Computing Intent Policy
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Introduction

The use of information and communication technology is an integral part of the national curriculum and now permeates all aspects of life in a modern technological society. ICT plays a huge part on our everyday life and therefore, its importance is highlighted in all of our schools, across the DAT academy chain. A high-quality computing education combines and integrates a vast range of media, through which successful learning takes place: auditory, vision, text and number. Subsequently, the use of computing technologies is embedded across the whole curriculum, as they can be used as tools to aid and advance learning in all areas.

Purpose of Study

Intended Outcomes

Our curriculum for Computing intends to ensure that all children:

- become independent users of ICT, gaining confidence and enjoyment from their computing activities
- can understand the fundamental principles of computer science, including logic, algorithms, data representation and communication
- can both identify and analyse computing problems and can use computer programmes in order to solve these
- can evaluate and apply their understanding of computing and information technologies to new and unfamiliar devices, in order to solve problems
- can safely demonstrate responsible and confident use of information and communication technology, including how to keep themselves safe while online.

Our curriculum for computing identifies computing capability as one who is able to effectively use a range of equipment, using them to analyse, process, present, measure, model and control. Subsequently, they can use this to make their own informed decisions about the application and significance of computing and its effect on our way of life.

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.

Subject content

Foundation Stage (Nursery and Reception)

Pupils should be taught to:

- Know how to operate simple equipment, e.g. turn on a CD player and use a remote control.
- Show an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones.
- Show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.
- Know that information can be retrieved from computers
- Complete a simple program on a computer.
- Use ICT hardware to interact with age-appropriate computer software.
- Recognise that a range of technology is used in places such as homes and schools.
- Select and use technology for particular purposes.

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 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.

Key Stage 2

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.

Teaching and Learning

Special Educational Needs

In DAT, we aim to teach our Computing curriculum to every student, regardless of their ability, in accordance with the teaching of the wider curriculum. Teachers and support staff (nurture where appropriate) are to ensure that all sessions and computing tasks address the needs of all learners, where appropriate have been adapted to support those with special educational needs.

Equal Chances

Our curriculum for Computing reflects the importance of spoken language and vocabulary in children's development across the whole curriculum. The quality and variety of language that children hear and speak are key factors in developing their scientific vocabulary and articulating computing concepts both clearly and precisely.

E-safety

As part of the computing curriculum, we ensure that all children receive a comprehensive overview of how to keep themselves safe while online. As we have already identified, the use of technology in our everyday life is on the rise and is now a vital part of our societal norms. Therefore, children are now exposed more than ever to the internet and the wonders it can bring- but also the dangers. While showing children the benefits of using new technologies we are also rigorous in teaching them about how to use technology safely and responsibly. E-safety workshops are held every year, and they are also embedded within our SMSC Jigsaw scheme of work.

Resources

Across our academies, we have a range to different schemes which we have access to such as Barefoot computing and Purple Mash. Similarly, our SMSC schemes such as Jigsaw. Planning resources and schemes also related to the government document '*Education for a connected world.*'
Across our academies, we have access to a wide range of different hardware, such as class laptop trollies, Ipads and even computer rooms, with desktop computers. Similarly, we have a wide range of tool to aid computing learning such as roamers (beebots), Lego computer kits, data loggers and recording equipment. Each classroom is equipped with desktop computers or laptops connected to a clever touch and/or smart board.

Planning

DAT bade out planning on the National Curriculum in England Framework of Computing as the foundation four our planning. Long term plans have been developed in a cross-academy approach, which keep in mind the range of technology at our disposal, and also identify links with the wider curriculum where technology can be used to support and enhance wider learning. Planning is split in to topic areas, which allow them to have complete coverage of different hardware and apps, which allow them to identify how to de-bug or identify and fix issues. Planning is developed to ensure that all children have access to the appropriate level of stretch and challenge.

Progression

Our long term planning is developed to ensure that prior knowledge is built upon throughout their time in our school. Whilst we give children of all abilities the opportunity to develop their skills, knowledge and understanding, we also plan progression into the scheme of work, so that there is an increasing challenge for the children as they move up through school. Our planning is developed to ensure that they have the chance of being challenged in their learning to help them make progress in the acquisition of new concepts, knowledge and skills. Through teacher assessment, we are able to identify where the children's learning is, how it has been built on in previous teaching and where we need to go next.

Curriculum Links

As a staff we are all aware that ICT and computing capability should be achieved through core and foundation subjects. Where appropriate, ICT and computing should be incorporated into all subjects. ICT and computing should be used to support learning in other subjects as well as develop ICT and computing skills.

Assessment, Monitoring and Recording

As I.C.T. is skills based the assessment needs to be ongoing so that the teacher can match work to the abilities and needs of the pupils as they progress. Much of this will be teacher observation, but may also be based on product/outcome. The formal assessment of I.C.T. will take place once during the academic year.

Children are also tracked within each class against their success criteria for that unit of computing. For each area of learning with in the year, children will receive both success criteria and quizzes, which the children and teachers will relate back to throughout the scheme of learning. Teachers will then use these reflections to influence their future planning.