Computing

Curriculum Statement

Intent

At Cummersdale Primary School we want our students to be MASTERS of technology. We want to enrich their experiences with technology and computing, and with technology playing a pivotal part in students' lives, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We want our pupils to be confident, competent computer experts and our broad curriculum; encompassing computer science, information technology and digital literacy reflects this. We recognise that the best prevention for a lot of issues we currently see with technology/social media is through education. Building our knowledge in this subject will allow pupils to effectively demonstrate their learning through creative use of technology. We recognise that technology can allow pupils to share their learning in creative ways. We also understand the accessibility opportunities technology can provide for our pupils. Our knowledge rich curriculum has to be balanced with the opportunity for pupils to apply their knowledge creatively, which will in turn help our pupils become skilful computer scientists. We encourage staff to try and embed computing across the whole curriculum; to make learning creative and accessible. We want to give the children at Cummersdale school opportunities to explore a variety and range of tools they can use to express their learning and hope children develop the independence and confidence to choose the best tool to fulfil the task and challenge set by teachers and become fluent users by Upper Key Stage 2.

Implementation

At Cummersdale School, we feel the majority of computing is and can be embedded across the curriculum, utilising a cross-curricular approach; using computing to enhance the learning in other areas of the curriculum. We have access to a fantastic variety of programs, resources and apps to achieve this. Some examples include; Purple Mash, Scratch, iLearn, BeeBots, Garage band, Google Explorations.

Areas covered using technology to enhance learning include:

Reception: Introducing Showbie so that the children are able to talk about the work that they have done, cross curricular links. Children can use voice notes to talk about their work, for the more able and those now writing words, they can add labels. Accessing apps such as Numbots to enhance the learning in the classroom, stretching the more able and supporting the lower ability to consolidate their learning. Interactive clip boards are used to give instructions to children about a task so they can have independence and allow free flow throughout the continuous provision.

Year 1 and 2: The children enjoy doing a variety of activities on purple mash and can load and save their work independently. A lot of work has cross curricular links for example adding photos and writing about parts of a castle, using algorithms to make fish swim in different directions in our Seaside topic and rockets launching in our Space topic. They access apps such as numbots, Edshed and epic independently to support learning in other areas. In computer week we learnt to use the programme sketchpad and the children investigated and learnt about all the art tools to create pieces of art based on artists and topic work.

Year 3 and 4: We access and use technology frequently in year 3 and 4. We use a variety of learning apps including TTrock, spelling shed and epic. The use of Showbie allows the children to carry out work in different ways, share their work and access documents instantly. Children have the opportunity to present their work in a range of ways and enjoy using Keynote, iMovie and Green screen activities. Furthermore, we provide a coding club after school club for those children who want to progress their coding skills or try something new.

Year 5 and 6: The children are taught how to design, write and debug programs that achieve specific goals, such as programming a Mars Rover using binary code. We use a variety of creative apps to make learning fun and interactive. For example Curiscope which is an augmented reality tool which allows the children to explore and learn about the internal organs of the human body. The children are able to

present their work in an interactive manner (animated water cycles using Keynote, biographies of famous people using ChatterKids) and select the most appropriate app to do this.

To complement our use of technology across the curriculum, we also deliver a carefully designed program through discrete teaching to enhance children's knowledge and understanding of the key learning objectives set in the National curriculum through the Kapow Primary Computing scheme of work. This scheme of work supports our planning and ensures the progressions in skills needed. Kapow delivers the Curriculum aims through three key strands:

- Computer Science
- Information Technology
- Digital Literacy

To deepen the learning further and immerse the children in a topic, we offer whole school Computing weeks. This is when the whole school focuses on one subject only. During this week there is collaboration between the year groups ensuring that clear progression of skill is demonstrated and then showcased in a celebration of their work at the end of the week.

All children in the school have access to an iPads and Google Chrome Books to aid learning, with children in Key Stage one and Key Stage Two having access to their own iPad. This ownership of having their own iPad gives the children instant access to apps and a personalised experience and a sense of responsibility.

Children with additional needs are included in whole class lessons and teachers support as necessary. Work is adapted where necessary to allow them to access the same work as their peers. This adaptation could be via additional teacher or teaching assistants support. Adaptive technology being used to record evaluations to reduce the need for written work, voice notes can be added to work.

Remote / Blended learning: We at Cummersdale school feel confidently prepared in the event of future closures, partial closures, isolation of bubbles and home-learning. The overarching goal was to enable pupils to access high-quality teaching and learning, even when they are unable to attend school. The teaching staff have carefully considered, consulted on and developed approaches in order for children to access the curriculum, whether they are delivering blended learning through the provision of both in-school and online lessons, or working from home and online only. We are developing a healthy digital estate and we utilise many digital learning platforms including: Showbie, Purple Mash, Google Classrooms, Youtube and BookCreator. We have continued to use ClassList since

the first national lockdown as a communication link to parents for whole school and class notifications, sharing good work, and providing support.

Impact

We want the students of Cummersdale School to enjoy and value the curriculum we deliver. We want our 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 at Cummersdale School, 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. 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 look for evidence through reviewing pupil's knowledge and skills digitally through Showbie which captures progress of skill through the year groups.

Curriculum Map

Cycle A	Autumn	Spring	Summer
Reception	Networks and Systems - using a computer/IPad	Computing Systems: Exploring hardware. Programming:Instructions	Data handling: Introduction to data Programming: Bee-Bots
Year 1 & 2	Rocket to the moon- Develop keyboard and mouse skills through building rockets Bee-bot - early programming skills ISS- how data is collected	Algorithms and debugging - what are they and how can they be developed. Online Safety 2- Sharing and how to keep things private	Digital Imagery-Create a story using photographs. How to edit and enhance. Stop Motion - Storyboard animation
Year 3 & 4	Journey inside a computer: Knowing how computers work for a better understanding of how to instruct them to achieve the desired result. Assuming the role of computer parts and creating	Programming Scratch: learning to use repetition or 'loops' and building upon skills to program; an animation, a story and a game	Top trumps databases: Using the theme of a 'Comparison cards game' (based on the popular game, Top Trumps), to understand what a database is by learning the meanings of records, fields and data. Further exploration will lead to

	paper versions of computers to consolidate an understanding of how a computer works.		the development of the ideas of sorting and filtering.
Year 5 & 6	Mars Rover I: The children learn about the automated vehicle the Mars Rover exploring how and why it transfers data, understanding how messages are sent using binary code and experiencing how to program the Mars Rover.	Mars Rover II Children deepen their understanding about how computers work, what data is and how it is transferred as well as developing their 3D design skills. They learn how to reduce file sizes so that they can be sent quickly.	Search Engines: Using keywords and phrases, identifying inaccurate information, and learning page rank works as well. These lessons are available for both Microsoft and Google schools

Cycle B	**Autumn**	**Spring**	**Summer**
Reception	Networks and Systems - using a computer/Ipad	Computing Systems: Exploring hardware. Programming: Instructions	Data handling: Introduction to data Programming: Bee-Bots
Year 1 & 2	What is a computer?- computers in the wider world. Getting started- Navigating a computer, learning to drag, drop, click and control. Online safety 1- useful tips and the digital footprint	Programming - scratch- Exploring blocks to programme a story, animal and make music.	Introduction to data- what is data and how is it useful. Word processing - Keyboard shortcuts, editing and importing images. Improving mouse skills - drag, drop, click to create art.
Year 3 & 4	Investigating Weather: Researching and storing data using spreadsheets; designing a weather station that gathers and records data; learning how weather forecasts are made and using green screen technology to present a weather forecast.	Web design Children develop their research, word processing, and collaborative working skills whilst learning how web pages and web sites are created, exploring how to change layouts, embed images and videos and link between pages.	Computational Thinking Plugged and unplugged activities to develop the four areas of computational thinking
Year 5 & 6	Stop Motion Animation	Bletchley Park Code Breaking Children learn about code breaking and password hacking.They will also	Scratch-Music Programming

	Storyboarding ideas, taking photographs and editing to create a video animation	develop their digital literacy skills by creating presentations about historical figures.	Applying programming skills to create sounds and melodies leading to a battle of the bands performance