|  |
| --- |
| **Computing** |
| **EYFS****Characteristics of Effective Learning:****Playing and Exploring/Engagement*** Finding out and exploring
* Playing with what they know
* Being willing to 'have a go'

**Active Learning/Motivation*** Being involved and concentrating
* Keeping trying
* Enjoying achieving what they set out to do

**Creating and Thinking Critically/Thinking*** Having their own ideas
* Making links
* Choosing ways to do things
 |
| **Intent** | **Implementation** | **Impact** |
| **At Girnhill Infant School, we provide a high quality and stimulating Computing curriculum by ensuring challenging and playful opportunities across the prime and specific areas of development.** When teaching Computing through the Early Years Foundation Stage, teachers at Girnhill ensure that all children are provided with early experiences of technology. Having a wide range of resources within provision ensures that all children have the opportunities to handle technology purposefully such as; BeeBots, iPads and the interactive whiteboard as well as regular access to simple programmes on devices. At Girnhill Infant School, we are ambitious in our expectation of all pupils, ensuring strong cross curricula links are made to develop children holistically. Throughout the learning day, in explicit taught sessions and through provision:•Children will be introduced to subject specific vocabulary that a computer programmer would use.•Children will use subject specific vocabulary to talk like a computer programmer. •Children will use subject specific vocabulary and definitions that a computer programmer would use.•Children will research, interpret and present information like a computer programmer would. •Children will learn to work and talk like a computer programmer. **Rationale and Order:**Core knowledge is taught in a progressive way throughout EFYS and KS1. By doing this, this allows many key concepts to be revisited and built upon throughout each half term. Allowing children to know more and remember more. Computing also makes strong cross curricula links with learning. We aim to link the computing in an interesting way to other topic work. **Planning:**Computing is planned using the Early Years Foundation Stage, Development Matters, Twinkl Plan It Scheme and the computing progression grids. This ensures a considered sequence of experiences that include subject specific vocabulary, knowledge, development of skills and activities to ensure that children become proficient in technological skills such as operating simple equipment, completing a simple computer programme and gaining an understanding of technological toys this will enable children to know more and remember more. **Curriculum:*** Seeks to acquire basic skills in turning on and operating some ICT equipment.
* Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car.
* Knows how to operate simple equipment, e.g. turns on CD player and uses remote control.
* •Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones. •Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.
* •Knows that information can be retrieved from computers
* Completes a simple program on a computer.
* •Uses ICT hardware to interact with age-appropriate computer software.

**Research:****Closing the vocabulary gap:*** Between birth and 48 months, professional parents speak 32 million more words to children than those from disadvantaged families – herein lies the vocabulary gap.
* Vocabulary size at 28 months equates to linguistic and cognitive ability at age 8.
* Vocabulary at 5 – 7 is a direct predictor of comprehension 10 years later.

**Rosenshine’s principles in action:**Conceptual information initially enters our working memory. Working memory is rather small and only small amounts of information can be absorbed at once. New information is only moved from working memory to long-term memory if we can connect it to knowledge that we already have (our schema). As a result of this, prior knowledge is a major factor in our capacity to learn new information therefore a specific teaching sequence in Computing needs to be implemented based upon daily, weekly and termly review. | Our computing curriculum enables children to become developing computer programmer through high quality provision, which includes:**Teaching sequence:**Planning and delivery follows Rosenshine’s Principles in action –1. Daily review
2. Present new material in small steps
3. Ask questions
4. Provide models
5. Guide student practice
6. Check for pupils understanding
7. Obtain a high success rate
8. Provide scaffolds for different tasks
9. Independent practice
10. Weekly and monthly review

**Teaching:**Children are taught a range of technological concepts (video/ voice recording, digital art, coding and programming) under the overarching principles of The Early Years Foundation Stage, Development Matters. Within this, the children will look at:**Understanding of the World:*** Technology.

This will be during a range of explicit taught sessions and through continuous provision. Children are taught to practise, use and apply these skills independently and collaboratively throughout their learning environment.Children will develop their subject specific vocabulary (generic and content based) through explicit teaching of vocabulary and definitions.Children develop an understanding of key concepts and vocabulary through exposure to a range of fiction and non-fiction subject specific texts.**Learning Environment:**Learning environments and working walls focus on the skills and subject specific vocabulary. Children use these to support their learning and development. Reach questioning enables children to be challenged and ensures teaching and learning is planned and pitched appropriately.**Provision & Resources:**Children have access to a range of technological equipment (Interactive white boards, iPads, Beebots, headphones and digital cameras). These are used in guided sessions, but are also frequently used in provision for children to apply taught skills.**Staff Knowledge:**Staff have produced and developed EYFS skills continuums for computing skills. These are evident in provision and support staff in resourcing, enhancing and providing children with necessary learning opportunities to move learning forwards.**Assessment:**Children are assessed against the Understanding of the World: Technology and Communication and Language: Understanding, Early Learning Goals. Children are assessed at ‘Emerging’, ‘Expected’ or ‘Exceeding’ standard | **Outcomes:**Children demonstrate their understanding of subject specific vocabulary through pupil voice evident during lesson observations and working folders. Pupil voice focuses on the ‘knowing more and remembering more’ principle. |

|  |
| --- |
| **Computing** |
|  **Aims:** The National Curriculum for Computing aims to ensure that all pupils:* Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
* Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
* Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
* Are responsible, competent, confident and creative users of information and communication technology
 |
| **Intent** | **Implementation** | **Impact** |
| **Computing at Girnhill Infant School provides both explicit taught sessions and practical, hands- on learning experiences in which we encourage and enable pupils to make deep learning links with maths, writing, science and design technology as well as the SMSC curriculum and the British Values.** By doing so, we support children to develop their understanding of technology, learn to be safe in the online world, develop the skills to become an effective computer programmer and become digitally literate learners. Throughout the learning day:* Children will be introduced to subject specific vocabulary that a computer programmer would use.
* Children will use subject specific vocabulary to talk like a computer programmer.
* Children will use subject specific vocabulary and definitions that a computer programmer would use.
* Children will research, interpret and present like a computer programmer.
* Children will learn to work and talk like a computer programmer.

**Planning:**Computing is planned using KS1 National Curriculum programmes of study, Twinkl Plan it Scheme planning and the computing progression Grids. This is to ensure a considered sequence of experiences including subject specific vocabulary, knowledge, skills of digital literacy, computer science and information technology. This enables all children to know more and remember more. **Rationale and Order:**Core knowledge is taught in a progressive way throughout EFYS and KS1. By doing this, this allows many key concepts to be revisited and built upon throughout each half term. Allowing children to know more and remember more. Computing also makes strong cross curricula links with learning. We aim to link the computing in an interesting way to other topic work. **Research:**Closing the vocabulary gap:* Between birth and 48 months, professional parents speak 32 million more words to children than those from disadvantaged families – herein lies the vocabulary gap.
* Vocabulary size at 28 months equates to linguistic and cognitive ability at age 8.
* Vocabulary at 5 – 7 is a direct predictor of comprehension 10 years later.

Rosenshine’s principles in action:* Conceptual information initially enters our working memory. Working memory is rather small and only small amounts of information can be absorbed at once. New information is only moved from working memory to long-term memory if we can connect it to knowledge that we already have (our schema). As a result of this, prior knowledge is a major factor in our capacity to learn new information therefore a specific teaching sequence in Computing needs to be implemented based upon daily, weekly and termly review.
 | **Teaching:**Children are taught a range of technological concepts (word processing, Esafety, PowerPoint, digital art, coding & programming) in explicit taught sessions. Each subject area has been split into explicit taught units for coverage of the 2014 National Curriculum throughout the school year using the Twinkl planning. The aims of the units are taken directly from the National Curriculum for Computing. **Year One:** * Word processing skills.
* Computer skills
* Computer Art
* E-safety
* Programming
* Using and applying

**Year Two:** * Presentation Skills
* Using the Internet
* Computer Art
* E -safety
* Programming

**Year Three:*** Word Processing Skills
* Presentation Skills
* Internet Research and communication
* Computer Art: Drawing and DTP
* E-safety
* Programming
* Using and applying

Lessons will follow a specific teaching sequence that allows children to focus on a specific skill, focusing on the subject specific computing vocabulary and evaluating learning using the subject specific vocabulary.Children develop their subject specific computing vocabulary (generic and content based) through explicit teaching of vocabulary and definitions.Children develop understanding of key concepts and vocabulary through exposure to a range of fiction and non-fiction subject specific texts.**Teaching sequence:** Planning and delivery follows Rosenshine’s Principles in action –1. Daily review
2. Present new material in small steps
3. Ask questions
4. Provide models
5. Guide student practice
6. Check for pupils understanding
7. Obtain a high success rate
8. Provide scaffolds for different tasks
9. Independent practice
10. Weekly and monthly review

**Learning Environment:**Learning environments and working walls focus on a range of computing skills and subject specific computing vocabulary. Children use these to support their learning and development.**Knowledge Organisers** :These provide a clear guide to key vocabulary, facts and information, both to use in school and at home.  **Class Learning Journey Big Book :**Regular opportunities to revisit learning through the class learning journey books are planned to recall knowledge and make connections on a regular basis.**Enrichment:**Enrichment opportunities are carefully selected to enhance learning opportunities for children by demonstrating real life contextual understanding of computing.**Assessment:**Progress is assessed by the use of the subject specific computing vocabulary, (video footage, pupil voice scribed, child’s use of language etc) and evidence of the learning process and evidence of the final piece of work. | **Outcomes:**Children demonstrate their understanding of subject specific vocabulary through pupil voice evident during lesson observations and working folders. Pupil voice focuses on the ‘knowing more and remembering more’ principle.  |
| **Curriculum:** |
| KS1 Curriculum: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
 |  |  |
| KS2 Curriculum: 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
 |  |  |