Whitehall Nursery and Infant School
Computing Policy

Rationale

Computing is an integral part of modern life that children are surrounded by from very early ages, from the machines that are used to monitor them as babies to the appliances at home. Computing has links to practically every aspect of life and it is our job as teachers to help children develop a thorough understanding of computing to not only gain an insight into the world around them, but to empower them with the skills needed to keep themselves safe online and to shape the future. We teach computing at Whitehall so that children can become safe, responsible users of technology who are equipped with the skills needed for future workplaces and as active participants in a digital world.

Aims and objectives

Here at Whitehall Nursery and Infant School we encourage all pupils to:
- Engage in a relevant, challenging and enjoyable computing curriculum.
- Meet the requirements of the national curriculum programmes of study for computing.
- Use computing as a tool to enhance learning throughout the curriculum.
- Respond to and explore new developments in technology.
- Equip pupils with the confidence and capability to use technology into their futures.
- Develop an understanding of how to use computing software and other relevant technology safely and responsibly.

We will deliver this by teaching and embedding computing principles into our curriculum offer, covering these areas:
- Programming and Coding
- Digital Literacy
- E-safety and using the Internet
- Animation

Computing and the National Curriculum

The National Curriculum (2013) aims to ensure that 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

In order to meet the aims of the National Curriculum, computing will be taught to pupils from Nursery through to Year Two. We use aspects of a 'Cornerstones' curriculum alongside technical software 'Discovery Coding' to deliver an enriched and purposeful curriculum. Progression is carefully planned (see appendix 1) across the areas of computing (programming and coding, digital literacy, e-safety and using the internet and animation) including how these skills are deepened, developed and mastered as children progress through the year groups.

Content will be taught in an exciting, thematic way where computing skills and focuses are weaved into exciting topics that each year group engages in. Computing will be taught at least weekly.

Each year we also have a specific, additional focus on e-safety in line with the national 'Safer Internet Day' (Spring term) where parents are invited into workshops and additional content is weaved into the week's curriculum to heighten awareness and engagement from children and families.

Computing in the EYFS

By the end of the Early Years Foundation Stage it is expected that:

- Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes. (ELG)

Computing in the Early Years is taught through play-based, thematic topics with both adult-led focus teaching and opportunities for independent discovery and exploration being offered to children in both indoor and outdoor provision. In Early Years these opportunities are:

- Playing with age appropriate technology toys (e.g. toys with buttons, levers and dials, electronic toys, CD players, pull back cars etc.)
- Using cameras or iPads to take photographs
- Using tablets to play age appropriate games
- As a class, using the internet to find information from images and videos
- Being introduced to beebots and having the opportunity to turn them on and make them move appropriately
- Using Discovery coding software to complete a simple program
- Technology hunts at school and at home
- Role play with technological resources (E.g. Toy washing machines, ovens, microwaves, irons, phones, computers)

SMSC and PHSE

At Whitehall Nursery and Infant School we recognise that computing can make a significant impact to the teaching of SMSC and PHSE in both the resources that can be used and topics that can be discussed and used as specific teaching stimulus. As part of their social development children can develop a sense of global citizenship by using the internet and e-mail. Because of this, learning to use the internet effectively and safely is a core part of our teaching. We raise awareness and understanding of this (including stranger danger, sharing personal information with others, dangers interacting in live apps/ websites) with both children and families, recognising that our online presence has the same importance as our physical presence in our communities. This strengthens children's moral development by learning about making the right choices to keep themselves safe when using the internet. Spiritually children are able to use their computing skills effectively to access the wonder of the world and intricacies of nature that would otherwise remain unknown to them; for example, using the internet to discover what life might be like in another part of the world or investigating life for creatures in the ocean. We promote children's cultural development by sharing online media from around the world to promote understanding of different festivals and celebrations. We also recognise the benefits that technology can offer which are also discussed and covered; e.g. using technology to connect to family and friends, ease of communication and future employment skills being key topics.

Pupils' Experiences

In computing opportunities will be created for pupils to:

- Build lifelong skills, which can be applied in many areas of future life.
- Enjoyment from engaging in interactive, practical lessons.
- Working in a variety of ways- in groups, in partners, alone, as a class.
- Opportunities to develop personal interests using technology- e.g. by attending clubs, interacting in available software during child-initiated learning.
- Opportunity to flourish in learning using different resources.
- Opportunity to build confidence, develop and learn new skills relevant to their future.

Computing and Inclusion

At Whitehall Nursery and Infant School, we recognise that computing can raise pupils' motivation levels, increase access to the curriculum, improve accuracy and presentation of work and offer additional

language support tools for children with English as an additional language (EAL). For these reasons we aim to maximise the use and benefits of using computing across the curriculum.

As a school, we teach computing to all children, whatever their ability and individual needs. This is in line with the school's curriculum policy of providing a broad and balanced education to all children. Through our computing teaching, we provide learning opportunities that enable all pupils to make good progress. We strive to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take all reasonable steps to achieve this. This is achieved through specific planning which is carefully differentiated to meet the needs of all pupils, additional resources or learning prompts (if required), targeted teacher support through 1:1 opportunities, small group work and directed questions and LSA support, where needed. For further details see the relevant SEN, Pupil Premium and More Able policies.

Assessment for learning

Children demonstrate their ability in Computing in a variety of different ways. Teachers will assess children's learning by making informal judgments as they observe them during lessons. By asking frequent and directed questions, throughout the lessons, to assess their learning and immediately address any misconceptions. On completion of a piece of work, the teacher assesses the work and gives oral or written feedback, as necessary, to support the child in making progress. Pupils are also encouraged to make judgments about how they can improve their own work. A judgement is made by the class teacher with regard to the progress a child has made and this is recorded on a subject specific matrix. The subject leader looks at examples of children's work across the year groups and monitors these against the expected attainment for the end of Key stage. Subject Matrixes are gathered in termly by Subject leaders to monitor progress of individual children within classes.

Resources

The following is a list of resources readily available in school in order to help deliver a broad and balanced Computing curriculum. These are only the ICT based resources; computational thinking can be taught using as little as a piece of paper!

- Dash and Dot robots
- Remote controlled robots
- Microscopes
- Bee bots
- Chromebooks
- PCs in each classroom
- Apple iPads
- Discovery coding software
- Mechanical toys in Early Years (including push and pull, books with flaps, etc.)

Monitoring

The coordination and planning of the Computing curriculum is the responsibility of the subject leader, who also:

- supports colleagues keeping informed about current developments in subject and by providing a strategic lead and direction for this subject;
- discusses progress with the head teacher and evaluates the strengths and weaknesses in their subject and highlighting areas for further improvement;
- arranges time to review evidence of the children's work;
- observes Computing lessons taught by class teacher in order to provide constructive feedback, highlighting positive areas and areas for improvement; directing colleagues to sources of support including in house good practise;
- Provide a termly summary to Governors.

This policy will be reviewed every three years.

Signed: K. Cripps Kcripps

Date: 29.06.20

Appendix 1- Progression in Computing

Area	Nursery	Reception	Year 1	Year 2
Programming and Coding	Pupils will have opportunities to play with beebots. Turning them on and experimenting by pressing buttons.	Pupils will continue to work with beebots programming one step algorithms (e.g. Forward, go) Pupils will program a simple computer code (e.g. When x clicked, x vanish.)	Pupils will input a provided algorithm into a beebot or floor robot of up to 5 steps with set start and end points. Pupils will follow an algorithm to travel around a map or grid with set start and end points. Supported to spot and solve errors in algorithms. Pupils will continue to progress through a coding program (e.g. Discovery Coding)	Pupils will program in their own algorithms into beebots in order to direct them between 2 given locations. Then with a third middle point. Pupils will solve errors in algorithms with peers. Pupils will conintue to progress through a coding program (e.g. Discovery coding) including fixing bugs.
Digital Communication	Children will explore communication technology through play (e.g. telephones and computers)	Children will continue to explore through play using communication technology toys appropriately.	Children will develop their knowledge of communication technology by writing and sending an email and using another form of digital communication such as video calling as a class.	Children will learn how to send their own emails and attach media and files.
Digital Organisation (Saving docs, using files.)		Children will take photos using a camera or a tablet, upload to a computer and print.	Children will learn to search computer folders in order to find an image.	Children will learn to save work as a file on a computer. Children will learn how to download images from a device and save in and organise folders on a computer.
Using different software (drawing software, Microsoft word, PowerPoint)	Children will have opportunities to access and explore age appropriate software (e.g. beep)	Children will use age appropriate computer software with increasing ability and understanding.	Children will use presentation software to make a slide with text and colour and a copied and pasted image. Children will use simple drawing software on a tablet to draw an image and print. Children will edit an image by	Children will use presentation software to make presentations with multiple slides and various media such as images, video and audio. Children will use drawing software such as paint on a computer to draw images.

			pasting another image on top.	Children will use a word processor to create different documents such as an invite or letter.
Finding and retrieving information from the web.	Children will be shown online educational videos as a group and discuss the information in them with an adult.	Children will watch online educational video and view images as a class then discuss the information as a class.	Children will explore a chosen website to find information about a set topic. Children will use online virtual tours to find information. Children will use an image search engine to find images.	Children will watch live webcams to find information on a topic. Children will use a search engine to find videos to provide them with information on a topic. Children will use a search engine to find information on their topic.
E-safety	Children will discuss as a class about what the internet is and the fun things that it can be used for. Parents will be advised on keeping their children safe on the internet and how to use parental contrals.	Children will discuss dangers on the internet such as viruses, talking to strangers and clicking on unknown links and talking to adults. Parents will be advised on keeping their children safe on the internet and the dangers of unsupervised access.	Children will learn about online risks such as talking to strangers, viruses clicking unknown links and cyber bullying. They will also discuss who to speak to if they face any issues online. Parents will be advised on keeping their children safe on the internet and the dangers of unsupervised access and informed of services for reporting negative online activity.	Children will continue to learn about online risks and will create presentations or activities to peer teach younger pupils. Children will learn about things they can access online in order to report negative online behaviour.
Animation	Children will explore mechanical toys experimenting with ways of making them move.	Children will show skill in making toys work by pressing parts or lifting flap to achieve effects.	Children will create a simple animation using computer software.	Children will develop skills using computer software for animation. Children will create a dough ball stop motion animation using video editing software.
Typing Skills	Children will play with toys with buttons exploring their purpose.	Children will play age appropriate games that involve using the keyboard.	Children will type words, captions and short phrases to label their work and begin to type sentences using a	Children will type for longer eventually producing paragraphs including a range

			full stop and capital letters by the end of the year.	of different punctuation. Adjusting text size using bold, italics and underlining.