BPS Computing Progression Document 2022-2023

Subject Statement

INTENT

We want all of our pupils to be digitally literate through being creators not consumers. Our broad curriculum encompassing computer science, information technology and digital literacy reflects this. At Brecknock it is our intention to enable children to find, explore, analyse, exchange and present information. We want pupils to be masters of technology and not conditioned to it. Technology is everywhere and will play a pivotal part in pupils' lives. Therefore, we will educate our children on how to use technology positively, responsibly and safely, modelled effectively by all Brecknock stakeholders (teaching staff, governors, parents).

KNOWLEDGEABLE LEARNERS

- The computing curriculum is balanced with the opportunity for pupils to apply their computer scientific knowledge creatively, which will in turn help our pupils become skilful computer scientists.
- Children will learn all three strands of the computing curriculum; digital literacy, information technology and computer science
- Teachers are encouraged to embed computing across the whole curriculum to make learning creative and accessible for all children, closely following the objectives set by the National Curriculum.
- All children including those who have SEND or are disadvantaged are supported to fully access the computing curriculum. This may include additional adult support or use of additional or adapted resources

CONFIDENT COMMUNICATORS

- By being digitally literate, our children will learn to communicate through technology in a variety of ways.
- All pupils will have the understanding that there is always a choice with using technology and as a school we utilise technology (especially social media) to model positive use.
- All pupils will effectively demonstrate their learning through creative use of technology. Building teacher knowledge in this subject will facilitate this.
- Through the teaching of subject specific technical vocabulary, children will be able to explain computer terms such as function, loop, algorithm, optimise and pattern recognition
- Children will be able to tell someone if they feel unsafe whilst using digital technology. They will be able to question information they read, see or hear online.

ACTIVE CITIZENS

- Wherever possible, diverse role models are used to encourage all children to see themselves as being successful coders and users of technology.
- Through our STEAM projects children have the opportunity to apply their critical and computational thinking to make links with science, engineering, art and maths, ensuring a deep and impactful understanding.

IMPLEMENTATION

- A clear and effective, bespoke cross curricular scheme of work that provides coverage in line with the National Curriculum.
- Teaching and learning should facilitate progression across all key stages within the strands of digital literacy, information technology and computer science
- Access to resources which aid in the acquisition of skills and knowledge. Children will have access to the hardware (computers, tablets, programmable equipment) and software that they need to develop knowledge and skills of digital systems and their applications
- A clear and effective scheme of work that provides coverage in line with the National Curriculum.
- Teaching and learning should facilitate progression across all key stages within the strands of digital literacy, information technology and computer science.
- Children will have the opportunity to explore and respond to key issues such as digital communication, cyberbullying, online safety, security, plagiarism and social media.
- Wider Curriculum links and opportunities for the safe use of digital systems are considered in wider curriculum planning.
- The importance of online safety is shown through displays within the learning environment and computer suite. Parents are informed when issues relating to online safety arise and further information/support is provided if required.
- As well as opportunities underpinned within the scheme of work, children will also spend time further exploring the key issues associated with online safety
- Computing is taught by class teachers who are supported by the Computing Lead.

IMPACT

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We encourage our children to enjoy and value the curriculum we deliver. We will constantly ask the WHY behind their learning and not just the HOW. We want learners to discuss, reflect and appreciate the impact computing has on their learning, development and well being. Finding the right balance with technology is key to an effective education and a healthy life-style. We feel the way we implement computing helps children realise the need for the right balance and one they can continue to build on in their next stage of education and beyond, understanding how to keep themselves safe and how to seek help and support if they experience dangers online.We encourage regular discussions between staff and pupils to best embed and understand this. The way pupils showcase, share, celebrate and publish their work will best show the impact of our curriculum. We also look for evidence through reviewing pupil's knowledge and skills digitally through tools like Google Drive and Seesaw and observing learning regularly. Progress of our computing curriculum is demonstrated through outcomes and the record of coverage in the process of achieving these outcomes.

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
KEY SKILLS	To know how to turn on the music centre and select music To be able to use a touchscreen to open and close apps	To use a mouse/touchpad to click and drag To be able to find the letters of my name on a keyboard	To know how to switch a range of digital devices (computer/laptops)/ chromebooks on and off Load programs (office, apps.docs) with support/open and close apps Use a mouse pad to navigate an age-appropriate website/know how to navigate programmes Use a mouse pad to select/drag/position an object or window To talk about what they are doing with Computers/Digital Media using appropriate vocabulary according to equipment available e.g screen/keyboard/laptop/computer/mous	To develop awareness of keyboard layout and use of a mouse e.g. use the mouse or arrow keys to insert words and sentences To know backspace/undo/shift for capital letters/enter/upload Changing font/ size/colour and style of text. typing skills (use two hands when typing) Logging on/off digital devices Use navigation skills to access appropriate parts of a website/ simple program/ app	To upload from digital devices and the Internet to a shared space (Class folders/Chn's Folder) To know that they can access their work from any school computer by logging on to their Folder/Network Area. Open/edit and save their work in own space To insert/cut/ copy/paste Use ctrl+v and ctrl+c to copy and paste To use 'save as' to create another version of their work To develop further basic drafting skills: Insert words or sentences. Centre titles. Change font, font size, colour.	To use the online dictionary/thesaurus To use ctrl+alt+prntscrn to take a picture of the whole screen and paste it into paint to adapt it. Use windows snipping tool to capture and annotate work Continue to practice touch typing Use more than two fingers to type To develop further basic drafting and editing skills Edit and top copy literacy work using Word/PPT/Publisher/ Slides/Docs Use spell checker/delete, insert and replace text	To be able to use an online dictionary/thesaurus to search out level specific grammar and vocabulary independently To use a variety of techniques to save and annotate on screen projects (screenshots/snipping) To find, save, crop and edit images to suit needs of projects Continue to practice touch typing and use several fingers when typing Use spellchecker and grammar checker to ensure consistency throughout work	To continue to build on Yr5 key skills To select suitable software to edit and redraft written work Use a variety of keyboard shortcuts to improve efficiency on computing systems

			e/headphones/chromebook		To practice touch typing	using mouse or arrow keys		

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Computer Science	To make toys work using buttons/switches To follow a simple algorithm To put simple instructions in order to create a sequence of instructions	To plan a route for a friend or robot To be able to code a robot to go to a certain place To debug an algorithm or some code	To explore a range of control toys and digital devices (BeeBots/microphones/laptops/chromebooks) To follow instructions to move around to complete a simple task To give a sequence of instructions to complete a simple task (ScratchJR/Scratch) To record instructions simply using pictures To understand that instructions should be given clearly and in the correct order) To talk about what will happen when instructions are given in a sequence to navigate a sprite/BeeBot around a course (ScratchJR/Scratch)	Understand that programs use precise instructions to work Create simple programs and find bugs in them. Predict outcomes of their algorithms and programs To know how to control a range of digital devices To know that devices and actions on screen may be controlled by sequences of actions and instructions To create a sequence of instructions to complete a simple task (move a BBot/create a simple shape) To control a floor robot using appropriate buttons (BeeBots) To make predictions about what will happen when a command is entered To discuss how to improve/change their sequence of commands. To know the purpose of a range of digital	To develop an understanding of how technology works and how computers process instructions and commands. To create/edit and refine more complex sequences of instructions for a variety of programmable devices e.g. using the repeat command To use a computer to create basic applications, investigating how different variables can be changed and the effect this has To understand that computer simulations can represent real life situations. To use simulations to represent real life situations To navigate a programming app To control a character by dragging commands To write a simple program/create a simple animation	To understand that ICT allows for situations to be modelled which it would be impractical to try out in real life To investigate the effects of changing variables in these simulations To develop their understanding of how technology works and how computers process instructions and commands To create a program which can be controlled by external inputs (Scratch) e.g to program their character to navigate their 3D world with an input using control device To change algorithms/conditional statements and investigate the effect this has e.g use of 'if' and 'then'	To begin to develop understanding of how technology works; how computers process instructions and commands, including the use of coding languages. To experience a selection of coding environments (Scratch, Code.org, Microbit) To design their own game including sprites, backgrounds, scoring and/or timers. To use conditional statements to create unique algorithms Begin to understand the history of Computer Science Use variables to add variation to algorithms To program start and ends to games involving wins, losses and draws To create variable interaction in quizzes and games using a combination of selection, conditional statements and variables (Data blocks in scratch/microbit) To evaluate the effectiveness of their algorithms	(Building on Yr5 work) To continue develop understanding of how technology works; how computers process instructions and commands, including the use of coding languages. To experience a variety of coding environments (Scratch, Code.org,Microbit) To show an understanding of the history of computing and computer science. To design their own game including sprites, backgrounds, scoring and/or timers. To use conditional statements to create unique algorithms Use variables to add variation to algorithms To program start and ends to games involving wins, losses and draws To create variable interaction in quizzes and games using a combination of selection, conditional statements and

				devices: laptops/cameras/computers To begin to answer 'What if' questions using a simulation (ScratchJr/Scratch to know the difference between input/output devices			To continually debug code to identify and correct errors, exceptions and exploits	variables (Data blocks in scratch) To evaluate the effectiveness of their algorithms To continually debug code to identify and correct errors, exceptions and exploits
INFORMATION TECHNOLOGY	To be able to ask an adult to help me with technology To be able to take turns on a digital device	To talk about what might stop a device working To be able to talk about different digital devices	To use a digital device to take a picture or record their work (digital camera/ipad) To select or record a sound to add to their work (Scratch) To be familiar with a keyboard To select images on a computer/laptop To begin to type sentences (with support using capital letters, full stops and other punctuation To use a paint package to a create a picture (paint) To use pre=defined layouts or templates for presentation	To develop basic editing skills e.g. shift key for uppercase, question marks, spaces after punctuation. To know how to improve the presentation of a piece of work by changing the font size, colour and style To use different layouts and templates for different purposes (e.g. story/newspaper /poster) To understand that folders are used to organise files on a computer To organise files and folders by creating, renaming, moving, copying and deleting	To use still and digital cameras To know what makes a good photo (hold the camera steady/point at people's faces/to discuss the quality of their image and make decisions (e.g. delete a blurred / bad image) To download images and video To select suitable sounds (including recording with a microphone) To recognise and use key features of layout and design such as text boxes, columns, borders, WordArt Explore and begin to use more advanced features in a paint package, eg colour picker, colour replacer	To evaluate a range of digital media, appropriate to task e.g websites To plan structure and layout of document/presentation To improve presentation of a document by laying it out effectively To select and import images from digital cameras and graphics packages Select and import sounds (eg own recording) and video/ visual effects Through peer assessment and self-evaluation, evaluate work both during and after completion, and	To use presentation software and skills to present work or information relating to their learning. To evaluate a range of digital media, appropriate to task e.g website, prezi, blog, pdfs and recognise key features of layout and design and relate to other curriculum areas (Reading/Writing/Topic) To select software to support structure and layout of document/presentation To improve presentation of a document by considering its target audience To select and import graphics from digital cameras, graphics packages and online sources	(Building on Yr5 work) Through peer assessment and self-evaluation, evaluate projects both during and after completion, and make suitable improvements To continue to produce and add to a portfolio of written and visual work and projects for sharing with other children inside and out of school To engage in a range of online activities including; publishing and sharing work for evaluation and evaluating the work of others.

			To know other uses for ICT outside of school To discuss examples of other ICT uses.	To combine graphics, text and sound to enhance their text (PPT/Word/Docs/Slides) To use a sound recording tool to record voice for a specific purpose (Scratch/PPT/Slides) To create a simple animation to illustrate a story or idea (Scratch/ScratchJr) To upload an image	Save images and use them as part of other multimedia/ desktop publishing work To use music software to select/record/organise and reorganise sounds To locate, record, save and retrieve sounds to add sounds from different sources. Sequence still images and use simple editing techniques to create a presentation	make suitable improvements To develop an increasing awareness of intended audience. To import a photograph and explore the effects which can be created To select areas and manipulate to give different effects. To capture video clips to communicate their ideas To cut and reorganise digital video To use a timeline to organise frames of video footage To add text, sound effects and other graphic effects To select from your best work to save and share (presentation, class folder) Ro use at least two online communication methods in topic work (blogs/emails etc.) To discuss advantages and disadvantages of	To select and import sounds (eg own recording, free online sources) video/visual effects Through self-evaluation, evaluate projects both during and after completion, and make suitable improvements To develop projects with an awareness of intended audience To capture video clips to communicate ideas and information to specific audiences To edit, reorganise and enhance digital video for a specific purpose or audience To begin to produce a portfolio of written and visual work and projects for sharing with other children inside and out of school To use online communication methods to support topic work To consider language, layout and format when communicating with different people online	

						these communication methods To start to think about the different styles of language layout and format of online communications sent to different people (eg. when it is appropriate to use "text language"). To begin to experience forms of online discussion: such as blogs, wikis, Start new threads and contribute to others relevant to the topic; consider relevance of contributions		
		EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
DIGITAL LITERACY	To be able to listen to and play digital stories	To be able to use technology to help me learn about the world To ask questions about different digital devices and answer questions about what I am doing with a range of technology.	To know that we can communicate online (email/text) To contribute ideas to a class email or respond to a message To create a story to combine words, pictures, sounds and animations (ppt) Use simple writing tools to create their	To compare the different ways that messages can be sent e.g email/text /telephone/letter and start to consider their advantages and disadvantages To contribute and respond to an e-mail (with support from teacher) to look and talk about other people's	To reply to an email independently To evaluate a range of printed and electronic texts, appropriate to task e.g newspaper, poster, webpage and recognise key features of layout and design To organise and present information for a specific audience	•To open/read, and reply to email (independently) To collaborate to create a document, giving thought to its audience and including links/images/embedded media (PPT) To understand that ICT allows us to make improvements to our	Use technology to present their work, showing an increasing degree of skill and using advanced software To use different filming techniques and camera angles e.g. zoom, panning, wide shot etc. to create different mood/perspective	(Building on Yr5 work) Use technology to present their work, showing a degree of skill and using advanced software To use a range of sources to check validity and recognise different viewpoints and the impact of incorrect data

			own content (office/purple mash) Follow age-appropriate links provided by the teacher to research information With support, use sound recording tools to convey a simple message To sort objects into groups according to the criteria	contributions online (padlet/prezi/Scratch) To consider who can see their contributions on scratch/padlet To know that stories can be shared in different ways (photos/video/animation) To create/use own pictograms/graphs (purple mash) To create QR codes (goo.gl) To access websites and documents using QR codes To enter/save and retrieve pictures and text	To begin to experience forms of online discussion: such as blogs, wikis, quizzes, surveys and google hangouts To know that ICT enables access to a wider range of information and tools to help find specific information quickly Produce work using a computer, using more advanced features of programs and tools (font sizes) To work collaboratively to create documents, including presentations To understand the basic structure of a database To add data to a pre-made database To use the data in a pre-made database to generate graphs and charts To use technology to create graphs and charts To answer questions by searching and sorting the database	work quickly and efficiently. To continue to use technology to create graphs and present data in different ways. To design and create a basic database To use a database to answer questions that have been constructed To enter data into a spreadsheet To change data and observe changes in results	To plan a video or animation by drawing a storyboard (Storyboard It) To use a range of sound effects, music and voice-overs to create mood/ atmosphere To select and edit sounds, text, movie clips and other effects to suit purpose and audience Begin to recognise that the internet may contain material that is irrelevant, bias and inappropriate. Begin to understand how issues of copyright apply to their own work Begin to understand the different type of copyright pertaining to digital medias	Understand how issues of copyright apply to their own work Understand the different type of copyright pertaining to digital medias Recognise that the internet may contain material that is irrelevant, bias and inappropriate. Save and use pictures, text and sound recognising copyright issues