East Midlands Academy Trust
Computing Curriculum

Data Handling	E-Safety	Multimedia	Programming	Technology in our lives	ICT Skills

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	**Unit 1.1 - We are treasure hunters** *The children will program a toy to move around a map to find buried treasure. They will start by thinking of algorithms for their routes, then input these as stored programs for the robot. They predict how the robot will move and will debug their programs.*	**Unit 2.1 - We are astronauts** *The children will build on work from Unit 1.1 – We are treasure hunters to program a sprite (such as a spaceship) to move around the screen. This unit acts as a springboard for programming in Year 3.*	**Unit 3.1 - We are programmers** *The children create an animated cartoon using characters they design. They use a paint tool to create characters and backgrounds. They then create an animation by translating a storyboard into a series of scripted instructions (program) for graphic objects.*	**Unit 4.1 - We are software developers** *The pupils start by playing and analysing educational computer games, identifying those features that make a game successful. They then plan and design a game, with a clear target audience in mind. They create a working prototype, and then develop it further to add functionality and improve the user interface. They test their game and make any necessary changes.*	**Unit 5.1 - We are game developers** *The pupils plan their own simple computer game. They design characters and backgrounds, and create a working prototype, which they develop further based on feedback they receive.*	**6.1 We are app planners** *The pupils learn about the capabilities of websites, think of a subject that a website could inform about or engage somebody with, and then pitch the idea for their website.*
Autumn 2	**Unit 1.2 We are TV chefs** *Pupils produce short videos of themselves making a healthy meal or snack. They also decompose a complex problem into smaller parts – an important idea from computer science.*	**Unit 2.2 We are games' testers** *Pupils will try to work out how some simple Scratch games work. They also look at free online or open source games and share their favourite games with the class.*	**Unit 3.2 We are bug fixers** *The children work with six example Scratch projects. They explain how the scripts work, finding and correcting errors in them, and explore creative ways of improving them. The children learn to recognise some common types of programming error, and practise solving problems through logical thinking.*	**Unit 4.2 We are toy designers** *The children work together to design a simple toy that incorporates sensors and outputs and then create an on-screen prototype of their toy in Scratch. Finally, they pitch their toy idea to a Dragons' Den-style panel.*	**Unit 5.2 We are cryptographers** *The pupils learn more about communicating information securely through an introduction to cryptography (the science of keeping communication and information secret). They investigate early methods of communicating over distances, learn about two early ciphers, and consider what makes a secure password.*	**Unit 6.2 - We are project managers** *Pupils work collaboratively to develop a website. Pupils apply computational thinking to the task of managing a complex project.*
Spring 1	**Unit 1.3 We are painters** *This unit allows children to create digital illustrations for familiar stories and understand the difference between a print and a digital picture.*	**Unit 2.3 We are photographers** *The children review photos online, practise using a digital camera, take photos to fit a given theme, edit their photos, and then select their best images to include in a shared portfolio.*	**Unit 3.3 We are presenters** *This unit gives children a chance to make a short, narrated video of themselves practising a sport or other skill, and to use this to help improve their performance.*	**Unit 4.3 We are musicians** *The children produce music suitable for any purpose they choose, such as music inspired by the sounds of the Rainforest.*	**Unit 5.3 We are artists** *The pupils use vector and turtle graphics to explore geometric art, taking inspiration from the work of Escher, Riley and traditional Islamic artists, as well as experimenting with complex 'fractal' landscapes.*	**Unit 6.4 We are interface designers** *The children will start to design the look/feel of their website's main interface. They begin by sketching ideas, planning the different screen layouts for the pages and developing these using a site mapping tool.*
Spring 2	**Unit 1.4 We are collectors** *The pupils will use web search engines to collect pictures of different types of animals and then explore ways in which those pictures can be organised.*	**Unit 2.4 We are researchers** *The children research a topic – safely, effectively and efficiently – using a structured approach (mind mapping). They share their findings with others through a short multimedia presentation.*	**Unit 3.4 We are network engineers** *The pupils investigate how computer networks work. They use a simulation and learn some simple command prompt (C:) tools for testing network connections.*	**Unit 4.4 We are html editors** *The children learn about the history of the web, before studying HTML (hypertext mark-up language), the language in which web pages are written. They learn to edit and write HTML, and then use this knowledge to create a web page.*	**Unit 5.4 We are web developers** *The pupils work together to create a website explaining e-safety and responsible online behaviour.*	**Unit 6.3 We are market researchers** *The pupils conduct research into the potential market for their website, using an online survey together with interviews or focus groups. They analyse the data and information they obtain and create a presentation summarising their findings.*
Summer 1	**Unit 1.5 We are storytellers** *In this unit, the children create a talking book that they can share with others.*	**Unit 2.5 We are detectives** *In this unit, the children are challenged to solve a mystery by reading, sending and replying to emails, and by listening to a witness statement. They use a fact file sheet to create a table and identify the culprit.*	**Unit 3.5 We are communicators** *This unit allows the children to learn about a number of e-safety matters in a positive way. They will work with a partner in another class, learning how to use email and video conferencing safely.*	**Unit 4.5 We are co-authors** *In this unit, the pupils collaborate to create a 'mini Wikipedia'. They then go on to add or amend content on the real Wikipedia.*	**Unit 5.5 We are bloggers** *In this unit, pupils create a media-rich blog, comment on blogs and respond to comments.*	**Unit 6.5 We are mobile app developers** *In this unit, the pupils draw on their work from the previous Year 6 units to create a working app. They write down their algorithms and use a programming toolkit to code them.*
Summer 2	**Unit 1.6 We are celebrating** *In this unit, pupils will have the opportunity to create a digital greetings card, which could be used for a religious festival such as Diwali or Christmas, pupils' birthdays, or simply to say thank you or good luck.*	**Unit 2.6 We are zoologists** *In this unit, the children go on a bug hunt, recording and identifying the small animals they find. They then organise the data they have collected, record it using a graphing package, and interpret the graph to answer questions about the animals.*	**Unit 3.6 We are opinion pollsters** *In this unit, the children create their own opinion poll, seek responses, and then analyse the results.*	**Unit 4.6 We are meteorologists** *This unit brings together data measurement, analysis and presentation, as the children take on the role of meteorologists and weather presenters.*	**Unit 5.6 We are architects** *In this unit, the pupils research examples of art gallery architecture, before using Trimble SketchUp to create their own virtual gallery. Finally, they use the gallery to exhibit their own artwork.*	**Unit 6.6 We are marketers** *The pupils work collaboratively to produce marketing materials for the app they have been developing in the Year 6 units. They create a poster or flyer and shoot a short video.*