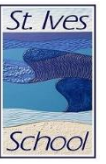




# St Ives School - Computing Curriculum Statement



**“Computers themselves, and software yet to be developed, will revolutionise the way we learn.” Steve Jobs**

## **Curriculum Intent**

The St Ives School Curriculum ensures that all our students have the opportunity for academic and personal development across a broad range of subjects and experiences. It combines equality of opportunity to our core learning with opportunities for students to make individual choices regarding their learning experiences. Acquisition of knowledge and transferable skills are the cornerstones of our student's progress and we place a high value on building their understanding of community, place and social justice. Lessons and other learning experiences are sequenced to build on students' prior knowledge, and to ensure that students deepen their understanding of each subject, and the interconnection between subjects and their global context.

Our Curriculum is the foundation to achieving our Core Principles:

- Students leave St Ives with high value achievements and the life skills and resilience that provide a platform for future success and happiness.
- We are inspired to work together to research, design and implement highly effective and sustainable solutions to develop and maintain our thriving school community.
- Continuous improvement is achieved through a whole school culture of, and commitment to, creativity, engagement and professionalism.

## **What is unique to the study of Computing?**

Many jobs that exist today will disappear over the lifetime of our children and be replaced by jobs in computing. That is why at St. Ives School, a fresh, challenging and innovative computing curriculum has been developed that puts students and their future at the forefront of learning. We make sure that students experience the exciting topics of computer science, but we are also passionate about ensuring every student leaves School with the industry standard IT skills to succeed in their education and beyond.

We make sure our students are aware of how their digital community is constructed and how to safely access and use the exciting resources at their disposal. Our technological world will bring opportunities in our children's future lives that we can't even imagine right now so at St Ives School we give every student the skills they need to find their way in this future.

From ensuring every student knows how to put their online welfare first to making sure every student leaves our school having coded in a professional programming language, we have developed a computing curriculum ready for the future. There is a growing skills shortage of computing specialists in the UK and we must prepare our young people for this. At St Ives School we endeavour to ensure that our children leave school ready to put themselves in pole position for these opportunities and our future world.

The most important aspect of computer science is problem solving, an essential skill for life. Students study the design, development and analysis of software and hardware used to solve problems in a variety of business, scientific and social contexts. We offer coding sessions as part of the Be Inspired programme to support the learning of computer coding in lessons.

**Literacy in Computing is developed via the teaching and discussion of Tier 2 and 3 vocabularies in lessons. Students are encouraged to explore technical language particularly when studying programming and where this language is used in the wider context. Resources are being used throughout the curriculum to provide students with tools to make sense of the history of Computing as well as develop their literacy skills and recognise the cross-curricular links attributed to reading and interpreting text.**

## Curriculum Implementation

### General principles

- Computing is sequenced based on the content provided in the statutory programmes of study from the national curriculum.
- Fluency in the fundamentals of Computing is taught through varied and frequent practice with increasingly complex problems over time so that students develop conceptual understanding and the ability to recall and apply skills rapidly and accurately.

### Student organisation

- Students across Year Seven, Eight and Nine are split into one of five groups where classes are grouped by ability. At KS4 students Study GCSE Computer Science if they have chosen this as an option subject. All classes receive the same curriculum but teaching and learning activities will vary to suit each individual class with challenges added to lessons to stretch students.
- Staff make decisions with clear knowledge of who the disadvantaged students are and which class they would be best suited to. This follows our Class Setting Protocol.

## Accumulation of knowledge

- Computing is taught as part of a spiral curriculum throughout KS3 to allow students to develop their complexity of understanding in each strand further as they mature. This enables a deepening of understanding, with each successive encounter building further knowledge and confidence. The GCSE qualification at KS4 recalls and builds upon key fundamentals from KS3.
- Each year covers a broad and diverse representation of key areas of Computing to allow for revisiting and further development of topics when students are academically ready.
- Within each year, topics are carefully sequenced to allow for transfer of learning between Computing fundamentals, through a period of several units. Topics that are related are taught in an order which allows students to make deep connections between linked content. The ordering of topics also allows for prerequisite knowledge to be obtained before encountering novel concepts. Diligence in teaching foundation concepts in strategically sequenced units allows for rapid progress through advanced topics later in the learning journey.
- In order to promote retention of these foundational concepts, our scheme of learning explicitly plans topics to interleave or revisit concepts whilst teaching new more complex concepts. These interleaving topics are sequenced not only to allow for spaced practice and retention, but to further promote transfer learning between Computing content.

## Time allocation

Each year group will have the following allocation of seventy five minute lessons where they are taught the Computing curriculum across a two-week cycle:

Year Group	Year 7	Year 8	Year 9	Year 10	Year 11
Lessons allocated	1	1	1	4	4
Percentage of curriculum time	2.5%	2.5%	2.5%	10%	10%

## Teaching and learning provision

- Lessons start with retrieval practice in the form, last month, last year - a spaced retrieval based activity.
- Checking for understanding points are used in lessons to review previously learned key skills that are relevant to the lesson taught. It highlights misconceptions and prevents barriers to learning throughout the lessons by reminding students of these skills.
- Modelling of worked examples is present in lessons using a format of 'I do, We do, You do' to ensure students meet the high expectations we have of them with communicating their work (both written and verbal) using tier 2 and tier 3 vocabulary. This is especially important when introducing new concepts.
- Feedback is provided to students 'live' throughout lessons to ensure students make rapid progress through activities. Whole class feedback is provided regularly to students and is low stakes.

- Hinge questions are being developed to allow transition periods within the lesson to be more formally assessed. This is used as a tool that the teacher employs when students reach the “hinge” points. Students’ responses provide the teacher with valuable evidence about what the students know, don’t know and need to do next.
- Repeat concepts link curriculum ideas together.

### **Adapted provision**

- Explicit instruction for SEND and LPA students focused on teacher demonstration followed by guided practice and independent practice.
- Cognitive strategies like memorisation techniques and metacognitive strategies to help students plan, monitor and evaluate their learning. Chunking the task at each stage will support students with SEND to make the information easier to process.

### **Enrichment provision**

- Students have the opportunity to attend a weekly programming after school club to stretch their programming skills and develop further.
- Opportunities to bring learning to life and give some context through external representatives from industry sharing their experiences with students.

### **Curriculum impact**

#### **Formative assessment**

- Formative assessment is more of a diagnostic tool with some elements of our formative and summative assessments based on knowledge retrieval to enhance knowledge retention.
- Formative assessment strategies include:
  - Impromptu quizzes and low stakes testing
  - Short comparative assessments to see how pupils are performing against their peers
  - Interactive quiz activities to assess learning/understanding
- Formative assessment is used to monitor student learning style and ability (metacognition) and to provide on-going feedback for student development.
- Planning and teaching methods are adapted to aid students to improve their learning rapidly.

## **Progress**

- Progress is monitored through data from end of unit tests and summative tests at KS4. This is evaluated and where necessary, actions are agreed and implemented.
- The quality of teaching and learning is monitored through lesson visits by the faculty lead and by senior leaders.
- Visits are recorded using Sisra Observe, where follow up action points are actioned as necessary.
- In link meetings between the faculty lead and senior leaders, teaching and learning is a standard agenda item and where any necessary action is discussed and agreed.
- Work scrutiny is also completed and recorded on Sisra Observe by the faculty lead and senior leaders.

## **Summative Assessment**

- Assessment during whole school assessment weeks are used to systematically check against set criteria in a given time frame (usually termly).
- Our summative structures are to evaluate student learning and academic achievement at the end of each term and/or unit. This is to give opportunities to aid retrieval of prior knowledge and for interleaving.
- At KS4 exam style questions are used to give students an opportunity to evaluate their own strengths and developments.
- At KS4 results are reported back to students in the form of a raw mark and percentage and this is recorded on internal tracking sheets for comparisons and analysis between focus groups and classes.
- During the summer term of Yr 10, GCSE past papers are used and students are given a 9 – 1 grade alongside their score/percentage using grade boundaries for that exam series.

## **Student Feedback**

- Students have the opportunity to communicate with teachers during the school day and by using Show My Homework and Google Classroom.