COMPUTING
OCEAN ACADEMY

Purpose:

The purpose of this document is to outline the planning intent and implementation of the Computing curriculum at Ocean Academy. In response to the Ofsted Research Review, our planning and approach has been reviewed and significantly developed to ensure that the computing curriculum offers the best education for our pupils.

Our revised curriculum — implemented from 2026-27 — reflects a deeper commitment to three interlocking strands: Computer Science, Information Technology and Digital Literacy. It introduces a structured, progressive coding programme using the BBC micro:bit from Year 4 onwards, embeds online safety as a non-negotiable thread in every lesson, and integrates the school's Power Skills framework to develop the whole child alongside their digital knowledge.

This document ensures that all staff understand the high expectations agreed, whilst establishing and maintaining a consistent approach to the teaching and learning of computing across our school — ensuring that all learners have exposure to high quality computing teaching and learning opportunities, regardless of ability, gender or socio-economic background.

Underpinning Evidence

1 Ofsted Research Review: Computing

2 The forgetting curve — Ebbinghaus

3 Cognitive Load Theory — Sweller

4 Principles of Instruction — Rosenshine

5 Metacognition and Self-regulated Learning — EEF

6 Feedback — EEF Teaching and Learning Toolkit

7 Mastery Learning — EEF Teaching and Learning Toolkit

8 Online Safety Education — UK Council for Internet Safety (UKCIS)

9 Computing At School (CAS) — National Curriculum Guidance

Intent

At Ocean Academy, we provide a comprehensive computing curriculum that equips pupils with the knowledge, skills and values to participate confidently, critically and responsibly in an increasingly digital world.

The core of computing is computer science, in which pupils are taught to think computationally — to break problems into parts, to recognise patterns, to design solutions and to build and debug programs. From Year 4, pupils develop practical coding skills through a structured, progressive programme using the BBC micro:bit, moving from Beginner to Intermediate to Advanced level across Key Stage 2. This ensures that by the end of Year 6, pupils have a genuine, hands-on understanding of programming, algorithmic thinking and physical computing.

Alongside computer science, pupils develop essential Information Technology skills, learning to create, organise, present and share digital content across a range of tools and platforms. They become skilled, independent users of technology who can apply their skills purposefully across the curriculum.

Digital Literacy sits at the heart of our curriculum. Pupils are not simply taught to use technology — they are taught to think critically about it. They learn to evaluate sources, recognise fake and misleading information, understand how algorithms and platforms shape what they see online, and appreciate the rights and responsibilities that come with living a digital life. Online safety is not an occasional add-on: it is embedded as a dedicated five-minute focus in every single computing lesson across all year groups.

Our curriculum is enriched by the school's Power Skills framework — Creativity, Character, Collaboration, Critical Thinking and Communication — which are explicitly mapped to each unit of work, ensuring computing contributes to the development of the whole child. Oracy is woven throughout, with pupils regularly explaining, justifying and presenting their digital thinking.

Every pupil at Ocean Academy leaves Year 6 as a confident, reflective Digital Citizen, equipped for the demands of Key Stage 3 and beyond.

Introduction and Aims

It is our aim at Ocean Academy to ensure that all pupils have the opportunity to become competent, confident and critically aware users of technology. We recognise the importance of developing digital literacy and fluency, and as such, computing is an integrated part of our academy's culture.

Our computing curriculum has been designed and sequenced by specialist staff, drawing on the National Curriculum for Computing and the latest guidance from the Ofsted Research Review. It is delivered in one-hour lessons across Years 3 to 6, with four lessons per term, providing consistent, regular encounters with computing knowledge and skills.

Our aims are to ensure that all pupils:

- Develop a secure understanding of computer science, including programming, algorithms and logical thinking
- Build practical coding skills through a progressive micro:bit programme from Year 4 onwards
- Become skilled users of information technology, able to create, collaborate and communicate digitally
- Develop critical digital literacy skills, enabling them to evaluate, question and use information responsibly
- Practise online safety in every lesson, building habits of safe and responsible digital behaviour
- Develop the Power Skills of Creativity, Character, Collaboration, Critical Thinking and Communication through computing
- Build a personal Computing Booklet — a digital portfolio that records their learning journey from Year 3 to Year 6
- Leave primary school as confident Digital Citizens, ready for the demands of Key Stage 3

Computer Science

At Ocean Academy, we teach the fundamentals of computer science in a structured, progressive way that builds genuine understanding rather than surface familiarity.

In Year 3, pupils develop their foundational knowledge of how computers and networks work, learning to navigate their Chromebooks independently, create and organise digital files, and begin to understand how technology processes information. This prepares them for the coding strand that begins in Year 4.

From Year 4 onwards, pupils follow a dedicated, parallel coding strand using the BBC micro:bit, which runs alongside each term's digital literacy topic throughout the academic year. The coding programme is structured across three levels:

- **Year 4 — micro:bit Beginner:** Pupils design, write and debug programs using sequence, input and output. They use logical reasoning to explain how their algorithms work and experience the relationship between code and physical computing for the first time.

- **Year 5 — micro:bit Intermediate:** Pupils extend their programs using loops, variables and selection. They debug systematically using a checklist approach and begin to justify their coding choices using technical vocabulary.
- **Year 6 — micro:bit Advanced:** Pupils combine nested conditions, loops and variables to create sophisticated, purposeful projects such as games, step-counters and alarms. They present their finished projects at a whole-school Coding Showcase, developing communication and presentation skills alongside technical ability.

This three-year progression ensures pupils develop the programming knowledge and computational thinking skills required by the National Curriculum, and builds a strong foundation for Key Stage 3. The Power Skills are explicitly mapped to the coding strand — pupils practise resilience when debugging, creativity when designing projects, collaboration when testing together, and communication when explaining their code.

Each Year 4, 5 and 6 coding unit culminates in a showcase event — Code Showcase (Year 4), Coding Clinic (Year 5) and whole-school Coding Showcase (Year 6) — ensuring pupil achievement in computing is celebrated and shared beyond the classroom.

Information Technology

Information Technology at Ocean Academy involves teaching pupils the practical application of computing and its associated technologies, as well as the broader applications and implications of these technologies in everyday life.

Pupils develop skills in creating, organising, presenting and sharing digital content across a range of tools and platforms. From the moment they begin in Year 3, pupils use Google Workspace tools — Docs, Drive, Slides — as their primary working environment, building familiarity and fluency that deepens year on year.

The teaching of Information Technology is planned explicitly and progressively so that pupils learn to produce digital work of increasing quality, underpinned by essential knowledge that builds upon prior learning:

- **Year 3:** Pupils learn to log in independently, navigate their Chromebook, create and format a Google Doc, and organise their work in Google Drive. They build the foundational habits — saving, finding, naming files — that underpin all future digital work.
- **Year 4:** Pupils apply their IT skills to communication tasks, creating structured emails, collaborative guides and showcasing work in Google Docs with appropriate formatting.
- **Year 5:** Pupils carry out structured research projects using multiple sources, write bibliographies, create presentations and infographics, and use technology to present and share findings with an audience.
- **Year 6:** Pupils create their Digital Citizen Project — a substantial piece of digital work for a real audience, produced using the tools and skills developed across Key Stage 2.

Pupils also maintain a personal Computing Booklet — a digital portfolio hosted on Google Classroom — which they update after each lesson. This booklet records their reflections, evidence of practical work and pupil voice across all four years, creating a meaningful record of their computing journey that can be shared with parents and carers at parents' evenings.

Our IT curriculum is designed so that pupils have repeated, purposeful encounters with the same tools and contexts, building deep and broad competency over time rather than a superficial acquaintance with many different applications.

Digital Literacy and Online Safety

Digital Literacy is the thread that runs through every aspect of our computing curriculum. It is the ability to use digital technology thoughtfully, critically and ethically — to find, evaluate, create and share information in ways that are safe, purposeful and responsible.

At Ocean Academy, Digital Literacy is taught in dedicated computing lessons and reinforced across the curriculum. Pupils are not simply taught what to do online — they are taught to think about why, to question what they encounter, and to take responsibility for their own digital behaviour.

Online safety is embedded in every computing lesson, every week. Each one-hour lesson includes a dedicated five-minute Online Safety Moment — a focused discussion, scenario or activity that builds a specific safety skill or reinforces a key message. These moments are carefully sequenced to be age-appropriate and to build progressively across the four years:

- **Year 3:** Password security, distinguishing real from fake online content, safe online communication, responsible searching
- **Year 4:** Digital citizenship, recognising cyberbullying, understanding automated decisions, protecting passwords and digital footprints
- **Year 5:** Evaluating sources, recognising fake news, understanding AI-generated content, managing online identity and data
- **Year 6:** Recognising unhealthy online relationships, advanced media literacy, legal aspects of online communication, understanding algorithmic influence

This approach ensures that online safety is never an afterthought — it is a consistent, cumulative and school-wide practice. By Year 6, pupils have encountered and discussed hundreds of online safety moments, building habits of critical thinking and safe behaviour that are deeply embedded.

Digital literacy topics are also mapped explicitly to the PSHE curriculum and the school's Anti-Bullying work, recognising that the skills of being safe, responsible and kind apply equally online and offline. Pupils leave Ocean Academy equipped not just with rules to follow, but with the judgement to navigate the digital world thoughtfully throughout their

lives.

Curriculum and Sequencing

At Ocean Academy, computing is taught as a discrete weekly subject across Years 3 to 6. Lessons are one hour long and pupils receive four lessons per term, giving twelve lessons per year across three terms.

The lesson structure is consistent across all year groups, ensuring pupils build familiar routines while the content develops progressively:

Component	Time	Purpose
Touch Typing Starter	10 minutes	Pupils practise touch typing using Mr Beedie's Typing App, building speed and accuracy as a settled, independent start to every lesson
Online Safety Moment	5 minutes	A focused safety discussion or activity — present in every lesson, every week
Main Teaching Input	10 minutes	Direct teaching of new vocabulary, concepts or skills
Practical Task	25 minutes	Hands-on application — coding on micro:bit (Y4–6) or a digital literacy/IT task
Plenary	10 minutes	Pupils review learning against success criteria, usually through an oracy task

Year-by-year curriculum map:

- **Year 3:** Digital Basics & Chromebook Skills (Autumn) → What is the Internet? How Technology Helps Us (Spring) → Staying Safe, Searching & Communicating Online (Summer)
- **Year 4:** Online Communication & Digital Behaviour (Autumn) → Technology Makes Decisions & Spotting Fake Information (Spring) → Password Security & Digital Footprints (Summer) + micro:bit Beginner coding running all year in parallel
- **Year 5:** Research Skills: Comparing Sources (Autumn) → Fake News, Media Literacy & Introduction to AI (Spring) → Online Identity, Reputation, Privacy & Data (Summer) + micro:bit Intermediate coding running all year in parallel
- **Year 6:** Online Relationships, Communication & Advanced Media Literacy (Autumn) → Digital Footprint, Future Impact & Responsible Use of AI (Spring) → Algorithms, Online Platforms & the Digital Citizen Project (Summer) + micro:bit Advanced coding running all year in parallel

Power Skills are explicitly mapped to every unit of work, ensuring computing contributes meaningfully to the school's wider learning ethos:

- **Creativity** — designing programs, creating digital content and producing original work

- **Character** — showing resilience when debugging, taking pride in finished work, acting responsibly online
- **Collaboration** — testing programs together, peer review, group projects
- **Critical Thinking** — evaluating sources, decomposing problems, questioning information online
- **Communication** — explaining code using technical vocabulary, oracy tasks, presenting to audiences

Oracy is a planned feature of every lesson's plenary. Pupils are regularly asked to explain, justify and present their thinking using technical vocabulary, developing the communication skills that underpin all aspects of learning.

Touch typing is practised at the start of every lesson using Mr Beedie's dedicated typing practice and assessment apps. Pupils track their progress across the year, building the keyboard fluency that underpins confident, efficient computing work.

Resources

Our school IT resources are carefully selected to support the aims and sequencing of our computing curriculum.

Hardware:

- Chromebooks (one per pupil) — the primary working device for all computing lessons across Years 3–6
- BBC micro:bits — used for the coding strand in Years 4, 5 and 6
- iPads — available for specific tasks and multimedia projects
- 3D printer and BeeBot robots — used for programming enrichment and STEM activities

Software and platforms:

- Google Workspace for Education — Docs, Drive, Slides and Classroom form the daily working environment for all pupils
- Google Classroom — the platform through which pupils access lesson materials, submit work and maintain their Computing Booklet
- Mr Beedie's Typing Practice App (https://ocean-typing-practice.netlify.app/) — used at the start of every lesson for structured touch typing practice
- Mr Beedie's Typing Assessment App (https://ocean-typing-assessment.netlify.app/) — used for periodic assessment of typing speed and accuracy
- Microsoft MakeCode (makecode.microbit.org) — the block-based coding environment used for all micro:bit programming

The Computing Booklet: Every pupil maintains a personal Computing Booklet, hosted within Google Classroom. This digital portfolio records their reflections, evidence of practical work (photos, links and written notes) and pupil voice for each lesson across Years 3 to 6. The booklet is accessible to teachers at all times and can be shared with parents and carers — including at parents' evenings, where pupils can walk their families through their computing journey.

The academy's IT infrastructure provides pupils with a safe, secure and well-maintained digital environment. The school's network and filtering systems are maintained in line with current guidance from the UK Safer Internet Centre and the school's Acceptable Use Policy.

Teacher Subject Knowledge and Professional Development

At Ocean Academy, the computing subject leader ensures that all teachers have a secure understanding of the aims, purpose and rationale of the computing curriculum, and that they are equipped with the knowledge and resources to deliver every lesson with confidence.

The comprehensive suite of lesson resources developed for 2026-27 — including 48 fully planned, structured PowerPoint presentations across Years 3 to 6 — means that teachers at all levels of computing confidence can deliver high-quality lessons. Each presentation follows the consistent five-part lesson structure, includes speaker notes, and provides clear guidance on differentiation, oracy tasks and online safety content.

The computing subject leader:

- Attends training courses and good practice networks to develop and maintain their own subject knowledge
- Provides resources, guidance and staff support for computing delivery across the school
- Monitors the quality of teaching and learning in computing and provides coaching where needed
- Keeps the school's computing curriculum, resources and policies up to date and in line with current best practice
- Liaises with the school's senior leadership team on the development and evaluation of the computing curriculum

Where gaps in teacher subject knowledge are identified — particularly in relation to the micro:bit coding programme — the subject leader provides targeted professional development, including demonstration lessons, co-planning and access to professional learning resources from Computing At School (CAS) and the National Centre for Computing Education (NCCE).

Assessment

'Well-designed assessment enables teachers to gather evidence to plan subsequent teaching that helps pupils to know and do more.' — Ofsted, 2022

Assessment in computing is regular, purposeful and multi-layered.

Within lessons: Each lesson's plenary includes a success criteria check — pupils self-assess against clear, specific criteria and teachers make formative judgements through observation and dialogue. The oracy tasks built into every plenary give teachers a direct window into pupils' understanding and vocabulary use. Speaker notes in lesson presentations include guidance for teachers on what secure learning looks like and what misconceptions to watch for.

Across lessons: Each term's fourth lesson is a showcase or consolidation lesson in which pupils demonstrate their learning from that term independently. These lessons provide teachers with a summative picture of progress within each unit.

The Computing Booklet is the primary evidence portfolio for each pupil's computing journey. Updated by pupils after each lesson, it contains written reflections, evidence of practical work, touch typing progress notes and pupil voice across Years 3 to 6. Teachers have access to all pupils' booklets at all times through Google Classroom and can use them to inform assessment judgements, plan next steps and communicate progress to parents and carers.

Touch typing is assessed using Mr Beedie's assessment app, with pupils tracking their words-per-minute score across the year. This provides a measurable indicator of keyboard fluency development.

At the end of Year 6, pupils are assessed against the relevant content of the National Curriculum for computing. Assessment data is shared with the subject leader to evaluate the effectiveness of the curriculum and inform future planning. Adjustments are made where needed to ensure the curriculum meets the needs of all pupils.

SEND and Inclusion

Computing planning at Ocean Academy ensures that pupils with SEND or physical impairment can access and achieve in computing alongside their peers.

The computing subject leader and class teachers work closely with the SENCo to understand pupils' specific needs and to incorporate these into planning and resourcing. All lessons are designed with accessibility in mind:

- The consistent five-part lesson structure reduces cognitive load and builds predictability, benefiting pupils who thrive on routine
- Clear success criteria and visual supports in every lesson presentation scaffold learning for pupils who need additional structure

- The touch typing starter is adapted for pupils with fine motor difficulties, with alternative input methods available where needed
- The Computing Booklet can be completed using speech-to-text tools, images alone, or with adult scribing where appropriate
- Practical tasks are designed with multiple entry points, allowing pupils to engage at different levels of independence and complexity
- The parallel micro:bit coding strand uses block-based programming, which is inherently visual and accessible, reducing barriers to entry for pupils who find text-based coding challenging

Pupils with SEND are fully included in all aspects of the computing curriculum, including showcase events and the Computing Booklet. Their progress is celebrated alongside that of their peers, and their booklets serve as meaningful evidence of their individual learning journey.

Adjustments to tasks, timing or resources are made in consultation with the SENCo and support staff, and are reviewed regularly to ensure they remain effective and appropriate.

Monitoring and Evaluation of Teaching and Learning

We regularly monitor teaching and learning across the school to ensure that all pupils make the best possible progress from their starting points.

Aims of monitoring and evaluation:

- To make secure judgements about the quality of teaching and learning in computing across the school
- To monitor and evaluate the progress of all pupils in computing, including those with SEND and disadvantaged pupils
- To evaluate teacher performance against the Teacher Standards and ensure high standards of professional practice are maintained
- To identify training needs across the teaching and support staff and inform the CPD programme
- To evaluate the effectiveness of the 2026-27 curriculum resources — including lesson presentations and the Computing Booklet — and make improvements for future years

Methods of monitoring:

SLT and the computing subject leader will monitor and evaluate the impact of teaching on pupils' learning through:

- Learning walks — observing the consistent lesson structure and quality of teaching input

- Work scrutiny — reviewing the Computing Booklets of a sample of pupils across each year group, including SEND and disadvantaged pupils
- Review of termly assessment data and touch typing progress scores
- Pupil voice — talking to pupils about their computing learning, what they enjoy, what they find challenging and what they know about online safety
- Staff voice — gathering feedback from teachers on the effectiveness of lesson resources and identifying any subject knowledge or resource gaps
- Showcase events — attending or reviewing Year 4, 5 and 6 coding showcases as evidence of pupils' practical computing achievement

Review

This policy is subject to yearly review by the computing subject leader and SLT.

Upon review, amendments will be made in line with the Academy Improvement Plan and shared with all staff. The review will consider:

- Pupil outcomes and progress data in computing
- The effectiveness of the lesson presentation resources and Computing Booklet
- Developments in the national computing curriculum and Ofsted guidance
- Feedback from pupils, parents and staff
- Emerging technologies and their implications for the curriculum (including AI)

Reviewed October 2026. Next review: October 2027.