1. <u>Subject: Computing</u>

2. <u>Leader: Mr Wake</u>

3. <u>Link Governor:</u> Matthew Searle MBE

4. <u>Why is computing important?</u>

<u>Our intention</u>

Computing is an integral part of teaching and learning at St Helens Primary School. It plays a significant role in the education of all children in our school. Computing underpins today's modern lifestyle and it is essential that all pupils gain the confidence and ability to access this subject and prepare themselves for the challenge of a rapidly developing and changing technological world.

Our computing curriculum is designed to support us with teaching all pupils, including disadvantaged and SEN pupils, together as much as possible. The use of Computing in teaching and learning enhances and extends children's learning across the whole curriculum whilst contributing to motivation and the development of social skills.

We intend to provide appropriate, fully integrated and supported computing resources in order that the highest level of education can be offered to all pupils. When possible, we aim to utilise the most up to date Computing resources and recognize the need to remain aware of the potential uses of any emerging technologies. In addition, we hope to utilise existing resources both within the school and the wider community

E-Safety plays a prominent role in our curriculum intentions in line with the changing nature of the world our children are growing up in and our dedication to safeguarding children. Our intention is to work alongside our PSHE curriculum to ensure children have a comprehensive understanding and knowledge of how to stay safe when using technology and how to ask for help if they have any e-safety concerns.

At St Helens Primary School our aims for Computing are that:

- can analyse problems in computational terms, and have repeated practical experiences 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.

- ● Children appreciate the relevance of computing in our society and that they see it as an essential tool for learning, communication, finding information and for controlling and understanding their environment.
- Children can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation;
- ● All children become responsible, competent, confident and creative and confident users of computing.
- Children have a secure understanding of e-safety.

5. How we teach computing at St Helens Primary

Our Implementation:

At St Helens Primary, computing is taught using a blocked curriculum approach. This ensures children are able to develop depth in their knowledge and skills over the duration of each of their computing topics. Planning of their computing lessons are often richly linked to engaging contexts in other subjects and topics. Knowledge and skills are mapped to ensure systematic progression.

We have a class set of laptops and a class iPad to ensure that all year groups have the opportunity to use a range of devices and programs for many purposes across the wider curriculum, as well as in discrete computing lessons.

Employing cross curricular links motivates pupils and supports them to make connections and remember the steps they have been taught. The implementation of the curriculum also ensures a balanced coverage of computer science, information technology and digital literacy. The children will have experiences of all three strands in each year group, but the subject knowledge imparted becomes increasingly specific and in depth, with more complex skills being taught, thus ensuring that learning is built upon. For example, children in Key Stage 1 learn what algorithms are, which leads them to the design stage of programming in Key Stage 2, where they design, write and debug programs, explaining the thinking behind their algorithms.

Internet safety is taken extremely seriously and is embedded within our curriculum. We have an E-Safety Policy that provides guidance for teachers and children about how to use the internet safely. Each year group participates in lessons on e-safety, children understand how to stay safe when using technology and the Internet.

Progression in Computing

The syllabus has been created in a format which enables children to revisit and build on prior knowledge of the three areas of computing; computer science, information technology and digital literacy. This supports children with securing knowledge and skills whilst making good progress.

Our curriculum is mapped out in a progression chart so that teachers have a good working knowledge of the progress expected in each area of computing. This supports planning, teaching, learning and assessment.

Within all lessons, teachers plan a phase of progressive questioning which extends to and promotes the higher order thinking of all learners. Questions initially focus on the recall or retrieval of

knowledge. Questions then extend to promote application of the knowledge in a creative way which is designed to promote analytical thinking.

6. National curriculum and Computing coverage

The objectives for computing in KS1 and KS2 are clearly set out for each year group in the National Curriculum:

Key stage 1 Pupils should 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.

Key stage 2 Pupils should 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.

7. Early Years Foundation stage

Despite computing not being explicitly mentioned within the Early Years Foundation Stage (EYFS) statutory framework, there are many opportunities for children to use technology to solve problems and produce creative outcomes in our EYFS curriculum.

Our EYFS is centred around play-based activities that focus on building children's listening skills, curiosity and creativity and problem solving.

Examples of Computing in the Early Years:

- taking a photograph with a camera or tablet
- searching for information on the internet
- playing games on the interactive whiteboard
- exploring an old typewriter or other mechanical toys
- using a Beebot
- watching a video clip
- listening to music
- using a creative program to express their ideas through drawing and colouring on the computer

Allowing children the opportunity to explore technology in this carefree and often child-led way, means that not only will they develop a familiarity with equipment and vocabulary but they will have a strong start in Key Stage 1 Computing and all that it demands.

8. Links to other subject areas.

The Computing resources, particularly the laptops, interactive whiteboards, tablets and digital cameras allow teachers to use Computing to support lessons across the curriculum. Computing is used to expand the opportunities it presents for many other subjects, for example, TT Rockstars is used to support the learning in maths.

9. British Values

In computing children learn to be considerate to the views of other internet users. They start to develop an awareness that we are each part of the democracy of the internet and that we can each, in our own small way, affect the way the internet exists.

From EYFS to year 6 children develop their understanding of the use of rules on computers and the internet, such as when we are allowed to use social media and what we are allowed to post and share. We understand that rules are to keep others and ourselves safe and to help the internet to be an enjoyable and engaging place.

In computing, and alongside PSHE, we teach children how to use their right to freedom of speech in a respectable and thoughtful way, being considerate of how this speech will affect others. The children develop an understanding of the views of others, their right to challenge, question and discuss opinions and views, and to do this in a respectable and thoughtful way.

Children start to understand the freedom the internet provides in connecting them to the world, this brings a wide range of views, opinions, ideas, cultures, faiths which they need to be respectful and tolerant of.

Impact of our computing curriculum
Our approach to the curriculum results in a fun, engaging, and high-quality computing education. The quality of children's learning is evident as pupils can share and evaluate their own work.. Evidence such as this is used to feed into teachers' future planning, and as a topic-based approach continues to be developed, teachers are able to revisit misconceptions and knowledge gaps in computing when

teaching other curriculum areas. This supports varied paces of learning and ensures all pupils make good progress. Much of the subject-specific knowledge developed in our computing lessons equip pupils with experiences which will benefit them in secondary school, further education and future workplaces. From research methods, E-safety, use of presentation and creative tools and critical thinking, computing at St Helens Primary School gives children the building blocks that enable them to stay safe online whilst pursuing a wide range of interests and vocations in the next stage of their lives.