Year 6 Computing Skills

- Produce algorithms independently using logical appropriate structures to organise and record data.

- Create flow charts and other diagrams to explain how a process or model works.

- Independently problem solve and model situations and processes, by understanding and explaining the impact of changing variables and rules with in a model.

- Demonstrate knowledge and understanding of how networks work by describing the type of service offered.

- Design and create/use a range of programs to accomplish given goals.

- Take account of accuracy and potential bias when searching for and selecting information.

- Evaluate and improve presentations in the light of discussion, marking and audience response.

- Find, report and flag buttons in commonly used sites and name sources of help.

- Discuss scenarios involving online risk. State the source of the information found online. Act as a role model for other children.

- Explain that changing the numerical data affects a calculation.

- Create data collection forms and enter data from these accurately. Make graphs from the calculations on their spreadsheet. Sort and filter information.

PROGRAMMING
Write and design programmes
Debug programmes
Work with conditional commands and variables within a code
Explain how an algorithm works
DIGITAL LITERACY
Use search technologies effectively
Understand how search results are selected
Use technology safely, respectfully and responsibly
Know that it is important to keep information safe online
Know how to prevent and respond to cyber bullying
Create positive profiles online to be a responsible member of the community
INFORMATION TECHNOLOGY
Know the school e-safety rules
Choose the appropriate tools to create images for a task
Create, edit, evaluate and combine digital images for an audience or task
Create music to accompany a story, presentation or digital movie
Create music and sound files thinking about an audience
Use a spread sheet with formulas, to achieve a task
Create graphs to show information and present them in a variety of ways
Know how a data logger can be used to prove a hypothesis

Year 5 Computing Skills

- With support, begin to produce algorithms by using logical and appropriate structures to organise data, and create precise and accurate sequences of instructions.

- Use flow charts and other diagrams to follow how a process or model works.

- Use logical reasoning to solve problems and model situations and processes. Predict what will happen when variables and rules within a model are changed.

- Demonstrate knowledge and understanding of computer systems and hardware by identifying and defining the functions of the processor, memory, backing storage and peripherals in a typical desk top computer.

- Select, use and combine a variety of software, including internet services on a range of digital devices, explaining how email and online discussion areas are used for communication and collaboration.

- Recognise the need for accuracy when searching for and selecting information. Use different sources to double check information found.

- Prepare and present information in a range of forms, using ICT safely and responsibly.

- Judge what sort of privacy settings might be relevant for reducing different risks to judge when to answer a question online and when not to.

- Be a good online, citizen and friend. Articulate what constitutes good behaviour online. Find and cite the web address for any information or resource found online.

- Describe how to check for and spot inaccurate data. Know which formulas to use to change a spreadsheet model.

- Create data collection forms and enter data from these accurately. Make graphs from the calculations on their own spreadsheet.

PROGRAMMING
Debug programs to solve problems
Solve problems by decomposing code into smaller parts
Work with conditional commands
Understand the algorithm behind each part of a code
DIGITAL LITERACY
Search for information and decide if it is useful
Understand how search results are selected
Use technology safely, respectfully and responsibly
Know that it is important to keep information safe online
Know how to prevent and respond to cyber bullying
Know that information I put online reflects my image
INFORMATION TECHNOLOGY
Create presentations suited to an audience
Publish and share work online
Create, edit and evaluate digital images
Compose, manipulate and refine music and sound
Create music and sound files thinking about an audience
Use a spread sheet to carry out calculations
Create graphs to show information and present them in a variety of ways

Year 4 Computing Skills

- Detect and correct errors in algorithms and programs (debug).

- Test programs using models and simulations. Design and write programs that accomplish specific goals, working with variables for input and output.

- Use logical reasoning to detect problems, make changes and find out what happens as a result.

- Demonstrate knowledge and understanding of computer hardware including input, output and storage devices.

- Create programs to control physical systems. Discuss opportunities for online communication and collaboration.

- Evaluate the quality and success of their solutions. Check plausibility and usefulness of information they find.

- Use and combine a variety of software and internet services on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

- Recognise social networking sites and social networking features, built into other things such as online and hand held games consoles. Make judgements in order to stay safe whist communicating with others online.

- Know who to tell if anything worries them online. Identify potential risks when presented with scenarios including social networking profiles. Use ICT responsibly, securely and safely.

- Describe how to sort and organise information to use in a database.

- Create a branching database from information which they have collected and sorted.

PROGRAMMING
Use algorithms to achieve a specific goal
Design and write a program using instructions and know that this is coding
Debug programs to solve problems
Understand how inputs can be used in coding to control outputs
DIGITAL LITERACY
Search for information and decide if it is useful
Use search engines efficiently and know how the results can change depending on words used
Know what to do if I come across inappropriate content
Use passwords to access resources on the web and keep them safe
Communicate and share ideas online
Communicate in different ways depending on the audience
INFORMATION TECHNOLOGY
Combine and evaluate digital images taking account of the audience
Publish and share work online
Think about the audience when creating animations, images or films
Evaluate my work on the computer
Know that ICT can create different graph types for different purposes
Know difference between a database and a spreadsheet.
Know that personal information is stored online

Year 3 Computing Skills

- Use logical reasoning to explain how a simple algorithm works.

- Use sequence, selection and repetition in programs.

- Analyse and tackle problems by decomposing into smaller parts.

- Demonstrate a knowledge of computer systems and hardware by describing input and output devices used in everyday life.

- Use software or search engines effectively.

- Become discerning in evaluation digital content.

- Identify and select appropriate information using straightforward lines of enquiry. Use different approaches to search and retrieve digital information, including the browser address bar and short cuts.

- Identify ways to keep safe when using ICT. Think before sending and suggest consequences of sending/posting.

- Recognise/outline behaviours that would be unfair. Show respect for individuals and intellectual property.

- Identify how to select information to put into a data table. Recognise which information is suitable for their topic.

- Design a questionnaire to collect information.

PROGRAMMING
Use algorithms to achieve a specific goal
Write a program using instructions and know that this is coding
Know that variables can change programs
Use a repeat and loop command in a code
DIGITAL LITERACY
Use the internet safely to find answers to a question
Use search engines efficiently
Know what to do if I come across inappropriate content
Use passwords to access resources on the web and keep them safe
Communicate and share ideas online
Know how people are connected across the world
INFORMATION TECHNOLOGY
Create and present information using programs
Publish and share work online for a given audience
Take and manipulate digital images
Use sound files to fit the mood of my work
Create pictograms, bar charts and tables on the computer
Speak about how ICT helps me to learn
Know it's important to keep personal information safe

Year 2 Computing Skills

- Recognise what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.

- Write and test simple programs.

- Use logical reasoning to predict the behaviour of simple programs.

- Explain why digital folders are used.

- Organise work into digital folders

- Recognise common uses of ICT beyond school.

- Organise, store, manipulate and retrieve data in a range of digital formats.

- Identify obviously false information in a variety of contexts. Identify personal information that should be kept private.

- Communicate safely, respecting and considering other people's feelings online.

- Explain how a branching or tree diagram works.

- Place objects and pictures in a list or simple table. Make a simple Y/N tree diagram to sort information.

PROGRAMMING
Know what an algorithm is
Use algorithms to control devices or objects on screen
Write a program using instructions and know that this is coding
Solve problems with instructions on and off screen
Predict the behaviour of simple programs or code
DIGITAL LITERACY
Get online and use websites
Ask a question and find the answer
Explore and share information online
Know how to stay safe online
Use passwords and keep them safe
Know that private information shouldn't be given out on the internet
Know that information including images online can be shared at home, school and worldwide
INFORMATION TECHNOLOGY
Create presentations for a specific audience
Publish and share work online
Take and edit photographs/videos on digital devices
Save and use recorded sounds
Use a data logger to collect information
Use software to represent data and information on screen
Create a graph or chart to answer questions

Year 1 Computing Skills

- Give simple instructions to everyday devices to make things happen.

- Make choices to control simple models of simulations.

- Solve a problem using ICT.

- Discuss and share how and when they use ICT in everyday life.

- Complete simple tasks on a computer by following instructions.

- Show an awareness of information in different formats.

- Make decisions about whether or not statements or images found online are likely to be true.

- Identify different devices that can go online, and separate those that do not.

- Understand rules around e-safety and know who to tell if something concerns them online.

- Explain that images can give them information. Say what a pictogram is showing them.

- Put data into a program (pictogram). Sort objects and pictures in lists or simple tables.

PROGRAMMING
Know what an algorithm is
Know that programmes are made up of a sequence of codes
Use instructions (algorithms) to control devices or objects on screen
Solve problems with instructions on and off screen
DIGITAL LITERACY
Get online and use websites
Ask a question and find the answer
Use the internet to find information
Know how to stay safe online
Know messages can be sent electronically
Know that information online can be seen by others
INFORMATION TECHNOLOGY
Add text to pictures
Record and use sound clips
Take photographs/videos on cameras and other digital devices
Edit photos
Use a data logger to collect information.
Use software to represent data and information on screen
Create a graph or chart to answer questions
Talk about ICT in and out of school.

EYFS Computing Skills

PROGRAMMING
Make a floor robot move.
Use simple software to make something happen.
Make choices about the buttons and icons I press, touch or click.
Move objects on a screen.
Create shapes and text on a screen.

DIGITAL LITERACY
Talk about technology used at home and in school.
Operate simple equipment.
Use a safe part of the internet to play and learn.
Tell an adult when something worrying or unexpected happens while I am using the internet.
Talk about the amount of time I spend using a computer / tablet / game device.
Use technology carefully

INFORMATION TECHNOLOGY
Talk about different kinds of information such as pictures, video, text and sound.
Record sound clips
Take photographs/videos on cameras and other digital devices