**Geography**

Progression Map

**Alumwell Infant School Computing whole school curriculum progression map**

We learn, we grow, we achieve

# Level Expected at the End of EYFS

We have selected the Early Learning Goals that link most closely to the computing National Curriculum.

ICT is incorporated in ‘Understanding the World (UW)’ in the Foundation Stage. Understanding the World is broken down into three aspects:

* People and Communities
* The World
* Technology
* Pupils in the Foundation Stage are given opportunities to explore and engage with a range of ICT resources. Opportunities are planned for explicit ICT skills teaching and for ICT to support others areas, e.g. Maths. These opportunities are included in the planning overviews.

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| **Key Stage 1 National Curriculum Expectations** | |
| 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. |

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| **Key Stage 2 National Curriculum Expectations** | |
| 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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. | ~~:~~  ♣ 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 |

**Intent**

Information and Communication Technology (ICT) is an integral part of modern living. It is the storage, manipulation, retrieval and presentation of information in a variety of forms. We aim to equip our pupils with the ICT skills, knowledge and understanding to engage in a rapidly changing world.

**Implementation**

Teaching of ICT at Alumwell Infant School will be of a high standard based on professional training and development of staff. Units of work will show progression throughout the Key Stage and appropriate activities matched to the pupils’ levels of increasing competency. Staff within the school will aim to increase pupils’ independence in using ICT across the curriculum. Our pupils will be surrounded by an ICT rich environment in which they will learn;

* **about ICT** (i.e. explicit ICT skills, knowledge and understanding) as well as,
* **through ICT** (i.e. using ICT to support learning in other curriculum areas).

**Impact**

At Alumwell Infant School we aim to:

* develop pupils’ skills, knowledge and understanding of ICT.
* develop responsible, competent, confident and creative users of information and communication technology.
* use ICT to support and enhance other areas of the curriculum.
* stimulate interest in new technologies.
* use ICT to create opportunities for both collaborative and independent learning.
* use ICT to support and enhance teaching and professional development

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|  | **EYFS** | **KS1**  **Statutory Curriculum Guidance**  Non-Statutory Curriculum Guidance  **Teacher Assessment Framework** | | **KS2**  **Statutory Curriculum Guidance**  Non-Statutory Curriculum Guidance |
|  | **EYFS** | **Year 1** | **Year 2** | **Year3/KS2** |
| Vocabulary | * Bee – bots * Blue – bots * Computer * Laptop * Mouse * Screen * debug | * text * image * tool * undo * Select * Shift * Click * Double click * account, * clipart * computer * log on * log off * mouse * password * screen (monitor) * software * username * algorithm, * Bee-Bot, * computing code, * computer program, * tinker, bug, * computer, * debug, * device * input * instructions * output, * solution * Algorithms * unplugged * camera, * collage, * crop, * delete, * download, * drag and drop, * online, * photo, * resize, * save as, * search engine, * sequence, | * battery, * buttons, * computer, * desktop, * device, * electricity, * input, * invention, * keyboard, * laptop, * screen (monitor), * mouse, * output, * , animation, * bug, * computer code, * code (verb), * debug, * icon, * immitate, * instructions, * loop, * repeat, * Scratch JR, * algorithm, * artificial intelligence, * correct, * data, * debug, * decompose, * error, * key features, * loop, | * account, * attachment (file), * BCC, * CC, * computer, * cyberbully, * cyberbullying, * domain, * email, * email account, * emoji, * spam, * username, * code block, * repetition code, * review, * Scratch, * sprite, * tinker * CPU, (central processing unit) data, * desktop, * GPU (graphics processing unit), * HDD (hard disk drive), * QR code, * RAM (random access memory), * ROM (read only memory), * tablet device, * trackpad, * network map, * network switch, * router, * server, * graphs and charts, * information, * record, * sort, * spreadsheet |
| **Online Safety** | Children are aware of internet risks that may occur and how best to deal with them through the use of the ‘SMART’ online safety rules that we promote at our school. | Children begin to consider their activity on the internet and learn about ways to keep themselves safe and why it is important to do so. They also compare appropriate and inappropriate activity on the internet and decide what to  do next.  **KS1 Computing National Curriculum**  Children can use technology safely and respectfully, keeping personal information private; they identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.  Children can:   1. identify what things count as personal information; 2. identify what is appropriate and inappropriate behaviour on the internet; 3. agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords; 4. seek help from an adult when they see something that is unexpected or worrying; 5. demonstrate how to safely open and close applications and log on and log off from websites;   use key vocabulary to demonstrate knowledge and understanding in this strand: safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, key, question, tell, safe, share, stranger, danger, internet. | See previous. | Children become more aware of their digital footprint by reflecting on their experience on the internet. They are able to understand more about age-appropriate websites and adverts and how adverts are used by companies. Children are also introduced to the concept of plagiarism and citation.  **KS2 Computing National Curriculum**  Children use technology safely, respectfully and responsibly. They recognise acceptable/unacceptable behaviour and identify a range of ways to report concerns about content  and contact.  Children can:   1. reflect on their own digital footprint and behaviour online; 2. identify what is appropriate and inappropriate behaviour on the internet, recognising the term cyberbullying; 3. agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords; 4. seek help from an adult when they see something that is unexpected or worrying; 5. demonstrate understanding of age-appropriate websites and adverts;   use key vocabulary to demonstrate knowledge and understanding in this strand: safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying/bullying, plagiarism, profiles, account, private, public. |

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|  | **EYFS** | **Year 1** | **Year 2** | **Year3/KS2** |
| Computer science | Children understand that an algorithm is a set of instructions that can make a device move.  Children can input a short sequence of instructions to control a device - They know that by programming an algorithm into a bee bot they can make it move in various ways. They understand that they must clear codes before starting new codes and begin simple debugging when an error has occurred. | Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that a computer program turns an algorithm into code that the computer can understand.  Children can work out what is wrong with a simple algorithm when the steps are out of order, e.g. The Wrong Sandwich in Purple Mash and can write their own simple algorithm, e.g. Colouring in a Bird activity. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code, e.g. Bubbles activity in 2Code  When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. Children can, for example, interpret where the turtle in 2Go challenges will end up at the end of the program. | Children can explain that an algorithm is a set of instructions to complete a task. When designing simple programs, children show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code.  Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors, e.g. Debug Challenges: Chimp. Children’s program designs display a growing awareness of the need for logical, programmable steps.  Children can identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause and effect sentence of what will happen in a program. | Children can turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts. Their design shows that they are thinking of the desired task and how this translates into code. Children can identify an error within their program that prevents it following the desired algorithm and then fix it.  Children demonstrate the ability to design and code a program that follows a simple sequence. They experiment with timers to achieve repetition effects in their programs. Children are beginning to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects.  Children’s designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, repetition and use of timers. They make good attempts to ‘step through’ more complex code in order to identify errors in algorithms and can correct this. e.g. In programs such as Logo, they can ‘read’ programs with several steps and predict the outcome accurately.  Children can list a range of ways that the Internet can be used to provide different methods of communication. They can use some of these methods of communication, e.g. being able to open, respond to and attach files to emails using 2Email. They can describe appropriate email conventions when communicating in this way. |
| Digital literacy | Children begin to understand what a computer is and the different uses of computers i.e. learning, communicating, finding information, playing games etc  Children are aware of the modern technological devices in our school and classroom settings.  Children use online satellite systems (such as google maps) to further understand the world around them.  Children use technology to create simple digital content, e.g. digital art. - Choose media to convey information, e.g. image for a poster  Children recognise that we control computers. | Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.  Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space such as their My Work folder on Purple Mash. | Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. They can share this knowledge, e.g. 2Publish example template. Children make links between technology they see around them, coding and multimedia work they do in school e.g. animations, interactive code and programs.  Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically such as posting work to the Purple Mash display board. They develop an understanding of using email safely by using 2Respond activities on Purple Mash and know ways of reporting inappropriate behaviours and content to a trusted adult. | Children demonstrate the importance of having a secure password and not sharing this with anyone else. Furthermore, children can explain the negative implications of failure to keep passwords safe and secure. They understand the importance of staying safe and the importance of their conduct when using familiar communication tools such as 2Email in Purple Mash. They know more than one way to report unacceptable content and contact. |
| **Information technology** | Children are given opportunity to use technology to explore and access digital content.  Children are able to recognise technology that is used at home and in school and is used for different purposes. | Children are able to sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds) or using pictogram software such as 2Count. | Children demonstrate an ability to organise data using, for example, a database such as 2Investigate and can retrieve specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions within 2Sequence. Children are confident when creating, naming, saving and retrieving content. Children use a range of media in their digital content including photos, text and sound. |  |