Computing at Oakmeadow

At Oakmeadow, we recognise that every child is a unique individual, with their own interests, passions, and potential. Our computing curriculum is designed to ignite curiosity, foster creativity, and equip children with essential skills for the digital age. We believe that computing is not just about coding or using devices; it is about enabling our children to **'live life in all its fullness' (John 10:10)**. Through our computing education, we empower children to be responsible digital citizens who can navigate the digital landscape confidently and respectfully. Computing opens doors to diverse ideas, cultures, and experiences. By providing access to information, communication tools, and collaborative platforms, we broaden our children's experiences. Computing becomes a tool for learning, problem solving, and self-expression. Children apply their computing knowledge and skills to real world challenges, whether it is designing a website, programming a robot, or analysing data. Our goal is to equip students with the confidence and capability to use computing throughout their lives. Whether they pursue careers in technology or other fields, they will have the skills to adapt, innovate, and contribute positively. We believe that computing should empower our children to embrace life's opportunities, challenges, and wonders. Together, we prepare them for a future where technology is both a tool and an adventure.

Our Curriculum Our Way

Teach Computing NCCE delivers elements of the National Curriculum as follows:

- Information Technology
- Computer Science
- Digital Literacy

Online safety is taught throughout the school as a separate element using Project Evolve.

Inclusive and ambitious

The Teach Computing Curriculum has been written to support all pupils. Each lesson is sequenced so that it builds on the learning from the previous lesson, and where appropriate, activities are scaffolded so that all pupils can succeed and thrive. Scaffolded activities provide pupils with extra resources, such as visual prompts, to reach the same learning goals as the rest of the class. Exploratory tasks foster a deeper understanding of a concept, encouraging pupils to apply their learning in different contexts and make connections with other learning experiences. As well as scaffolded activities, embedded within the lessons are a range of pedagogical strategies, which support making computing topics more accessible.

Research Informed

The subject of computing is much younger than many other subjects, and as such, there is still a lot more to learn about how to teach it effectively. To ensure that teachers are as prepared as possible, the Teach Computing Curriculum builds on a set of pedagogical principles, which are underpinned by the latest computing research, to demonstrate effective pedagogical strategies throughout. To remain up to date as research continues to develop, every aspect of the Teach Computing Curriculum is reviewed each year and changes are made as necessary. Teachers access Teach Computing resources from the website to ensure resources are up to date.

Progression across Key Stage

All learning objectives have been mapped to the National Centre for Computing Education's taxonomy of ten strands, which ensures that units build on each other from one key stage to the next. This enables our learners to leave Oakmeadow with a foundation of knowledge and skills for KS3.

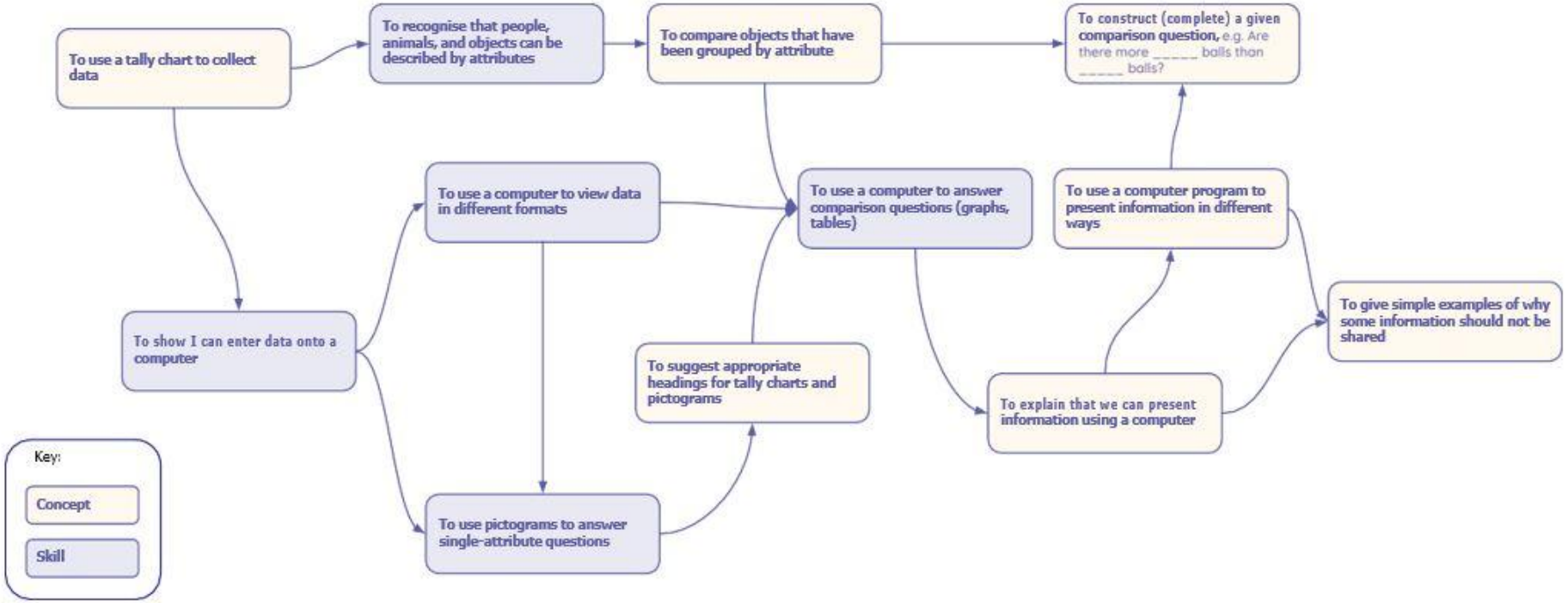
Progression across year groups

Within the Teach Computing Curriculum, every year group learns through units which combine the ten strands of the National Centre for Computing Education's taxonomy. This area has recently been developed to eleven strands due to the growing capabilities of Artificial Intelligence. This is an area we will be seeking to develop at Oakmeadow. The areas are as follows:

1. Effective use of tools
2. Safety and security
3. Design and development
4. Impact of technology
5. Computing systems
6. Networks
7. Creating media
8. Algorithms and data structures
9. Programming
10. Data and information
11. Artificial intelligence

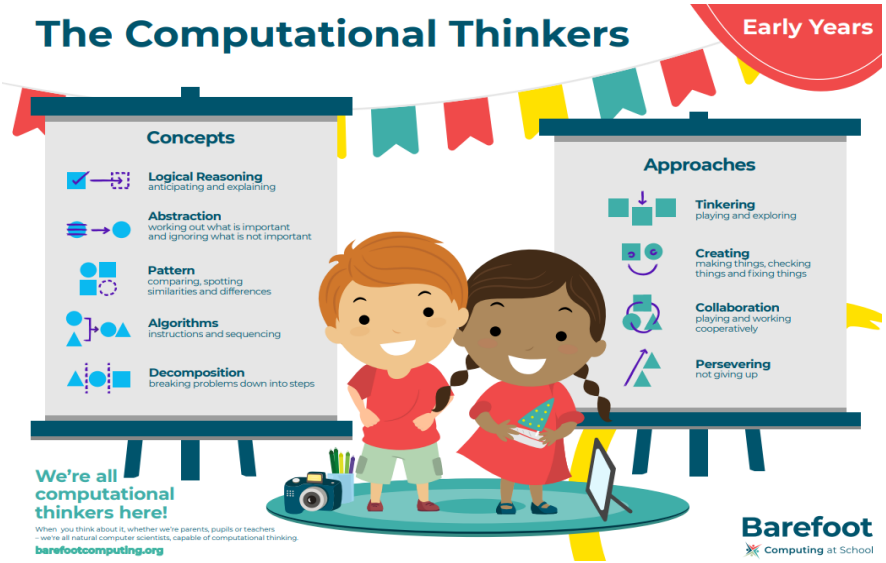
Progression within a unit – learning graphs

Learning graphs are provided as part of each unit and demonstrate progression through concepts and skills. To learn some of those concepts and skills, pupils need prior knowledge of others, so the learning graphs show which concepts and skills need to be taught first and which could be taught at a different time. The learning graphs often show more statements than there are learning objectives. Some of these skills and concepts are milestones, which form learning objectives, while others are smaller steps towards these milestones, which form success criteria. All teaching staff received CPD to understand these graphs and how they inform the teach computing scheme.



In each year group, there are two 'Programming' units of work, but only one 'Programming' learning graph. The second 'Programming' unit builds on the content that was taught in the first 'Programming' unit so closely that there is no specific divide where one ends and the other begins. This approach allows us to use the spiral curriculum approach to progress skills and concepts from one year group to the next.

Computing in EYFS

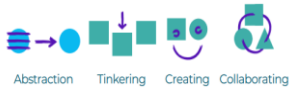
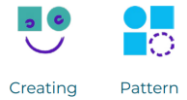
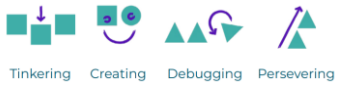
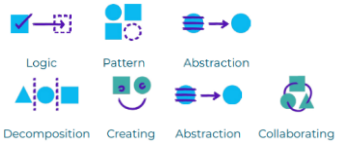
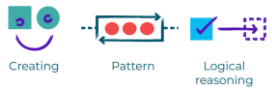


Although, the 'Technology' strand of the Early Learning Goals has been removed, we value the opportunities that children have in our Early Years to develop their 'Computational Thinking' skills, which will ensure they are well prepared to start a more formal Computing education from Year 1. Our goal is to pave the way for our children to access the National Curriculum. Computational Thinking is at the heart of the Computing curriculum and closely aligns with the Characteristics of Effective Learning. By aligning our EYFS provision to Computational Thinking, we use the same vocabulary as used by our colleagues in KS1 and KS2, to ensure a fluid progression. Throughout their time in our EYFS, children will use and practise the following Computational Thinking skills:

- Tinkering – playing and exploring
- Creating – creating, checking and fixing things
- Collaboration – playing and working collaboratively
- Persevering – not giving up
- Logic – anticipating and explaining is logical reasoning
- Pattern – grouping things, comparing, spotting similarities and differences, working out rules
- Abstraction – naming and labelling, working out what is important, sticking to the main theme, ignoring what is not important, creating a summary
- Algorithms and Decomposition – responding to instructions, ordering things, sequencing things, introducing storylines, working out different ways to do things, breaking problems down into steps

We use Barefoot Computing to support our learning. These projects will run in reception with explicit teaching sessions. Within the provision there will be a progressive introduction of different technologies and resources to develop specific computational skills. Resources can be accessed through the following link – Early Years | EN | Barefoot Computing. Barefoot computing is new following CPD completed by the subject leader to implement and adapt in EYFS. The impact of using this resource will be regularly assessed and reviewed. The EY team will still deliver Project Evolve circle time sessions to ensure the importance of E-Safety is promoted regularly. Our aim is to develop the provision surrounding technology throughout EY so all children can access and develop. We train our children how to use technology in their play and how to manage it if it goes wrong. When using devices connected to the internet an adult is always present and this is used as an adult directed session, not independent play. Within the provision children have access to digital painting, floor robots (following our programming unit) and toys which allow the children to experience cause and effect. Our aim is for the children to constantly be challenged to use and develop their computational thinking in provision through resources, adult questioning and barefoot adult directed input.

EYFS Computing Long Term Plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS Barefoot Planning	**All about me** **Busy Bodies** Provides four activities that help children discover how bodies move and grow. Using the resources provided they explore and learn about parts of the body, growth and movement. Simple algorithms are created and adapted to form a routine of movements. Part of our bodies  Make bodies  **Awesome Autumn** These handy cards provide key questions to prompt discussion in your classroom linked to the Barefoot computational thinking concepts and approaches. Leaf labyrinth  Garlands galore 	**Once upon a time** **Winter Warmers** These handy cards provide key questions to prompt discussion in your classroom linked to the Barefoot computational thinking concepts and approaches. Scarves for Snowmen  Feed The Birds 	**People who help us** **People Who Help Us** Three activities based on our everyday superheroes, which have been designed to help pupils develop their computational thinking skills. Create patterns on a police car, guide a delivery person to their destination and design a uniform for a firefighter! Delivery day  Pattern Patrol  Firefighter Fun 	**Spring into life** **Springtime** Springtime provides an environment that gives good opportunities for developing language of directions, e.g. navigating mazes or routes using their own bodies or toys, using forwards / backwards / left / right to describe position, and giving and receiving instructions for everyday tasks. Make links with spring themes of animals and their young by providing related books / rhymes / songs. Springtime - Junk Scarecrow  Springtime - Seed Sequencing  Springtime - Rabbit Run 	**Summertime Fun** Children will learn how to combine, turn and place shapes to create familiar seaside features. Provide an opportunity to prompt the child when objects need flipping or rotating and model how to problem solve. Question children about why the items are placed, organised and arranged to create a picture. Get creative and recount their journey using models, characters and toys to develop their maps. Children will be encouraged to talk about the position of objects on the map and develop their speaking and explanation skills needed for the task. Colourful Collections  Journey  Seaside Tangrams 	**We are Scientists** **Boats Ahoy!** In this activity children find out about boats from a range of sources, such as their families talking about experiences of boats, looking at books, watching film clips, listening to stories, singing songs about boats and role play. There are IT skills here in the use of technology as children find out about things and interact with software.  **Super Space** Includes creating algorithms to direct a rocket through space and spotting patterns in pictures of aliens. Space Chase  Build a Rocket  Amazing Aliens 
DIG LIT EFACW	Self-Image and Identity	Online Relationships	Online Reputation	Online Bullying	Managing Online Information	Health, Well-Being and Lifestyle

Computing LTP at Oakmeadow

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1 NCCE	Computing Systems and Networks Technology Around Us	Creating Media Digital Painting	Programming A Moving a Robot	Data and Information Grouping Data	Creating Media Digital Writing	Programming B Programming Animations
DIG LIT EFACW	Privacy and Security	Copyright and Ownership	Self-Image and Identity	Online Relationships	Online Reputation	Online Bullying
Year 2 NCCE	Computing Systems and Networks IT Around Us	Creating Media Digital photography	Programming A Robot Algorithms	Data and Information Pictograms	Creating Media Digital Music	Programming B Programming Quizzes
DIG LIT EFACW	Managing Online Information	Health, Well-being and Lifestyle	Privacy and Security	Copyright and Ownership	Self-Image and Identity	Online Relationships
Year 3 NCCE	Computing Systems and Networks Connecting Computers	Creating Media Stop-Frame Animation	Programming A Sequencing Sound	Data and Information Branching Databases	Creating Media Desktop publishing	Programming B Events and Actions in programs
DIG LIT EFACW	Online Reputation	Online Bullying	Managing Online Information	Health, Well-being and Lifestyle	Privacy and Security	Copyright and Ownership
Year 4 NCCE	Computing systems and networks The Internet	Creating Media Audio Production	Programming A Repetition in Shapes	Data and Information Data Logging	Creating Media Photo editing	Programming B Repetition in Games
DIG LIT EFACW	Self-Image and Identity	Online Relationships	Online Reputation	Online Bullying	Managing Online Information	Health, Well-being and Lifestyle
Year 5 NCCE	Computing systems and networks Systems and Searching	Creating Media Video production	Programming A Selection in Physical Computing	Data and Information Flat File Databases	Creating Media Introduction to Vector Graphics	Programming B Selection in Quizzes
DIG LIT EFACW	Privacy and Security	Copyright and Ownership	Self-Image and Identity	Online Relationships	Online Reputation	Online Bullying
Year 6 NCCE	Computing systems and networks Communication and Collaboration	Creating Media Web page creation	Programming A Variables in Games	Data and Information Introduction to Spreadsheets	Creating Media 3D modelling	Programming B Sensing Movement

Assessment in Computing

To assess computing at Oakmeadow we introduce the children to a 'Oakmeadow Computing Passport' at the start of each unit. On the passport will be a question to assess the children's prior learning of that topic and a question to identify what knowledge of the current content the children possess. This knowledge is reviewed with an exit class displayed on the board for children to answer and discuss. These questions have been derived from the Teach Computing summative assessments and progression documents. Year 1 conduct these whole class whereas other year groups complete them individually. This informs the excel document which tracks attainment in each unit of computing. This allows teachers and subject leaders to address areas of need across the school.

To assess understanding each lesson plan for Teach Computing has specific learning outcomes and opportunities for formative assessment provided for teachers to adapt. All slides finish with a review against the outcomes. Here self-reflection is used, and formative assessment can then allow teachers to adapt the next session to ensure all children are supported meeting the learning.

What computing looks like?

Computing lessons are taught every half term following the teach computing unit. Additionally children will be taught their E-Safety unit from Project Evolve each half term. In the computing subject books at the start of each unit children stick in their computing passport and complete the initial assessment questions. When the children complete their Project Evolve their complete the date in the slip on the passport and answer the knowledge map questions (this will be circle who you agree with or for year 1 a vote). Children are to write the learning focus and date in their book for any activities which are unplugged. SEN learners may use stickers to support this. Any activities are to be completed in their computing books where the teacher will highlight green if the objective has been met. For activities on digital devices children can save their work on Seesaw; teachers are to stick a learning focus with the date and note saying work is on Seesaw or teams so there is a reference. Where applicable teachers may print a screenshot of the code produced or the project made. EY and Year 1 will take photos of the computing in the provision and reference the date. TLAC strategies are used to teach computing effectively. All teaching staff have received CPD for teaching computing in their year group. This training outlined computing pedagogy. Teach Computing has teacher subject knowledge and detailed lesson plans for each lesson with adaptations for SEN learners outlined. The scheme also provides adaptations of resources to support SEN learners.

Project Evolve

Education for a Connected World – 2020 edition

A framework to equip children and young people for digital life

Children have the right to enjoy childhood online, to access safe online spaces, and to benefit from all the opportunities that a connected world can bring to them, appropriate to their age and stage.

As they grow older, it is crucial that they learn to balance the benefits offered by technology with a critical awareness of their own and other's online behaviour and develop effective strategies for staying safe and making a positive contribution online.

This framework describes the knowledge, understanding and skills that children and young people should have the opportunity to develop at different ages and stages. It highlights what a child should know in terms of current online technology, its influence on behaviour and development, how to get support, and what skills they need to be able to navigate it safely.

Children and young people's online activity and behaviour can be different both within and across an age range. This framework is intended to be used flexibly in order to support learning that is relevant to children and young peoples' online behaviour and experiences and matched to their readiness for new learning.

Since the publication of the first edition of the framework in 2018 the introduction of new statutory subjects in all English schools has elevated the status of much of the knowledge young people will require from September 2020.

This edition expands learning outcomes related to understanding, respecting and protecting individual autonomy, the right to give or withhold consent and repositions some outcomes in response to new behaviours related to safeguarding.

Aims of the Framework

Education for a Connected World is a tool for anyone who works with children and young people. It enables the development of teaching and learning as well as guidance to support children and young people to live knowledgeably, responsibly and safely in a digital world.

It focuses specifically on eight different aspects of online education:

1. Self-image and Identity
2. Online relationships
3. Online reputation
4. Online bullying
5. Managing online information
6. Health, wellbeing and lifestyle
7. Privacy and security
8. Copyright and ownership

The framework aims to support and broaden the provision of online safety education, so that it is empowering, builds resilience and effects positive culture change. The objectives promote the development of safe and appropriate long term behaviours, and support educators in shaping the culture within their setting and beyond.

The status of this framework for English schools

From September 2020 Relationships Education and Relationships and Sex education will be compulsory for all secondary aged pupils in England and Relationships Education for all primary aged pupils in England. Health Education will be compulsory for all pupils in state-maintained schools. PSHE is already compulsory for Independent Schools[1].

Much of the specific knowledge young people will need to enable them to live safely and thrive online are identified throughout these new statutory subjects. It is important to ensure that factual knowledge is set within learning that provides a broader understanding of the digital world and the development of digital skills.

In 2019 the Department for Education produced non-statutory guidance 'Teaching online safety in schools – Guidance supporting schools to teach their pupils how to stay safe online, within new and existing subjects'[2]. This guidance makes extensive reference to this framework as a tool to support realising this outcome.

It is essential that education young people require to thrive in the digital environment is planned across the entire curriculum and as part of a whole school approach to digital learning and online safety.

Using Education for a Connected World

School leaders, teachers and other members of the children's workforce can use this framework for a wide range of purposes, including:

- Developing a rich, effective and developmental curriculum, which will support young people to be safe, healthy and thriving online
- Auditing and evaluating existing provision of online safety education
- Coordinating delivery of online safety education throughout the curriculum
- Improving engagement across the wider school community on issues related to online safety
- Developing effective training for staff and governors / board members

Online safety is a whole school issue. The framework aims to support the development of the curriculum and is of particular relevance to PSHE education, Relationships and Sex Education, Health Education and Computing. It is designed, however, to be usable across the curriculum and to be central to a whole school approach to safeguarding and online safety.

About us

The framework has been developed by members of the UKCIS Education Working Group.

UKCIS is a group of more than 200 organisations drawn from across government, industry, law, academia and charity sectors working in partnership to help keep children safe online.

The UKCIS Education Working Group brings together leading organisations in online safety in education and the group focuses on how education settings in the UK are responding to the challenges of keeping their pupils safe online.

Feedback and development

Education for a Connected World is a working document and we would appreciate your feedback. You can report on your use of the framework and your online safety education needs by completing **this survey**.

Acknowledgements

UKCIS would like to thank members of the Education Working Group who have contributed significant time and expertise to the development of Education for a Connected World.

Many thanks to Common Sense Education for agreeing to the use of topic headings in their Digital Citizenship Curriculum as a source for the structure of the current Framework.

Self-image and identity

This strand explores the differences between online and offline identity beginning with self-awareness, shaping online identities and media influence in propagating stereotypes. It identifies effective routes for reporting and support and explores the impact of online technologies on self-image and behaviour.

Online relationships

This strand explores how technology shapes communication styles and identifies strategies for positive relationships in online communities. It offers opportunities to discuss relationships, respecting, giving and denying consent and behaviours that may lead to harm and how positive online interaction can empower and amplify voice.

Online reputation

This strand explores the concept of reputation and how others may use online information to make judgements. It offers opportunities to develop strategies to manage personal digital content effectively and capitalise on technology's capacity to create effective positive profiles.

Online bullying

This strand explores bullying and other online aggression and how technology impacts those issues. It offers strategies for effective reporting and intervention and considers how bullying and other aggressive behaviour relates to legislation.

Managing online information

This strand explores how online information is found, viewed and interpreted. It offers strategies for effective searching, critical evaluation of data, the recognition of risks and the management of online threats and challenges. It explores how online threats can pose risks to our physical safety as well as online safety. It also covers learning relevant to ethical publishing.

Health, well-being and lifestyle

This strand explores the impact that technology has on health, well-being and lifestyle e.g. mood, sleep, body health and relationships. It also includes understanding negative behaviours and issues amplified and sustained by online technologies and the strategies for dealing with them.

Privacy and security

This strand explores how personal online information can be used, stored, processed and shared. It offers both behavioural and technical strategies to limit impact on privacy and protect data and systems against compromise.

Copyright and ownership

This strand explores the concept of ownership of online content. It explores strategies for protecting personal content and crediting the rights of others as well as addressing potential consequences of illegal access, download and distribution.