# Common Road Infant and Nursery School
# Computing Policy
# September 2020

> "A high-quality computing education equips pupils
> to use computational thinking and
> creativity to understand and change the world."
> (Quote from the Computing Programme of Study 2014)

# Introduction

Computing and ICT (Information and Communications Technology) play a vital role in our lives, particularly in current times where technologies are constantly changing and evolving. A sound knowledge and understanding of ICT and Computing enables and prepares pupils to be active participants in a world where work, and other activities, are increasingly transformed by access to varied and developing technology. It is our duty as educators to ensure all children have access to an education in which such technologies are available and skills taught and practiced to a high standard in a variety of ways.

In September 2013 the Department for Education published the new National Curriculum for Computing, to become effective by September 2014. The new curriculum reflects the developments that have taken place over recent years; shifting focus from children learning how to **use** computers, to becoming competent and confident analytical thinkers, computer programmers and understanding **how** technology works. The new curriculum encompasses three main strands of Computing (C), Information and Communication Technology (ICT), and Digital Literacy (DL) which will be outlined in this policy.

This policy should be read in conjunction with the E-safety, Acceptable Usage and Information Security policies.

# Purpose

This policy aims to reflect the school values and philosophy in relation to the teaching and learning of C, ICT and DL. It is intended as an outline to establish what we will do, and as a guide for teachers, non-teaching staff, parents and governors.

The purpose of the C and ICT policy at Common Road is:
- To establish a framework for teaching and learning which meets the requirements of the new Computing Curriculum 2014;
- To promote a good understanding of what C, ICT and DL are and how they will look at Common Road;
- To establish clear expectations for staff and pupils;
- To promote continuity and coherence throughout school;
- To establish clear procedures and guidelines for staff to operate within.

# Curriculum Intent

In line with the 2014 National Curriculum for Computing, our aim is to:
- Provide a high quality computing education which equips children to use computational thinking and creativity to understand and change the world.
- Teach knowledge about how computers and computer systems work and how they are designed and programmed.
- Provide a whole school approach to C and ICT, ensuring continuity and progression;
- Provide children with opportunities to develop their computing capabilities in all areas specified by the National Curriculum Computing Programme of Study;
- Provide challenge and excitement for our pupils, both in C / ICT and through their use across the curriculum;
- Inspire children to be creative and innovative with new and emerging technologies.

We aim for members of staff to:
- Be confident users of new technologies to be able to use them effectively as powerful tools to support and enhance teaching and learning opportunities across the curriculum;
- Develop good subject knowledge in relation to C, ICT and DL so that they are able to deliver high quality lessons to enable pupils to be challenged and achieve highly;
- Use computing technologies, when appropriate, to improve access to learning for pupils with a diverse range of individual needs, including those with SEN and disabilities.
- Provide pupils with challenging, engaging and motivating lessons;

We aim for our children to:
- Become autonomous, independent users of computing technologies;

- Be confident users of new technologies and be able to experiment with them in different ways to communicate learning;
- Be able to use logical thinking and reasoning to solve problems;
- Gain and apply new skills and knowledge in the areas set out in the POS;
- Understand how their C and ICT learning in school impacts on their future lives;

# Implementation of the Computing Curriculum – Computing, ICT and Digital Literacy

The Computing Curriculum focuses on three main areas:

- Computing (C) – *The ability to understand how technologies work and **how to be an effective author** of them. The ability to apply logical reasoning and computational thinking to solve problems.*
- Information and Communication Technologies (ICT) – *The ability **to be an effective and thoughtful user** of technologies to store, present and communicate information.*
- Digital Literacy (DL) - *The ability to locate, organise, understand, evaluate, and analyse information using digital technology. It involves a working knowledge of current 'high-technology', and an understanding of how it can be used.*

As described above, C and ICT are different, but complimentary subjects. It is also important to note that much of our C curriculum will be non-computer based. The focus in this area is computational thinking and logical reasoning to equip our children with the thinking skills they will need to solve computer based problems.  As described by Edsger Dijkstra -  "We need to do away with the myth that computer science is about computers. Computer science is no more about computers than astronomy is about telescopes, biology is about microscopes or chemistry is about beakers and test tubes. Science is not about tools, it is about how we use them and what we find out when we do."

At Common Road, the curriculum will be planned and taught based on these three key areas. The following pages show the long term plan for 2020/21 for the three aspects of the curriculum.

# Common Road Infant and Nursery School- Long Term Plan 2020/21

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---|---|---|---|---|---|---|
| EYFS | Early Learning Goal: Technology: Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes. | | | | | |
| Theme | All about me | Into the woods | Jurassic | Circle of life | One World 1 | One World 2 |
| Nursery | Children to explore everyday technological equipment. | Children to explore everyday technological equipment. | Moveable dinosaurs- children to make the dinosaurs travel in a straight line. | Children to take their own photographs of the chicks and of their growing activities to display and discuss. | Children to explore making CD players work and manipulating ipads. | Children to explore making CD players work and manipulating ipads. |
| Reception | Children to take a 'selfie' of themselves on the iPad. | Researching on the internet-National Geographic Kids websites. | Bee bots- Jurassic forest bee bot mat. Can we programme the bee bot to go through the forest? | Interactive whiteboard games linked to sequencing pictures, maths and life cycles. | Children to have access to different technology to select and use. | Children to access and manipulate different technology to achieve an end goal. |

| Year | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---|---|---|---|---|---|---|
| | ICT | Coding | ICT SAFER INTERNET DAY | Multi-Media | ICT | Coding |
| 1 | Introduction to computers, what a keyboard does, trackpad/mouse, typing - Laptops – *Purple Mash 2Type from the beginning* - Laptops – *Purple Mash – 2Paint // 2Paint a Picture* | Introduction to coding - programming, algorithms - Bee-Bots – tinkering, inputting simple directions, creating algorithms - iPad – Bee-Bot | Internet Safety _____ Photography - iPad - Pic Collage for selfies and collages | Presenting Information – Pictures and captions Laptops – *Purple Mash – Lists and Captions (English section)* _____ Creating music - Laptops – *Purple Mash – 2Sequence* | Presenting Information - Producing an animated story - Laptops – *Purple Mash 2Create a Story (English section)* _____ Graphs / Charts - Laptops – *Purple Mash 2Count* | Recap and next steps for coding – programming, algorithms, debugging - Bee-Bots – creating algorithms, debugging - iPad – *Coding for Kids app* - iPad – Lightbot (challenge) |
| 2 | Introduction to computers, what a keyboard does, trackpad/mouse, typing - Laptops – *Purple Mash - 2Type from the beginning* - Laptops – *Purple mash – Create a leaflet using 2Publish Plus (English Section)* | Introduction to coding - programming, algorithms - Bee-Bots – tinkering, inputting simple directions, creating algorithms - iPad – *Coding for Kids app* | Internet Safety _____ E-mail - Laptops – *Purple Mash Email practice* | Stop Motion Animation -iPad – *I Can Animate app* - Laptops – *Purple Mash 2Animate* (Extension / for next year Y2) | Presenting Information – Producing a chart - Laptops – *Purple Mash 2Publish 'Sequence This' (English section)* - Laptops – *Purple Mash – UK Weather Report* _____ Graphs / Charts - Laptops – *Purple Mash 2Graph* | Recap and next steps for coding – programming, algorithms, debugging - Bee-Bots – creating algorithms, debugging - iPad – *Coding for Kids app* - iPad – Lightbot (challenge) |
| Internet Safety | Introduce Zip it, Block it, Flag it. **Managing online information Privacy and security** | Further work on Zip it, Block it, Flag it. **Privacy and security continued** | Self-image and identity Online reputation | Copyright and ownership | Online relationships Online bullying | Health, well-being and lifestyle |

# Early Years Foundation Stage

Computing is introduced within the Foundation Stage, and relates directly to the Early Learning Goal:

ELG 15 Technology:

- Children recognise that a range of technology is used in places such as homes and schools
- They select and use technology for particular purposes

At Common Road, children within the Early Years setting have the opportunities to learn and apply skills in computing through direct teaching and enhancements in continuous provision. Technology and its use is an integral part of the EYFS curriculum. Teachers within this stage know the next steps for children progressing into Year 1, and work to ensure that children leaving the Foundation Stage have a wide range of experiences with different technology.

It is important in the foundation stage to give pupils a broad, play-based experience of computing in a range of contexts, including outdoor play. Computing is not just about computers. Early years learning environments should feature computing scenarios based on experience in the real world, such as in role play. Pupils gain confidence, control and language skills through opportunities to 'paint' on the whiteboard or program a toy. Recording devices can support pupils to develop their communication skills. This is particular useful with pupils who have English as an additional language.

# Teaching and Learning

The time allocated to the teaching of the computing aspects is flexible and arranged by the class teacher to best suit the needs of the children. The guidelines below are followed by each teacher:

- The teaching of new skills should be discrete (E.g. basic skills in using new software and/or equipment, new skills relating to programming);
- Children should be given as many opportunities as possible to apply their computing, ICT and digital literacy skills across the curriculum and in creative ways (E.g. as an option to present work);
- There will be a 45 minute session each week timetabled and dedicated to computing.
- Teachers must show coverage of learning objectives through planning each half term. This does not need to be on a specific planning grid.
- Planning must be centred around the needs of the pupils and designed to meet a range of differing needs, including those needing additional support.
- Planning must show opportunities for challenge and further support by highlighting key questions that may be asked of pupils to challenge or support them further.
- Where appropriate, planning should be linked to topics being studied.

# Planning for inclusivity and challenge

At Common Road, all children have the right to access the computing curriculum. In order to ensure that children with special educational needs achieve to the best of their ability, it may be necessary to adapt the delivery of the computing curriculum for some pupils. We teach computing to all children, whatever their ability. Computing forms part of the national curriculum to provide a broad and balanced education for all children. Through the teaching of computing we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Where appropriate, computing can be used to support SEN children on a one to one basis where children receive additional support.

# Assessment

**Summative and Formative Assessment**

Class Teachers will make assessments by making informal judgements during lessons, using the STEM 'I can' statements as a point of reference. This information will be used to assist in planning next steps for future work. Verbal feedback will be given to children during lesson time to help to guide their progress. Children working at expectations should be able to achieve most of these statements. Children securely achieving all of their year group expectations, and some of those within the next year group, will be assessed as being a 'Greater Depth' learner. In order to ensure lessons are pitched correctly and children are challenged, teachers must regularly check progress alongside the expectations explained above.  This will also feed in to the summative assessment, where Teachers will give an overall judgement of each child's ability according to whether they are working towards expectations, working at expectations or are working at greater depth.

# Roles and Responsibilities

**The Computing Leader** – The school has a designated Computing Leader to oversee the planning, teaching and organisation of computing, ICT and digital literacy. The Computing Leader will be responsible for:

- Raising standards in C and ICT / DL across school by:
- Supporting others in planning, teaching and assessment;
- Facilitating the use of ICT across the curriculum, in collaboration with other subject coordinators;
- Ensuring staff are up to date with training to enable them to deliver the curriculum confidently and effectively.
- Providing advice to staff in terms of resourcing, planning, using software and equipment, effective resources;
- Managing school resources to ensure we have the technology to be able to deliver the new curriculum effectively;
- Monitoring the planning and delivery of the new C curriculum and reporting to the Head Teacher.

**The Head Teacher and Governing Body** – The Head Teacher and Governing Body provide support for the ICT Coordinator to fulfil their role, as outlined above. The will provide support by:

- Ensuring teachers are able to deliver the new curriculum by having access to the appropriate training and resources necessary;
- Providing opportunities for the Computing Leader to work with staff to plan and deliver lessons for the new curriculum;
- Reviewing policies relating to C, E-safety and Information Security.

**The Class Teacher** – The class teacher must:

- Follow the guidelines set out in the computing, E-safety and Information Security policies.
- Plan effective computing and ICT / digital literacy lessons using the objectives from the long term plan outlined in this policy;
- Ensure all objectives for their year group are planned for either through discrete or cross-curricular lessons;
- Provide many opportunities for C and ICT / DL skills to be applied by pupils in a variety of ways, using a wide range of technology and software;
- Plan lessons which will support and/or challenge pupils as appropriate;
- Ensure they have access to a range of necessary resources to be able to deliver the curriculum effectively. This includes liaising with the Computing Leader that resources are available, ensuring equipment is ready to be used, and returning equipment for others to use. Any breakages or faults must be reported by teaching staff to the Computing Leader.
- Support the Computing Leader in monitoring and assessment by completing the relevant planning and assessment grids at the end of each unit of work.
- Ensure support staff have access to planning and have the knowledge and skills to be able to support and challenge them in completing tasks.

**Support Staff** – Support staff must:

- Ensure they have the relevant planning necessary to support and challenge pupils;

- Ask for support from the class teacher and/or Computing Leader to ensure their training requirements are met.

# Monitoring and Evaluation

In order to ensure the curriculum is being planned for and delivered effectively, the Computing Leader will monitor the following:
- The training requirements of staff as new concepts and technologies are introduced to the curriculum;
- The impact of training already undertaken;
- Planning and assessment formats – taking on board any suggestions from staff on how they could be amended or used more effectively;
- Planning for each year group to ensure it is pitched appropriately, challenging, engaging, uses a wide range of resources and meets the requirements of the new curriculum;
- Children's work. This will be done in a variety of ways, including work scrutiny with commentary from the class teacher on how it was done; conversations with pupils; pupil skills audits;
- Computing teaching and learning by observing in the classroom, where possible.
- The impact of the Computing action plan and how this can be taken forward to further develop the subject;
- School resources to ensure staff and pupils have access to the appropriate and necessary equipment and software.

By monitoring the above areas, the Computing Leader, Head and Governing Body will be able to identify any areas of strength and development. These will be used to inform the next action plan to ensure clear direction.

# Staff Development

At Common Road, we have a wide range of staff with differing areas of skills and knowledge in terms of computing and ICT / digital literacy. There is an expectation that all staff with endeavour to keep up to date with new developments and requirements in this area. To support this, the Computing Leader, Head Teacher and Governing Body will:
- Provide regular updates with regards to the new curriculum;
- Identify key areas to develop staff knowledge and skills;
- Provide opportunities for staff training in areas identified and/or requested. This may be delivered by the Computing Leader outside agencies;
- Identify areas of strength in knowledge and skills, and encourage these members of staff to assist in training and supporting others as well as leading by example and leading projects or specialism areas (E.g. programming, podcasting, blogging).

# Resources and Access

ICT resources are accessed and deployed in a number of ways throughout school. This ensures the maximum amounts of resources are available and easily accessible to support delivery of an effective and powerful computing curriculum. At present we have:

- 16 iPads stored securely in a locked trolley. These are timetabled for every class each week, and are available to be 'signed out' when not in use by another class. Classes may take all or some of the iPads when timetabled. Class teachers must request any Apps they may need, which will be purchased by the Computing Leader;
- 14 laptops stored securely in a locked trolley. These are timetabled and available as per the iPads.
- 1 staff laptop per classroom. This can be used by the teacher to display learning materials, or by children as directed by the teacher.
- 1 Smartboard per classroom – to be used as a teaching tool by staff or to aid learning in group work by children;
- 4 iPads for use in EYFS.
- 6 Bee-Bots and mats, located in the ICT storage boxes.

A school network enables internet access to all devices in the school building, including mobile devices via Wifi. The school network is secure and can only be accessed by user name and password. The network also offers access to a shared area in which documents are stored and accessed. Please refer to the E-safety, Acceptable Usage and Information Security policies for further details.

# E-safety

Internet access is planned to enrich and extend learning activities. Common Road's Computing curriculum includes the teaching of e-safety throughout the year as an integral part of the curriculum. We strive to ensure that all pupils are responsible and safe users of the Internet and other communication technologies. We aim to provide a curriculum which includes education on how to stay safe online and when using other technology. We also offer a safe online environment through filtered internet access. Please refer to the school E-safety, Acceptable Usage and Information Security policies for further details.

# Other Documents

Please also refer to the following documents for further and supporting information:

- E-safety policy
- Acceptable Usage policy
- Information Security policy
- KS1 National Curriculum Coverage documents
- National Curriculum Level Descriptors for 2014

The illiterate of the 21$^{st}$ century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn.

(Alvin Toffler discussing rapidly evolving technologies)

(Computing At School: 'Computer Science: A Curriculum for Schools'

Computational thinking influences fields such as biology, chemistry, linguistics, psychology, economics and statistics. It allows us to solve problems, design systems and understand the power and limits of human and machine intelligence. It is a skill that empowers, and that all pupils should be aware of and have some competence in.

Education enhances pupils' lives as well as their life skills. It prepares young people for a world that doesn't yet exist, involving technologies that have not yet been invented and that present technical and ethical challenges of which we

This policy will be reviewed in September 2021.

Leanne Staves
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