



Grange Primary Academy
The best in everyone™
Part of United Learning



Computing at Grange Primary Academy

Intent

Within an ever changing and technological world, Grange Primary Academy understands and values the importance of teaching Computing from a young age. We acknowledge that future generations will rely heavily on their computational confidence and digital skills in order to support their progress within their chosen career paths.

Therefore, it is our school's aim to equip children with the relevant skills and knowledge that is required to understand the three core areas of Computing (Computer Science, Information Technology and Digital Literacy) and to offer a broad and balanced approach to providing quality first teaching of this subject.

Computing is an integral part to a child's education and everyday life. Consequently, we intend to support our pupils to access and understand the core principles of this subject through engaging and activities. Whilst ensuring they understand the advantages and disadvantages associated with online experiences, we want children to develop as respectful, responsible and confident users of technology, aware of measures that can be taken to keep themselves and others safe online.

Implementation

We follow a broad and balanced Computing curriculum (based upon the National Curriculum) that builds on previous learning and provides both support and challenge for learners.

Computing at Grange Primary Academy at Key Stage 1 and 2 is taught across six units in each year group with the intention that each unit is taught over a half term. In EYFS, it is taught through by using technology to solve problems and produce creative outcomes. We follow the Teach Computing scheme of work.

All lessons at Grange Primary Academy are crafted around Rosenshine's Ten Principles of Instruction and these inform the structure of each lesson in the United Learning Curriculum for Computing. We believe in the importance of co-operative learning and use Kagan structures to enable this. Our methods of teaching and learning are chosen to support the development of lively and enquiring minds, which critique and question.

The school uses the commercial scheme 'Teach Computing'. This was selected because long term plans detail the 'Powerful Knowledge' that is taught and ensure that there is a clear progression in key skills, both across a year and from year to year. Each unit provides opportunities for developing computational thinking concepts by using approaches including tinkering. Learning sequences also provide opportunities to develop creativity and solving problems within a meaningful context for applying what is learnt. This scheme also provides opportunities to develop pupil's conceptual understanding alongside opportunities for them to be creative and to apply taught skills, as they become digitally literate. Learning through experimentation, discussion and making are at the core of the scheme. This 'hands on', practical approach supports the development of long term memory and gives pupils with limited technical

English a context in which to learn and use new vocabulary

Teachers will plan knowledge organisers which outlines key knowledge and substantive vocabulary which all children must master. Low stakes quizzes will be used regularly to support learners' ability to know and remember more and increase space in the working memory.

All classes will have a scheduled Computing lesson each week and there will be an expectation that technology will be utilised throughout other lessons in the curriculum. Links to other areas of the curriculum are planned out in advance so that children have the opportunity to apply their computing knowledge in other subjects.

Computing Curriculum Drivers

As a result of the children being taught the Grange Curriculum, our children will be:

A Resilient Learner

Computing knowledge and understanding is shared with the children and prioritised in the teaching. We are committed to ensuring children learn and remember the fundamentals of key computing concepts. The learning process will include regular peer and feedback to further develop knowledge and skills. Children will be expected to practice the skills taught and set themselves high standards for use of software, coding, and application of skills.

An Independent Enquirer

Children will be encouraged to ask questions about their real-world experience of computers and its applications. They will want to know about the historical significance of computing and how it is constantly changing and shaping our world.

An Articulate Collaborator

Children will experience a wide range of computing skills and techniques. They will be required to articulate and explain their personal opinions on these. They will be taught precise, technical vocabulary and they will apply this to their discussions during the learning process. They will work confidently on their own, and with others to problem solve, develop, improve, and demonstrate their knowledge and understanding

An Ambitious Individual

The computing curriculum journey through Grange does not shy away from the complex concepts or skills, instead building in complexity progressively, encouraging children to explore and develop real world applicable skills. Children are required to find solutions from an early stage in the curriculum. They will create games, presentations, performances, accessible content and confident discussion.

A Considerate Participator

The children will have the opportunity to collaborate with their peers. They will work on projects in groups of varying sizes and compete in team-based activities. There is a strong focus on ways of communicating correctly in the virtual environment. They will respect and value the opinions of others. They will fully engage in their learning through a range of presentation opportunities.

Sequencing of Content

The Grange Primary Academy Computing overview ensures that pre-requisite knowledge is considered and linked to new learning.

Key concepts are taught across phases and built upon, giving opportunity to deepen understanding throughout

The renewal and development of skills to achieve more sophisticated outcomes as the children progress is key to the learning sequence.

Purpose

Each unit of work is purposeful and works towards a known end goal which ensures all children understand that their learning has a real-life purpose.

Children will constantly explore safety in the online world which will apply to future life. Computing is a subject that is in a constant state of change. We are preparing the children to use and apply skills that may not even exist yet but will be widely used in the near future.

Big Ideas

- Explore what an online life is and how to remain safe when using computers.
 - Learn to code and develop programmes.
 - Use different software to solve problems.
 - Develop original content to share with others.
- Solve problems and look for ways to develop ideas. Learning how to adapt established procedures and build upon them.

Retrieval Practice

The learning journey across the year groups builds upon prior skills. The children will constantly develop skills they have previously learnt and recall prior learning.

Remembering information and knowledge is celebrated and is part of the Grange culture.

Deepening Concepts

The curriculum is broken into four core strands: These cover the expectations of the National Curriculum. The strands are Digital Literacy, E-Safety, Information Technology and Computer Science. These four areas cover the subject areas of computational thinking, coding, logical reasoning, networking, harnessing technology, online (use of the internet e.g. search), technology in the real world, media and content and online safety. The programme is progressive, building skill upon skill to give an immersive learning experience.

British Values

At Grange Primary Academy we understand the importance of promoting the fundamental British Values that are recognised around the world. It is our aim as a school to address these values wherever possible in the curriculum, including in computing. Computing is becoming an increasingly vital part of the curriculum as it is an integral part of modern daily life. Wherever possible we find it important to immerse the children in these values which are important to our identity. Children can do this through research on the internet. We can use computing to learn about different cultures and to discuss the similarities and differences between them and our own. We educate children on online safety and have this as a basis when using technology in school. The children engage in online safety lessons every term to continually update their knowledge and understanding of staying safe linked to current affairs. The children are able to critique each other's work in a positive and constructive manner whilst showing respect for the opinions and beliefs of their peers which may differ from their own.

Cultural Capital

Cultural Capital is the accumulation of knowledge and skills that a child can draw upon and which demonstrates their cultural awareness, knowledge and competence. It is one of the key ingredients a child will draw upon to be successful in society, throughout their educational journey and eventually their career and world of work. At Grange Primary we enhance children's experiences and learning by utilising different opportunities in our computing curriculum, across the whole curriculum and around school.

We provide engaging computing lessons for every child in which we include a various experiences to develop their skills to prepare them for the real world. We aim to foster children's curiosity and fascination with technology so that this thirst for knowledge remains with them for the rest of their lives. We give children as many opportunities to experience, explore and explain the wide variety of technology in the world in order for them to become informed and thoughtful members of the digital community.

SMSC

Our computing helps to promote and foster SMSC through a variety of different ways.

Spiritual

By wondering at the power of the digital age – using the Internet.
Understanding the advanced and limitations of ICT.

Moral

By teaching the importance of Internet and online safety when working online using a variety of different platforms.
Ensuring the children have the knowledge and tools to report any instances of bullying, cyber-bullying and online safety issues.
Exploring the moral issues around data and sharing information.

Social

By highlighting and teaching ways to stay safe when using online services and social media.
Teaching and discussing the different ways that the Internet has impacted on communication.
Preparing the children for the challenges of living and learning in a technologically enriched increasingly interconnected world.
Ensuring the children acknowledge advances in technology and appreciation for human achievement in a technological world.
Making clear the guidelines about the ethical use of the Internet and how we keep others and ourselves safe by discussing the moral and social implications of cyberbullying.

Cultural

Providing the children the opportunity to learn about different cultures through the use of the Internet and online platforms – such as Newsround, Picture News and First News. Providing the children opportunities to explore human achievements and creativity in relation to a worldwide communication platform. Opportunities to develop a sense of awe and wonder at human ingenuity.

Impact

Our Computing curriculum is high quality, well thought out and is planned to demonstrate progression. If children are keeping up with the curriculum, they are deemed to be making good or better progress. In addition, we measure the impact of our curriculum through the following methods:

- A reflection on standards achieved against the planned outcomes
- Children can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
- Children can analyse problems in computational terms and have repeated practical experience of writing computer programs in order to solve such problems.
- Children can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.
- Children are responsible, competent, confident and creative users of information and communication technology.
- Tracking of gains in each quiz.
- Pupil discussions about their learning.

Our Computing curriculum is planned in a way which promotes the cultural capital of all our children. We enhance our curriculum especially for the most disadvantaged by organising guest speakers (gaming developers, music producers/ICT experts), organising Computing events which focus on the wider world and promote skills needed by children in their future careers. We develop these skills to enable children to choose from a wide range of vocations when they leave education. We also provide additional opportunities for children to apply these skills in their local environments, including digital photography and art.