Micklands Primary School

Computing Curriculum Syllabus

Our Intent

At Micklands, computing is a dynamic and essential subject that equips children with the knowledge and skills they need to navigate and shape the digital world. Our computing curriculum aims to foster creativity, logical thinking, digital responsibility and curiosity.

Children at Micklands will learn how technology works, how to use it thoughtfully, and how to create and evaluate digital content. Our curriculum enables children to develop computational thinking, explore programming, understand data, and communicate ideas through technology. We place a strong emphasis on online safety and digital citizenship throughout.

Computing at Micklands is engaging, relevant, and purposeful. We use hands-on activities, structured progression and real-world connections to ensure children can confidently use digital tools in everyday life.

Look out for:

- Practical programming challenges using block coding and unplugged activities
- Multimedia projects such as podcasts, videos and games
- Cross-curricular links to art, geography, maths and PSHE
- A strong focus on staying safe and responsible online
- Opportunities to design, debug, and evaluate real digital solutions

Content and Structure

Computing at Micklands is taught in five termly units per year group. Each unit develops computational knowledge, skills and thinking by focusing on:

- Programming and coding
- Creating and evaluating digital content
- Understanding systems and networks
- Using data and representing information
- Online safety and responsible digital behaviour

Our lessons use structured sequences, practical tasks, explicit vocabulary and creative assessment. Children learn to think logically, solve problems, and express themselves through technology.

Curriculum Progression

Year	Units	Key Learning and Skills
EYFS	Continuous provision and exploration	Explore technology in everyday life; use devices with care; develop early sequencing, pattern and prediction through games and stories; talk about staying safe and asking for help when online
Y1	Introduction to Online Safety, Technology All Around Us, Create with Computers, Programming a Robot, Create a Moving Story	Recognise digital and non-digital technology; use simple block coding; sort and label data; create art with digital tools; understand how to stay safe and kind online
Y2	Developing Awareness of Online Safety, Exploring Information Technology in Our Lives, Creating and Exploring Data with Pictograms, Designing and Debugging with ScratchJr, Digital Photography: Capturing and Creating Images	Sequence and debug simple code; explore networks and inputs/outputs; capture and organise images; design presentations; recognise privacy and consent
Y3	Staying Safe and Smart Online, How Computers Talk to Each Other, Animate and Advertise, Scratch Sounds and Sequences, Code and Control: Creating with Scratch	Build logical sequences using events; classify and query data; create layered audio; use text and images for a purpose; discuss digital footprints and safe sharing
Y4	Safety and Self-Regulation, Connecting Networks, Data logging, Repetition in games, Audio production	Understand internet systems and search; gather and analyse data; use loops in programming; plan, record and edit audio; protect personal information and handle online pressure
Y5	Critical Thinking and Responsibility, Computing systems and networks - systems and searching, Data and information – Flat-file databases, Selection in quizzes, Introduction to vector graphics	Investigate search engines and systems; sort and filter complex data; create branching quizzes using selection; create and group digital drawings; evaluate online information and behaviour
Y6	Digital Leadership and Independence, Communication and collaboration, 3D Modelling, Variables in games, Introduction to Spreadsheets	Work collaboratively using online tools; build 3D digital objects; design and use variables; analyse and model data in spreadsheets; reflect critically on online identity, bias and safety

Link to Climate Change Education

Each year group in KS1 and 2 includes **explicit and implicit opportunities** to connect history with environmental awareness:

Year	Unit Focus	Link to Climate Education
Y1	Introduction to Online Safety, Technology All Around Us, Create with Computers, Programming a Robot, Create a Moving Story	• Build awareness that technology has an environmental impact and small actions can help conserve energy. • Encourage children to recognise that all forms of creativity use resources and energy, and introduces early thinking about sustainability when using technology or art materials. • Introduce the idea that technology can support environmental action and helps children connect computing with positive changes for the planet. • Introduces the idea that digital technology (like satellites and robots) helps us understand and care for the Earth, making links between computing and environmental awareness.
Y2	Developing Awareness of Online Safety, Exploring Information Technology in Our Lives, Creating and Exploring Data with Pictograms, Designing and Debugging with ScratchJr, Digital Photography: Capturing and Creating Images	• Connect digital responsibility to environmental awareness, introducing the idea that turning off devices protects both personal data and the planet. • Think critically about the hidden environmental cost of using technology. It introduces the concept that while digital tools are helpful, they require energy—often from polluting sources. • Introduce the idea that careful observation and recording are important tools for understanding and protecting living things, encouraging a respect for local ecosystems. • Discuss how animals live in different environments and how climate change might affect where they can survive. Use this to introduce the idea that climate affects habitats and the animals that live there. • Talk about how nature changes over time and how we can use photos to document weather, seasons, or environmental impact (e.g. a tree in winter vs summer).
Y3	Staying Safe and Smart Online, How Computers Talk to Each Other, Animate and Advertise, Scratch Sounds and Sequences, Code and Control: Creating with Scratch	• Navigate the large amount of information online, including misinformation about climate change. • Understand that while technology can make tasks easier, it also has an environmental cost. Discuss simple choices they can make to reduce energy waste: shutting the lid on laptops, turning off screens when not in use, or charging devices only when needed. • Raise awareness about simple, climate-positive behaviours. Reinforce the idea that digital tools can be used for persuasive communication and social change. Discuss how their message could influence others to take care of the environment. • Reinforces the power of technology and creativity to influence positive change, while celebrating music as a tool for environmental storytelling. • Use programming to visualise eco-friendly habits, helping children think about how small choices (like walking or recycling) have an impact. Encourage digital creativity in the service of sustainability and helps children connect code with the real world.
Y4	Safety and Self-Regulation, Connecting Networks, Data logging, Repetition in games, Audio production	• Encourage children to make sustainable lifestyle choices and consider the environmental impact of device use. Build awareness that digital habits affect both personal wellbeing and the planet. • Encourages children to be critical consumers and creators of environmental content online. Build digital literacy while reinforcing sustainable messages, helping children see how the web can be used for positive action and climate awareness. • Develop critical thinking skills using real climate-related data. Understand how data informs environmental decisions and

		policies, and how digital tools support climate action through monitoring and evidence gathering. • Create games with meaningful environmental messages. Think about how repeated positive actions (e.g. recycling, picking up litter, planting) can make a difference. Encourage them to reflect on sustainability and spread eco-awareness through digital storytelling. • Create a message about sustainability or the environment. Children use digital media to raise awareness and practise persuasive communication. It shows how technology can amplify voices for climate action.
Y5	Critical Thinking and Responsibility, Computing systems and networks - systems and searching, Data and information – Flat-file databases, Selection in quizzes, Introduction to vector graphics	• Build children's ability to critically assess environmental claims online, fostering scepticism of greenwashing and empowering informed, responsible decision-making in support of climate action. • Encourage children to see how digital habits can affect the environment. Introduce responsible digital citizenship by linking everyday online behaviours with real-world environmental outcomes. • Help children see how data can be used to raise awareness and guide decisions around environmental impact. By practising visual data representation, they become more informed about real-world climate issues and how digital tools can support advocacy and change. • Deepen engagement with sustainability issues and highlight how computing can help spread environmental messages. • Allow children to apply their digital drawing skills to real-world communication for change. They think creatively about how images and slogans can persuade people to take sustainable actions. It links digital media to environmental impact.
Y6	Digital Leadership and Independence, Communication and collaboration, 3D Modelling, Variables in games, Introduction to Spreadsheets	• Develop a connection between privacy, data control, and energy consumption. Begin to understand the digital carbon footprint and are empowered to make changes, like turning off unused devices or reducing unnecessary app permissions, promoting more sustainable online habits. • Introduce the idea that online collaboration can reduce environmental impact. It also prompts children to think about the sustainability of communication methods and how tech choices can affect the planet. • Promote creative thinking around sustainability and introduce the idea that designers must consider both function and environmental impact. It helps children understand how digital prototypes can reduce material waste by refining ideas before production. • Use programming skills to promote environmental awareness. It reinforces the idea that games and media can influence positive actions and helps them explore how digital creativity supports real-world issues. • Promote environmental thinking in budgeting and planning. Children are encouraged to balance cost and sustainability, fostering responsible decision-making and awareness of eco-friendly choices.

How We Teach Computing

- **Structured Progression**: Knowledge and skills build from EYFS to Year 6 through carefully sequenced units.
- **Vocabulary and Modelling**: Teachers explicitly model technical language and thought processes.
- **Practical Application**: Children learn by creating, testing and refining digital content or programs.
- **1-Minute Checks**: Every lesson includes a short, varied assessment to check for understanding.
- **Creative Assessments**: End-of-unit tasks let children demonstrate their learning through games, videos, presentations or collaborative projects.
- **Online Safety Thread**: Embedded in every year, with one dedicated unit annually.
- **Cross-Curricular Links**: Many computing projects link to geography, art, English, PSHE and science.

Computing Assessment Summary for Parents

We assess computing through observations, discussions, project outcomes and lesson-based checks. Children are supported to explain their thinking, use digital tools confidently, and apply computing to real-life contexts.

Below Expectations

Your child may struggle to use or explain digital tools independently; need frequent help to sequence steps or stay safe online.

At Expected Level

Your child is likely to use key programs and commands with growing independence; explain choices and check for errors; describe how to use technology safely.

Above Expectations

Your child may show strong problem-solving in programming; explain and evaluate their digital work clearly; show creativity and curiosity in digital projects.

How You Can Support Computing at Home

You don't need to be a tech expert to support your child's computing learning. Here are some simple and effective ways to help at home:

Explore Learning

- Let your child show you what they've been learning. Ask them to explain how a program or app works – teaching you helps reinforce their own understanding.

Use Technology Creatively

- Encourage your child to use digital tools to write stories, draw pictures, record voice notes or make presentations. Creativity builds confidence with computing.

Play Coding Games:

- Try free child-friendly coding platforms such as Scratch, ScratchJr, or Code.org. These offer guided tasks and build essential programming skills.

Talk About Online Safety

- Discuss how to stay safe and kind online. Use real examples and explore questions like "What would you do if…?" Check settings together on devices and games.

Use Tech Purposefully

- Talk about how you use technology in your life – emails, maps, spreadsheets or online research. Show how you solve problems and make choices with tech.

Balance Screen Time

- Help your child develop healthy habits by setting limits, encouraging regular breaks and talking about the importance of offline activities.

Celebrate Digital Efforts

- Praise your child's thinking, effort and creativity rather than focusing on whether something worked first time. Debugging and trying again is part of the learning process!