

 Computing – Concept Map

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|  | Early Years | Year 1&2 | Year 3&4 | Year 5&6 |
| **Computer Science** | Read a set of instructions and predict the outcomeWrite/draw a simple set of instructions in order including programming moveable toysMake changes to instructions and predict how the outcome will changeCorrect mistakes in instructionsDescribe patterns and relationshipsSort objects into sets based on one or more criteria | Produce a sequence of instructions that results in planned outcomesProgram and test simple programsCreate algorithms to solve simple problems | Write an algorithm to produce a given effect using repetition, sequencing and basic selectionAccurately predict the outcome of a range of algorithms and programsTest, debug and refine programs and algorithmsExplain how a programmed effect has been achievedTalk about improvements that can be made to programs | Create and use efficient methods of repetition and conditional statements (if, the blocks)Systematically test and debug computer programsCritically analyse algorithms and programs, suggesting better and more elegant solutionsCreate procedures that call on other procedures (broadcast blocks) |
| **The Internet** | Access a website using shortcutsNavigate a website using buttons and linksObtain information online | Choose a website based on how useful it is for a purposeBe discerning about information from websitesNavigate around website using links and the back buttonType web addresses into browserCreate internet favourites | Understand that a computer network means connected computersUse internet for more than just web browsing (e.g. emails)Use search engines by using specific search termsNavigate to the class blogEdit websites and blogs from a range of devicesComment on blogs | * Find and use search results knowing how search engine results are ranked

Know that computers on networks have unique addresses (IP addresses)Know that data s transferred in packetsDesign and create webpages using HTML and CSSUnderstand files may be saved off their device in ‘clouds’. Upload/download a file to the cloud on different devices. Understand about syncing files using cloud computing folders. |
| **Communication and Collaboration** |  |  | Send and reply to emails* Send emails to more than one person and reply to all

Add attachments to emailsBe able to filter and search emails | CC and BCC people in emailsEncrypt emailsUse telecommunication and understand its benefits and drawbacks (Skype etc) |
| **IT**  | * Use a mouse and touchpad
* Use a keyboard to type words
* *Create and save work*
* *Print work*
* Understand computers can simulate real life situation
* *Put together a simple presentation*
 | Combine graphics with textNavigate a document using arrow keys and a mouseDevelop a storyboard and then create a simple animationUse backspace and delete buttonsMake choices about which applications to use (word or PowerPoint)Locate, edit and save different version of their work**WORD**Enter text and imagesChange the font and text sizeUse underline, italics and bold functionsAlign text left, right and centre.Add word art**POWERPOINT**Create a title slide and choose a style. Insert a picture/text/graph from the Internet or personal files.  | Used advanced features of applications to match work to an audienceRecognise an email addressUse the print screen function to capture an image.**WORD**Select certain areas of an image and resize, rotate and invert the image. Edit pictures using a range of tools in a graphics program.Use a variety of font sizes, styles and colours. Add a border**POWERPOINT**Change the layout of a slide. Decide upon and use effective transitions.Layer images (send to back, front etc) | * Create digital content that includes images, sound and text

Create content that is organised into pages that match the needs of the audienceAnalyse and critique digital content Design criteria for evaluating content**POWERPOINT**Work independently to create a multi slide presentation that includes speakers notes. Use transitions and animations to improve the quality of the presentation.Include sounds and moving graphics in the slides. Present to a large group or class using the notes made.Insert videos**WORD**Insert and format text boxesInsert shapesUse dictionary and thesaurus toolsAdd bullet points and numbers Insert a tableAdd a header and footer**EXCEL**Use basic functionsSort information based on valuesCreate graphs using inputted dataBegin to use conditional formatting |
| **E-safety** | * Always ask permission before going online
* Get help when unsure about something
* Talk about how they use computers
 | * Make decisions about whether or not statements found on the internet are true or not.
* Identify devices that can be used to search the Internet.
* Identify what things count as personal information.
* Identify when inappropriate content is accessed and act appropriately.
* Recognise that a variety of devices can be used to connect a number of people.
* Consider other people’s feelings on the Internet
 | Question the ‘validity’ of what they see on the internet.Use a browser address bar not just search box and shortcuts. Think before sending and comment on consequences of sending/posting. Recognise online behaviours that would be unfair. Make and use secure passwordsRecognise social networking sites and social networking features built into other things (such as online games and handheld games consoles) Make judgments in order to stay safe, whilst communicating with others online. Tell an adult if anything worries them online. Identify dangers when presented with scenarios, social networking profiles etc. Articulate examples of good and bad behaviour online | Judge what sort of privacy settings might be relevant to reducing different risks. Judge when and when not to answer a question online. Be a good online citizen and friend. Articulate what constitutes good behavior online. Use different sources to double check information found online. Find ‘report’ and ‘flag’ buttons in commonly used sites and name sources of help (child line, cyber mentors etc) Discuss scenarios involving online risk. State the source of information found on the Internet. Act as a role model for younger pupils.Control how cookies track online usage and be able to delete them |
| **Vocabulary –****Algorithms/****Programming**  | * Instructions
 | * Algorithm
* Instructions
* Sequence
* Debug
* Repeat
* Input
* Output
* Negative
* Cut
* paste

UndoRedo Edit  | Angle Degrees ValueExecuteConditionStatement FunctionProcedure Abstraction Call Decomposition Elevate Simulation  | NetworkRouteSimulation Logical operatorsVariablesIteration Java OrientatedDeclareArgument Class (sub/super)InheritanceAbstractionHardware/softwareInterfacePseudo HandlerSyntaxAssetsDecompositionAbstraction |
| **Data** |  | * Survey
* Tally
* Pictogram
* Information
* Graph
* Software
* Icon
* Sort
* Classify
 | BinaryDigitalFieldFileDatabase Record |  |
| **Word Processing /Communicating**  | * Type
 | * Return
* Backspace
* Spacebar
* Scroll
* Text
* Shift
* Connected
* Save

CutBoldFont Blog OnlineUsernamePasswordPost Login |  InboxServerAttachment Forward | Cipher/decipherCode Encrypt/decryptCryptographyEncode |
| **Connecting**  | * Internet
* Google
 | Memory StorageEmailMultimedia Audio video Internet WebsiteWebpage HyperlinkScrollNavigate Worldwide web | RooterNetworkSurfingBrowserDefault Refresh/reloadSpiderCrawlHitsTabDomain | SkypeInstant messagingFTPHTML codeHackingCSSURLTagCopyright Syntax Element  |
| **Safety**  | * Strangers
* Name
* School
* Age
* address
 | Personal informationTrustworthy/untrustworthy | Privacy settingsBlock ManipulationEndorsementRegister (online)Identity theftPassword protectionSecuritySpamJunk MailVirusCyber bullying BystanderUp stander | Two factor/step verificationEncryption HackerAbuse |