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| Focus areas/ software | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Text and Multimedia  ***2create a super story***  ***Photostory***  ***Microsoft Word*** | Put stories and pictures together using 2 create/ Purple Mash | Put stories and pictures together using 2create/ Purple Mash | use font sizes and effects appropriately to fit purpose of text • develop further basic drafting and editing skills • use spell checker • begin to use more than two fingers to enter text | Y3 and recognise key features of layout and design such as text boxes, columns, borders, WordArt  Use 2 hands and more than 2 fingers | • cut, copy and paste between applications  Use thesaurus  Use all fingers to type | delete, insert and replace text using mouse or arrow keys.  Find and replace.  Use all fingers to type and elements of touch typing |
| Use child friendly search engines to find information for topics.  **Know about internet safety and under supervision use responsibly.** | Use child friendly search engines to find information for topics.  Save information in favourites.  Use History  Use suitable searches  Where can I go on holiday  Or ‘Holiday Destinations’  **Know about internet safety and use responsibly** | Use child friendly search engines to find information for topics.  Understand copyright and plagiarism.  **Know about internet safety and use responsibly.** | Use Google etc search engines with care for safety. Be discerning in evaluating digital content.  **Use technology safely, respectfully and responsibly;** |
| Digital Research  ***Kidrex***  ***Swiggle***  ***Safesearch Kids*** | Find information on line with support | Find information using Swiggle on line |
| Data Handling  ***2 investigate*** | Begin to understand that there is useful information online | Understand that there is a WORLD WIDE WEB where a variety of information can be found and use some of this with the teacher | Use ready-made data to investigate the power of collecting, storing and organising information to answer questions.  Use a data base to sort, classify and create a bar chart to answer questions. | Know data can be stored as numbers, choices, pictures or text. | Understand what data logging is and investigate how its use can make tracking data such as light, sound etc tracking easier. | Analyse data over time |
| Digital Media  ***2Paint***  ***Paint*** | Take photos for projects | Take photos for projects and choose the best from a selection. | Take photos for different purposes- acquire, retrieve store | Select and modify photographs for the different purposes in a Paint program | Record sound for different purposes. Combine sounds | Be aware of how sound can impact on audience and use it to create mood |
| Programming and control  BEEBOTS (KS1)  PURPLE MASH  2SIMPLE | Develop an understanding of what algorithms are and how they are implemented | Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following instructions | 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 |  |
| Communication and collaboration  JiT/J2E5  J2Webby (Blogging) (Accessible through my.uso.im) | Understand that communications can be made online and the importance of safety. | Understand that communications can be made online and the importance of safety. | Have experience of sending a simple email to a safe person.  Recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact | Recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact | Recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact  Make a contribution to a blog | Recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.  Make a contribution to a blog |

Key stage 1 Pupils should be taught to:

• 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

• use technology purposefully to create, organise, store, manipulate and retrieve digital content

• recognise common uses of information technology beyond school

• use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies

Key stage 2 Pupils should be taught to:

• 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

• 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

• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

**Computing Objectives Explained**

**Understanding the statements, key words and technical vocabulary in the Computing National Curriculum.**

KS1 references / KS2 references quoted from the Computing National Curriculum Objectives

**Algorithms**

KS1 understand what algorithms are; how they are implemented as programs on digital devices

KS2 use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

An **algorithm** is a precise list of instructions on how to perform an action. In computing terms, it is instructions for what the computer will be programmed to do. **Algorithms** might even be written in plain English, before translating them into code that the computer will understand.

**Collect, Analyse, Evaluate and Present Data**

KS2 select, use and combine a variety of software … to design and create a range of programs, … that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

**Data** is just information. **Presenting** it could be in the form of tables, charts or graphs; it may be figures in a spreadsheet or records in a database; or it may be in the form of text, images, video or audio. We collect data by gathering from different sources. To **analyse and evaluate** is to study or examine it and draw our own conclusions. You may collect **data** from one source and insert it into another (e.g. creating a graph in a spreadsheet and copying it into a presentation).

**Computer Networks**

KS2 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

**A computer network** is a number of computers connected together, enabling them to communicate with each other. This allows information, software or hardware (such as printers) to be accessed by any computer on the network. They may be connected with wires or wirelessly. We have **computer networks** in our homes, schools and workplaces. The Internet or World Wide Web is like one great big network, connecting millions

**Controlling or Simulating Physical Systems**

KS2 design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems

A **physical system** involves actual hardware or devices, including those that could be attached to a computer. Examples could include data logging devices to measure temperature or light, traffic lights, motion sensors, buzzers or switches. A program (a piece of code) is needed to tell the system what to do. Sometimes computer software is used to mimic or recreate on screen how a real physical system would work. This is called simulating the system

**Digital Content**

KS1 use technology purposefully to create, organise, store, manipulate and retrieve digital content

KS2 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

**Digital content** means any information that is stored or presented on computers or the Internet. Everything you create on the computer becomes digital content. This includes files on your computer, network or on the World Wide Web. Children need to start taking certain factors into consideration, such as where the digital content has come from and who has made it.

**Digital Devices**

KS1 understand what algorithms are; how they are implemented as programs on digital devices

KS2 select, use and combine a variety of software (including internet services) on a range of digital devices

**Digital devices** are any types of computers that you use, including laptops, tablets and smart phones. This also includes hardware which may connect to a computer.

**Decomposing Problems**

KS2 solve problems by decomposing them into smaller parts

**Decomposing** means breaking down into chunks. If there are several parts required in a program to make it work, splitting into smaller sections makes it easier to solve each part separately.

**Debug**

KS1 create and debug simple programs

KS2 design, write and debug programs that accomplish specific goals Errors in programs, or anything that stops them from working properly, are known as bugs.

To **debug** means to fix or get rid of the bugs and solve problems within a program in order to make it work how it is intended. Mistakes are a normal, common part of programming and every computer programmer should get used to the fun of debugging!

**Logical Reasoning**

KS1 use logical reasoning to predict the behaviour of simple programs

KS2 use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

**Logical reasoning** means thinking logically or systematically to solve problems. The best way to understand what a program does or solve errors in a program is to think through sensibly what is supposed to happen.

**Sequence, Selection and Repetition**

KS2 use sequence, selection, and repetition in programs

**Sequence** means to put things into a particular order where it is important that one action needs to be performed before another. Selection means making a choice, specifically where a program can do one of two or more things. Repetition is to perform or repeat the same process multiple times. In a loop, a process can be repeated for a set number of times or until a variable changes. Sequence, selection and repetition are the three main ways to structure a piece of computer code or algorithm.

**Software**

KS2 select, use and combine a variety of software (including internet services) on a range of digital devices

Different types of **software** are more suitable for different tasks. Choosing the best **software** is important for completing a task properly and combining software means using more than one type together, for example creating a graph or chart in a spreadsheet then copying this to a word processor or desk top publisher as part of a report.

**Variables**

KS2 work with variables and various forms of input and output Variables are anything that can be changed or given a value in a program.

A **variable** may be the input from a particular device or become the output, based on some code or calculation; it may be a number or text.