Computing Policy

Governor Committee Responsible	Learning and Teaching
Review period	Annual
Policy approved by Governors/Head Teacher	HT
Meeting minute reference	
Status	Advisable
Next review	Nov 18
Document version number	V1.2
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To be read in conjunction with the following policies:	E safety
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Document History	
V1.0	Nov 2017
V1.2	Nov 2018

Vision for an e-confident school
We desire that our children leave Heather Ridge Infant School with a full understanding of how technology can be used as a tool to benefit their future learning and aware of how to stay safe. That they have the personal skills and confidence to develop without limits.

Aims
We aim to meet the standards of the National Curriculum. 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

Introduction
As Computing underpins today's modern lifestyle, it is essential that all students gain the confidence and ability that they need in this subject to prepare them for a rapidly developing and challenging technical world.

Rationale
The school believes that ICT and computing:
- Gives pupils immediate access to a rich source of materials.
- Can present information in new ways which help pupils understand access and use it more readily.
- Can motivate and enthuse pupils.
- Can help pupils focus and concentrate.
- Offers potential for effective group working.
- Has the flexibility to meet the individual needs and abilities of each pupil.

Curriculum Objectives

Early years
It is important in the foundation stage to give children a broad, play-based experience of ICT in a range of contexts, including outdoor play. Computing is not just about computers. Early years learning environments should feature ICT scenarios based on experience in the real world, such as in role play. Children gain confidence, control and language skills through opportunities to explore using non-computer based resources such as metal detectors, controllable traffic lights and walkie-talkie sets. Recording devices can support children to develop their communication skills. This is particular useful with children who have English as an additional language.

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.

Resources and access
The school acknowledges the need to continually maintain, update and develop its resources and to make progress towards a consistent, compatible system by investing in resources that will effectively deliver the strands of the national curriculum and support the use of computing across the school. Teachers are required to inform the technician of any faults as soon as they are noticed via email. Resources, if not classroom based, are located in MITCH (the schools computer room).

A glossary of computing language is attached as Appendix 1.

The curriculum is embedded in core subjects so that the computing skills are developed within a context that is meaningful to the children.
The area of E-Safety is followed differently (refer to our e-safety policy).

Monitoring Standards

Planning

The school's Computing curriculum follows the statutory computing programme of study set out in The National Curriculum, September 2014.

Planning for the use of cross-curricular computing is a process in which all teachers are involved, wherein computing activities which take into account the breadth of study and knowledge, skills and understanding pupils should acquire and the software they should become familiar with are integrated into the whole curriculum. Subject coordinators, supported by the computing Subject Leaders where appropriate, are responsible for identifying needs and opportunities for the use of computing within their subject area.

Formative Assessment

There are some challenges to assessing computing.

- It's hard for teachers to judge pupils' knowledge and understanding based on the outcomes of practical tasks alone.
- If pupils work collaboratively, it can be hard to identify each individual's contribution.
- If the teaching of computing is embedded in other subjects, it's often difficult to separate attainment in computing from that in the host subject.

In order to monitor and raise standards, the Computing Subject Leaders will annually conduct pupil conferences using open questioning to assess and understand their grasp of concepts.

Equal Opportunities

- Priority will be given to ensuring equality of access and quality of experience for all pupils according to need and irrespective of race, gender, disability, age and class. Those who are most proficient with the technology will be encouraged to share their expertise and confidence. All will have the opportunity to make the most of their own potential, within this field.
- Pupils who experience difficulty with mastering the technology or just work more slowly will be allowed extra time or opportunities to work with computing.
- Specialised access software and hardware will be available for pupils with special educational needs. All reviews of provision for pupils with special needs will include consideration of a child's access to a computer.
- Consideration will be given to the most appropriate input device for all pupils but especially those with special needs.

Glossary APPENDIX 1

algorithm – an unambiguous procedure or precise step-by-step guide to solve a problem or achieve a particular objective.

computer networks – the computers and the connecting hardware (wifi access points, cables, fibres, switches and routers) that make it possible to transfer data using an agreed method ('protocol').

data – a structured set of numbers, representing digitised text, images, sound or video, which can be processed or transmitted by a computer.

digital content – any media created, edited or viewed on a computer, such as text (including the hypertext of a web page), images, sound, video (including animation), or virtual environments, and combinations of these (i.e. multimedia).

information – the meaning or interpretation given to a set of data by its users, or which results from data being processed.

input – data provided to a computer system, such as via a keyboard, mouse, microphone, camera or physical sensors.

internet – the global collection of computer networks and their connections, all using shared protocols (TCP/IP) to communicate.

program – a stored set of instructions encoded in a language understood by the computer that does some form of computation, processing input and/or stored data to generate output.

search – to identify data that satisfies one or more conditions, such as web pages containing supplied keywords, or files on a computer with certain properties.

software – computer programs, including both application software (such as office programs, web browsers, media editors and games) and the computer operating system. The term also applies to 'apps' running on mobile devices and to web-based services.

World Wide Web – a service provided by computers connected to the internet (web servers), in which pages of hypertext (web pages) are transmitted to users; the pages typically include links to other web pages and may be generated by programs automatically.