



Computing Policy

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| Signed: | Headteacher |
| Signed: | Chair of Governors |



COMPUTING POLICY

Heygarth Primary School 2022-2023

'Learning and Achieving Together for Life.'

OUR VISION

Computing and ICT are an integral part of daily life for children at Heygarth Primary School. We envision that children become confident and capable users of technology who are able to develop their skills, knowledge and understanding of a range of technologies.

Computing offers children a wide range of opportunities to become creative and analytical thinkers by discovering ways to solve problems. Children will be able to confidently apply skills from other subjects and apply their computing skills to other areas. The use of ICT will empower children to deepen their learning and understanding of not only computer programming and systems but also their knowledge and understanding of the world around them. Computing will be used to enhance the curriculum as a whole, as well as being taught in standalone lessons.

Our computing curriculum teaches children to be responsible users of technology; both from an e-safety background and the ability for children to analyse the validity of research and sources. This will allow all children to understand both the positive and negative influences which computing technology can have on our daily lives.

Technology is all around us; it is critical that children feel empowered to use it effectively and responsibly. Computing lessons will enable children to make links between a variety of areas in preparation for later life and future workplaces.

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

Commonly, these aims are referred to as the three strands of computing: Information Technology, Digital Literacy and Computer Science. These are the founding principles upon which the computing curriculum at Heygarth Primary school are based.

The Content of our Curriculum

Pupils at our school are taught computing across the three key strands outlined above, as well as a fourth strand, Key Skills. Long and Medium term planning has been created collaboratively between key stakeholders including the subject leader, members of the Senior Leadership Team, Middle Leaders and a local consultancy firm, Hi-Impact. It outlines the aspects of each strand and how they are taught are covered in each year group.

- **Information Technology:**
Children are taught how to use computers for functional purposes, such as collecting, managing and presenting information and using search technology effectively.
- **Digital Literacy:**
Children are taught how to responsibly and safely use a wide variety of technology, and the advantages which the digital world offers.
- **Computer Science:**
Children are introduced to understanding how computer programs and networks work, as well as being taught how to program a range of physical and digital devices to achieve given goals.

Below is an outline of what areas are covered in each strand, for each phase (split into KS1, LKS2 and UKS2)

KS1

Key skills:

- Logging onto a computers, devices and accounts
- Entering text beginning to use more than one hand
- Using a mouse/trackpad to move and place items on a screen
- Using a range of methods to interact with a program such as right click, drag and drop
- Saving and retrieving work

Computer science:

- Understanding algorithms as instructions
- Using keys or commands to make a virtual and physical robots move
- Programming sprites or bots by giving simple sequences of commands with an immediate outcomes
- Creating own and using basic symbols to record directional instructions
- Developing language to aid programming (such as tilt/turn)

Digital Literacy:

- Navigating websites using links
- Accessing information on the internet using QR codes
- Using a search engine when keywords are provided
- Saying what information is personal and should not be shared online
- Being able to tell an adult if they see something online which may be inappropriate

Information Technology:

- Producing text in word processing software
- Using knowledge of where most letters are located on a keyboard
- Creating and altering the appearance of an image
- Beginning using simple audio, video and animation software

LKS2

Key skills:

- Using increasing mouse commands including left/right/double click and scroll as well as pinch-to-zoom on tablets.
- Using two hands to enter text.
- Retrieving work effectively and managing and navigating some folder systems.
- Increasing knowledge of and using a higher range of keyboard function keys (e.g. shift, caps lock, num lock)

Computer science:

- Designing, testing and amending programs to achieve intended objectives.
- Finding errors in programs of their own design and debugging them.
- Using, adapting and changing pre-written functions.
- Using nested loops to increase the efficiency of programs.

Digital Literacy:

- Identifying and using keywords for effective Internet searches
- Selectin relevant information (pictures and text) to use in other software
- Using information found online to answer specific questions.
- Beginning to evaluate how appropriate a site is and the validity of research.
- Explaining how to keep safe online and demonstrating respect on the internet.
- Sharing suitable pictures and work to an online digital platform.
- Taking part in digital surveys and quizzes and analyse data with support.

- Predicting the effect of changing the variables in digital simulations.

Information Technology:

- Using effects appropriately to fit the purpose and audience.
- Using a range of features of layout and design such as text boxes, columns and borders, to control the layout and presentation of a document.
- Creating a video presentation or animation for an audience, which incorporates editing.
- Adding text, sound effects and other graphic effects
- Layering sounds using music composition software
- Using data loggers to collect data.
- Entering data into a graphing package
- Understanding that spreadsheets perform calculations and the effectiveness and efficiencies of these.

UKS2

Key skills:

- When typing, holding two hands over different halves of the keyboard and using more than two fingers to enter text, with increasing speed and accuracy
- Increasing knowledge of online storage: saving, naming and retrieving work effectively
- Navigating a range of folder systems to find, open, edit and save specific files (e.g. Shared Drive, iPad camera roll or Dropbox)
- Creating suitably named folders to organise documents using appropriate file paths (e.g. User>Documents>School>Year 6>Topic)
- Using more advanced keyboard functions and hotkeys including insert, delete, ctrl+c, ctrl+v and ctrl+z

Computer science:

- Using abstraction to filter out extraneous detail to debug.
- Using variables efficiently within a computer program to manipulate outcomes.
- Using logical operations (not, or, and) to alter and control the outcomes.
- Using a wider range of events (such as broadcasts) efficiently within programs to start and stop scripts
- Understanding subroutines (e.g. functions and procedures) and creating them within a computer program to store and retrieve data.

Digital Literacy:

- Searching the Internet using Google Advanced Search, discerning how results are ranked
- Identifying irrelevant, implausible and inappropriate information.
- Understanding bias.
- Knowing and applying that some media is copyrighted and cannot be used without permission.
- Learning collaboratively using a digital platforms
- Explaining what to do in cases of cyberbullying and acting upon if necessary
- Using modelling software to create virtual environments/simulations

Information Technology:

- Independently planning and structuring the layout of multimedia presentations, drawing on a range of different techniques and styles as appropriate for the task.
- Making appropriate use of hyperlinks to produce a non-linear presentation or document.
- Creating, editing and refining media.
- Importing sounds into sound editing software and using layering and editing to refine work.
- Organising data by independently designing fields and records in databases.
- Querying large pre-prepared databases.
- Using conditional formatting.
- Exporting and analysing continuous data from data logging.
- Presenting data in a variety of ways including, but not limited to, graphing.

Planning and Delivery

Planning of the Computing curriculum was a collaboration between the Computing Lead, experienced Key Stage teachers, the Senior Leadership Team and Hi-Impact Consultancy: our school IT providers.

The units set out in the planning are used as a starting point only. Delivering the Curriculum effectively requires each teacher to make allowances for their class. The long-term plan ensures small-step, developed progression between year groups, where knowledge and skills are revisited, built upon and developed over time, whilst ensuring topics and the use of specific programs and applications are both revisited and built upon over time. This ensures that children's prior learning is used to engage and support

them for the next phase of their learning. This mirrors the spiral curriculum at Heygarth Primary School.

For some lessons, computing is taught as a standalone subject; in others, computing is taught as part of a wider curriculum topic. Links to other subjects have been made only where appropriate.

The explicit teaching of computing skills should be taught for a minimum of one session (50 minutes) per week.

Each class is timetabled for one-session per week in the ICT suite where they can access desktop PCs, laptops and iPads. This technology is also available to be booked out by class teachers at other points during the week. This ensures that each class has equal opportunity for access to the technology provided by school.

As a school, we constantly update and refresh existing applications and programs to ensure the best outcomes for our pupils. Medium term planning is reviewed and evaluated yearly and long-term planning reviewed every three years.

Assessment and Monitoring

Teachers at Heygarth use assessment effectively to plan lessons that builds on individual pupils' prior knowledge and provide feedback that genuinely helps pupils to improve their work in computing. Feedback is provided immediately to ensure pupils make the most progress within each lesson.

Using the 'Balance' tool for assessment, teachers will make regular formative judgements, focusing on the learning that has taken place. Strengths and areas for development will be identified and addressed on a pupil-by-pupil basis.

Assessment in computing is an ongoing, continuous process where observations during the lesson and looking at work after the lesson inform next steps planning. Evidence is collected throughout the year for each pupil and is recorded on BALANCE.

Reports to parents on the attainment of their children are made verbally in the Autumn and Spring term and a written report is provided during the summer term. Reporting focusses on all four strands of computing.

Summative assessment too takes into account children's attainment in all four key areas: Information Technology, Computer Science, Digital Literacy and Key Skills.

Monitoring

Monitoring teaching, pupil achievement and progress is essential and the outcomes of monitoring are used strategically to secure even better attainment and progress in computing.

Monitoring and data analysis includes:

- Learning walks;
- Moderating assessment;
- Observing lessons;
- Team planning;
- Pupil focus groups and voice;
- Team meetings;
- Work scrutiny.

Monitoring of computing teaching is carried out through a program of lesson observations by the Computing leader and teachers' line managers and appraisers. The objective of the monitoring is to ensure computing is being taught well across the school. Specific areas may be chosen as the focus of an observation (for example the use of support staff, support for SEND and vulnerable pupils) which will be agreed in advance of the lesson, particularly if this is an area where the teacher feels they need additional support. Following an observation, the class teacher receives feedback and a copy of the observation notes.

Computing monitoring achieves the following:

- To ensure the agreed teaching and learning sequences are being followed rigorously.
- Teachers the opportunity to review their own practice and discuss the teaching of computing with a subject specialist;
- Examples of excellent practice can be shared with colleagues.
- It gives the computing subject leader a wider view of computing across school, in phases or key stages they would not normally work in.
- It allows the computing leader to set targets, demonstrating the school's commitment to self-evaluation and improvement of standards/
- It provides opportunities for bespoke support for areas of need.

Inclusion

We recognise that supporting access to computing for all pupils is crucial. The range of needs include those for whom language and communication difficulties are the result of sensory or physical impairment; for some, English may be an additional language requiring additional support; pupils may have a speech and language delay, impairments or disorders, specific learning difficulties as a result of dyslexia, dyspraxia or ADHD. Other difficulties in communication/interaction may have arisen from a disrupted education through illness or early childhood trauma.

At Heygarth we ensure that we are aware of barriers to learning and we endeavour to meet the needs of all pupils in our school using the following strategies:

- Quality first teaching
- The use of spiral curriculum where children are given opportunities to revisit and build upon knowledge, skills and programs/applications.
- Teachers consider a variety of methods for communicating ideas;
- Try not to introduce more than one concept at a time;
- Consider how technical words are introduced;
- Enable opportunities to discuss ideas in pairs;
- Key vocabulary displayed and explicitly revisited throughout the lesson.

Equal Opportunities

All teaching and non-teaching staff at Heygarth Primary School are responsible for ensuring that all pupils irrespective of gender, ability, ethnicity and social circumstance, have access to the curriculum and make the greatest possible progress and achievement.

Health and Safety

The Code of Practice for Health and Safety in Primary Computing is encompassed in the booklet "Be Safe!". All staff are expected to be familiar with the contents and follow its guidance during planning each teaching unit. Relevant safety measures are identified in planning and additional risk assessments as required.

Staff ensure that pupils are made aware of the importance of safety rules, prior to them being given access to technology and equipment.

The Local Authority subjects all mains-powered electrical equipment in school to regular safety checks.

Role of the Subject Leader

At Heygarth the computing leader uses research to keep up to date with developments in pedagogy and best practice. This helps to ensure that there is a deep understanding of the best ways to teach the three main strands, whilst also offering opportunities to develop the key skills. There is an understanding of progression in terms of childhood development which helps to build upon concepts into each phase of education. The leader can identify issues in computing teaching and address through appropriate CPD for all staff. CPD will either be delivered by the subject leader themselves, or additional support will be bought in through Hi-Impact, the school IT providers. The computing leader has a secure knowledge of, and is able to apply and model a range of, teaching methods suitable for teaching across all phases in school.

The computing leader promotes the use of computing to enhance lessons. Children need to be prepared for life in the digital world. The computing lead ensures that computing is taught as a core subject so that children feel empowered to use all three strands as part of their learning.

The computing leader has developed a whole school vision for computing which ensures that all children have all the opportunities to achieve well, if this policy is followed. It is the role of the subject leader to ensure that when children leave Heygarth Primary School, they are as well prepared as possible to continue their computing education.

It is also the role of the subject leader for computing to monitor existing equipment and cost new purchases which directly affect children's learning.

Role of Governors

The role of the link governor is based on trust, openness and transparency. They know the school well. They will support the monitoring of computing, ask questions for clarification or explanation and challenge. Governors are also responsible for signing off on the purchases of new technology and resources, due to their high costs.

Conclusion

It is the responsibility of all staff at Heygarth Primary School to share the love of learning in computing. The computing curriculum, when delivered effectively prepares children for life in the digital world and the next phase of their learning.

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