Oakdene Primary School

Computing at Oakdene

Subject Leader: Mr M. Weston

Mission Statement

Oakdene – Growing and Learning Together

The above statement is our Mission Statement which is what we are all aiming to achieve at Oakdene.

We will try to achieve this through our aims in everything we do at Oakdene.

The Computing curriculum is underpinned by the whole school Intent, Implementation and Impact statement.

(see separate Curriculum Statement document)

Computing at Oakdene

Perhaps more than any other subject, Computing changes almost by the minute. New technologies are all around us. Many of the jobs available and the technologies that will be used when our children are ready for employment may not even exist right now. Therefore, it is vital that our Computing curriculum enables our children to cope with the changes of the future. We want them to become confident users of current technology, and responsible creators of content that has real purpose. We want them to be using a variety of different applications, challenging themselves to apply prior knowledge into new technologies and applications. Most of all, we want to engender an ability to show resilience with technology, where children can troubleshoot their own problems.

We teach Computing through three main pillars in every year group, with a key focus pillar each term:

- Autumn - Digital Literacy (knowledge of technology and networks, including safe and responsible use of the internet);
- Spring - Computer Science (learning the ability to design, write and debug programs);
- Summer - Information Technology (using different skills and applications for a purpose).

Safe online use is a key element of our curriculum, and children in every year group begin each academic year with a unit of work called 'My Online Life' to ensure they both revisit and improve their knowledge of online safety. This is linked to our termly school values of Responsibility & Respect. This is then further enhanced with additional tasks linked to Safer Internet Day in the spring term (when our values are Friendship and Honesty) and further revisiting throughout spring and summer term topics.

Work in Computing is not completed in exercise books. Children initially log their learning on applications such as Book Creator, Powerpoint or Keynote, and then transfer that evidence into their online learning journal on Seesaw (their online learning portfolio). Tasks and units of work will be completed both on desktop and laptop computers in our Computer Suite, as well as i-Pads. This ensures that children are experiencing a range of devices and medium-term planning each term incorporates this.

Curriculum and Coverage

The Computing National Curriculum 2014 is followed at Oakdene Primary School. We have adapted the Knowsley CLC Scheme of Work, which we subscribe to and which provides regular content updates. We have created our Oakdene milestones to demonstrate progression based on the content and objectives from this scheme. We will continue to keep our topic overview for Computing up-to-date based on new units of work and applications that may become available as technology changes.

Year group	Autumn	Spring	Summer
Reception	My Online Life (DL) 8 Technology & Me (DL) 5	Nursery Rhyme Coding (CS) 3 Robots (CS) 5 *Byte-sized – Shape Hunt 1*	Talking Technology (IT) 6 Animal Safari (IT) 1 *Byte-sized - Beats & Rhythms 1* *Byte-sized – Pretty Pictures 4*
Y1	My Online Life (DL) 8 Modern Tales (DL) 3	What Is A Computer? (CS) 5 My Friend the Robot (CS) 6 *Byte-sized - Animate Shapes 1*	Mini-Beasts (IT) 5 News Presenter (IT) 6 *Byte-sized - Drawing Maths 5*
Y2	My Online Life (DL) 8 Online Buddies (DL) 4 *Byte-sized - Heads Up 1*	Code-A-Story (CS) 4 Making Games (CS) 6	Presentations and Typing (IT) 6 Story Land (IT) 6 *Byte-sized - Maths Madness 2*
Y3	My Online Life (DL) 8 Online Detectives (DL) 6	Dancing Robot (CS) 6 Programming with Robots (CS) 6	Be Digitally Awesome (IT) 6 Rainforests (IT) 6 *Byte-sized – Keyboard Adventures*
Y4	My Online Life (DL) 8 Fake or Real? (DL) 6	Hour Of Code (CS) 6 Games Designer (CS) 6	Endangered Animals (IT) 6 Dinosaurs (IT) 6 *Byte-sized – Wizard School 5*
Y5	My Online Life (DL) 8 You Tuber (DL) 6	Web Designer (CS) 6 Girls vs Boys – Steam Challenges (CS) 6	Binary Messages (IT) 6 Making AR Games (IT) 6 *Byte-sized - Podcaster 3*
Y6	My Online Life (DL) 8 Online Safety Dilemmas (DL) 6	Chicken Run – Crossy Roads (CS) 5 Coding Playgrounds (CS) 6	Money (IT) 6 VR Worlds (IT) 6 *Byte-sized – Quiz Show Host 2*

Byte-sized can be used as optional extras to supplement other work. The numbers after the unit denote the number of sessions on the scheme.

OAKDENE COMPUTING MILESTONES PROGRESSION DOCUMENT

Key Stage 1 NC	Key Stage 2 NC	EYFS MILESTONES	KS1 MILESTONES	LKS2 MILESTONES	UKS2 MILESTONES
DIGITAL LITERACY (DL) including MANDATORY SKILLS (MS)					
Recognise common uses of information technology beyond school.	*Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web* *Understand the opportunities networks offer for communication and collaboration.* *Be discerning in evaluating digital content.*	MS1 I understand that people can talk to each other (communicate) online MS2 I can do the basics with technology (e.g. switch on and off, use a mouse, go online) MS3 I can use a camera or tablet to take photos MS5 I can discuss the use of technology in the world around me	MS1 I can communicate safely and politely on the internet MS2 I am learning to save, share and retrieve my digital work MS3 I can take a quality video or photograph on a tablet or digital camera MS4 I can use technology to organise and present my ideas MS5 I know the rules of using technology at home and in school MS6 I recognise how technology is used in school, the home, the community and in the wider world	MS1 I know that the internet can be used for different methods of communication MS2 I can save, share and retrieve my digital work independently MS3 I can film and produce a short video on a topic MS4 I can collaborate to create digital content MS5 I can explain different types of digital content MS6 I can label the different kinds of input connections on common devices MS7 I can explain the difference between the internet and world wide web	MS1 I understand how to communicate in a variety of different ways online (e.g. vlogs, podcasts, email) MS2 I can independently save, manipulate and organise my files & folders MS3 I can create a consistent design in my digital work and present to others MS4 I can collaborate to create, improve and develop digital content MS5 I can explain different file types MS6 I can troubleshoot when something doesn't appear to be working on my device MS7 I understand how computer networks work, including the internet

Key Stage 1 NC	Key Stage 2 NC	EYFS MILESTONES	KS1 MILESTONES	LKS2 MILESTONES	UKS2 MILESTONES
DIGITAL LITERACY (DL) – inc INTERNET SAFETY					
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.	*Use technology safely, respectfully and responsibly; recognise acceptable and unacceptable behaviour; identify a range of ways to report concerns about content and contact.*	DL1 I know online content is made by and belongs to someone DL2 I can discuss the rules for staying safe online	DL1 I am aware that content online is owned by whoever created it DL2 I can explain what personal information is and understand the need for passwords DL3 I can give examples of online bullying behaviour, and where to go for support DL4 I understand that once something is posted, you lose control of it DL5 I understand that some things online may upset me, that I cannot trust everyone online and not everything I read online is true	DL1 I understand the need for copyright DL2 I am aware of what I should be sharing online, who I should share it with, and how to keep my data secure. DL3 I know which technologies are used for online bullying and I am considerate of others when posting myself DL4 I can describe strategies for safe experiences in online social environments and where to go for help DL5 I can evaluate information and make informed choices (e.g. about what is 'fake news') DL6 I understand the impact technology can have on health and wellbeing DL7 I am aware that people may have a different online identity	DL1 I understand the consequences for ignoring copyright DL2 I know how to keep my data private and secure, and create strong passwords DL3 I know how to capture evidence of online bullying and how to report it DL4 I understand the need to create a positive online reputation and relationships DL5 I am aware that the media can shape and influence my opinions and ideas (e.g. on gender) DL6 I understand the impact technology can have on various aspects of lifestyle DL7 I understand the real cost of some apps

Key Stage 1 NC	Key Stage 2 NC	EYFS MILESTONES	KS1 MILESTONES	LKS2 MILESTONES	UKS2 MILESTONES
INFORMATION TECHNOLOGY (IT)					
Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	*Use search technologies effectively and appreciate how search results are selected and ranked* *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*	IT1 I can type key words in a search engine IT2 I can select and use technology for particular purposes (e.g. an app for drawing a picture)	IT1 I can use a search engine to answer questions IT2 I am beginning to create with technology (e.g. video, e-book & animation) IT3 I can use menus and icons in apps with increasing confidence IT4 I can combine text and images in a document IT5 I can use design and formatting to enhance my digital work (e.g. fonts, resizing images) IT6 I can collect and record data purposefully (e.g. in a table or database)	IT1 I can explain how a search engine works, and use advanced search tools IT2 I can create content with a range of technology (e.g. video, animation, 3D) IT3 I can use a keyboard confidently and make use of tools and shortcuts IT4 I can produce documents, media and presentations with increasing competency and independence IT5 I can improve the quality and presentation of my work IT6 I can collect, analyse, evaluate and present data and information	IT1 I can use complex searches and talk about the way search results are selected and ranked IT2.1 I can use unfamiliar technology to create content IT2.2 I can record and produce audio IT3 I am able to transfer my knowledge of menus and icons from one app to another IT4 I can create and combine a range of media to produce digital content IT5 I can improve the quality and presentation of my work using editing and formatting techniques IT6 I can use a spreadsheet to collect and record data

Key Stage 1 NC	Key Stage 2 NC	EYFS MILESTONES	KS1 MILESTONES	LKS2 MILESTONES	UKS2 MILESTONES
COMPUTER SCIENCE (CS)					
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*	*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*	CS1 I can explain an algorithm CS2 I can give instructions to a programmable toy CS3 I can explain sequencing	CS1 I can follow simple algorithms and create a simple sequence algorithm CS2 I can plan out an algorithm with a sequence of commands to carry out specific tasks CS3 I can create a simple repeat loop CS4 I can use logical reasoning to predict the outcome of simple programs, and a sequence of blocks in a control program (e.g Scratch) CS5 I can identify bugs in computer programs, debug simple sequence errors and use the term debug in context	CS1 I can design, write and debug a program for a given purpose CS2 I can use decomposition to help me solve problems CS3 I can use sequence, selection, repetition and variables in programs CS4 I can use logical reasoning to predict and correct errors in algorithms and programs CS5 I can test existing programs to see how they could be improved CS5.2 I can work with various forms of input and output	CS1 I can design, plan and create a more complex program, including linked to physical systems CS2 I can use decomposition to help me write programs CS3 I can use variables, conditional statements, procedures and repeat commands to improve programs. CS4 I can use logical reasoning to detect errors, debug and modify a program to improve it CS5 I can use more complicated forms of programming language (e.g. HTML, binary, text-based)

TIER 3 VOCABULARY (GLOSSARY OF TERMS PROVIDED ELSEWHERE)

Foundation	Instructions, camera, robot, QR code, sequence, share, technology, control, Google, information, internet, algorithm, computer, iPad/tablet, app (application), keyboard, button, printer, save, zoom.
Year 1	3D, program, debug, design, emoji, search, selection, website, personal information, link, menu, icon, trusted adult, online, sign in, game, wireless (Wifi), online bullying, landscape, portrait, Bluetooth, download, frame, processor, green screen, hard drive, illustration, log in, tool, send, follow, digital, communicate.
Year 2	Browser, computer networks, data, computational thinking, execute/run, input, output, software, World Wide Web (WWW), password, username, interact, images, facts, scan, chat, post / re-post, copyright, backdrop, repeat / loop, characters, avatars, fictitious/fake, evaluation, publish, trust, stroke, template, reputation, identity, digital book (eBook/ePub).
Year 3	Block, palette, code/coding, command, decomposition, sprite, stage, condition, control block, costume, digital content, simulation, hyperlink, attachment, URL, blog/blogging, consequences, illustrator, untrusted, cyberbully, cyberbullying, reliable, MegaByte, GigaByte, report, sceptical, verify, fake news, soundtrack, VR (virtual reality), font, shortcut, shots, 360° Video, authenticate, multimedia.
Year 4	Logical reasoning, audio, selection, page ranking, hacker, repetition (sometimes referred to as 'iteration' in upper KS2), script, scripts area, secure (https), PEGI, netiquette, conditional, scene, filters, griefing, storyboard, cloud computing, positive online communication, online persona, digital footprint, animation, age restrictions, social network, screenshot, screencast.
Year 5	Abstraction, vlog, YouTuber, IP address, pixels, vector, HTML, CSS, services, ISP, LAN, TCP/IP, variables, hub, peripheral, bandwidth, CEOP, ChildLine, cache, harassment, plagiarism, infringe copyright, illegal downloads, streaming, blocking, victim, cookie, junk mail, RAM / ROM, USB, ZIP, augmented reality, bit & bytes, upload, score, podcast, edit.
Year 6	Antivirus, new media, collaboration, visual coding, text based coding, adware, trojan, feedback, bot, boolean, checksum, server, firewall, generalisation, security updates, plug in, pop up blocker, scams, phishing, location based settings, in app purchasing, trolling, sexting, exclusion, doxxing, catfishing, flaming, fabotage, creeping, dissing, ghosting FTP, filtering, malware, screen time, balanced lifestyle, configuring.