Wardley CE Primary School
Computing Policy

Name of Reviewer	Andrew Houston
Date of Approval of Governing Body	September 2023
Signature of Chair	*Alan Johns*
Signature of Head	*Mark Foster*
Date Due for Review	September 2026

EQUALITY STATEMENT

As a school we welcome our duties under the Equality Act 2010. The general duties are to:

- eliminate discrimination, harassment and victimisation
- advance equality of opportunity
- foster good relations

We review all policies and procedures we operate to ensure there are no negative equality impacts based on the following protected characteristics: age, disability, ethnicity & race, gender (sex), gender identity & reassignment, pregnancy & maternity, sexual orientation, religion & belief and non-belief as outlined in the Equality Act 2010. If you feel, on reading this policy that there may be a negative equality impact, please tell us about this. Please also let us know if you need to access this policy in a different format. You can do this by contacting the school office.

Our school vision

We are a Church of England school that values and recognises the uniqueness of each individual child and acknowledges their fundamental right to be educated to their full potential in a safe, secure and caring environment. Our ethos is built on Christian foundations and drives our belief that we can do all things.

Wardley CE Primary School is committed to continual improvement to ensure that what we do today is even better tomorrow. We provide a happy, secure and supportive learning environment where the children develop independence and work hard to make the most of their talents, and that 'We can do all things' within a deep and rich curriculum.

We can do all things through Christ who strengthens us. Phillippians 4:13

Practical ways in which we attempt to carry out our school vision

Through the Christian value of respect:
-Having strong ethics to underpin our decision making and actions.
-Creating an environment which promotes the Christian ethos of trust, respect and honesty to enable people to flourish.
-Promoting a sense of justice.
-Creating a strong moral purpose which underpins everything we do

Through the Christian value of friendship:
-Having an inclusive ethos to create a school in which everyone is welcome and everyone is equal.
-In celebrating diversity we value the strengths of all and embrace differences.
-Engaging stakeholders within and beyond the school.

Through the Christian value of trust:
-Having a strong sense of teamwork amongst all members of the school community.
-No matter how small, we value every contribution and support each other to reach our goals.
-In respecting each other, we strive to not let each other down.
-In feeling valued and empowered people have a desire to go the extra mile.

Through the Christian value of courage
-Recognising, supporting and developing everyone's potential.
-Nurturing skills and promoting opportunities.
-Creating an environment for people to think positively and take risks.

Through the Christian value of perseverance:
-Through continual enhancement we are constantly striving to achieve high standards, we never stand still.
-All improvements are underpinned with high aspirations.
-When problems arise, we must hold on to our vision and find solutions.

-We inspire and innovate and we support others to do the same.

Spiritual Moral Social & Cultural Statement

At Wardley CE Primary School, our computing curriculum contributes to SMSC by preparing our pupils for the challenges of living and learning in a technology enriched world, making clear guidelines about the ethical use of the internet.

We promote spiritual development
- By wondering at the power of the digital age – using the Internet.
- Understanding the advanced and limitations of ICT.
- By using the internet as a gateway to big life issues.

We promote moral development
- 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.
- By considering the benefits and potential dangers of the internet – eg campaigns for charities and injustice as a force for good.
- By considering the vision of those involved in developing the web.
- Exploring the moral issues around data and sharing information.

We promote social development
- 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.
- By discussing the impact of ICT on the ways people communicate
- By links through digital media services with other schools and communities

We promote cultural development

- Providing the children the opportunity to learn about different cultures through the use of the Internet and online platforms.
- Providing the children opportunities to explore human achievements and creativity in relation to a worldwide communication platform.
- by providing opportunities to develop a sense of awe and wonder at human ingenuity.

Intent

At Wardley CE Primary School, we aim to prepare our learners by delivering a high-quality computing education. We provide opportunities to gain knowledge and develop digital skills that will equip them for an ever-changing digital world.

Our ambitious Computing curriculum focuses on a sequential progression of skills in digital literacy, computer science, information technology and online safety to provide them with sufficient knowledge and skills for future learning and employment.

Our subject intent for computing is that each learner will show:
• Competence in coding for a variety of practical and inventive purposes, including the application of ideas within other subjects.

• The ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity.

• An understanding of the connected nature of devices.

• The ability to communicate ideas well by using applications and devices throughout the curriculum.

• The ability to collect, organise and manipulate data effectively.

•Ensure children become digital literate – to be able to use and express themselves.

•Develop ideas through information and communication technology.

•Be active participants in a digital world.

Implementation

Within each academic year, children will study computing topics on a termly basis. Across the whole school, there are four key threshold concepts that the children will keep returning to in their computing work. The children are assessed by the teacher during each unit against the age related expectations for these key threshold concepts. They are:

- To code
- To connect
- To communicate
- To collect

These strands are revisited repeatedly, and sequenced appropriately, through a range of themes during children's time in school to ensure the learning is embedded and skills are successfully developed.

To ensure a broad range of skills and understanding, computing is taught across three main strands: **digital literacy, computer science and information technology.**

Computer science is about solving problems and making things better. Our curriculum allows children to explore how software and hardware can be used to fix problems in science, business and society as they learn about design and development. There is also an important human side to computer science, as computers fix problems to help people. And, because computers can affect almost every aspect of our lives, we show our pupils of the career opportunities in all areas of industry: from cyber security as a software developer, health as an informatician, to more creative fields - like game development, graphic design, or digital journalism, sport performance or fashion design.

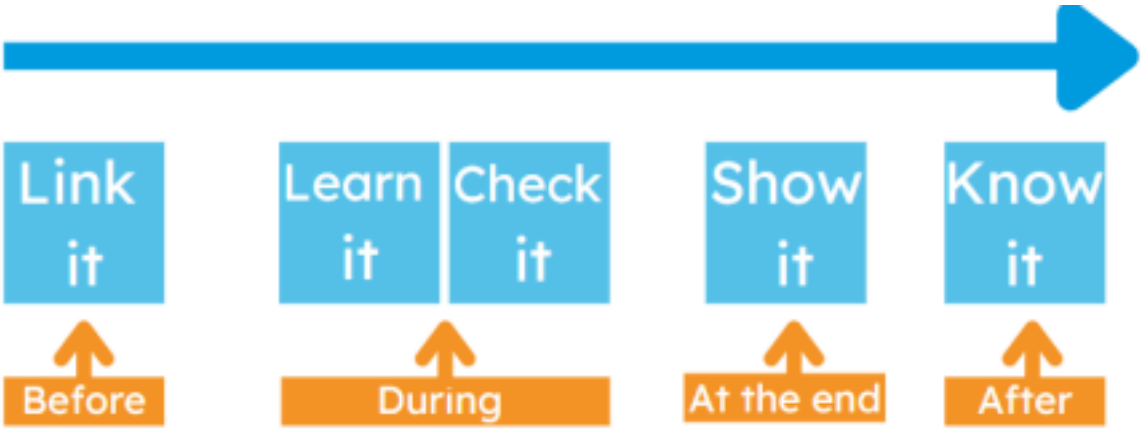
Digital literacy is the general ability to use computers, including using digital technology effectively and for a purpose when creating content. Being digitally literate helps children to use technology safely and responsibly, and to know how to report inappropriate online behaviour and content.

Information technology is concerned with how systems and applications can be used and combined to solve problems and complete tasks.

Intent

Our intention is that computing also supports children's creativity and cross-curricular learning to engage children and enrich their experiences in school.

At Wardley CE Primary School we place five pedagogical principles at the heart of our computing curriculum and we have ensured that there is time spent on the intent of how we deliver this. Our aim is for the children to 'remember more and know more".



Link It: At the beginning of a unit of learning teachers carefully link the children's prior learning. Learning starts with igniting pupils' prior knowledge. Research on cognitive load recognises the potential benefits this will have upon long-term

retention. Once established, we move onto the ‘Learn It’ stage where the composite learning is broken down into manageable components.

Learn It: This is new learning. It is often taught through a sequence of lessons that follow a ‘line of enquiry’. These are shaped by key questions which guide the children’s exposure to new knowledge and link it back to the overarching line of enquiry. Children learn the substantive knowledge required for the area of learning (based on the essential opportunities) whilst developing their disciplinary knowledge for the subject through the threshold concepts.

Check It: Throughout the ‘Learn It’ phase, teacher’s plan ‘Check It’ opportunities for adults to review their learning to date. This gives teachers the opportunity to recognise gaps in pupils’ knowledge and to enable them to make future decisions based on these assessments. Throughout lessons, the children’s understanding will be checked by the teacher through a range of ‘Check It’ tasks.

Show it: At the end of a sequence of learning, we use ‘show it’ which is beneficial in enabling pupils to showcase their learning. The children present their learning at the end of each area of learning. This often takes the form of an end of unit reflection activity in which the children bring together their ideas in response to the ‘line of enquiry’ that they have been following. Importantly, there is encouragement for pupils to come up with innovative ideas.

Know It: At Wardley CE Primary School, we check that the children know more and remember more with a summative activity at the end of each area of learning. As well as this, the children have regular retrieval sessions to retrieve their prior learning to ensure that it is not lost. This would normally be after the area of learning has been concluded and could be later, or even much later, in the school year.

Links to the Wider Curriculum

At Wardley CE Primary School computing is taught through a blocked curriculum approach and we teach Computing discreetly. We try to link computing to other subjects to help build on prior knowledge whilst ensuring no tenuous link is made.

Some seemingly discrete skills taught in computing are in fact transferrable, and we at Wardley embrace and try to develop these across subjects. These include -

- find things out from a variety of sources
- select and synthesise information to meet their needs
- develop an ability to question the accuracy, bias and plausibility of information
- develop their ideas, using computing tools to amend and refine their work and enhance its quality and accuracy
- exchange and share information, both directly and through electronic media
- review, modify and evaluate their work, reflecting critically on its quality, as it progresses.

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.

Not only is an understanding of computing vital to achieve computer science qualifications, computing also supports the development of problem solving and critical thinking skills.

The teaching of computing offers pupils a broad and balanced programme of study that enables them to build an understanding of how computers function and how they can be used in pupils' work and personal lives.

As STEM is important in our school. Our Computing curriculum interweaves a range of enrichment activities with a STEM focus. In KS1, children explore engineering topics with kinetic sand and Meccano. In lower KS2, children apply their coding skills learnt in the Scratch platform to new hardware (micro:bit and Pi), and then in upper KS2 they explore algorithms through animation.

Computing contributes to teaching and learning in our art and design and technology curriculum. For example, graphics work links closely with work in art, and work using databases supports work in mathematics, while the Internet proves very useful for research in humanities subjects. Computing enables children to present their information and conclusions in the most appropriate way.

Computing is a major contributor to the teaching of English. Through the development of keyboard skills and the use of computers, children learn how to edit and revise text. They learn how to improve the presentation of their work by using desk-top publishing software.

Many computing activities build upon the mathematical skills of the children. Children use computing in mathematics to collect data, make predictions, analyse results, and present information graphically. They also acquire measuring techniques involving positive and negative numbers, including decimal places.

Computing contributes to the teaching of SMCS and citizenship as children learn to work together in a collaborative manner. They develop a sense of global citizenship by using the Internet and email. Through the discussion of moral issues related to electronic communication, children develop a view about the use and misuse, and they also gain a knowledge and understanding of the interdependence of people around the world.

Computing in the EYFS

‘Play is an intrinsic part of being human. Play is at the heart of creativity, music, dance, song, poetry and art – it is a form of experimentation that loosens the often rigid boundaries of our very structured world, allowing us to try, allowing us to fail, allowing us to see that success might come in an unexpected shape, colour, size or configuration.’

Michael Rosen’s Book of Play Profile Books Ltd 2019

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.

Our young children take part in a variety of tasks with digital devices, such as moving a Bee Bot around a classroom; they will already be familiar with the device before being asked to undertake tasks related to the key stage one (KS1 - ages 5 - 7 years) computing curriculum, such as writing and testing a simple program. Not only will children be keen to again use a device they had previously enjoyed using, their cognitive load will also be reduced, meaning they are more likely to succeed when undertaking activities linked to the next stage in their learning.

The September 2020 release of Development Matters outlines how effective teaching and learning gives children the opportunity to play and explore, participate in active learning and create and think critically. Tasks are outlined for each area of the EYFS framework, although, at Wardley, many other opportunities exist to use technology with younger children linked to a topic studied within class.

Impact

The impact of the subject can be seen in the progress that the pupils make. This can be seen as knowing more, remembering more and being able to do more. It is about the pupils developing their ability to think geographically. It is about connecting existing and new knowledge, developing competence and making links. Assessment is both formative as children learn and summative to evaluate the gains that have been made. It is kept to the minimum necessary to be fit for its purpose.

At Wardley CE Primary School assessment is in line with the school’s assessment policy. Teachers are expected to assess at the end of each topic against the subject's threshold concepts (disciplinary knowledge) and the subject's substantive knowledge, which enables teachers to track each child’s progress. These are based on the subject’s National Curriculum programme of study,

The way we assess this progress includes the following practice (as set out in the school’s teaching & learning policy and assessment policy):

• On-going formative assessment- this includes the use of day to day assessment for learning classroom practice and feedback. It looks at the pupil's development of key knowledge and skills. It can include short tests and quizzes. The aim is to reactivate thinking, make links and connect ideas to better embed them in the long term memory.

• Long term summative assessment - this looks at the subject's substantive and disciplinary knowledge. It involves the pupils drawing their learning together, for example in the end of unit responses to the key questions. It also provides an overview of whole school progress for the subject leader.

Role of the subject leader.

The computing subject leader at Wardley CE Primary School is Andrew Houston.

Their role as a subject leader is to act as a guardian of the standards in the subject.

This means that they know:

• How well pupils achieve.

• What the strengths of provision are

• What needs to be done to improve outcomes.

To achieve this subject leaders undertake the following monitoring activities on a termly basis:

• Lesson observations.

• Monitoring of children's books.

• Discussions with both adults and children.

• Looking at classroom displays.

In addition subject leaders will:

• Support staff in their development of planning and to monitor planning.

• Facilitate the sharing of good practice among staff.

• Work together with colleagues to raise standards.

• Ensure that the policy documents and curriculum resources remain useful and current.

Computing and links to home.

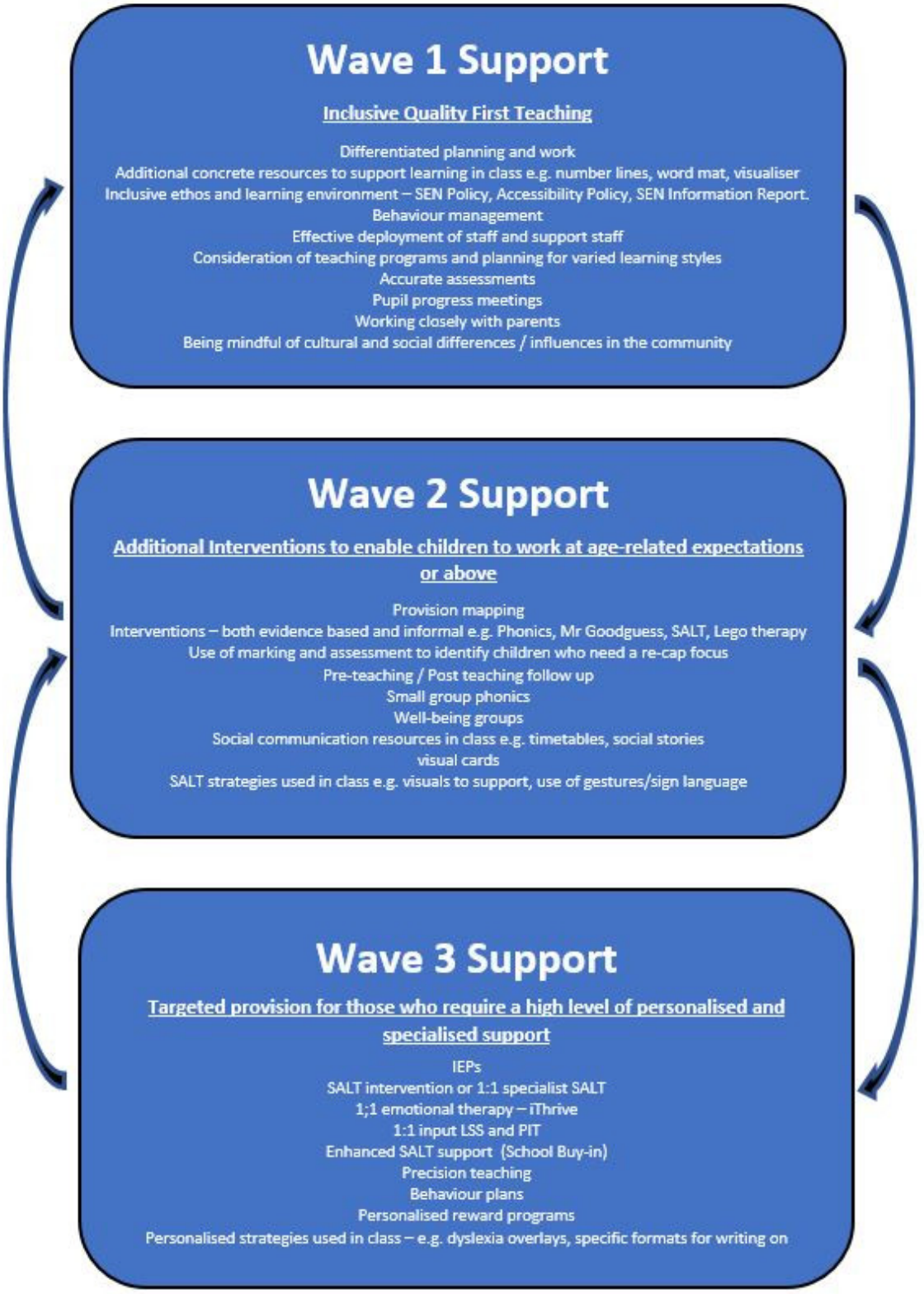
At Wardley, we recognise the important role parents play in their children's learning and social development, whether that's extra-curricular activities, homeschooling or helping with home learning in exceptional circumstances. To support parents from across our community, we provide guidance, useful links and resources for all key stages.

Inclusion

At Wardley CE Primary School all children have access to computing lessons and activities regardless of their characteristics or ability. Teaching approaches provide equality of opportunity by making sure the work is suitable for all, regardless of gender, considering religious and cultural beliefs and enabling those with disabilities to have full participation

Through adaptive teaching we provide all children with the tools and support to be involved and access every history lesson. This is the 'low threshold, high ceiling' model of teaching and learning that is set out in our teaching and learning policy.

To promote an inclusive environment in computing, we will use the following provision model:


Wave 1 Support
Inclusive Quality First Teaching
Differentiated planning and work
Additional concrete resources to support learning in class e.g. number lines, word mat, visualiser
Inclusive ethos and learning environment – SEN Policy, Accessibility Policy, SEN Information Report.
Behaviour management
Effective deployment of staff and support staff
Consideration of teaching programs and planning for varied learning styles
Accurate assessments
Pupil progress meetings
Working closely with parents
Being mindful of cultural and social differences / influences in the community
Wave 2 Support
Additional Interventions to enable children to work at age-related expectations or above
Provision mapping
Interventions – both evidence based and informal e.g. Phonics, Mr Goodguess, SALT, Lego therapy
Use of marking and assessment to identify children who need a re-cap focus
Pre-teaching / Post teaching follow up
Small group phonics
Well-being groups
Social communication resources in class e.g. timetables, social stories
visual cards
SALT strategies used in class e.g. visuals to support, use of gestures/sign language
Wave 3 Support
Targeted provision for those who require a high level of personalised and specialised support
IEPs
SALT intervention or 1:1 specialist SALT
1;1 emotional therapy – iThrive
1:1 input LSS and PIT
Enhanced SALT support (School Buy-in)
Precision teaching
Behaviour plans
Personalised reward programs
Personalised strategies used in class – e.g. dyslexia overlays, specific formats for writing on