



HEAP BRIDGE VILLAGE PRIMARY SCHOOL

"Working together, learning together"

Computing Policy

Headteacher

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BE POSITIVE

BE PROACTIVE

BE PROUD

HEAP BRIDGE VILLAGE PRIMARY SCHOOL

COMPUTING POLICY

Statement of Intent:

*At Heap Bridge Village Primary School, we aspire to ensure that each and every one of our pupils develops in to a **positive, proactive** learner who is **proud** of their achievements and well prepared for a successful life. Delivered through a vibrant curriculum, we believe that learning should be enjoyable, purposeful and challenging. We will equip pupils with the skills and dispositions they need for lifelong learning, teach them the importance of being proactive, taking ownership of their own futures and ensuring they develop the highest expectations for themselves in their pursuit of excellence. We will do this within a safe and supportive environment of mutual understanding, positive relationships, respect and tolerance. Regardless of any barriers to learning, we will ensure that we work in partnership with school stakeholders to ensure that every child in our school can be proud of what they achieve.*

Our ambition is to provide a high quality Computing curriculum that:

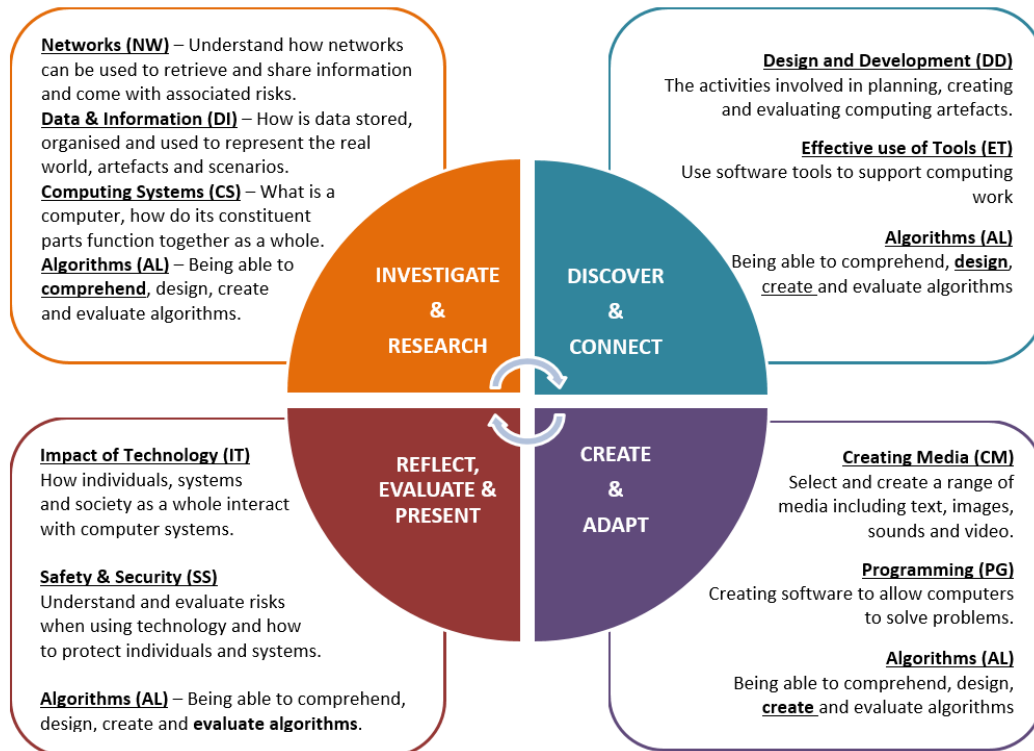
- Equips pupils to use computational thinking and creativity as technology continually evolves
- Creates strong links with mathematics, science, art and design technology (STEAM)
- Builds on our children's starting points and prior knowledge of technology so that we ensure that they can demonstrate that they know more, remember more and can apply more to their year group Computing end points.

Aims of our Computing Curriculum:

1. To build on prior knowledge and understanding so that pupils are equipped to use information technology to create programs, systems and a range of content.
2. To ensure that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future education and workplace and as active participants in a digital world.
3. To ensure that pupils can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation, and can analyse problems in computational terms.
4. To enable pupils to evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.
5. To ensure that pupils become responsible, competent, confident and creative users of information and communication technology.
6. To make certain that all children, particularly those with special needs or disability and children who may have English as a second language, are well supported in Computing. To ensure support and adaptations enable all children to reach their full potential and achieve the highest possible personal standard, ensuring that each child receives maximum equal learning opportunities, regardless of gender, creed, culture, ethnic background or disability.

Development of knowledge, skills and understanding

The objectives of computing teaching in the school are based on the requirements of the National Curriculum Programmes of Study for Key Stages 1 and 2 and developed further through the teaching framework published by Teach Computing, a programme published by NCCE (*The National Centre for Computing Education is funded by the Department for Education and supporting partners, and marks a significant investment in improving the provision of computing education in England*).



Implementation Strategy:

Subject Knowledge & Curriculum Planning

To ensure a clear focus on the above priorities the school has set out a detailed ‘**Long Term Curriculum Implementation Plan**’ which clearly sets out a progressional framework for pupil’s acquisition of knowledge, skills and understanding across the range of curriculum content taught from Year 1 to Year 6. This framework, along with sequenced lesson planning through the Teach Computing website also supports teacher planning and our current development of strategies to support pupils to learn more and remember more. This, in turn, links to our recent focus and research in to the use of spaced learning and quizzing strategies to support the longer term retention of knowledge acquisition.

How we teach computing: 12 pedagogy principles

Lead with concepts:

Support pupils in the acquisition of knowledge, through the use of key concepts, terms, and vocabulary, providing opportunities to build a shared and consistent understanding. Glossaries, concept maps, and displays, along with regular recall and revision, can support this approach.

Unplug, unpack, repack:

Teach new concepts by first unpacking complex terms and ideas, exploring these ideas in unplugged and familiar contexts, then repacking this new understanding into the original concept. This approach (semantic waves) can help pupils develop a secure understanding of complex concepts

Create projects:

Use project-based learning activities to provide pupils with the opportunity to apply and consolidate their knowledge and understanding. Design is an important, often overlooked aspect of computing. Pupils can consider how to develop an artefact for a particular user or function, and evaluate it against a set of criteria.

Challenge misconceptions:

Use formative questioning to uncover misconceptions and adapt teaching to address them as they occur. Awareness of common misconceptions alongside discussion, concept mapping, peer instruction, or simple quizzes can help identify areas of confusion.

Structure lessons:

Use supportive frameworks when planning lessons, such as PRIMM (Predict, Run, Investigate, Modify, Make) and Use-Modify-Create. These frameworks are based on research and ensure that differentiation can be built in at various stages of the lesson.

Work together:

Encourage collaboration, specifically using pair programming and peer instruction, and also structured group tasks. Working together stimulates classroom dialogue, articulation of concepts, and development of shared understanding.

Model everything:

Model processes or practices — everything from debugging code to binary number conversions — using techniques such as worked examples and live coding. Modelling is particularly beneficial to novices, providing scaffolding that can be gradually taken away.

Add variety:

Provide activities with different levels of direction, scaffolding, and support that promote active learning, ranging from highly structured to more exploratory tasks. Adapting your instruction to suit different objectives will help keep all pupils engaged and encourage greater independence

Make concrete:

Bring abstract concepts to life with realworld, contextual examples and a focus on interdependencies with other curriculum subjects. This can be achieved through the use of unplugged activities, proposing analogies, storytelling around concepts, and finding examples of the concepts in pupils' lives.

Read and explore code first:

When teaching programming, focus first on code 'reading' activities, before code writing. With both block-based and text-based programming, encourage pupils to review and interpret blocks of code. Research has shown that being able to read, trace, and explain code augments pupils' ability to write code.

Get hands-on:

Use physical computing and making activities that offer tactile and sensory experiences to enhance learning. Combining electronics and programming with arts and crafts (especially through exploratory projects) provides pupils with a creative, engaging context to explore and apply computing concepts.

Foster program comprehension:

Use a variety of activities to consolidate knowledge and understanding of the function and structure of programs, including debugging, tracing, and Parson's Problems. Regular comprehension activities will help secure understanding and build connections with new knowledge.

Teachers will use the school's curriculum implementation plan and planning guidance provided through TEAM Computing, supported by a range of high quality teaching and learning resources and appropriate adaptations, to develop the long-term knowledge, skills and understanding of every child, ensuring that all pupils, including those with SEND, achieve high standards for their ability and make appropriate progress towards year group end points.

Where necessary, adaptations will be made to support the learning of individual children. This will involve a clear understanding of the strengths and needs of a pupil so that clear and well-thought- through adjustments to the Computing curriculum can be made to provide tailored support with high expectations for the outcomes they can achieve.

Across the whole school, Digital Citizenship will be taught alongside the main three pillars of progression: Computer Science, Information Technology and Digital Literacy. This focuses discretely on online safety and using technology safely, respectfully and responsibly, and links directly to the '[Education for a Connected World](#)' framework. This focus is also underpinned by our well established pupil [Digital Leaders programme](#).

Computing in the Early Years Foundation Stage

Despite computing not being explicitly mentioned within the Early Years Foundation Stage (EYFS) statutory framework, which focuses on the learning and development of children from birth to age five, there are many opportunities for young children to use technology to solve problems and produce creative outcomes. In particular, many areas of the framework provide opportunities for pupils to develop their ability to use computational thinking effectively. We set out opportunities for computational learning in EYFS within our whole school implementation plan.

Cross-Curricular Links

Computing is seen as a tool to be used as appropriate throughout the curriculum to support and enrich children's learning. In order to ensure that valuable areas of experience are covered all curriculum subjects will have planned links with Computing.

The school uses the skills and learning objectives from TEACH Computing (NCCE) as the basis of its planning to ensure continuity and progression amending and adapting the units to meet our own needs and requirements. The Computing Skills Progression aids planning and delivery of blocked discrete skills work throughout KS1 and KS2. Where possible, the skills and techniques in Computing will also be taught through strong links with other subjects. As a result the children will be given a sense of purpose and application in a wider context.

Personal, social and health education (PSHE) and British values

Much of the specific knowledge young people will need to enable them to live safely and thrive online are identified throughout our computing and online safety curriculum. This is further supported by learning pupils experience in RSHE. It is important to ensure that factual knowledge is set within learning that provides a broader understanding of the digital world and the development of digital skills. It is essential that education young people require to thrive in the digital environment is planned across the entire curriculum and as part of a whole school approach to digital learning and online safety.

In 2019 the Department for Education produced non-statutory guidance 'Teaching online safety in schools – Guidance supporting schools to teach their pupils how to stay safe online, within new and existing subjects'

Teaching and learning strategies

Teaching and learning will focus on a range of agreed entitlement experiences and there will be a focus on:

a) developing progression in the key elements of the subject;

- b) ensuring that appropriate opportunities are taken to develop the major cross-curricular skills including literacy, numeracy and enquiry skills...;
- c) the effective use of a range of programmes, computing environments (Google / Microsoft) with a focus on the use of open source, free accessible software to increase accessibility outside of school.
- d) the consistent use of a variety of interesting, engaging and challenging approaches to learning, including opportunities to engage in observation and recording, written and oral questioning, class and group discussion, different styles of writing and communication
- e) an emphasis on encouraging pupils to investigate by asking a range of subject related questions, by responding in a variety of forms and by making judgements about issues i.e. debugging, online safety, managing online information, health, wellbeing and lifestyle, privacy and security.

Subject/Curriculum Leadership

The 'STEAM' curriculum team (*see 'Curriculum Leaders Handbook'*) will be responsible for:

- i) Producing and reviewing an agreed computing policy and curriculum implementation plan which are compatible with the school's overall curricular aims and which meet the statutory requirements;
- ii) providing advice to teachers on appropriate resources, teaching strategies and approaches to assessment;
- iii) developing an overview of the computing curriculum in the school to ensure that pupils experience a sufficient variety of key entitlement experiences and that the subject policy is put into practice;
- iv) co-ordinating the purchase, organisation and storage of appropriate resources;
- v) collecting a portfolio of pupils' work in the subject to ensure consistency of standards and monitoring approaches to assessment to ensure that there are a sufficient variety of tasks;
- vi) assisting with the regular evaluation and monitoring of the quality of provision in the subject, participating in the identification of agreed development tasks each year and reviewing the subject policy and curriculum planning as appropriate;
- vii) keeping abreast of recent developments in the subject, attending relevant subject specific training and participating in the planning and delivery of school based training and discussions.

Class teachers will be responsible for:

- i) participating in the collaborative development of subject schemes of work and lesson plans which meet the criteria agreed by the school and which ensure that pupils encounter a range of key entitlement experiences;
- ii) developing an appropriate number of learning tasks which can be used for assessment purposes and recording the outcomes of these using the system agreed by the school;
- iii) ensuring the highest quality of teaching within the subject and seeking professional development opportunities where required
- iv) reporting to parents on pupils' progress in computing;
- v) participating in the collaborative review of the effectiveness of schemes of work and lesson plans.

Parental and community involvement and liaison with other schools

Parents will be given opportunities to support and be involved in pupils' learning in computing in a variety of formal and informal ways such as **"Working together, learning together"** days and class assemblies. School stakeholders will be kept informed of developments in the subject by newsletters and regular updates to the school blog. Pupils will be encouraged to develop and extend their studies at home and to become aware of the value and potential of the subject in a range of different contexts.

Health & Safety

- Eyestrain and other problems can be caused by prolonged use of computers and tablets. Therefore, whenever possible, a time limit will be set for the use of computers or tablets within any session: - 50 minutes in KS1 and

60 minutes in KS2.

- All computers and peripheral devices will be set securely on computer trolleys or tables with leads and wiring placed towards walls, cupboards or display screens so that they are not exposed or trailing.
- Electrical equipment will be switched on or off at the mains by staff or managed through timer switches,
- In the event that a computer needs to be moved, staff will move trolleys as required. Children will be taught about the safe working, logging on and loading of programs.
- Where children are handling laptops and tablets, they will be taught to hold the equipment with two hands at all times and to only handle the equipment when absolutely necessary.

Equal opportunities

A wide variety of strategies are used to ensure that teaching meets the needs of different groups of pupils, including students with SEND and those from different ethnic or gender groups.

Heap Bridge aims to provide all children with a differentiated curriculum that meets their particular needs. Computer equipment can be a valuable tool for aiding pupils with difficulties in learning, or who need additional motivation to practice basic skills (see [SEND information report](#)). Specific software is available to children across the curriculum to encourage the development of these basic skills in reading, writing and numeracy. Pupils of high ability may also be extended through the use of programs which offer challenge and opportunities for investigation.

Resources

The STEAM curriculum team will endeavor to ensure that resources to support the teaching of computing are available and in good working order. Where staff experience defective resources, this should be reported to the computing lead or senior leadership team immediately.

Professional Development

It is important to recognise any particular difficulties staff may have in delivering the curriculum and an annual review will determine any input or INSET which may be required.

Measuring Impact:

This policy will ensure that all pupils, including those with Special Educational Needs, will know more, remember more and apply more knowledge (both declarative and procedural) to make at least good progress from their starting points. Children will build strong computational thinking skills that can be applied to solve a range of computing problems. Children will develop a passion and love of computing and technology, and perceive this as a subject in which they can succeed. Teachers will have good subject knowledge and confidence in teaching Computing, which will lead to stronger outcomes for children.

Assessment, recording and reporting

As with any curriculum plan, its success is determined by the degree and depth to which pupils learn and acquire the knowledge and skills set out to be taught. Assessment, recording and reporting of learning in computing is based around the following pupils acquiring and remembering the knowledge set out in the implementation plan. This is recorded in a spreadsheet against the lesson objective for each unit and long term retention of this knowledge is assessed continuously through regular quizzing activities, lesson recaps and teacher focused questioning.

Review

This document will be reviewed bi-annually by the The 'STEAM Curriculum Team'