



Computing - led by Mr R Hudson

Rationale

The use of Information and Communication Technology is an integral part of the national curriculum and is a key skill for everyday life. A high-quality Computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. Here at Howley Grange, we aim to deliver inspiring Computing lessons and show what impact Computing has on our lives today.

In the new National Curriculum there are three strands to Computing. The core of Computing is **computer science**, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use **information technology** to create programs, systems and a range of content. Computing also ensures 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 workplace and as active participants in a digital world.

At Howley Grange we aim to:

- Provide a relevant, challenging and enjoyable curriculum for Computing for all pupils.
- Meet the requirements of the new National Curriculum programmes of study for Computing.
- Use computing as a tool to enhance, enrich and extend learning throughout the curriculum, using technology to support collaborative working and independent study.
- Develop children's ability to use a wide range of technology, enabling them to choose the correct technology to support a given task whilst using their knowledge of computer science to overcome any difficulties they encounter.
- Respond to new developments in technology.
- Equip pupils with the confidence and capability to use computing throughout their lives.
- Develop a deep understanding of how to use Computing safely and responsibly at all times.

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.

Teaching and Learning in Computing

At **Key Stage 1** pupils will 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.
- begin to develop their keyboard skills.

At **Key Stage 2** pupils will 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.
- fine tune their keyboard skills with improved pace and fluency.

Curriculum Planning

We endeavour to link our computing lessons to the chosen creative curriculum theme where possible. Teachers plan each half term unit around key objectives which lead to children developing a core Computing skill. This learning is revisited as the children travel through the school, enabling them to make progress and develop their skills within each core skill.

Assessment

Assessment in Computing follows school policy and procedures. At Howley Grange, we understand the value of formative, day to day assessment and incorporate assessment for learning opportunities within lessons, using teacher, self and peer assessment, ensuring all activities meet the needs of our pupils. During Computing sessions, children can self-assess their achievement of their Qs (questions). At the end of each term, teachers will formally assess children's achievements against age related expectations. This information is shared with parents in the termly reports.

Role of the Computing subject leader.

- To encourage the use, development, competence, and confidence in computing for staff and pupils.
- To develop a positive image of computing and allow for its changing nature.
- To be responsible for compiling the computing policy and to ensure its implementation.
- To lead, assist and support staff in planning, assessing and implementing computing to enhance the children's learning.
- To help staff develop their use and knowledge of computing.
- To keep the Head Teacher and staff informed of new software and developments.
- Under the RM system, the subject leader informs RM of any problems that need attention, along with Interactive Education, who supplied the majority of the interactive boards.
- To monitor the delivery and assessment of computing.
- To provide strategic leadership for the development of computing across the school.
- To manage and develop the Digital Leaders in their role within school.

E-Safety

There is a separate E-safety Policy which describes how pupils, staff and visitors to the school are kept safe online including the use of Acceptable Use Policies and security measures in place to protect all users.

Children will be taught about E-Safety during and around their Computing lessons as we encourage the children to remain safe whilst online.

Resources.

- Each classroom has a computer available which is connected to an interactive whiteboard. To complement this, each classroom has access to wireless laptops that can be connected to the RM system.
- There is a group of 31 computers set up in the computer suite, plus one computer in the adjacent library.
- Each class will have access to their own class iPad, which can be mirrored onto the interactive whiteboard.
- There are 3 computers in the staffroom, for staff PPA use.
- There is also 1 computer in the hall connected to the projection system.

- There are 3 sets of iPads, 1 of which is based in year 6, 1 in year 5 and a further set based in the Computing suite (all can be used across the school as and when needed).
- All year groups have a camera and a card reader.
- A central resource of Computing equipment such as Bee-bots, microphones, Dash Robots, and recording slates are stored centrally in the computing suite for staff and pupils to use as and when required.

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Next review: Sep 2021

