



## Year 1

Pupils in Year 1 will:

- ❖ follow and record a set of instructions
- ❖ program a toy and will know what input, program and output means for a robot toy
- ❖ create a program, correct mistakes in a program (debug) and look for ways to make a program work better
- ❖ create a recipe with ordered steps, film video, join clips together and import their video to the computer
- ❖ create an illustration, edit, save/retrieve an image, combine illustrations, export a document and know what to do if they find inappropriate images
- ❖ search for images using online galleries, copy and paste images, and move and organize images
- ❖ plan and rehearse sound effects needed in an audio book, record sound effects and record directly to a computer ❖ combine text and an image to make greeting cards which will also involving editing and modifying images

Year 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Programming	Computational thinking	Creativity	Computer Networks	Communication/ Collaboration	Productivity
	Using programmable toys  E safety- web access and safe practice	Filming the steps of a recipe  E safety-using digital equipment safely	Illustrating an e book  E safety- researching safely on the internet	Finding images using the web  E safety- researching safely on the internet. School's acceptable use of ICT policy	Produce a talking book  E safety- using microphones and audio recording software	Creating a card electronically  E safety- using email safely.

### Computing Programme of Study Coverage in Year 1

- Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.
- Create and debug simple programs.
- Use logical reasoning to predict the behaviour of simple programs.
- Recognise common uses of information technology beyond school.



## Year 2

Pupils in Year 2 will:

- ❖ **plan an algorithm to move a spaceship (created on screen) from Earth to the Moon**
- ❖ **implement algorithms on floor turtles and implement algorithms as programs on a screen sprite, learning how to debug their programs.**
- ❖ **explore and investigate how computer programmers implement algorithms to make computer games and discuss common features.**
- ❖ **suggest ways in which simple computer games can be improved and will learn about what to do if they are concerned about something in a particular game.**
- ❖ **take photographs using a digital camera or tablet, reviewing and editing their work.**
- ❖ **locate information on the internet using a search engine and relevant websites and will also learn how to report concerns when searching the web**
- ❖ **read, respond and compose emails import photographs taken, explore Google Maps and Google Earth and create charts to show the data they collect and will add labels and titles**

Year 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Programming	Computational thinking	Creativity	Computer Networks	Communication/ Collaboration	Productivity
	Programming on screen  E safety – uploading projects to Scratch website	Exploring how computer games work  E safety –using the internet safety and choosing games wisely	Talking, selecting and editing digital images  E safety – images posted, acceptable and unacceptable photographs	Researching the internet  E safety – how to stay safe while researching online	Communicating clues  E safety – risks associated with email	Recording bug hunt data using excel  E safety –using digital equipment and keeping safe

### Computing Programme of Study Coverage in Year 2

- **Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.**
- **Create and debug simple programs.**
- **Use logical reasoning to predict the behaviour of simple programs.**
- **Recognise common uses of information technology beyond school.**



## Year 3

Pupils in Year 3 will:

- ❖ create an algorithm for an animated scene, creating their own sound and graphics which will eventually lead to writing a program in Scratch to create an animation
- ❖ suggest ways of improving the performances of programs (debugging) and correct errors in programs.
- ❖ operate a video camera, recording, importing and editing footage with an informative commentary
- ❖ use email and video conferencing to communicate and they will use email to work, in paired groupings, on a joint project
- ❖ explore how data is transmitted via the internet and look at a range of different commands; ping, ipconfig and tracert ❖ collect data via the internet and using Google Forms and Google Slides to collect, present and analyse data.

Year 3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Programming	Computational thinking	Creativity	Computer Networks	Communication/ Collaboration	Productivity
	Programming an animation  E safety – uploading projects and participating positively in an online community	Finding and correcting bugs in programs  E safety- acceptable on line behaviour	Videoining performances  E safety- acting responsibly when filming, editing and presenting work	Exploring computer networks including the internet  E safety- safety on the internet and encryption	Communicating safely on the internet  E safety – risks/safe use of email	Collecting and analysing data  E safety- legal and ethical requirements for on line surveys.

### Computing Programme of Study Coverage in Year 3

- Design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts.
- Use sequence in programs; work with variables and various forms of input and output.
- Use logical reasoning to detect and correct errors in algorithms and programs.
- Select, use and combine a variety of software to design and create content that accomplishes given goals, including collecting, analysing, evaluating and presenting data information.
- Debug programs that accomplish specific goals.
- Work with various forms of input and output.
- Use technology safely, respectfully and responsibly, identify a range of ways to report concerns about content and contact.
- Understand computer networks, including the internet; how they can provide multiple services and the opportunities they offer for communication and collaboration



## Year 4

Pupils in Year 4 will:

- ❖ **design and develop an interactive educational game, integrating sound and correcting mistakes**
- ❖ **design a toy with computer controlled input and output**
- ❖ **write an algorithm to show how their toys would produce output in response to input received**
- ❖ **debug problems they encounter**
- ❖ **create a simple musical piece using sequencing software and combine, edit and refine samples of music to produce a final composition**
- ❖ **create a web page, know and use some HTML tags and recognise the importance of links ❖ create content for a wiki and edit their own content**
- ❖ **create simple charts, enter data, make predictions and present to class member**

Year 4	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Programming	Computational thinking	Creativity	Computer Networks	Communication/ Collaboration	Productivity
	Developing a simple educational game  E safety-uploading projects	Prototyping an interactive toy  E safety- using tools and electronic equipment safely	Producing digital music  E safety- copyright and downing and sharing music	Editing and writing HTML  E safety- safety on the internet and how web pages can be modified	Producing a wiki  E safety- safely and responsibility collaborating on a shared resource	Presenting the weather  E safety- uploading films to the school network



## Computing Programme of Study Coverage in Year 4

- Design, write and debug programs that accomplish specific goals.
- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.
- Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.
- Understand computer networks, including the internet and the opportunities they offer for communication and collaboration.
- Be discerning in evaluating digital content.
- Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
- Use technology safely, respectfully effectively and responsibly; recognise acceptable/unacceptable behaviour and know a range of ways to report concerns about content and contact.
- Use and combine a variety of software (including internet services) to accomplish given goals, including presenting information.
- Solve problems by decomposing them into smaller parts

## Year 5

Pupils in Year 5 will:

- ❖ create an algorithm for a game created adding in images and sound
- ❖ correct errors and improve their game based on feedback given ❖ add instructions to their game
- ❖ learn how to send and receive messages, decrypting and encrypting messages
- ❖ write a program to draw shapes and overlapping shapes, creating a repeated/varied pattern
- ❖ collect and present information and evaluate web sources for quality and bias
- ❖ learn how to use blogs safely and responsibly, adding an image, audio or video to a blog post
- ❖ be given the opportunity to use the web to explore virtual art galleries and create complex and compound objects using SketchUp ❖ create a narrated walkthrough of their gallery.

Year 5	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Programming	Computational thinking	Creativity	Computer Networks	Communication/ Collaboration	Productivity



Developing an interactive game  E safety-uploading work and dangers of inappropriate games	Cracking codes  E safety-learning how to encrypt content and using password security	Fusing geometry and art  E safety- safety on the internet and protecting personal information	Creating a web page about cyber safety  E safety-how to use search engines safely	Sharing experiences and opinions  E safety-safely and appropriately sharing information on blogs	Creating a virtual space  E safety-safely searching and selecting digital content
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### Computing Programme of Study Coverage in Year 5

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.
- Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.
- 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.
- Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration.
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.
- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

### Year 6

In Year 6 pupils will

- ❖ be taught about a smartphone/tablet
- ❖ understand and be able to describe the input and output capabilities of a smartphone/tablet
- ❖ create a smartphone app and create an effective presentation to pitch their idea ❖ lead onto identifying tools and resources needed to complete their project
- ❖ sketch ideas for their app
- ❖ develop clear algorithms which will include detecting errors, using sequence, selection and repetition and variables in their codes
- ❖ create an online survey, use tables to analyse the results and they will evaluate the quality of data and information obtained ❖ create market flyers incorporating images and text
- ❖ have the opportunity to use appropriate software and hardware to create an effective promotional video.

Year6	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Computer Networks	Computational thinking	Productivity	Communication/ Collaboration	Programming	Creativity



Planning the creation of a mobile app  E safety- recording and sharing information safely	Developing project management skills  E safety-using on line tools safely and effectively	Developing project management skills  E safety-safely conducting interviews and online surveys	Designing an interface for an app  E safety-use of copyright and sourcing their own digital content	Developing a simple mobile phone app  E safety- safety aspects of apps they create	Creating video and web copy for a mobile phone app  E safety- legal and ethical framework around advertising
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### Computing Programme of Study Coverage in Year 6

- Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration.
- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.
- Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
- Work with various forms of input and output.
- Solve problems by decomposing them into smaller parts.
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.
- Be discerning in evaluating digital content.
- Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- 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.