Ormiston Beachcroft Academy Vision for Education - Computing

At OBCA, our approach is grounded in the values of **Trust, Excellence, Ambition, and Motivation**. We build strong relationships through trust, set high expectations to achieve excellence, inspire ambition in every student, and foster motivation to succeed. These values align with the **Ormiston Academies Trust principles of Ambition, Learning, Perseverance, Collaboration, and Inclusion**, driving our shared vision for every child to thrive. Through this ethos, we aim to secure both **currency and character**, enabling students to gain the qualifications that open life opportunities while developing the personal qualities needed to succeed beyond school.

Intent

Our Computing curriculum equips learners with the knowledge and skills to succeed in an increasingly digital world. At **KS3**, students build secure foundations in digital literacy, information technology and computer science, covering systems, programming, networks, data, cybersecurity and digital ethics.

At **KS4**, learners follow one of two pathways:

- **OCR GCSE Computer Science** – an academic route developing programming, computational thinking and system knowledge.
- **Pearson Digital Functional Skills (Level 1)** – a practical route focused on applied digital skills for life and work.

Both ensure progression to Post-16 study, apprenticeships or employment, with pathways suited to learners' strengths and aspirations.

Implementation

At **KS3**, a structured, spiral curriculum develops skills through practical projects, programming, and applied ICT, with regular assessment.

At **KS4**, learners study their chosen qualification:

- **Computer Science** through theory, Python programming and exam preparation.
- **Digital Functional Skills** through scenario-based tasks and external assessment.

Our approach balances challenge with accessibility, ensuring all learners achieve success and leave school digitally confident and qualified.

Impact

Providing both **Computer Science** and **Digital Functional Skills** at KS4 ensures every learner can access a pathway suited to their strengths, needs and aspirations. This approach supports achievement for all, enabling students to secure meaningful qualifications, develop digital confidence, and progress into further study, apprenticeships or employment.

Assessment

- **KS3** – Learners are assessed through ongoing formative activities and summative checks in terms 2, 4 and 6. This tracks progress and ensures they are well prepared for KS4 pathways.
- **KS4 Computer Science** – Assessment includes low-stakes testing, programming practice, mock exams and final written papers, ensuring strong recall and exam readiness.
- **KS4 Digital Functional Skills** – Learners are assessed through applied, scenario-based tasks and a final external assessment that demonstrates competence in real-world digital skills.

All assessments are quality assured through internal, cross-site and external moderation to maintain consistency and fairness.

Key Stage 3 – Computing (3 Years)

Year	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
KS3 Year 1	LO1: Digital systems & safe computer use. **Key Terms:** hardware, software, input, output.	LO2: Data representation basics. **Key Terms:** binary, ASCII, pixel.	LO3: Networks & the internet. **Key Terms:** LAN, WAN, IP, protocol.	LO4: Programming intro (Scratch/Python). **Key Terms:** sequence, variable, loop.	LO5: Cybersecurity basics.**Key Terms:** phishing, password, firewall.	LO6: Digital project & evaluation.**Key Terms:** copyright, fair use, ethics.
KS3 Year 2	LO1: Inside the computer – hardware & logic. **Key Terms:** CPU, ALU, Boolean, logic gates.	LO2: Data in depth. **Key Terms:** binary addition, hexadecimal, compression.	LO3: Networks extended. **Key Terms:** topology, DNS, packet switching.	LO4: Programming development (Python). **Key Terms:** selection, iteration, array.	LO5: Cybersecurity & online identity. **Key Terms:** malware, phishing, encryption.	LO6: Digital media project. **Key Terms:** graphics, video, sound.
KS3 Year 3	LO1: Advanced systems & emerging tech. **Key Terms:** IoT, AI, cloud, big data.	LO2: Advanced data representation.**Key Terms:** images, sound, sampling, resolution.	LO3: Advanced networks. **Key Terms:** client-server, peer-to-peer, bandwidth.	LO4: Programming project (Python). **Key Terms:** function, procedure, subroutine.	LO5: Cybersecurity case studies. **Key Terms:** GDPR, penetration testing, social engineering.	LO6: Ethical computing & prep for KS4. **Key Terms:** digital divide, sustainability, ethics.

Key Stage 4 – Computer Science (OCR GCSE, 2 Years)

Year 10 (6 Terms)

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
LO1: Systems architecture, memory & storage. **Key Terms:** CPU, cache, RAM, ROM.	**LO2:** Networks & protocols. **Key Terms:** IP, TCP/IP, topology.	**LO3:** Cybersecurity threats & solutions. **Key Terms:** malware, brute force, encryption.	**LO4:** Algorithms & computational logic. **Key Terms:** decomposition, abstraction, flowchart.	**LO5:** Programming fundamentals (Python). **Key Terms:** variable, loop, condition, array.	**LO6:** Data representation basics. **Key Terms:** binary, hex, ASCII.

Year 11 (4 Terms)

Term 1	Term 2	Term 3	Term 4
LO7: Boolean logic & advanced programming. **Key Terms:** AND, OR, NOT, truth table.	**LO8:** Testing & evaluation of solutions. **Key Terms:** debugging, validation, verification.	**LO9:** Programming project & exam prep. **Key Terms:** modularity, subroutine, parameter.	**LO10:** Final exam practice & revision. **Key Terms:** past papers, command words, exam skills.

Key Stage 4 – Digital Functional Skills (Pearson L1, 1 Year)

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
LO1: Using devices & managing information.	**LO2:** Communicating online safely.	**LO3:** Cybersecurity & protecting information.	**LO4:** Problem solving with digital tools.	**LO5:** Creating & editing content.	**LO6:** Applied digital project & final assessment prep.

Key Terms: storage, cloud, login, folder.*(aligns with CS Term 1 – systems & storage)*	**Key Terms:** email, phishing, etiquette.*(aligns with CS Term 2 – networks & protocols)*	**Key Terms:** threats, passwords, safe sharing.*(aligns with CS Term 3 – cybersecurity)*	**Key Terms:** troubleshoot, formula, search engine.*(aligns with CS Term 4 – algorithms & logic)*	**Key Terms:** word processing, spreadsheet, formatting.*(aligns with CS Term 5 – programming fundamentals)*	**Key Terms:** collaboration, accuracy, review, reflection.*(aligns with CS Term 6 – data representation & exam prep)*