Computing Policy

Inspire – Impact - Independence

OAKWOOD ACADEMY MISSION STATEMENT

"Promoting learning excellence – Inclusion beyond the barriers".

Moral Purpose

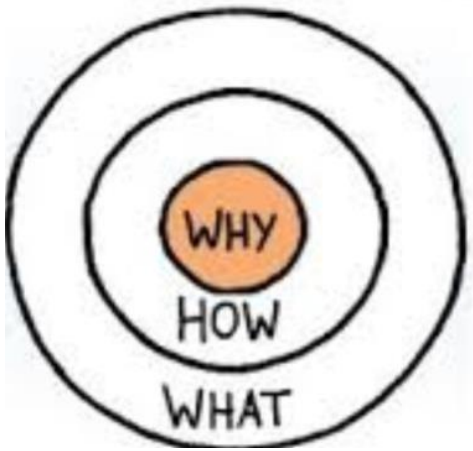
"We are united in the belief that together we can inspire all learners to dream, persevere and achieve so that we can change lives for the better, now and for future generations to come"

Policy developed by:	J Hough
Policy to be reviewed:	Summer 2027
Summary of changes	• changes to the curriculum content

Aims of Teaching and Learning at Oakwood;

Inspire – Impact – Independence

The aim of Teaching and Learning at Oakwood is to provide high quality education which **inspires**, has a positive **impact** on all young people and results in fostering **independence**, preparing them for the future.



Policy Development (How)

This policy has been developed through:

- Review of Computing policy in Summer of 2021
- RAG of action plan for academic year 2020 2021
- Consultation with pupils / parents and staff during the Pandemic
- Developed through the Curriculum Review Autumn 2021 with A.S. and D.J.

Contents	Slide number
Subject Information: • The Vision and rationale of Computing at Oakwood	**4**
Subject design: • Computing Curriculum Progression Model (concepts, intent and assessment) ○ Key Stage 2/3 Computing curriculum ○ Key Stage 4 Computing curriculum • Home Learning • Cross-curricular links (including SMSC and British Values opportunities)	**5-11**
Other information • Curriculum maps • Schemes of Work	**12-20** **21+**

Computing Policy – Rationale

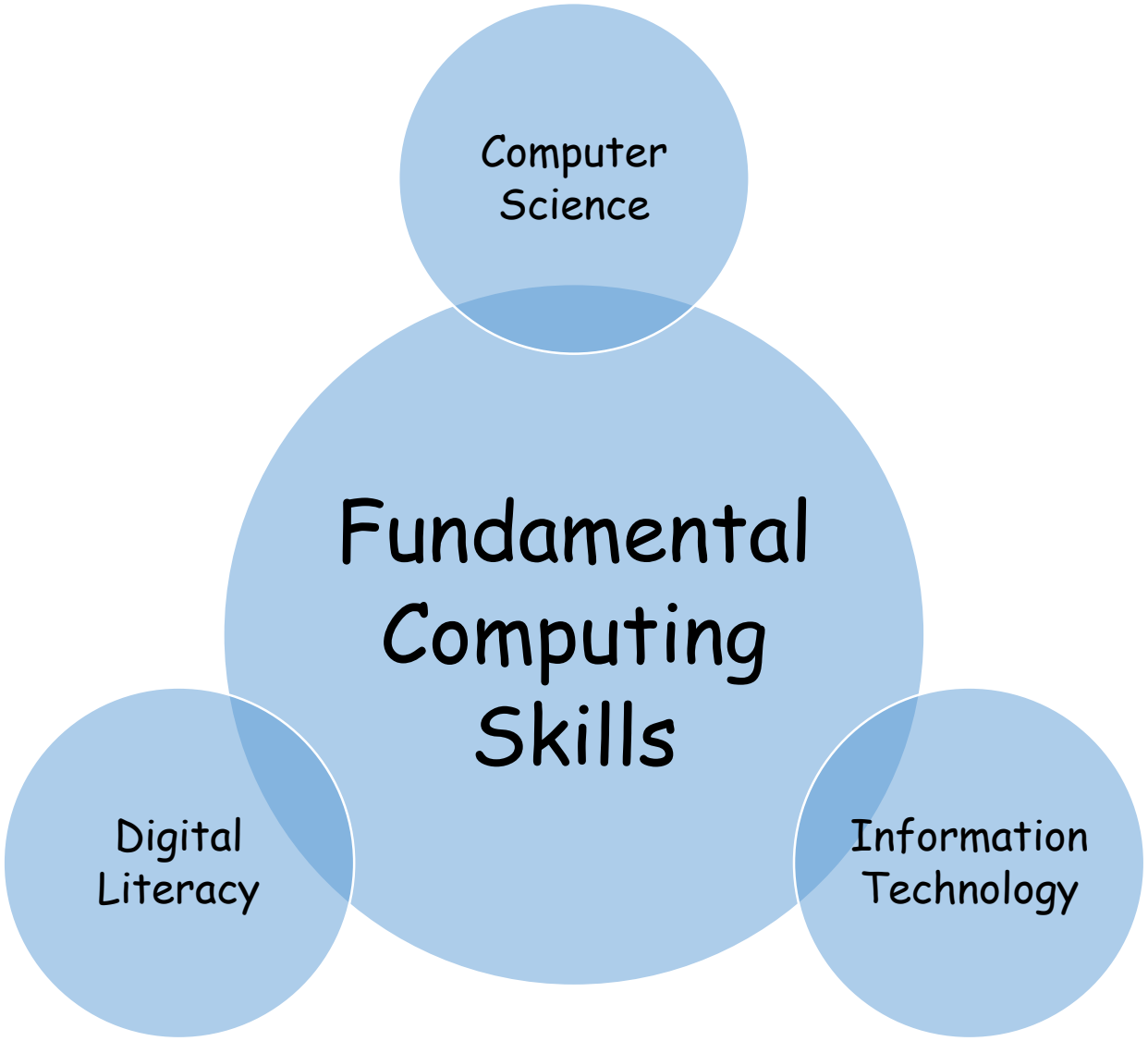
- To introduce the key aims and objectives of the Computing department.
- To explain the curriculum design and coverage.
- To explain the effective Teaching and Learning strategies involved in Computing.

Computing Policy - Vision (Why)

- The purpose of Computing at Oakwood is to ensure that all students are competent users and innovators of digital technology. They will be safe when exploring the digital world and are able to recognize dangers and respond appropriately. We aim to foster an ongoing interest and exploration of the ever changing **digital world**.

- This will lead to students becoming responsible citizens within a digital society, promote future study and offer more employability opportunities.

The core concepts identified in Computing are:



Breakdown of core skills:

Computer Science

- Programming
- Systems and Networks

Information Technology

- Data & Information
- Creating Media

Digital Literacy

- Safe Practice

Breadth and Depth of the Curriculum

Computer Systems and Networks

- Connecting Computers
- The Internet
- Sharing Information
- Internet Communication
- Computer Hardware

Creating Media

- Stop-Frame Animation
- Audio Editing
- Video Editing
- Desktop Publishing
- Photo Editing
- Vector Drawing

Data and Information

- Grouping and labelling Data
- Collecting Data
- Sorting and Filtering Data
- Using data to answer questions
- Branching Databases
- Flat-File Databases
- Spreadsheets

Programming

- Sequencing
- Repetition
- Selection
- Variables
- Events and actions
- Procedures

Curriculum Organization

- There is a curriculum map across the whole of KS2 and 3 that follows the KS2 national curriculum and incorporates elements of the KS3. This was a deliberate choice to cater for the needs of our students. Qualifications at KS4 have been chosen deliberately to encompass elements of the KS3 and KS4 national curriculum, to better fit the needs of our pupils.

- The concepts at the KS2/3 level are based loosely on the Teach Computing curriculum and as such follow a coherently planned, flexible, spiral learning model in order to best support student retention and the consolidation of knowledge. Units are mostly blocked into half termly sessions, followed by an additional week of recapping and assessment to judge student attainment and inform future planning.

- Maple students at KS3 follow a more specialised curriculum that focuses on using computers independently, allowing for a much more flexible approach to teaching our most vulnerable students.

Core Computing Y10-Y11

- All students are entered into the WJEC Entry Pathways ICT Users qualification, taking place over two years.
- The level of qualification is tailored to meet the needs of the pupils in the class, ranging from Entry Level 1-3. This is the ensure that all students attain a usable ICT qualification by the end of their time at Oakwood.

Computing Options

- The options students will study the OCN London Entry Level Creative Digital Media qualification over the course of two years. More information can be found here: https://www.ocnlondon.org.uk/qualifications/our-qualifications/create-ind-design/E3-certificate-creative-digital-media

Home Learning Policy

- Students have Home Learning packs whereby they can choose a selection of work to complete from a list of given topics. For each year group Computing options are provided in the form of an online activity using the iLearn2 website. Students will have 3 options to pick from per term.

Computing Policy – Impact (What)

1. To foster an ongoing interest and exploration of the digital world.

- All pupils are given access to a range of technology that might pique their interest and are encouraged within their lessons to explore these products. Through lessons, students explore the inner workings of technology to discover how they function. They are given the opportunity to make their own games and generate an interest in programming by tailoring their experiences to their personal preferences. Students also engage in projects to enhance their ICT skills that relates to their interests, such as making apps on PowerPoint, or creating their own Websites to share their creative impulses.

2. To become safe digital explorers.

- Effective digital explorers are safe digital explorers. That's why we start every year with an E-safety refresher, and why we explore it specifically within certain units of the curriculum. We have strong links with the Personal Development department and promote E-Safety via a variety of cross curricular links. Older students work on E-Safety guides for our younger students, and act as E-Safety mentors for them.

3. To become competent users and innovators.

- All students follow a tailored curriculum that adapts to their level of needs. At the end of each unit summative assessment is used to judge student attainment and that data is in turn used to inform future planning. Students are given countless opportunities to be creative within computing, whether it's programming routes on Beebots or pathing a characters movement in Kodu. They are provided with the computational thinking skills embedded in the curriculum to think logically and assess their own work. Students are given the opportunities to debug code, troubleshoot hardware problems and make changes where necessary, teaching them to become competent in their use of computers and innovate new solutions and ideas.

Links to wider learning

Computing Curriculum

English

Exploring computer specific vocabulary

Reading and interpreting written aspects of programming languages

Annotating and describing computer processes

Science

Logic based inquiry and reasoning

Investigating data and comparing results from data.

Presenting data in visual ways, e.g. graphs.

Art

Photoshop skills, layering images, image selection, design elements, working to a brief, animation and modelling skills.



Maths

Analysing and comparing numerical data

Base mathematics skills used in programming - time, angles, measurement, decimal places.

Logical thinking and reasoning skills

Statistics and data handling

Personal Development

Internet Safety

Our impact on the wider world

Working to the benefit of those around us

RMT

Collaborative projects involving coding for robotics or programming interactive designs.

Subject enhancements

At Oakwood, we believe in providing a comprehensive Computing education that goes beyond the classroom. We recognize the value of subject enhancements, such as trips, in-school visits, projects, theme days, and the inclusion of famous Computer Scientists throughout the curriculum. These enhancements aim to deepen students' understanding of Computational concepts, foster a love for the subject, and develop crucial real-world skills. By incorporating these activities, we create a holistic learning experience and promote cultural capital among our students.

In-School Visits: In-school visits bring experts and external organizations to our students, providing hands-on experiences and fostering problem-solving skills. The following table showcases the in-school visits and their focus:

Year	Workshop	Focus	When
Year 7	Stop-Motion Animation	Stop-Motion Animation	SPR2/SUM1 – WK 27 +/-
Year 8	BlockyBots or alternative	Robotics, programming, computational thinking.	AUT2 – WK 14 +/-
Year 9 (Pathway 1)	Drone Flying	Computational Thinking, programming skills, engineering.	SPR1 – WK 19 +/-
Year 9 (Pathway 2)	Legoland	Computational Thinking, Programming skills.	SPR1 – WK 19 +/-

Subject enhancements

Projects and Theme Days: Projects and theme days allow students to delve deeper into specific Computing topics and engage in interactive and collaborative activities. The following table highlights the projects and theme days conducted throughout the year:

Year	Theme Day / Project	Focus
All years	Safer Internet Day	E-Safety

Inclusion and Cultural Capital: We value inclusivity and aim to provide a diverse and representative curriculum. To celebrate inclusivity, we have incorporated the study of famous Computer Scientists throughout the curriculum. The following important figures are interwoven into our lessons:

Year	Computer Scientist
Year 7	Charles Babbage
Year 8	Ada Lovelace
Year 9	Alan Turing
Year 10	Steve Wozniak

Subject enhancements

Additionally, on Inclusivity Day (March 23rd), students study a famous individual from the computing field who has overcome challenges to achieve success. This activity aims to inspire students by reflecting their own experiences and the experiences of others in the curriculum.

Year	Computer Scientist
Year 7	Satoshi Tajiri
Year 8	Bill Gates
Year 9	Alan Turing



Accessibility and inclusivity

We are committed to ensuring that all students have equal access to high-quality Computing education, regardless of their disabilities or special education needs. We recognize the importance of creating an inclusive environment where every student can actively participate, engage, and succeed in Computing. This section of our policy outlines our approach to inclusivity and the provision of adapted Computing equipment to support students with disabilities or special education needs.

1. **Inclusive Teaching Strategies:**

    a. The Oakwood T&L principles are based upon inclusive teaching strategies to meet the diverse learning needs of students.

    b. Modifications to instructional methods, assessments, and assignments will be made to accommodate individual students, ensuring that they can actively engage and demonstrate their understanding of Computer Science concepts.

2. **Adapted Computing Equipment:**

    a. Oakwood is equipped with a range of adapted Computing equipment to facilitate the participation and learning of students with disabilities or special education needs.

    b. Assistive technologies, such as screen readers, and alternative input devices, will be provided to students with fine and gross motor difficulties. Adapted mice and keyboards are available for those that need them.

    c. For students with mobility impairments, we have installed a bank of rise-and-fall tables situated at the front of the room to accommodate any height.

    d. Tactile models, enlarged diagrams via, and other sensory aids will be used to enhance the learning experience for students with visual impairments.

    e. Additional supports, such as magnifiers, colored overlays, or specialized seating, will be provided based on individual student needs.

f. We have a range of adapted subject specific equipment including:

Early Learning Mice

Alternative control Mice

Large keyboards

High contrast large keyboards

Rise and fall tables

Adjustable monitor arms

5. Accessibility of Computer Science Facilities:

a. The Computing classroom has been designed and organized to provide easy accessibility for students with disabilities or special education needs.

b. Clear pathways and appropriate signage will be in place to ensure students can navigate the facilities independently.

c. Consideration will be given to the placement of equipment, ensuring that it is accessible and adjustable to accommodate students with varying physical abilities.



Our approach to teaching Computing

Our Oakwood pedagogical approach

We have developed a pedagogical approach based on a contextual analysis of our students and their needs.

We have used a large research base to inform our selection of approaches to teaching and learning, that we best feel will make the content accessible for our students.

We have divided these strategies into main sub categories:

Foundations



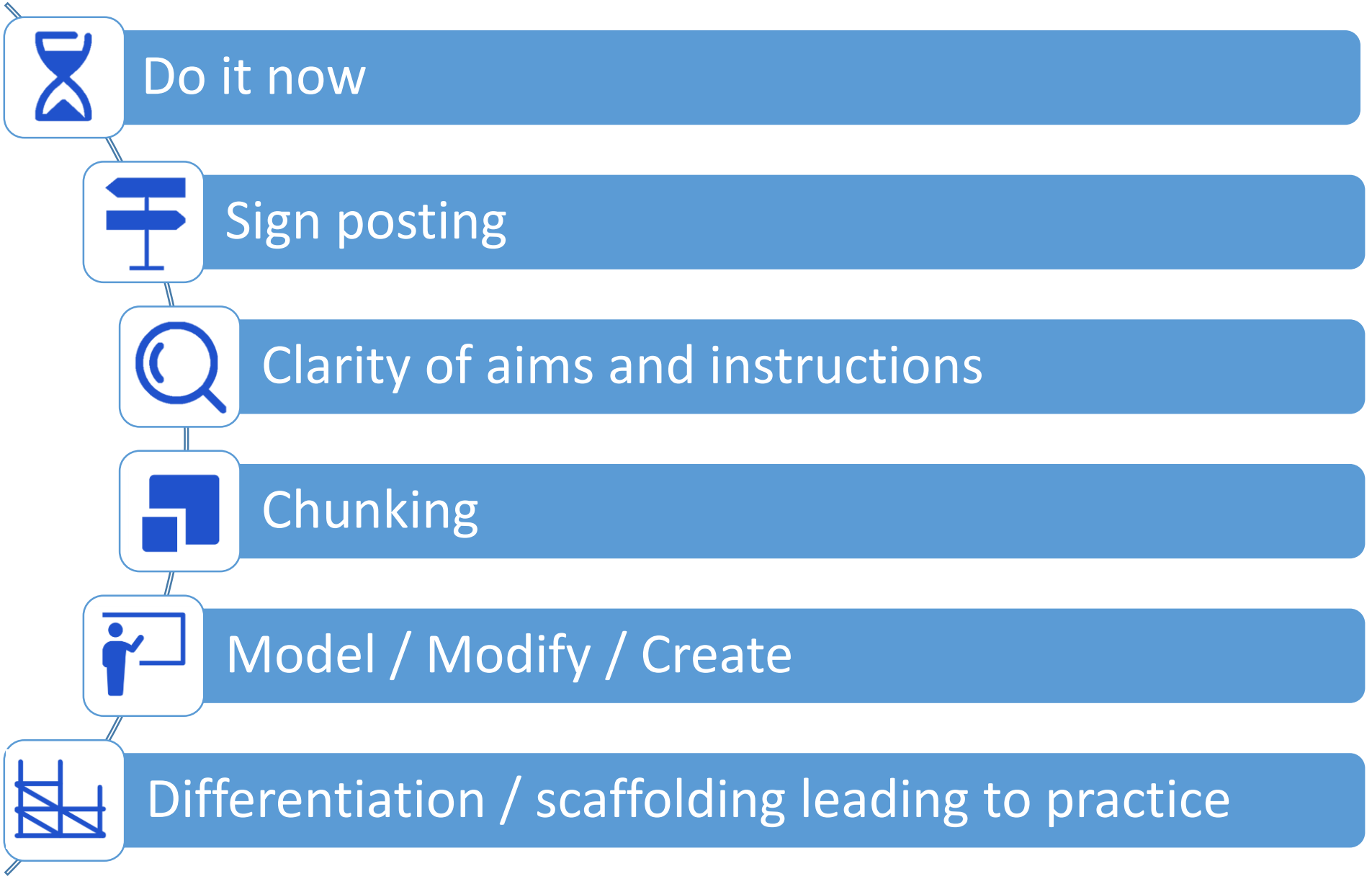
Lesson structure



Foundations

Classroom environment		Setting up a classroom that is welcoming, safe and nurturing. Welcoming students and allowing them entry in a calm and orderly fashion. Having a tidy, well organised space free of unnecessary distractions. Consistent routines that establish an effective classroom environment
Knowing students and developing relationships		Developing relationships with students cannot be under estimated. Get to know them well, their needs, strengths and weaknesses and personal circumstances. Familiarise yourself with the EHCP of students in your class to increase pupils motivation.
High expectations		'The higher the expectations of teachers, the better students perform' – (Rosenthal & Jacobson). Know students starting points and gaps in knowledge very well. Have the belief that all students can succeed and communicate this belief to the students.

Lesson structure



SMSC in Computing

Spiritual Development in Computing
In Computing, students are encouraged to explore the wonders of technology, fostering a sense of awe and curiosity about how things work and the potential of the digital world. Activities such as creating animations, games, and digital art allow students to express their creativity and reflect on their digital creations. By engaging in coding and problem-solving tasks, students develop perseverance and a sense of accomplishment, enhancing their spiritual growth.

Moral Development in Computing
The Computing curriculum promotes ethical understanding and responsibility in the digital world. Students learn about digital citizenship, including the importance of online safety, respecting digital privacy, and the consequences of cyberbullying. Through discussions and activities, students explore the ethical implications of technology use, such as data protection, intellectual property, and the environmental impact of digital devices. They are encouraged to reflect on their own use of technology and consider how their actions can affect others.

Social Development in Computing
Computing lessons at Oakwood emphasize collaboration and teamwork. Students work together on projects, sharing ideas and solving problems collectively. This helps them develop essential social skills such as communication, negotiation, and cooperation. By participating in group activities, students build friendships and learn to appreciate diverse perspectives.

Cultural Development in Computing
Our Computing curriculum celebrates cultural diversity by exposing students to a range of technological innovations and contributions from different cultures around the world. Students learn about the history of computing and the pioneers who have shaped the field, recognizing the global nature of technological advancement. They are encouraged to explore how technology is used in various cultures and to consider its impact on society. Through projects that involve global themes and cross-cultural collaboration, students develop a deeper appreciation for cultural diversity and digital inclusivity.

Computing curriculum - SMSC overview

Oakwood ensures pupils' SMSC development through both implicit teaching and through other aspects of school life.

	Social Investigate moral issues; appreciate diverse viewpoints; participate, volunteer and cooperate; resolve conflict; engage with the fundamental values of British democracy.	Moral Recognise right and wrong; respect the law; understand consequences; investigate moral and ethical issues; offer reasoned views and have an appreciation of British Values.	Spiritual Explore beliefs; respect faiths, feelings and values; enjoy learning about oneself, others and the surrounding world; use imagination and creativity; reflect.	Cultural Appreciate cultural influences; appreciate the role of Britain's parliamentary system; participate in culture opportunities; understand, accept, respect and celebrate diversity
Explicit Computing curriculum opportunities	✓ See Computing curriculum - SMSC overview	✓ See Computing curriculum - SMSC overview	✓ See Computing curriculum - SMSC overview	✓ See Computing curriculum - SMSC overview
Subject Enhancements	✓ See Computing curriculum - SMSC overview	✓ See Computing curriculum - SMSC overview	✓ See Computing curriculum - SMSC overview	✓ See Computing curriculum - SMSC overview
Computing assembly	✓ Themed assemblies, leading to opportunities for discussion and reflection.	✓ Themed assemblies, leading to opportunities for discussion and reflection	✓ Themed assemblies, leading to opportunities for discussion and reflection	✓ Themed assemblies, leading to opportunities for discussion and reflection
Oakwood Arcade	✓ Afterschool Club Available to all pupils	✓ Afterschool Club Available to all pupils	✓ Afterschool Club Available to all pupils	✓ Afterschool Club Available to all pupils

Computing curriculum – SMSC overview

Oakwood Academy

	Willows Curriculum	Year 7 Curriculum	Year 8 Curriculum	Year 9 Curriculum
Social Investigate moral issues; appreciate diverse viewpoints; participate, volunteer and cooperate; resolve conflict.	• Participate in discussions about online behaviour including E Safety training. • Explore the use of ICT in society and its benefits.	• Explore the use of technology throughout society. • Explore the impact programming has had on society and the film industry. • E Safety discussions.	• Explore the effect technology has had on how we interact with each other, through social media and creating content.	• Explore how technology has improved our ability to share information, and the potential misleading nature of this information.
Moral Recognise right and wrong; respect the law; understand consequences; investigate moral and ethical issues; offer reasoned views and have an appreciation of British Values.	• Discussing if ICT and technology benefits the world around us.	• Explore how technology has replaced other methods of creating content and the pros and cons of this.	• Exploration of how technology has changed the way we communicate online and the benefits/dangers this presents. • Discuss the impact image editing has on us as a society	• Explore the concept of copyright and free use content on the web. • Explore the concept of sharing content and what to do in cases of misleading information.
Spiritual Explore beliefs; respect faiths, feelings and values; enjoy learning about oneself, others and the surrounding world; use imagination and creativity; reflect.	• Explore connecting with the world around them through the internet and the opportunities it gives to learn about themselves and others.	• Explore the concept of an online identity, what this means for modern individuals. Explore ways to express yourself as an individual online, and find likeminded groups. Recognise the potential dangers of said groups.	• Explore how people share information about themselves and the online communities they join in order to discuss like minded elements. • Expressing spirituality through digital art.	• Sharing of spiritual information through popular social media videos and the effects this can have on viewers. The communication about said videos and the how to speak respectfully online.
Cultural Appreciate cultural influences; appreciate the role of Britain's parliamentary system; participate in culture opportunities; understand, accept, respect and celebrate diversity	• Explore popular cultural uses of ICT and technology, digital art, games, text documents. • Students discuss ability to communicate about these things in a respectful manner. • Discussions about digital footprint and online personality.	• Explore popular cultural uses of ICT and technology, digital art, games, text documents. • Students discuss ability to communicate about these things in a respectful manner. • Discussions about digital footprint and online personality.	• Explore popular cultural uses of ICT and technology, digital art, games, text documents. • Students discuss ability to communicate about these things in a respectful manner. • Discussions about digital footprint and online personality.	• Explore popular cultural uses of ICT and technology, digital art, games, text documents. • Students discuss ability to communicate about these things in a respectful manner. • Discussions about digital footprint and online personality.