COMPUTING POLICY

Related Documents:
Computing Intent, Implementation, Impact Document
Acceptable Use Policy
Safeguarding Policy
All Curriculum Policies

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1. INTENT

A high-quality Computing education equips pupils to use computational thinking and creativity to understand and change the world. In Computing our provision is designed to promote a journey to becoming 'masters of technology'. Technology is everywhere and plays a pivotal part in pupil's lives, Therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We want our pupils to be creators not consumers and our rich curriculum encompassing computer science, information technology and digital literacy reflects this.

The core of Computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content.

Computing ensures that pupils become digitally literate – able to use, express themselves and develop their ideas through, information and communication technology at a level suitable for the future workplace and as active participants in a digital world.

2. AIMS

Through Computing teaching, we equip children to participate in a world of rapidly changing technology. We allow them to communicate with a range of audiences and make links and connections with the wider world they live in. We enable them to find, explore, analyse, exchange and present information in a variety of ways. We also help them develop the necessary skills for using information in an effective way. This is a major part of enabling children to be confident, creative and independent learners.

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.

3 TEACHING AND LEARNING

The teaching style that we aim to adopt in Computing is as active and practical as possible to equip children with the technological skills they need to become independent learners.

While at times it is necessary to give children direct instruction on how to use hardware or software, the main emphasis of our teaching in Computing, is to firmly embed it in all areas of the curriculum, so that it becomes a vehicle for teaching and learning. This then allows individuals or groups of children to use Computing to help them progress in whatever they are studying.

For example, children research topics in Geography using software which allows them to explore other places and cultures; they learn to manipulate photos and images in Art; they may investigate food and nutrition in Science on the Internet; use an iPad in PE to improve performance or set out equipment.

We recognise that all classes in school have children with a wide range of Computing Skills. It is essential we recognise that although many children in our school have access to Computing equipment at home, others do not. We therefore provide suitable learning opportunities for all children by matching the challenge of the task to the ability and experience of the child.

4. CURRICULUM PLANNING

As a school, we have chosen the Purple Mash Mixed Age Computing Scheme of Work from Reception to Year 4. The scheme of work provides detailed long, medium and short-term planning and supports teachers in delivering engaging lessons which help to raise standards and allow all pupils to achieve to their full potential.

We are confident that the scheme of work more than adequately meets the National curriculum for Computing. It provides immense flexibility, strong cross-curricular links and integrates perfectly with the 2Simple Computing Assessment Tool. Furthermore, it provides excellent teaching and learning material and guidance for less confident teachers. Through the use of Purple Mash we believe we are able to provide an exciting, rich, relevant and challenging Computing curriculum for all pupils.

Each year group's programme of knowledge and skills is designed with a cycle approach in mind; building on previous learning (See Appendix 1 Purple Mash Mixed Age Overview).
Within the Purple Mash scheme the use of precise, technical Computing language is consistent and progressive across all year groups. The vocabulary can be seen on each of the Unit 'Knowledge Organisers' and is a key feature of teaching and learning for every unit of work.

Teachers should ensure that Computing capability is also achieved through all other subject areas and where appropriate and necessary, Computing should be incorporated into work for all subjects using a wide range of interactive resources. This can be done through the use of Purple Mash as it has an online portal of age-appropriate software, games and activities, as well as additional topic materials to support children's learning in other subject areas using alternative software.

Staff, pupils and parents are required to sign an Acceptable Use Policy. Parents are assured that their child's use of the Internet at school is always supervised and that secure filters are in place through the Local Education Authority.

4.1 EYFS

We teach Computing in Reception as an integral part of the topic work covered during the year and as play-based learning experiences in a range of contexts (including outdoor learning). Children have the opportunity to use the computers, iPads, Beebots, CD players, laptops etc. Role-play areas include props such as tills, books containing ICT tools and hardware, microwaves, kettles, mobile phones and laptops which children see as everyday life technology. Children gain confidence, control and language skills through these rich opportunities.

4.2 KS1

By the end of key stage 1 pupils should be taught to:

- understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions;
- write and test simple programs;
- use logical reasoning to predict and computing the behaviour of simple programs
- organise, store, manipulate and retrieve data in a range of digital formats;
- communicate safely and respectfully online, keeping personal information private, and recognise common uses of information technology beyond school.

4.3 KS2

By the end of key stage 2 pupils should be taught to:

- design and write 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; generate appropriate inputs and predicted outputs to test programs;
- use logical reasoning to explain how a simple algorithm works 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;
- describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely;
- select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

5. CROSS CURRICULAR LINKS

Computing contributes to teaching and learning in all curriculum areas. It offers ways of impacting on learning which are often not possible with conventional methods and significantly raises levels of pupil motivation.

Teachers use software to present information visually, dynamically and interactively so that children understand concepts more quickly. A highly visual style is appealing to more learners and helps to make learning memorable. For example, graphics work links in closely with work in art, and work using databases supports work in mathematics, while the Internet proves very useful for research in humanities subjects. Information technology enables children to present their information and conclusions in the most appropriate way.

6. INCLUSION AND EQUAL OPPORTUNITIES

We teach Computing to all children, whatever their ability and individual needs. Computing forms part of the school curriculum policy to provide a broad and balanced education to all children. Through Computing teaching, we provide learning opportunities that enable all pupils to make good progress. We strive hard 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. We work hard to make learning accessible and reasonable adjustments can be made using technology.

We ensure that all children are provided with the same learning opportunities regardless of social class, gender, culture, race, disability or learning difficulties. As a result, we hope to enable all children to develop

positive attitudes towards others. All pupils have equal access to Computing and all staff members follow the equal opportunities policy.

7. ASSESSMENT

The whole school Computing Assessment excel and procedures will provide an all-round picture of individual children's attainment and achievement and a review of how the curriculum is implemented. At the end of each unit of work, the class teacher will assess the children on the particular part of computing they have been focusing on for example, programming, communication, handling data and e-safety.

They will then use this information to make an overall judgement at the end of the year using the terminology ‘working towards’, ‘expected standard’ or ‘greater depth’, this is recorded on the Assessment Tool trackers. Attainment and progress are reported to parents in the end of year report and the class information will be passed on to the next teacher.

Assessing Computing is an integral part of teaching and learning and central to good practice. It should be process orientated - reviewing the way that techniques and skills are applied purposefully by pupils to demonstrate their understanding of the concepts taught. As assessment is part of the learning process it is essential that pupils are closely involved. Thus, children are also encouraged to evaluate their own and others’ work in a positive and supportive environment, including peer assessment.

8. RESOURCES

An inventory of resources is kept in the School Office. New resources will be logged when received in school. Current resources include interactive whiteboards, laptops, iPads, Beebots and Desktop PCs. The quality of resources are under constant review in conjunction with the Head Teacher. Each child and member of staff have their own login to access School360, Times Tables Rockstars and Purple Mash.

It is our intention to have a high-specification teaching laptop in each classroom. All computers are networked through the server, to enable access to the shared pupil and staff servers and to the Internet. A secure wireless network system is also in-place to enable tablet and other wireless device usage.

All staff have their own individual password protected login accounts for school. They also have an email address registered to our school and access to this via Google Mail, these are provided by Northumberland County Council. Laptops and iPads stored in a locked charging cupboard. All staff are responsible for correct use of this to maintain security.

All school computers and laptops have SENSO Software installed. This software monitors screen activity and keyboard strokes for inappropriate words, phrases and websites. A weekly report is sent to the Head teacher with any inappropriate word or website captures.

The Computing Action Plan expresses the school’s priorities for future expenditure and is reviewed by the Computing subject leader, governors and senior management who consider its impact on all learning.

We have shared access to a Computing technician responsible for maintenance, repair and professional advice. We also regularly utilise the expert advice of the ICT/Computing and E-Learning Consultant at NCC.

9. MONITORING AND REVIEW

Monitoring of the standards of children’s work and of the quality of teaching and learning Computing is the responsibility of the Computing Subject Lead and Head teacher. The Computing Subject Lead is also

responsible for supporting colleagues in their teaching of Computing, for keeping informed and up to date with current developments in the subject, and for providing a strategic lead and direction for Computing in the school.

The Computing Subject Lead provides the Head teacher regular feedback to evaluate the strengths and weaknesses in the subject and indicate areas for further improvement.
The Computing Subject Lead is responsible for monitoring the teaching and learning and providing feedback to staff, ordering resources to support all curriculum areas, liaising with our federated school and the community, providing INSET for staff and day to day support for the teaching of Computing, reviewing samples of the children's work, updating policies and action plans, developing own knowledge and expertise and leading new initiatives across school.

This policy will be reviewed at least every two years. The development of Computing and the use of new technologies has a high priority each year with the School Development Plan.

10. HEALTH AND SAFETY

The school is aware of the health and safety issues involved in children's use of ICT and computing.

All electrical equipment in school is tested for safety. It is advised that staff should not bring their own electrical equipment in to school but if this is necessary, then the equipment must be PAT tested before being used in school. All staff should visually check electrical equipment before they use it and take any damaged equipment out of use. Damaged equipment should then be reported to the Computing Lead or Head Teacher who will arrange for repair or disposal.

- Children should not put plugs into sockets or switch the sockets on.
- trailing leads should be made safe behind the equipment
- liquids must not be taken near the computers
- magnets must be kept away from all equipment

Purple Mash – Long Term Overview

Long Term Plan for Computing: Key Stage 1

In Year 1 and 2 coding, the lessons need to be taught in sequence as each lesson introduces skills that are consolidated and developed in the next lesson. Therefore, it is proposed to teach coding for 11 weeks in Cycle A and none in Cycle B. It is also beneficial for all children to recap unit 1.1 in both cycles as this introduces children new to the class with key skills needed to make the most of Purple Mash.

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
YEAR 1 & 2 – CYCLE A	Unit 1.1 Online Safety & Exploring Purple Mash Weeks – 4 Programs – Various				Unit 2.5 Effective Searching Weeks – 3 Programs – Browser			Unit 1.4 Lego Builders Weeks – 3 Programs – 2DIY			Unit 1.9 Technology outside school Weeks – 2 Programs – Various		Unit 1.2 Grouping & Sorting Weeks – 2 Programs – 2DIY			Unit 2.6 Creating Pictures Weeks – 5 Programs – 2PaintAPicture				Unit 1.8 Spreadsheets Weeks – 3 Programs – 2Calculate			Unit 1.7 Coding Weeks – 6 Programs – 2Code						Unit 2.1 Coding Weeks – 5 Programs – 2Code				

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
YEAR 1 & 2 – CYCLE B	Unit 1.1 Online Safety & Exploring Purple Mash Weeks – 4 Programs – Various				Unit 1.5 Maze Explorers Weeks – 3 Programs – 2Go			Unit 2.4 Questioning Weeks – 5 Programs – 2Question, 2Investigate					Unit 2.2 Online Safety Weeks – 3 Programs – Various			Unit 1.6 Animated Story Books Weeks – 5 Programs – 2Create A Story					Unit 2.7 Making Music Weeks – 3 Programs – 2Sequence			Unit 2.3 Spreadsheets Weeks – 4 Programs – 2Calculate				Unit 1.3 Pictograms Weeks – 3 Programs – 2Count			Unit 2.8 Presenting Ideas Weeks – 4 Programs – Various			

Long Term Plan for Computing: Key Stage 2

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
YEAR 3 & 4 CYCLE A	**Coding** **Number of Weeks** – 6 **Main Programs** – 2Code See table below for breakdown						**Unit 3.2 Online safety** **Weeks** – 2 **Programs** – Various		**Unit 3.3 Spreadsheets** **Weeks** – 3 **Programs** – 2Calculate			**Unit 3.4 Touch Typing** **Weeks** – 4 **Programs** – 2Type				**Unit 3.5 Email** (including email safety) **Weeks** – 6 **Programs** – 2Email, 2Connect, 2DIY						**Unit 3.6 Branching Databases** **Weeks** – 4 **Programs** – 2Question				**Unit 3.7 Simulations** **Weeks** – 3 **Programs** – 2Simulate, 2Publish			**Unit 3.8 Graphing** **Weeks** – 3 **Programs** – 2Graph		
Week	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
YEAR 3 & 4 CYCLE B	**Coding** **Number of Weeks** – 6 **Main Programs** – 2Code See table below for breakdown						**Unit 4.2 Online safety** **Weeks** – 2 **Programs** – Various		**Unit 4.3 Spreadsheets** **Weeks** – 6 **Programs** – 2Calculate						**Unit 4.4 Writing for different audiences** **Weeks** – 5 **Programs** – 2Email, 2Connect, 2DIY					**Unit 4.5 Logo** **Weeks** – 4 **Programs** – Logo				**Unit 4.6 Animation** **Weeks** – 3 **Programs** – 2Animate			**Unit 4.7 Effective Search** **Weeks** – 3 **Programs** – Browser			**Unit 4.8 Hardware Investigators** **Weeks** – 2		