers
Software	2	The **programs** used to control **computers** and perform specific tasks
Stored (data)	2	**Data** kept digitally so that it can be accessed by a computer
Subroutine	2	A named sequence of **commands** designed to perform a specific task
Switch (network switch)	2	A device that manages the flow of **data packets** within a **computer network**
Technology	1	The use of scientific knowledge for practical purposes
URL (Uniform Resource Locator)	2	The address of a file on the **internet**
Variable	2	A named piece of **data** (often a number or text) **stored** in a computer's memory, which can be accessed and changed by a **computer program**
Web	2	SEE: WWW (World Wide Web)
Web address	2	SEE: URL (Uniform Resource Locator)
Web browser	2	A **program** used to view, navigate, and interact with **web pages**
Web page	2	A **HTML** document viewed using a **web browser**
Website	2	A collection of interlinked **web pages**, stored under a single **domain**
WiFi	2	A technology that allows devices to wirelessly access a **network** and transfer **data**
WAP (Wireless Access Point)	2	A network device that allows wireless computing devices to connect to a wired **network**
WWW (World Wide Web)	2	A service provided via **the internet** that allows access to **web pages** and other shared files

East Midlands Academy Trust
Online Safety Curriculum Map – Progression (1)

		Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	Self-Image and Identity	• I can recognise, online or offline, that anyone can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset.	• I can recognise that there may be people online who could make someone feel sad, embarrassed or upset. • If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust and how they can help.	• I can explain how other people may look and act differently online and offline. • I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened; I can give examples of how they might get help.	• I can explain what is meant by the term 'identity' • I can explain how people can represent themselves in different ways online. • I can explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why.	• I can explain how my online identity can be different to my offline identity. • I can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them. • I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this	• I can explain how identity online can be copied, modified or altered. • I can demonstrate how to make responsible choices about having an online identity, depending on context	• I can identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online. • I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline • I can explain the importance of asking until I get the help needed
Autumn 2	Online Bullying	• I can describe ways that some people can be unkind online. • I can offer examples of how this can make others feel.	• I can describe how to behave online in ways that do not upset others and can give examples.	• I can explain what bullying is, how people may bully others and how bullying can make someone feel. • I can explain why anyone who experiences bullying is not to blame. • I can talk about how anyone experiencing bullying can get help.	• I can describe appropriate ways to behave towards other people online and why this is important. • I can give examples of how bullying behaviour could appear online and how someone can get support.	• I can recognise when someone is upset, hurt or angry online. • I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). • I can explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them (their reputation).	• I can recognise online bullying can be different to bullying in the physical world and can describe some of those differences. • I can describe how what one person perceives as playful joking and teasing (including 'banter') might be experienced by others as bullying. • I can explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult. • I can identify a range of ways to report concerns and access support both in school and at home about online bullying. • I can explain how to block abusive users. • I can describe the helpline services which can help people experiencing bullying, and how to access them (e.g. Childline or The Mix)	• can describe how to capture bullying content as evidence (e.g. screen-grab, URL, profile) to share with others who can help me • I can explain how someone would report online bullying in different contexts.
Spring 1	Privacy and Security	• I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location) • I can describe who would be trustworthy to share this information with; I can explain why they are trusted.	• I can explain that passwords are used to protect information, accounts and devices. • I can recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names). • I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others.	• I can explain how passwords can be used to protect information, accounts and devices. • I can explain and give examples of what is meant by 'private' and 'keeping things private' • I can describe and explain some rules for keeping personal information private (e.g. creating and protecting passwords) • I can explain how some people may have devices in their homes connected to the internet and give examples (e.g. lights, fridges, toys, televisions)	• I can describe simple strategies for creating and keeping passwords private. • I can give reasons why someone should only share information with people they choose to and can trust. I can explain that if they are not sure or feel pressured then they should tell a trusted adult. • I can describe how connected devices can collect and share anyone's information with others	• I can describe strategies for keeping personal information private, depending on context. • I can explain that internet use is never fully private and is monitored, e.g. adult supervision • I can describe how some online services may seek consent to store information about me; I know how to respond appropriately and who I can ask if I am not sure. • I know what the digital age of consent is and the impact this has on online services asking for consent	• I can explain what a strong password is and demonstrate how to create one. • I can explain how many free apps or services may read and share private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others. • I can explain what app permissions are and can give some examples.	• I can describe effective ways people can manage passwords (e.g. storing them securely or saving them in the browser) • can explain what to do if a password is shared, lost or stolen. • I can describe how and why people should keep their software and apps up to date, e.g. auto updates. • I can describe simple ways to increase privacy on apps and services that provide privacy settings. • I can describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g. scams, phishing) • I know that online services have terms and conditions that govern their use
	Copyright and Ownership	• I know that work I create belongs to me • I can name my work so that others know it belongs to me.	• I can explain why work I create using technology belongs to me • I can say why it belongs to me (e.g. 'I designed it' or 'I filmed it''). • I can save my work under a suitable title / name so that others know it belongs to me (e.g. filename, name on content) • I understand that work created by others does not belong to me even if I save a copy	• I can recognise that content on the internet may belong to other people. • I can describe why other people's work belongs to them	• I can explain why copying someone else's work from the internet without permission isn't fair and can explain what problems this might cause.	• When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it. • I can give some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images	• I can assess and justify when it is acceptable to use the work of others • I can give examples of content that is permitted to be reused and know how this content can be found online.	• I can demonstrate the use of search tools to find and access online content which can be reused by others • I can demonstrate how to make references to and acknowledge sources I have used from the internet.

East Midlands Academy Trust
Online Safety Curriculum Map – Progression (2)

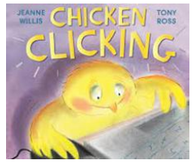
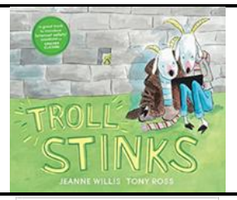
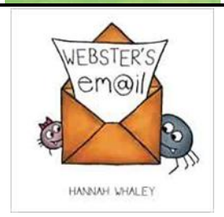
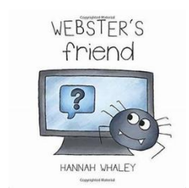
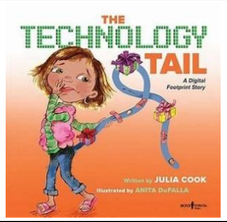
		Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Spring 2	Health, Well-Being and Lifestyle	• I can identify rules that help keep us safe and healthy in and beyond the home when using technology. • I can give some simple examples of these rules.	• I can explain rules to keep myself safe when using technology both in and beyond the home	• I can explain simple guidance for using technology in different environments and settings e.g. accessing online technologies in public places and the home environment • I can say how those rules / guides can help anyone accessing online technologies.	• I can explain why spending too much time using technology can sometimes have a negative impact on anyone, e.g. mood, sleep, body, relationships; I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged (e.g. doing homework, games, films, videos) • I can explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g. age restricted gaming or web sites)	• I can explain how using technology can be a distraction from other things, in both a positive and negative way. • I can identify times or situations when someone may need to limit the amount of time, they use technology e.g. I can suggest strategies to help with limiting this time.	• I can describe ways technology can affect health and well-being both positively (e.g. mindfulness apps) and negatively • I can describe some strategies, tips or advice to promote health and wellbeing with regards to technology • I recognise the benefits and risks of accessing information about health and well-being online and how we should balance this with talking to trusted adults and professionals. • I can explain how and why some apps and games may request or take payment for additional content (e.g. in-app purchases, lootboxes) and explain the importance of seeking permission from a trusted adult before purchasing	• I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose • I recognise and can discuss the pressures that technology can place on someone and how / when they could manage this • I can recognise features of persuasive design and how they are used to keep users engaged (current and future use). • I can assess and action different strategies to limit the impact of technology on health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise)
Summer 1	Online Relationships	• I can recognise some ways in which the internet can be used to communicate. • I can give examples of how I (might) use technology to communicate with people I know.	• I can give examples of when I should ask permission to do something online and explain why this is important. • I can use the internet with adult support to communicate with people I know (e.g. video call apps or services). • I can explain why it is important to be considerate and kind to people online and to respect their choices. • I can explain why things one person finds funny or sad online may not always be seen in the same way by others	• I can give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky. (e.g. email, online gaming, a pen-pal in another school / country) • I can explain who I should ask before sharing things about myself or others online. • I can describe different ways to ask for, give, or deny my permission online and can identify who can help me if I am not sure. • I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do. • I can identify who can help me if something happens online without my consent. • I can explain how it may make others feel if I do not ask their permission or ignore their answers before sharing something about them online. • I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online.	• I can describe ways people who have similar likes and interests can get together online. • I can explain what it means to 'know someone' online and why this might be different from knowing someone offline. • I can explain what is meant by 'trusting someone online', why this is different from 'liking someone online', and why it is important to be careful about who to trust online including what information and content they are trusted with. • I can explain why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried. • I can explain how someone's feelings can be hurt by what is said or written online. • I can explain the importance of giving and gaining permission before sharing things online; how the principles of sharing online is the same as sharing offline e.g. sharing images and videos.	• I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms). • I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours. • I can explain how content shared online may feel unimportant to one person but may be important to other people's thoughts feelings and beliefs.	• I can give examples of technology specific forms of communication (e.g. emojis, memes and GIFs) • I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my / our fault • I can describe some of the ways people may be involved in online communities and describe how they might collaborate constructively with others and make positive contributions. (e.g. gaming communities or social media groups). • I can explain how someone can get help if they are having problems and identify when to tell a trusted adult. • I can demonstrate how to support others (including those who are having difficulties) online.	• I can explain how sharing something online may have an impact either positively or negatively. • I can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not. • I can describe how things shared privately online can have unintended consequences for others. e.g. screen-grabs • I can explain that taking or sharing inappropriate images of someone (e.g. embarrassing images), even if they say it is okay, may have an impact for the sharer and others; and who can help if someone is worried about this

East Midlands Academy Trust
Online Safety Curriculum Map – Progression (3)

		Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Summer 2	Online Reputation	• I can identify ways that I can put information on the internet.	• I can recognise that information can stay online and could be copied. • I can describe what information I should not put online without asking a trusted adult first.	• I can explain how information put online about someone can last for a long time. • I can describe how anyone's online information could be seen by others. • I know who to talk to if something has been put online without consent or if it is incorrect.	• I can explain how to search for information about others online. • I can give examples of what anyone may or may not be willing to share about themselves online. I can explain the need to be careful before sharing anything personal. • I can explain who someone can ask if they are unsure about putting something online	• I can describe how to find out information about others by searching online. • I can explain ways that some of the information about anyone online could have been created, copied or shared by others.	• I can search for information about an individual online and summarise the information found. • I can describe ways that information about anyone online can be used by others to make judgments about an individual and why these may be incorrect	• I can explain the ways in which anyone can develop a positive online reputation. • I can explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity.
	Managing Online Information	• I can talk about how to use the internet as a way of finding information online. • I can identify devices I could use to access information on the internet	• I can give simple examples of how to find information using digital technologies, e.g. search engines, voice activated searching • I know / understand that we can encounter a range of things online including things we like and don't like as well as things which are real or make believe / a joke. • I know how to get help from a trusted adult if we see content that makes us feel sad, uncomfortable worried or frightened.	• I can use simple keywords in search engines. • I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections) • I can explain what voice activated searching is and how it might be used, and know it is not a real person (e.g. Alexa, Google Now, Siri) • I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real'. • I can explain why some information I find online may not be real or true.	• I can demonstrate how to use key phrases in search engines to gather accurate information online. • I can explain what autocomplete is and how to choose the best suggestion. • I can explain how the internet can be used to sell and buy things. • I can explain the difference between a 'belief', an 'opinion' and a 'fact. and can give examples of how and where they might be shared online, e.g. in videos, memes, posts, news stories etc • I can explain that not all opinions shared may be accepted as true or fair by others (e.g. monsters under the bed). • I can describe and demonstrate how we can get help from a trusted adult if we see content that makes us feel sad, uncomfortable worried or frightened.	• I can analyse information to make a judgement about probable accuracy and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others. • I can describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy (e.g. social media, image sites, video sites). • I can describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online • I can explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true. • I can explain that technology can be designed to act like or impersonate living things (e.g. bots) and describe what the benefits and the risks might be. • I can explain what is meant by fake news e.g. why some people will create stories or alter photographs and put them online to pretend something is true when it isn't	• I can explain the benefits and limitations of using different types of search technologies e.g. voice-activation search engine. I can explain how some technology can limit the information I aim presented with e.g. voice-activated searching giving one result. • I can explain what is meant by 'being sceptical'; I can give examples of when and why it is important to be 'sceptical' • I can evaluate digital content and can explain how to make choices about what is trustworthy e.g. differentiating between adverts and search results • I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence • I can identify ways the internet can draw us to information for different agendas, e.g. website notifications, pop-ups, targeted ads • I can describe ways of identifying when online content has been commercially sponsored or boosted, (e.g. by commercial companies or by vloggers, content creators, influencers) • I can explain what is meant by the term 'stereotype', how 'stereotypes' are amplified and reinforced online, and why accepting 'stereotypes' may influence how people think about others. • I can describe how fake news may affect someone's emotions and behaviour, and explain why this may be harmful • I can explain what is meant by a 'hoax'. I can explain why someone would need to think carefully before they share.	• I can explain how search engines work and how results are selected and ranked. • I can explain how to use search technologies effectively. • I can describe how some online information can be opinion and can offer examples. • I can explain how and why some people may present 'opinions' as 'facts'; why the popularity of an opinion or the personalities of those promoting it does not necessarily make it true, fair or perhaps even legal. • I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how someone might encounter these online (e.g. advertising and 'ad targeting' and targeting for fake news). • I understand the concept of persuasive design and how it can be used to influences peoples' choices. • I can demonstrate how to analyse and evaluate the validity of 'facts' and information and I can explain why using these strategies are important • I can explain how companies and news providers target people with online news stories they are more likely to engage with and how to recognise this • I can describe the difference between online misinformation and dis-information. • I can explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen (e.g. the sharing of misinformation or disinformation) • I can identify, flag and report inappropriate content

Every child deserves to be the best they can be

East Midlands Academy Trust
Online Safety Assembly Map

Term & Focus		Text			Key Questions
Autumn 1	Self-image and Identity		Chicken Clickin – Making Purchases online / meeting up with strangers you have met on the internet. By Jeanne Willis and Tony Ross	Chicken Clicking explores the story of a little chick that sneaks into the farmer's house at night and buys herself and her farmyard friends lots of gifts. Chicken Clicking also uses the internet to go online and meet a new friend but all is not as it seems! This story is a 21st century version of the "Chicken Licken" fairy story, a familiar tale for both adults and children and provides opportunities for discussion about keeping safe online.	**How can we use text messages and emails safely?** Key Questions: • Why do we use emails and text messages? • Who uses them? • Why are they better than writing a letter or ringing someone? • What are the dangers of using text message or email? • What apps should we not be using at our age to communicate via text? • Why – what are the dangers? • What should you do if someone sends you a message that makes you feel uncomfortable?
Autumn 2	Online Bullying		Troll Stinks By Jeanne Willis and Tony Ross	Billy Goat and his best friend Cyril are messing about with the farmer's mobile phone, taking selfies and playing games… until they find the number for a troll. Their Grandpa Gruff says trolls are bad, so Billy and Cyril decide to get their own back by sending mean messages. After all, trolls really do stink! Don't they? This story is a 21st century version of the "Billy Goat's Gruff" fairy story, a familiar tale for both adults and children and provides opportunities for discussion about keeping safe online. Troll Stinks can be used to discuss issues such as cyberbullying, being kind online and taking/sharing pictures.	**How can we be responsible contributors to online content?** Key Questions: • What is online content? • Why would we contribute to this? • Do comments count as content? • How can we be responsible when adding to online content? • Self-reflect on previous behaviour – was it responsible?
Spring 1	Privacy and Security Copyright & Ownership		Webster's Email – Sharing pictures online. By Hannah Whaley	Webster's Email is a rhyming story that explores the idea of sharing content online and how quickly things can be shared. Webster the little spider emails a funny picture of his sister but it quickly is forwarded to lots of people and throughout the book, children can count how many people end up seeing the picture. This book encourages children to be aware that once a picture has been shared online, it can't' always be removed and it is very hard to control. Webster's Email can be used to discuss email etiquette, over sharing, being kind online, taking/sharing photos, meeting strangers online and using technology responsibly.	**What information should we share online?** Key Questions: • Why would we want to share information online? • What positive uses does the internet have for sharing information? • When have you used the internet to find information? • What information should you share about yourself online? Why? • Where would you share this? • Why do some people choose to share more? • What are the risks of this?
Spring 2	Health, well-being, and lifestyle		Webster's Bedtime By Hannah Whaley	Webster's Bedtime is a rhyming story which explores the need for us all to switch off from screens and internet, especially at bedtime. The story acknowledges that this is often easier said than done and enables children to think about the impact technology can have. Webster's Bedtime can be used to discuss using technology responsibly, screen time, balanced use, gaming and using mobile phones and tablets responsibly.	**How can we take care of our health and well-being while online?** Key Questions: • Why was it hard for Webster to sleep? • Why should we think about the amount of time we spend on screens? • What impact does spend too much time online/on screens have? • What does balanced use of screens mean? • What should you do if you are struggling to sleep like Webster? • How do we use technology safely to take care of our health and well-being?
Summer 1	Online Relationships		Webster's Friend By Hannah Whaley	Webster's Friend is a rhyming story that explores the idea of making an online friend. Webster the spider meets a new online friend who he wants to impress but he isn't honest about who he is. Things taking a surprising turn when Webster's new friend wants to meet him! Webster's Friend introduces the concept of online friends to young children and highlights the fact that anyone can lie online due to the anonymity of the internet. Webster's friend can be used to discuss meeting strangers online, gaming, reliability, trust, speaking to an adult and using technology responsibly.	**How should we form online relationships?** Key Questions: • Who should we be friends with online? • How do we be kind to our friends online? • Why would someone want to make an online friend? • What are the dangers of making friends with people we don't know? • What does anonymity mean? • How can we keep ourselves safe when we are chatting online? • How can we trust people who we only know online? • What should you do if someone sends you a message that makes you feel uncomfortable? • Who can help us when something is wrong?
Summer 2	Online Reputation & Managing Online Information		The Technology Tail: A Digital Footprint Story By Julia Cook	A young girl has a frank conversation with her computer, who reveals knowing in detail about all of her online activities. She finds out about having a 'Technology Tail' which gets prettier every time she does something uplifting or kind online and bruised each time she is unsafe or unkind. The book concludes with concrete five rules for safe online behaviour.	**What information should we share online?** Key Questions: • Why? • Why is it so important to be aware of you online use? • What types of information could be stored about you? • What are the rules for safe online behaviour? • How could your online reputation be affected?

East Midlands Academy Trust
Statutory RSE Curriculum Map – Online Relationships (1)

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
R20 That people sometimes behave differently online, including by pretending to be someone they're not	**Summer 1** • I can recognise some ways in which the internet can be used to communicate. • I can give examples of how I (might) use technology to communicate with people I know.	**Autumn 1** • I can recognise that there may be people online who could make someone feel sad, embarrassed or upset. • If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust and how they can help.	**Autumn 1** • I can explain how other people may look and act differently online and offline. • I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened; I can give examples of how they might get help.	**Autumn 1** • I can explain what is meant by the term 'identity' • I can explain how people can represent themselves in different ways online. • I can explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why. **Summer 1** • I can explain what it means to 'know someone' online and why this might be different from knowing someone offline. • I can explain what is meant by 'trusting someone online', why this is different from 'liking someone online', and why it is important to be careful about who to trust online including what information and content they are trusted with.	**Autumn 1** • I can explain how my online identity can be different to my offline identity. • I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this	**Autumn 1** • I can explain how identity online can be copied, modified or altered. • I can demonstrate how to make responsible choices about having an online identity, depending on context	**Autumn 1** • I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline • I can explain the importance of asking until I get the help needed
R21 That the same principles apply to online relationships as to face-to-face relationships, including the importance of respect for others online including when we are anonymous	**Autumn 1** • I can recognise, online or offline, that anyone can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset.	**Summer 1** • I can explain why it is important to be considerate and kind to people online and to respect their choices. • I can explain why things one person finds funny or sad online may not always be seen in the same way by others	**Summer 1** • I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do. • I can identify who can help me if something happens online without my consent. • I can explain how it may make others feel if I do not ask their permission or ignore their answers before sharing something about them online. • I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online.	**Summer 1** • I can explain how someone's feelings can be hurt by what is said or written online. • I can explain the importance of giving and gaining permission before sharing things online; how the principles of sharing online is the same as sharing offline e.g. sharing images and videos.	**Summer 1** • I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours. • I can explain how content shared online may feel unimportant to one person but may be important to other people's thoughts feelings and beliefs.	**Summer 1** • I can describe some of the ways people may be involved in online communities and describe how they might collaborate constructively with others and make positive contributions. (e.g. gaming communities or social media groups). • I can explain how someone can get help if they are having problems and identify when to tell a trusted adult. • I can demonstrate how to support others (including those who are having difficulties) online.	**Summer 1** • I can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not. • I can describe how things shared privately online can have unintended consequences for others. e.g. screen-grabs • I can explain that taking or sharing inappropriate images of someone (e.g. embarrassing images), even if they say it is okay, may have an impact for the sharer and others; and who can help if someone is worried about this
R22 The rules and principles for keeping safe online, how to recognise risks, harmful content and contact, and how to report them	**Spring 2** • 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 of these rules.	**Autumn 1** • If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust and how they can help.	**Autumn 1** • I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened; I can give examples of how they might get help. **Autumn 2** • I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do. • I can identify who can help me if something happens online without my consent. • I can explain how it may make others feel if I do not ask their permission or ignore their answers before sharing something about them online. • I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online.	**Summer 2** • I can describe and demonstrate how we can get help from a trusted adult if we see content that makes us feel sad, uncomfortable worried or frightened.	**Summer 1** • I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours.	**Summer 1** • I can explain how someone can get help if they are having problems and identify when to tell a trusted adult. • I can demonstrate how to support others (including those who are having difficulties) online.	**Autumn 1** • I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline • I can explain the importance of asking until I get the help needed

East Midlands Academy Trust
Statutory RSE Curriculum Map – Online Relationships (2)

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
R23 How to critically consider their online friendships and sources of information including awareness of the risks associated with people they have never met	**Autumn 2** • I can describe ways that some people can be unkind online. I can offer examples of how this can make others feel. **Summer 1** • I can recognise some ways in which the internet can be used to communicate. • I can give examples of how I (might) use technology to communicate with people I know.	**Autumn 2** • I can describe how to behave online in ways that do not upset others and can give examples. **Summer 1** • I can give examples of when I should ask permission to do something online and explain why this is important. • I can use the internet with adult support to communicate with people I know (e.g. video call apps or services). • I can explain why it is important to be considerate and kind to people online and to respect their choices. • I can explain why things one person finds funny or sad online may not always be seen in the same way by others	**Autumn 2** • I can explain what bullying is, how people may bully others and how bullying can make someone feel. **Summer 1** • I can give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky. (e.g. email, online gaming, a pen-pal in another school / country) • I can explain who I should ask before sharing things about myself or others online. • I can describe different ways to ask for, give, or deny my permission online and can identify who can help me if I am not sure. • I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do. • I can identify who can help me if something happens online without my consent. • I can explain how it may make others feel if I do not ask their permission or ignore their answers before sharing something about them online. • I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online.	**Autumn 2** • I can describe appropriate ways to behave towards other people online and why this is important. **Summer 1** • I can describe ways people who have similar likes and interests can get together online. • I can explain what it means to 'know someone' online and why this might be different from knowing someone offline. • I can explain what is meant by 'trusting someone online', why this is different from 'liking someone online', and why it is important to be careful about who to trust online including what information and content they are trusted with. • I can explain why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried. • I can explain how someone's feelings can be hurt by what is said or written online. • I can explain the importance of giving and gaining permission before sharing things online; how the principles of sharing online is the same as sharing offline e.g. sharing images and videos.	**Autumn 2** • I can explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them (their reputation) **Summer 1** • I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms). • I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours. • I can explain how content shared online may feel unimportant to one person but may be important to other people's thoughts feelings and beliefs.	**Autumn 2** • I can recognise online bullying can be different to bullying in the physical world and can describe some of those differences. • I can describe how what one person perceives as playful joking and teasing (including 'banter') might be experienced by others as bullying. • I can explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult. **Summer 1** • I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my / our fault • I can describe some of the ways people may be involved in online communities and describe how they might collaborate constructively with others and make positive contributions. (e.g. gaming communities or social media groups). • I can explain how someone can get help if they are having problems and identify when to tell a trusted adult. • I can demonstrate how to support others (including those who are having difficulties) online.	**Autumn 2** • I can explain how someone would report online bullying in different contexts. **Summer 1** • I can explain how sharing something online may have an impact either positively or negatively. • I can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not. • I can describe how things shared privately online can have unintended consequences for others. e.g. screen-grabs • I can explain that taking or sharing inappropriate images of someone (e.g. embarrassing images), even if they say it is okay, may have an impact for the sharer and others; and who can help if someone is worried about this
R24 How information and data is shared and used online	**Spring 1** • I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location) **Summer 2** • I can talk about how to use the internet as a way of finding information online.	**Spring 1** • I can explain that passwords are used to protect information, accounts and devices. • I can recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names). • I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others. **Summer 2** • I can give simple examples of how to find information using digital technologies, e.g. search engines, voice activated searching	**Spring 1** • I can explain how passwords can be used to protect information, accounts and devices. • I can explain and give examples of what is meant by 'private' and 'keeping things private' • I can describe and explain some rules for keeping personal information private (e.g. creating and protecting passwords) **Summer 2** • I can explain why some information I find online may not be real or true. .	**Spring 1** • I can describe simple strategies for creating and keeping passwords private. • I can give reasons why someone should only share information with people they choose to and can trust. I can explain that if they are not sure or feel pressured then they should tell a trusted adult. • I can describe how connected devices can collect and share anyone's information with others **Summer 2** • I can demonstrate how to use key phrases in search engines to gather accurate information online.	**Spring 1** • I can describe strategies for keeping personal information private, depending on context. • I can explain that internet use is never fully private and is monitored, e.g. adult supervision • I can describe how some online services may seek consent to store information about me; I know how to respond appropriately and who I can ask if I am not sure. **Summer 2** I can analyse information to make a judgement about probable accuracy and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others.	**Spring 1** • I can explain what a strong password is and demonstrate how to create one. • I can explain how many free apps or services may read and share private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others. • I can explain what app permissions are and can give some examples. **Summer 2** • I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence	**Spring 1** • I can describe effective ways people can manage passwords (e.g. storing them securely or saving them in the browser) • can explain what to do if a password is shared, lost or stolen. • I can describe how and why people should keep their software and apps up to date, e.g. auto updates. • I can describe simple ways to increase privacy on apps and services that provide privacy settings. • I can describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g. scams, phishing) I know that online services have terms and conditions that govern their use

East Midlands Academy Trust
Statutory RSE Curriculum Map – Internet Safety & Harms (1)

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
H11 That for most people the internet is an integral part of life and has many benefits.	**Summer 1** • I can recognise some ways in which the internet can be used to communicate. • I can identify devices I could use to access information on the internet.	**Summer 1** • I can use the internet with adult support to communicate with people I know (e.g. video call apps or services).	**Summer 1** • I can describe ways people who have similar likes and interests can get together online.	**Summer 1** • I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms). • I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours.	**Summer 1** • I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms).	**Summer 1** • I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my / our fault • I can describe some of the ways people may be involved in online communities and describe how they might collaborate constructively with others and make positive contributions. (e.g. gaming communities or social media groups).	**Summer 1** • I can explain the ways in which anyone can develop a positive online reputation.
H12 About the benefits of rationing time spent online, the risks of excessive time spent on electronic devices and the impact of positive and negative content online on their own and others' mental and physical wellbeing.	**Spring 2** • 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 of these rules.	**Spring 2** I can explain rules to keep myself safe when using technology both in and beyond the home	**Spring 2** • I can explain simple guidance for using technology in different environments and settings e.g. accessing online technologies in public places and the home environment • I can say how those rules / guides can help anyone accessing online technologies.	**Spring 2** • I can explain why spending too much time using technology can sometimes have a negative impact on anyone, e.g. mood, sleep, body, relationships; I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged (e.g. doing homework, games, films, videos) • I can explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g. age restricted gaming or web sites)	**Spring 2** • I can explain how using technology can be a distraction from other things, in both a positive and negative way. • I can identify times or situations when someone may need to limit the amount of time they use technology e.g. I can suggest strategies to help with limiting this time.	**Spring 2** • I can describe ways technology can affect health and well-being both positively (e.g. mindfulness apps) and negatively • I can describe some strategies, tips or advice to promote health and wellbeing with regards to technology • I recognise the benefits and risks of accessing information about health and well-being online and how we should balance this with talking to trusted adults and professionals.	**Spring 2** • I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose • I recognise and can discuss the pressures that technology can place on someone and how / when they could manage this • I can recognise features of persuasive design and how they are used to keep users engaged (current and future use). • I can assess and action different strategies to limit the impact of technology on health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise)
H13 How to consider the effect of their online actions on others and know how to recognise and display respectful behaviour online and the importance of keeping personal information private.	**Summer 1** • I can give examples of how I (might) use technology to communicate with people I know.	**Summer 1** • I can use the internet with adult support to communicate with people I know (e.g. video call apps or services). • I can explain why it is important to be considerate and kind to people online and to respect their choices. • I can explain why things one person finds funny or sad online may not always be seen in the same way by others	**Summer 1** • I can explain who I should ask before sharing things about myself or others online. • I can describe different ways to ask for, give, or deny my permission online and can identify who can help me if I am not sure. • I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do. • I can identify who can help me if something happens online without my consent. • I can explain how it may make others feel if I do not ask their permission or ignore their answers before sharing something about them online.	**Summer 1** • I can describe ways people who have similar likes and interests can get together online. • I can explain what it means to 'know someone' online and why this might be different from knowing someone offline. • I can explain what is meant by 'trusting someone online', why this is different from 'liking someone online', and why it is important to be careful about who to trust online including what information and content they are trusted with. • I can explain how someone's feelings can be hurt by what is said or written online. • I can explain the importance of giving and gaining permission before sharing things online; how the principles of sharing online are the same as sharing offline e.g. sharing images and videos.	**Summer 1** • I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms). • I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours. • I can explain how content shared online may feel unimportant to one person but may be important to other people's thoughts feelings and beliefs.	**Summer 1** • I can give examples of technology specific forms of communication (e.g. emojis, memes and GIFs) • I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my / our fault • I can describe some of the ways people may be involved in online communities and describe how they might collaborate constructively with others and make positive contributions. (e.g. gaming communities or social media groups).	**Summer 1** • I can explain how sharing something online may have an impact either positively or negatively. • I can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not. • I can describe how things shared privately online can have unintended consequences for others. e.g. screen-grabs • I can explain that taking or sharing inappropriate images of someone (e.g. embarrassing images), even if they say it is okay, may have an impact for the sharer and others; and who can help if someone is worried about this

East Midlands Academy Trust
Statutory RSE Curriculum Map – Internet Safety & Harms (2)

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
H14 Why social media, some computer games and online gaming, for example, are age restricted.				**Spring 2** • I can explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g. age restricted gaming or web sites)			**Spring 2** • I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose
H15 That the internet can also be a negative place where online abuse, trolling, bullying and harassment can take place, which can have a negative impact on mental health.	**Autumn 2** • I can describe ways that some people can be unkind online. • I can offer examples of how this can make others feel.	**Autumn 2** • I can describe how to behave online in ways that do not upset others and can give examples.	**Autumn 2** • I can explain what bullying is, how people may bully others and how bullying can make someone feel. • I can explain why anyone who experiences bullying is not to blame. I can talk about how anyone experiencing bullying can get help.	**Autumn 2** • I can describe appropriate ways to behave towards other people online and why this is important. • I can give examples of how bullying behaviour could appear online and how someone can get support.	**Autumn 2** • I can recognise when someone is upset, hurt or angry online. • I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). I can explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them (their reputation).	**Autumn 2** • I can recognise online bullying can be different to bullying in the physical world and can describe some of those differences. • I can describe how what one person perceives as playful joking and teasing (including 'banter') might be experienced by others as bullying. • I can explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult. • I can identify a range of ways to report concerns and access support both in school and at home about online bullying. • I can explain how to block abusive users. • I can describe the helpline services which can help people experiencing bullying, and how to access them (e.g. Childline or The Mix)	**Autumn 2** • can describe how to capture bullying content as evidence (e.g screen-grab, URL, profile) to share with others who can help me I can explain how someone would report online bullying in different contexts.
H16 How to be a discerning consumer of information online including understanding that information, including that from search engines, is ranked, selected and targeted.	**Summer 2** • I can talk about how to use the internet as a way of finding information online. I can identify devices I could use to access information on the internet	**Summer 2** • I can give simple examples of how to find information using digital technologies, e.g. search engines, voice activated searching • I know / understand that we can encounter a range of things online including things we like and don't like as well as things which are real or make believe / a joke.	**Summer 2** • I can use simple keywords in search engines. • I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections) • I can explain what voice activated searching is and how it might be used, and know it is not a real person (e.g. Alexa, Google Now, Siri) • I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real'. • I can explain why some information I find online may not be real or true.	**Summer 2** • I can demonstrate how to use key phrases in search engines to gather accurate information online. • I can explain what autocomplete is and how to choose the best suggestion. • I can explain how the internet can be used to sell and buy things. • I can explain the difference between a 'belief', an 'opinion' and a 'fact. and can give examples of how and where they might be shared online, e.g. in videos, memes, posts, news stories etc • I can explain that not all opinions shared may be accepted as true or fair by others (e.g. monsters under the bed). • I can describe and demonstrate how we can get help from a trusted adult if we see content that makes us feel sad, uncomfortable worried or frightened.	**Summer 2** • I can analyse information to make a judgement about probable accuracy and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others. • I can describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy (e.g. social media, image sites, video sites). • I can describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online • I can explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true. • I can explain that technology can be designed to act like or impersonate living things (e.g. bots) and describe what the benefits and the risks might be. I can explain what is meant by fake news e.g. why some people will create stories or alter photographs and put them online to pretend something is true when it isn't	**Summer 2** • I can explain the benefits and limitations of using different types of search technologies e.g. voice-activation search engine. I can explain how some technology can limit the information I aim presented with e.g. voice-activated searching giving one result. • I can explain what is meant by 'being sceptical'; I can give examples of when and why it is important to be 'sceptical' • I can evaluate digital content and can explain how to make choices about what is trustworthy e.g. differentiating between adverts and search results • I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence • I can identify ways the internet can draw us to information for different agendas, e.g. website notifications, pop-ups, targeted ads • I can describe ways of identifying when online content has been commercially sponsored or boosted, (e.g. by commercial companies or by vloggers, content creators, influencers) • I can explain what is meant by the term 'stereotype', how 'stereotypes' are amplified and reinforced online, and why accepting 'stereotypes' may influence how people think about others. • I can describe how fake news may affect someone's emotions and behaviour, and explain why this may be harmful • I can explain what is meant by a 'hoax'. • I can explain why someone would need to think carefully before they share.	**Summer 2** • I can explain how search engines work and how results are selected and ranked. • I can explain how to use search technologies effectively. • I can describe how some online information can be opinion and can offer examples. • I can explain how and why some people may present 'opinions' as 'facts'; why the popularity of an opinion or the personalities of those promoting it does not necessarily make it true, fair or perhaps even legal. • I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how someone might encounter these online (e.g. advertising and 'ad targeting' and targeting for fake news). • I understand the concept of persuasive design and how it can be used to influences peoples' choices. • I can demonstrate how to analyse and evaluate the validity of 'facts' and information and I can explain why using these strategies are important • I can explain how companies and news providers target people with online news stories they are more likely to engage with and how to recognise this • I can describe the difference between online misinformation and dis-information. • I can explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen (e.g. the sharing of misinformation or disinformation) • I can identify, flag and report inappropriate content

East Midlands Academy Trust
Statutory RSE Curriculum Map – Internet Safety & Harms (3)

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
H17 Where and how to report concerns and get support with issues online.	**Autumn 1** • I can recognise, online or offline, that anyone can say 'no' / 'please stop' **/ 'I'll tell' / 'I'll ask'** to somebody who makes them feel sad, uncomfortable, embarrassed, or upset. **Spring 1** • I can describe who would be trustworthy to share this information with; I can explain why they are trusted.	**Summer 2** • I know / understand that we can encounter a range of things online including things we like and don't like as well as things which are real or make believe / a joke. • I know how to get help from a trusted adult if we see content that makes us feel sad, uncomfortable worried or frightened.	**Autumn 2** • I can talk about how anyone experiencing bullying can get help.	**Autumn 2** • can give examples of how bullying behaviour could appear online and how someone can get support. **Spring 1** • I can give reasons why someone should only share information with people they choose to and can trust. I can explain that if they are not sure or feel pressured then they should tell a trusted adult. **Spring 2** • I can explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g. age restricted gaming or web sites) **Summer 2** • I can describe and demonstrate how we can get help from a trusted adult if we can see content that makes us feel sad, uncomfortable, worried or frightened.	**Spring 1** • I can describe how some online services may seek consent to store information about me; I know how to respond appropriately and who I can ask if I am not sure.	**Autumn 2** • I can explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult. • I can identify a range of ways to report concerns and access support both in school and at home about online bullying. • I can explain how to block abusive users. • I can describe the helpline services which can help people experiencing bullying, and how to access them (e.g., Childline or The Mix)	**Autumn 2** • I can explain how someone would report online bullying in different contexts. **Spring 1** • I can explain what to do if a password is shared, lost, or stolen. **Summer 2** • I can identify, flag, and report inappropriate content.