



## **INA COMPUTING POLICY**

### **INTRODUCTION**

The use of computers and computer systems is an integral part of the National Curriculum and knowing how they work is a key life skill. In an increasingly digital world there now exists a wealth of software, tools and technologies that can be used to communicate, collaborate, express ideas and create digital content. At Isaac Newton Academy we recognise that pupils are entitled to a broad and balanced computing education with a structured, progressive, approach to the learning how computer systems work, the use of IT and the skills necessary to become digitally literate and participate fully in the modern world. The purpose of this policy is to state how to make this provision.

### **AIMS**

Our aims are to:

- Provide a broad, balanced, challenging and enjoyable curriculum for all pupils.
- Develop pupils' computational thinking skills that will benefit them throughout their lives.
- Teach computing with depth, breadth, skills, character development and academic rigor and knowledge.
- Meet the requirements of the national curriculum programmes of study for Computing at Key Stage 1 and 2
- Respond to new developments in technology.
- Equip pupils with the confidence and skills to use digital tools and technologies throughout their lives.
- Enhance and enrich learning in other areas of the curriculum using IT and computing.
- Develop the understanding of how to use computers and digital tools safely and responsibly.

The National Curriculum for Computing aims to ensure that all pupils:

- Can understand and apply the fundamental principles of computer science, including logic, algorithms, data representation, and communication
- 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.



## **RATIONALE**

At Isaac Newton Academy we believe that IT, computer science and digital literacy:

- Are essential life skills necessary to fully participate in the modern digital world,
- Allow children to become creators of digital content rather than simply consumers of it,
- Provide access to a rich and varied source of information and content,
- Communicate and present information in new ways, which helps pupils understand, access and use it more readily,
- Can motivate and enthuse pupils,
- Offer opportunities for communication and collaboration through group working both inside and outside of school,
- Have the flexibility to meet the individual needs and abilities of each pupil.

## **OBJECTIVES**

### **Early Years (see also EYFS Policy)**

It is important in the foundation stage to give children a broad, play-based experience of IT and computing in a range of contexts, including off-computer activities and outdoor play.

Computing is not just about computers. Early Years learning environments should feature IT scenarios based on experience in the real world, such as in role play. Children gain confidence, control and language skills through opportunities such as 'programming' each other using directional language to find toys/objects, creating artwork using digital drawing tools and controlling programmable toys (Beebots).

Outdoor exploration is an important aspect and using digital recording devices such as ipads to video record, capture images and record sounds can support children in developing communication skills. This is particularly beneficial for children who have English as an additional language.

## **KEY STAGE 1**

- Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.
- Create algorithms for a range of purposes.
- Create, de-bug and improve efficiency of 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.
- Use a variety of software to create digital content.
- Communicate safely and respectfully online, keeping personal information private, and recognise common uses of information technology beyond school.



## KEY STAGE 2

- 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.

## RESOURCES AND ACCESS

At Isaac Newton Academy we acknowledge the need to continually maintain, update and develop our resources and to make progress towards consistent, compatible computer systems by investing in resources that will effectively deliver the objectives of the National Curriculum and support the use of IT, computer science and digital literacy across the school. Teachers are required to inform the computing subject leader and IT technician of any faults as soon as they are noticed. Resources if not classroom based are located in central areas available for all staff. Computing network infrastructure and equipment has been sited so that:

- Every classroom from Reception to Y6 has a computer connected to the school network and an interactive whiteboard with sound, DVD and video facilities.
- There are three laptop trolleys with 15 laptops connected to the network.
- There is an iPad Sync & Charge cabinet in school containing 10 iPads and USB ports.
- Internet access is available in all classrooms.
- Each class from Y1 – Y6 has an allocated slot one afternoon per week for teaching computing as a discrete subject.
- The laptops and iPads are available for use throughout the school day as part of computing lessons and for cross-curricular use.
- Pupils may use IT and computing independently, in pairs, alongside a TA or in a group with a teacher.
- The school has a computing technician, who is in school and available at any time across the Academy.



## **THE CURRICULUM AT KEY STAGE 1 AND 2**

Isaac Newton Primary Academy uses Switched On Computing through Y1-Y6. Written for the National Curriculum 2014, Switched On Computing offers creative units using the latest software in a format that is designed for teachers to pick up and use. It delivers clear progression of skills from Y1-Y6, embedding online safety to ensure safe and responsible use of technology. With each year group teacher's guide, classroom posters and digital resources are included. Switched On Computing includes six flexible units for each year group covering:

- Programming
- Computational thinking
- Creativity
- Computer networks
- Communication and collaboration
- Productivity
- Online safety

Each unit is mapped out and planned in our schemes of learning.

A minority of children will have particular teaching and learning requirements, which go beyond the provision for that age range and if not addressed, could create barriers to learning. This could include HA children, those with SEND and those who have EAL. Teachers take account of these requirements and plan, where necessary, to support individuals or groups of pupils to enable them to participate effectively in the curriculum and assessment activities. During any teaching activities, teachers bear in mind that special arrangements could be made available to support individual pupils. This is in accordance with the school inclusion policy. These children are identified and discussed at pupil progress meetings to ensure that appropriate provisions and/or interventions are effected.

## **ASSESSMENT AND RECORD KEEPING (ALSO SEE ASSESSMENT FOR LEARNING POLICY)**

Teachers regularly assess progress through observations and evidence. Key objectives to be assessed are taken from the National Curriculum to assess computing each term and recorded on the school's non-core trackers. Assessing computing is an integral part of teaching and learning and key to good practice. Switched On Computing follows the National Curriculum statutory attainment target in relating all assessment to the content of the programme of study. Each unit includes a number of assessable outcomes, presented in the format 'all', 'most' and 'some'. When assessing computing, it's important to look for evidence of knowledge and understanding as well as technical skills. Asking pupils to talk about what they have learned as well as showing the work they have completed, provides important evidence of their learning. Children's self-assessment, encourages pupils to reflect on their own learning in Computing.



### **MONITORING AND EVALUATION**

Class teachers are responsible for monitoring the standard of the children's work and the Primary Senior Leadership Team are responsible for monitoring the quality of teaching in line with the school's monitoring cycle. This is through lesson observations, pupil discussion and evaluating pupil work.

### **PUPILS WITH SPECIAL EDUCATIONAL NEEDS (SEE ALSO SEND POLICY)**

We believe that all children have the right to access IT and Computing. In order to ensure that children with special educational needs achieve to the best of their ability, it is necessary to adapt the delivery of the computing curriculum for some pupils.

We teach IT and Computing to all children, whatever their attainment or disability. Computing forms part of the national curriculum to provide a broad and balanced education for all children. Through the teaching of computing we provide opportunities that enable all pupils to make progress. We do this by setting suitable challenges and responding to each child's individual needs. Where appropriate IT can be used to support children with SEND on a one to one basis where children receive additional support.

### **EQUAL OPPORTUNITIES (SEE ALSO EQUAL OPPORTUNITIES POLICY)**

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 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. Resources for children with SEND and HA will be made available to support and challenge appropriately.

### **STAFF TRAINING**

The Computing subject leader in Secondary supports with staff training needs, in response to individual needs and requests throughout the year. Individual teachers are encouraged to continually develop their own skills and knowledge, identify their own needs and notify their Year Team Leader.

Teachers are encouraged to use IT and Computing to produce plans, reports, communications and teaching resources in line with the schemes of learning.

### **HEALTH AND SAFETY (SEE ALSO HEALTH AND SAFETY POLICY)**

Isaac Newton Academy is aware of the health and safety issues involved in children's use of IT and Computing.



All fixed electrical appliances in school are tested by a Local Authority contractor every five years and all portable electrical equipment in school is tested by an external contractor every twelve months. It is advised that staff should not bring their own electrical equipment in to school but, if this is necessary, equipment must be PAT tested before being used in school. This also applies to any equipment brought in to school by, for example, visitors running workshops, activities, etc. and it is the responsibility of the member of staff organising the workshop, etc. to advise those people. 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 a computer technician, bursar or head teacher who will arrange for repair or disposal.

In addition:

- 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.
- Safety guidelines in relation to IWBs are displayed in the classrooms.
- E-safety guidelines are set out in the e-safety policy & Acceptable Use Policy.

## **SECURITY**

We take security very seriously. As such:

- The computing technician is responsible for regularly updating anti-virus software.
- Use of IT and computing is in line with the school's 'Responsible Use of Digital Technology' All staff, volunteers and children sign a copy of the schools 'Responsible Use of Digital Technology'.
- Parents are made aware of the 'Responsible Use of Digital Technology' at school entry and KS2.
- All pupils and parents are aware of the school rules for responsible use of IT and computing and the internet and will understand the consequence of any misuse.
- The agreed rules for safe and responsible use of IT and Computing and the internet are displayed in all Computing areas.

## **CROSS CURRICULAR LINKS**

Isaac Newton Academy are aware that IT and computing skills should be developed through core and foundation subjects. Where appropriate, IT and computing should be incorporated into schemes of work for all subjects. IT and computing should be used to support learning in other subjects as well as developing computing knowledge, skills and understanding.



# ISAAC NEWTON ACADEMY

## **PARENTAL INVOLVEMENT**

Parents are encouraged to support the implementation of IT and Computing where possible by encouraging use of IT and computing skills at home for pleasure, through home-learning tasks, use of the online journal within Early Years and use of the school website. Parents will be made aware of issues surrounding e-safety and encouraged to promote this at home.

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