COMPUTING CURRICULUM

COMPUTER SCIENCE

Pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.

- Computing systems and networks
- Programming
- Creating media
- data handling
- Online safety

PROGRAMS

- Sketchpad
- Beebot
- PowerPoint
- Scratch
- Micro:bit
- Trinket
- iMovie
- Google forms
- Microsoft Excel
- Sway
- Tinker Cad
- Microsoft Word

PROGRESSION

EYFS

- Operate a camera
- Explore and tinker with hardware
- Introduction to keyboard layout
- Basic mouse skills, incl. moving and clicking
- Simple instructions and commands
- Experimenting with programming
- Learning to debug

KS1

- Explore and tinker with hardware
- Recognise input and output devices
- Location of keys on a keyboard
- Decomposition of problems
- Logical reasoning
- Sequencing and following instructions
- Simple algorithms
- Programming a bee bot
- Debugging
- Components of a computer
- Input and output
- Basics of touch typing
- Decomposition
- Algorithms
- Precise instructions
- Predicting, testing and explaining software
- Using loop blocks

LKS2

- Components of a computer and network
- Purpose of routers
- Differences across computers
- Website, networks and the internet
- Transferring data
- Decomposition
- Simple algorithms
- Predicting, testing and explaining software
- Coding and debugging
- Sensors
- World Wide Web
- Decomposition
- Identifying patterns
- Creating algorithms
- Incorporating variables to make coding efficient

UKS2

- Programming external devices
- ROM and RAM
- Compressing data
- Binary
- Bit patterns
- Decomposition
- Predicting software
- Decomposing algorithms
- Animation
- Loops
- Debugging
- History of computers
- QR codes and RFID
- Data corruption
- Programming python
- Changing a program to personalise it
- Evaluating and predicting code

COMPUTING CURRICULUM

INFORMATION TECHNOLOGY

Information technology is very broad as it **involves the creation, organisation and manipulation of digital content** in both key stages – digital content could be interpreted as many things from audio to images to film and beyond.

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PROGRESSION

EYFS

- Create digital art
- Representing data in unplugged scenarios
- Representing data through pictograms
- Exploring branch databases

KS1

- Using a basic range of tools in graphic software
- Taking and editing photographs
- Developing control of the mouse
- Recognising devices connected to the internet
- Searching and downloading images safely
- Representing and understanding data
- Create pictograms and databases
- Understand ways of using the internet
- developing word processing skills
- Type and word format a text
- Using software to create story animations
- Creating and labelling images
- searching for appropriate images
- Understanding what online information is
- Collecting, inputting and interpretting data into a spreadsheet
- Understand how computers are used in the wider world

LKS2

- Taking photographs and recordings to tell a story
- Using software to edit and enhance their video
- Understand vocabulary associated with databases: field, record, data
- Understand the pros and cons of digital v paper databases
- Sorting and filtering databases to easily retrieve information
- Creating and interpreting charts and graphs
- Recognise how social media platforms are used to interact
- Understand the purpose of e mails
- Building a website
- Use online software for presentations, forms and spreadsheets
- Using key words to search the internet
- Designing a device which gathers and records sensor data
- Recording data in a spreadsheet

UKS2

- Using logical thinking to explore software
- Using Scratch to produce music
- Using video editing software to animate
- Identify ways to improve and edit programs, videos, images etc.
- 3D design to design a product
- Develop searching skills
- Understand how data is collected and used to tell us about a location
- Forms of communication
- Use search and word processing to create a presentation
- Creating and editing videos adding multiple elements
- Create a website with embedded links
- Understand how search engines work
- Gather and analyse data
- Creating formulas and sorting data

COMPUTING CURRICULUM

DIGITAL LITERACY

Digital literacy refers to the ability to use internet and communication technologies (ICT) to find, evaluate, use, and communicate online information. Through the process of gaining digital proficiency, children can strengthen their critical thinking skills and build a strong foundation for future endeavors.

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PROGRESSION

EYFS

- Recognise that a range of technology is used at home and school
- Learning how to log in and out.

KS1

- Logging in and out and saving information
- When using the internet to search for images, learning what to do if they come across something online that worries them
- Understand how to interact safely online
- Recognise how actions on the internet can affect others
- Recognise what a digital footprint is and how to be careful about what we 'post'
- Identify whether information is safe or unsafe
- How to create a strong password
- Sharing online respectfully
- Strategies for checking if something online is true
- How to stay safe

LKS2

- Recognise that different information is shared including facts, beliefs and opinions
- Identifying reliable information when searching online
- How to stay safe on social media
- The impact technology has on mood
- Cyberbullying
- Understand not all e mails are genuine
- Judging the accuracy of searches
- Identify forms of advertising online
- Recognise appropriate behaviour
- Reflect on positive and negatives of time online
- Identify respectful and disrespectful online behaviour
- Recognise that information online may not be true

UKS2

- Identify possible dangers online
- Evaluate pros and cons of online communication
- Recognise that information online might not be true and how to check its validity
- Understand how to deal with bullying online
- Know how to use an online community safely
- Positives and negatives of sharing online
- Strategies to create a positive online reputation
- Importance of secure passwords and how to create them
- Strategies to capture online bullying
- Using search engine safely
- Know that updated software can help to prevent data corruption and hacking