

Year 1

Term 1&2 – Computing Skills

Pupils will:

- hold a mouse comfortably and correctly
 - move the cursor and use the buttons to click and double-click
 - name the main components of a computer
 - explain the differences between switching on and off and logging on and off
 - use more than one way to open an application
 - move and change the shape and position of a window
 - find and open their own folder
 - save a file in their folder
 - click on an object to select it
 - drag selected objects with control
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Term 1 – Digital Maps

Pupils will:

- use an iPad camera to scan a QR code
 - explore the Google Earth app and find out about the different features available
 - use one finger to move around the local area when using the app
 - use the pinching technique to zoom in and out of areas
 - recognise when digital maps may be used, discussing the advantages of a digital map in comparison with an atlas
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Term 3&4 – Programming (Bee-Bots)

Pupils will:

- know what an algorithm is
 - create step-by-step instructions using pictures
 - write and follow detailed instructions
 - see how a product changes when they change the instructions
 - write step-by-step instructions
 - debug their work when checking for mistakes
 - program a Bee-Bot using the arrow buttons
 - evaluate and improve their sequence
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Term 5&6 – Online Safety

(Cross-curricular links with PSHE)

Pupils will:

- give their work a filename that shows it is their work
 - say why it is important to name and date their work
 - open up a web browser
 - select and use Safe Search filters
 - type words to find an image online
 - save images on a computer
 - know to speak to a trusted adult if they see, hear or read something online that upsets them
 - explain what each letter of SMART stands for
 - spot when something online might not be safe
 - explain what to do if something online is not safe or upsets them
 - make links between the offline and online world
 - talk about their own personal information
 - recognise what personal information can affect their safety
 - know who to tell if someone asks for their personal information
 - say why email is a good way of communicating.
 - understand how quickly an email can go from one place to another
 - begin to form an email
 - suggest ways to use email safely
 - explain what to do if they receive an email from someone they don't know
 - recall some of the online safety skills I have been learning.
 - recognise potential dangers online
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Year 2

Term 1&2 – Technology Around Us

Pupils will:

- identify technology in their school
 - describe how they use technology in the classroom
 - explain how technology is used in their school
 - recognise the difference between technology and information technology
 - identify examples of information technology in the home
 - know why information technology is used in the home
 - identify examples of information technology in the wider world
 - describe how information technology is used in different places
 - talk about how people in different jobs make use of information technology
 - know that digital devices can perform more than one task
 - understand that digital devices can be connected and that we need to be careful about the information we share
 - describe how computers have changed over time
 - order digital devices on a timeline
 - know about some of the people who have helped to change information technology
 - give some examples of how information technology may change in the future
 - use their knowledge of information technology to design a digital device of the future
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Term 2 – Data Handling

(Cross-curricular links with mathematics)

Pupils will:

- open the camera app on an iPad and scan a QR code to open a website
 - explore a new website to find out about its different features
 - create a pictogram on the J2E website to present data collected
 - navigate the website to create their own table and block graph using the J2E website
 - compare the benefits technology has when creating their own graphs with hand drawing
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Term 3 – Digital Maps

Pupils will:

- use an iPad camera to scan a QR code
- explore the Google Earth app and find out about the different features available

- use one finger to move around the local area when using the app
 - use the pinching technique to zoom in and out of areas
 - recognise when digital maps may be used, discussing the advantages of a digital map in comparison with an atlas
 - locate the different continents on a map and use the zoom feature to locate Kenya
 - use Google Earth to explore different landmarks and cities in Kenya
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Term 3&4 – Programming Language

Pupils will:

- give clear accurate instructions in order to a partner
 - explain what an algorithm is
 - write and check an algorithm to instruct a partner on how to move
 - write an algorithm that includes forwards, backwards, left and right instructions
 - include quarter turns in their algorithms
 - recognise 90 degrees as a quarter turn
 - write an algorithm that will create a specific shapes when the route is drawn on the floor
 - use command abbreviations fd, lt and rt to write their own algorithms
 - create their own algorithms to navigate around the school
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Term 5&6 – Online Safety (Cross-curricular links with PSHE)

Pupils will:

- explain what 'digital footprint' means
- explain how people might use the information they put online
- explain how a digital footprint contains information about a person
- identify which keywords will give them good results
- use a website to search for information
- think about how to identify possible dangers or things which might make them uncomfortable online
- identify websites that are suitable for their age
- identify when to ask an adult for advice about accessing a website
- know what to do if a website makes them uncomfortable in any way
- discuss what people might want to know about a website to decide whether it is useful or not
- explain what they like or dislike about a website
- use clues to decide who a website is aimed at
- identify unkind online behaviour
- know what to do if they think someone is being unkind to me online
- choose a sensible course of action if they feel uncomfortable online
- explain how to safely search for information online

Year 3

Term 1&2 – The Internet

Pupils will:

- explain what the Internet is and how it works
- identify the many different ways the Internet is used
- understand that a computer is connected to the Internet via a router
- explain how the Internet is connected around the world
- explain how data is transferred from one point to another when using the Internet
- understand what packets of data are
- explain what an IP address is
- explain what routers are and their function
- explain what a search engine is.
- explain the difference between a web browser and a search engine
- use a search engine to find information
- explain how to make a search age-appropriate
- identify if they need to tell an adult if something I see online makes me feel uncomfortable
- select a safe search engine to find information
- identify how to trust if a website is safe
- compare two websites for reliable information
- bookmark a web page
- use tabs on a web browser to compare information on web pages
- search for images online using a search engine
- copy an image from a web page
- paste an image into a document
- use shortcuts on a keyboard
- type a URL into a web address bar
- use secure and trusted websites

Term 3&4 – Programming (Logo and Scratch)

Pupils will:

- write commands in the correct order
- write a variable value where required
- correct any mistakes
- use the commands fd, bk, lt, rt to move or rotate the turtle
- use cs to clear the screen
- use the repeat command
- use the pen up and pen down commands
- rotate the turtle angles other than 90°
- use the pen block to draw
- create algorithms that draw regular polygons

- use the repeat block to draw patterns
 - vary the pen size and colour
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Term 5&6 – Online Safety

(Cross-curricular links with PSHE)

Pupils will:

- recognise cyberbullying
 - identify a safe person to tell if they encounter cyberbullying
 - know that cyberbullying can happen via a range of devices
 - identify adverts online
 - identify a targeted advert
 - explore how companies use websites to promote products
 - create a strong password
 - explain why a strong password is important
 - explain what privacy settings are
 - discuss email as a form of communication
 - identify an email that they should not open
 - write an email with an address and subject
 - know how to safely send and receive an email
 - identify online communities they are a part of
 - identify different forms of online communication.
 - discuss the positive and negative aspects of online communities
 - discuss the differences between communication in real life and online
 - plan a party using online methods to communicate ideas
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Term 6 – Digital Music

(Cross-curricular links with music)

Pupils will:

- use a search engine to access the website Chrome Music Lab
 - create a song using the sound buttons available and the play button to check results
 - identify advantages technology has when making music
 - edit and improve their work by evaluating and taking ideas from others
 - record their screen and audio to capture their song
 - upload their work to Seesaw as an online platform
 - comment on others' work, ensuring they show respect and recognise correct behaviour when communicating online
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Term 1-6 – Word Processing
(Cross-curricular links with English)

Pupils will:

- manipulate windows including viewing 2 windows at once
- search for files
- save and print work using specific options
- use two hands for typing
- use the keys 'shift', 'Caps Lock' and space bar correctly
- edit work using backspace, delete, arrows, undo and redo options
- align text left, centre, right or justified
- use the menu buttons for bullets and numbering and choose the correct formatting
- insert and format a textbox

Year 4

Term 1&2 – Animation

Pupils will:

- explain what is meant by animation
- describe early devices used to develop animation techniques
- explain how simple animation techniques work
- explain how computer software has improved animation techniques
- create a series of linked frames
- edit and refine still images to improve their animation
- add a second figure and animate them interacting with each other
- use animation recording to animate the movement of a character
- animate the interaction between two characters
- control the timing of characters' appearance in a recording
- use a time slider to find a new place in a clip
- insert a new character at a given place in a clip
- edit or change objects at different parts of a clip
- take still images using an iPad
- import their images to create a stop motion animation
- order and sequence frames to create the effect of smooth movement
- comment on the advantages and disadvantages of using a particular piece of software
- compare features in different software
- differentiate between different types of animation technique
- express their opinion about the effectiveness of software
- plan a party using online methods to communicate ideas

Term 2 – Digital Music

(Cross-curricular links with music)

Pupils will:

- explore a new app they have not used before (Keezy), experimenting with different features
 - record their own sounds on an iPad
 - combine sounds on the iPad to create their own tracks
 - record their screen and audio to capture their song
 - upload their work to Seesaw as an online platform
 - comment on others' work, ensuring they show respect and recognise correct behaviour when communicating online
 - discuss how artists and music producers using technology to help them create new songs
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Term 2 – Design

(Cross-curricular links with history)

Pupils will:

- explore the features of the Minecraft Education software as a group
 - combine tools and control on the software to create space for a new road
 - build a Roman road using the design brief and features available on the software
 - edit and improve their work to fit the criteria given
 - show control and precision when using a trackpad
 - consider the advantages technology has when designing a model in comparison to making one
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Term 3&4 – Programming (Scratch)

Pupils will:

- decompose a problem into smaller parts
 - write a program using Scratch
 - identify errors and debug a program using Scratch
 - write a program using visual programming blocks
 - identify errors and debug a program using Scratch
 - create a sequence of instructions using Scratch
 - use the duplicate function
 - use repetition to create an effect
 - program a variable for a sprite in Scratch
 - add features to a sprite in Scratch
 - add to an existing sequence of commands
 - use variables to change the backdrop in a quiz
 - select when to change the variable in the program sequence
 - write a program including a scoring system
 - create a variable scoring system using Scratch
 - assign numerical values to the scoring system
 - debug a program to ensure that it works
 - create their own quiz using Scratch
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Term 5 – Data Handling

(Cross-curricular links with science)

Pupils will:

- scan a QR code and know what 'QR' stands for
- use the J2E website to create their own classification grid
- explore and navigate a website to find out how to use the given features

- compare the differences to making a classification grid with and without technology
 - screenshot their work and upload it to Seesaw
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Term 5&6 – Online Safety

(Cross-curricular links with PSHE)

Pupils will:

- know how to respond to a hurtful message or comment online
 - edit their own messages and comments to make sure they are not being unkind
 - explain why other people may be hurt by messages or comments
 - access a trusted search engine
 - use strategies which improve their results when searching online
 - choose an appropriate number of words to include in their searches
 - explain how to use other people's work respectfully
 - explain what a citation is
 - write a citation
 - explain why plagiarism is harmful
 - identify the information that they shouldn't share online
 - know why it is dangerous to share certain information
 - understand why some websites ask for registration information
 - explain what digital citizenship is
 - explain how to be a good citizen in real life and online
 - design a character that represents at least one aspect of online safety
 - write a 'top tip' for online safety
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Term 1-6 – Word Processing

(Cross-curricular links with English)

Pupils will:

- select, edit and manipulate text in different ways
- insert images onto a document
- format images to achieve various effects
- know some of the main keyboard shortcuts
- find and use the different functions of the spellcheck tool
- add a spelling to the spelling dictionary
- insert a simple table, adding and deleting rows and columns when needed
- change the orientation of the page
- copy the URL of a website to include a hyperlink in their document

Year 5

Term 1&2 – The Internet

Pupils will:

- explain what a search engine is and what it is used for
 - access a trusted search engine and complete a search to find a website or specific information
 - use keywords to refine their search
 - explain how using keywords in their search terms can help when using search engines
 - explain how Boolean operators can affect their search results and how they can be useful when using a search engine
 - understand that information they read online may not always be true
 - identify what makes a trusted web page
 - explain what a web crawler is
 - explain how web indexing works
 - explain how a search engine works
 - understand and explain how search engines are ranked
 - suggest some of the criteria that search engines use to decide on web page ranking
 - compare the page ranking across different search engines
 - explain what SEO is and why it is used on websites
 - suggest SEO improvements on a website
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Term 3&4 – Programming (Scratch)

Pupils will:

- draw a background using blocks to make a maze
 - select and change a sprite
 - program commands that control the movement of a sprite
 - program consequences for specific actions, such as adding sounds and events
 - use tools to draw their own sprite
 - program commands that change the backdrop
 - test and debug a program after making changes
 - add appropriate commentary to a code
 - make two characters move in relation to each other
 - translate logical reasoning into coding language (blocks)
 - design new costumes for an existing sprite
 - design code that's witches from one costume to another
 - identify new features to be added to a game
 - use code to increase the value of a variable
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Term 5 – Digital Music

(Cross-curricular links with music)

Pupils will:

- use a search engine to find a website called Incredibox
 - record their own songs on a website
 - explore and experiment with a new app called Launchpad
 - record their own songs using the Launchpad app and upload to Seesaw
 - use comment features on seesaw to show the correct behaviour when communicating online
 - discuss specific artists and songs that have successfully used technology
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Term 5&6 – Online Safety

(Cross-curricular links with PSHE)

Pupils will:

- look at the sender and subject to spot a spam email
 - identify the potential dangers of spam email
 - know what to do with a spam email and take steps to avoid receiving one
 - explain why it is important to cite a source
 - cite a website and follow a citation to access an online source
 - explain the rules for creating a strong password
 - create a strong password using a set of rules
 - explain why having a strong password is important
 - recognise changes that have been made to an original photograph
 - digitally alter a photograph
 - understand that not everything online is true
 - explain how false photographs can make people feel bad about themselves
 - explain how to stay safe online and give an example of unsafe online behaviour
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Term 6 – Data Handling

(Cross-curricular links with science and mathematics)

Pupils will:

- open an Excel spreadsheet and locate the charts tab
- type data into cells, showing awareness for the correct format needed
- add a chart to the spreadsheet, selecting the data they have typed
- change the title and axis labels on a chart
- create their own chart that shows the gestation periods of different animals

Term 1-6 – Word Processing

(Cross-curricular links with English)

Pupils will:

- type with increasing speed, using two hands
- right click on a word to find synonyms
- change the font and colour of text to suit a given purpose
- copy work with increasing speed into a word document, attempting to type without the need to look at the keyboard

Year 6

Term 1&2 – Spreadsheets

Pupils will:

- identify cells using rows and columns
 - type texts and numbers into cells
 - use the SUM function to add numbers together
 - use the SUM function to perform further calculations
 - enter a formula for a specific purpose
 - use the fill tool to copy formulas
 - insert and format a bar/column graph
 - use formulas to calculate totals and averages
 - sort and edit existing data by different criteria
 - add extra data, including inserting new rows and columns
 - replicate formulas over several cells
 - check calculations for errors
 - interpret data and make comparisons
 - plan and calculate a spending budget
 - make decisions on formatting to improve the appearance
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Term 3 – Programming / Design

(Cross-curricular links with design and technology)

Pupils will:

- program a floor robot (Bee-Bot) to move around a specified area
 - apply their knowledge of block coding to program a Sphero floor robot
 - debug algorithms when there are mistakes
 - log in to the Tinkercad online software using a given passcode
 - use the Tinkercad website to combine and edit the appearance of shapes
 - design their own adventure island map for a floor robot to travel on
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Term 3&4 – Programming (Scratch)

Pupils will:

- select appropriate characters or objects to fit within a scene
- use rapid costume changes for a motion effect
- use a 'repeat' command to create gradual movement
- use a succession of glide commands
- use the 'broadcast message' and 'receive broadcast' block correctly
- combine broadcasts in code to sequence actions
- locate and insert the 'show' and 'hide' blocks in a script

- locate the correct place for a sprite to appear visible
 - make a sprite invisible when it is not active in the code
 - order a series of backdrop settings
 - narrate events with required timing
 - program the use of a button to change the backdrop
 - record their own voice sounds and insert blocks to be able to play them
 - match the timing of sounds with speech bubbles
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Term 4 – Digital Music

(Cross-curricular links with music)

Pupils will:

- explore and experiment with different features on the Garageband app
 - combine different musical instruments to create their own song using the app
 - recognise when technology has been used to create a song
 - record their own songs using the Garageband app and upload to Seesaw
 - use comment features on seesaw to show the correct behaviour when communicating online
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Term 5&6 – Online Safety

(Cross-curricular links with PSHE)

Pupils will:

- say what bullying and cyberbullying are
 - suggest ways in which people could deal with cyberbullying
 - know why cyberbullying can be as harmful as in-person bullying
 - look in the address bar of a website to check for security
 - identify the lock symbol in an address bar
 - understand why they should ask an adult if they are unsure
 - identify warning signs that a website may not be secure
 - identify what their personal information is and explain the dangers of revealing personal information to an online friend
 - explain why someone might have an online friendship
 - explain what to do if they are asked or told something online which makes them feel uncomfortable
 - know what a stereotype is and understand how a stereotype can be harmful
 - compare gender stereotypes and identify examples in an online media message
 - identify a situation they should be careful in online
 - choose an appropriate action online to stay safe
 - know what the SMART acronym means
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Term 6 – Data Handling

(Cross-curricular links with science and mathematics)

Pupils will:

- add data to a spreadsheet that they have collected showing heart rates during exercise
- create a chart using the data recorded
- change the title and axis labels on the chart
- change colours and styles of the chart to ensure data is presented clearly