

# Computing at Copperfield

algorithm  
variables  
social media  
digital footprint  
processor  
graphics  
password  
debugging  
bug  
copyright free  
phishing  
software  
pixels  
privacy  
repeats  
programmer  
hardware  
software  
QR codes



Subject Leadership

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### Subject Leaders at Copperfield

- Subject Leaders provide professional leadership for a subject or group of subjects to secure high-quality first teaching, a rich curriculum and the effective use of resources. The success of this will be measured by the impact on learning and progress for pupils.
- We do not expect Subject Leaders to be an 'expert' in the subject they lead. What is important is that they have the overview of what is going well and what needs to be improved – based on evidence.
- Subject leaders at Copperfield are part of both the Middle Leadership and the Copperfield Extended Leadership Teams
- Each Subject Leader has an assigned Mentor (from SLT)

### All Subject Leaders will

- Be part of our distributed leadership
- Utilise the expertise, passion, pedagogical awareness and strengths of other leadership team members
- Establish a collective responsibility for demonstrating that everyone makes a difference
- Moving the school forward through driving the implementation aspect of each subject
- Professionally develop themselves and other staff team members
- Raise standards across all aspects of the curriculum
- Enrich the curriculum
- Share knowledge, expertise, skill, passion and enthusiasm

## How does the role of Subject Leader fit into Copperfield's Ofsted Statement of Action?

The staff, pupils and school community are working on areas identified in the May 2021 Ofsted inspection.

***'Leaders are developing their plans to ensure that all areas of the curriculum are equally ambitious and well sequenced. Currently, they are focusing on science and history. Leaders should review existing wider curriculum planning to ensure that essential knowledge is explicitly identified and sequentially mapped out from Nursery to Year 6. For this reason, the transition arrangement has been applied in this case'.***

*This handbook, along with every other handbook, maps out the sequential curricular links from Nursery to Year 6.*

### *Our Curriculum Statement*

*Copperfield has an ambitious and aspirational curriculum designed to meet each individual's needs and to give all learners the knowledge and cultural capital they need to succeed in life. Strong teachers have been appointed to key posts within the school. They are aware of national curriculum developments, and pedagogical developments, and a range of strategies are implemented to improve practice, and to better meet the needs of pupils more effectively'*

**Our Four Drivers, making a well sequenced and ambitious curriculum.**

### **Ethical, informed Individuals.**

*At Copperfield we aim to build confident, open-minded individuals who feel safe and secure within a caring environment based on mutual respect where everyone is valued and is able to maximise their individual potential. Children from our community may need to develop their self-esteem, confidence and communication skills. An example of this is our comprehensive PSHE curriculum, weekly Values Assembly, and expansive Wellbeing Programme, which all support with self-esteem, independence, perseverance and self-discipline. Our curriculum will also prepare our children to successfully engage with the wider community, as we educate the children on inclusivity and British values. Our 'hands-on' approach to learning in all areas of the curriculum will ensure the children have many opportunities to practice the traits and values they are learning on a daily basis.*

### **Ambitious Capable Learners (Skills and Knowledge).**

*Our aim is to make learning exciting, enjoyable, relevant and appropriately challenging to build upon what learners already know. Reading is at the heart of our curriculum, it is central to all that we do. Children will read and enjoy a range of books from a myriad of genres. Enriching the children's vocabulary, knowledge and imagination. We also aim for every child to become confident and competent mathematicians, achievable through our maths mastery approach. Beyond the core subjects, the children's knowledge and awareness of how the wider curriculum, such as the arts, humanities, and sports, can be applied in, and have an impact on, their community will be explored. The children will be able to recite key facts and demonstrate their learning of news skills through various forms of outcomes.*

### **Experiences to Inspire**

*Aware that children seldom explore beyond their very immediate community, our curriculum is designed to broaden the children's horizon. To inspire. The curriculum will be brought alive through hands-on experiences designed to teach and link new skills and knowledge to prior learning. Where possible, the learning will happen beyond the classroom, either on the school grounds, local community or beyond. To enhance their learning for each topic, the children will meet knowledgeable and engaging individuals (virtually or physically) whilst also immerse themselves in the worlds of craft, art, food and sport – taking the learning of skills and knowledge beyond textbooks and into real life experiences. Reach2's 11b411 has also been embedded into our curriculum, to help enrich the children's learning even further.*

### **Successful in Society**

*Mindful that some challenges in the local community could have an impact on the children's learning and progress, the school continues to be an outward looking school. Through using the curriculum and resources at our disposal, we openly encourage the parents to engage with, and learn from, the children's curriculum and thus better place them to progress and prosper along with their children. Termly invitations to curriculum days, parent & teacher curriculum conferences and parent workshops with keynote speakers all come together as a package of support, upskilling and development for parents. This level of support for the support network is designed to elevate the standing of education, increase parental engagement and drive progress in the community. Running throughout the curriculum are our values we embed the 6 values in everything we do. .*

## **Aligning INTENT, IMPLEMENTATION AND IMPACT to ensure we meet the criteria for a good quality of education in the Education Inspection Framework**

### **INTENT**

Our curriculum is:

- deliberately ambitious
- designed to give all learners, particularly the most disadvantaged and SEND or high needs, the knowledge and cultural capital they need to succeed in life.
- coherently planned and sequenced towards cumulatively sufficient knowledge and skills for future learning and employment.
- broad and balanced, and allows all pupils access to the full range of subjects, throughout all years, from Nursery to Year 6
- successfully adapted to meet the needs of all learners, especially those with SEND, to develop their knowledge, skills and abilities to apply what they know and can do with increasing fluency and independence.

### **IMPLEMENTATION**

1. Teachers have good subject knowledge of the subject(s) they teach, and leaders support those teaching outside their main areas of expertise.
2. Teachers:
  - present subject matter clearly, promoting appropriate discussion about the subject matter they are teaching.
  - check learners' understanding systematically.
  - identify misconceptions accurately.
  - provide clear, direct feedback.
  - respond, and adapt their teaching as necessary.
3. Teaching is designed to help learners to remember in the long-term the content they have been taught, and to integrate new knowledge into larger concepts.
4. Teachers and Leaders:
  - use assessment well to help learners embed and use knowledge fluently, or to check understanding and inform teaching.
  - understand the limitations of assessment, and do not use it in a way that creates unnecessary burdens for staff and learners.
5. Teachers create an environment that focuses on pupils:
  - textbooks and other teaching materials that teachers select – in a way that does not create unnecessary workload for staff – reflect the school's ambitious intentions for the course of study.
  - materials clearly support the intent of a coherently planned curriculum, sequenced towards cumulatively sufficient knowledge and skills for future learning and employment.
6. Work given to pupils is demanding and matches the aims of the curriculum in being coherently planned and sequenced towards cumulatively sufficient knowledge.
7. Reading is prioritised to allow pupils to access the full curriculum offer.
8. A rigorous and sequential approach to the reading curriculum develops pupils' fluency, confidence and enjoyment in reading:

- At all stages, reading attainment is assessed and gaps are addressed quickly and effectively for all pupils.
  - Reading books connect closely to the phonics knowledge pupils are taught when they are learning to read.
9. The sharp focus on ensuring that younger children gain phonics knowledge and language comprehension necessary to read, and the skills to communicate, gives them the foundations for future learning.
  10. Teachers ensure that their own speaking, listening, writing and reading of English support pupils in developing their language and vocabulary well.

### **IMPACT**

1. Pupils develop detailed knowledge and skills across the curriculum, and as a result achieve well. This is reflected in results from national tests.
2. Pupils are ready for the next stage of education:
  - they have the knowledge and skills they need to go on to destinations that meet their interests and aspirations, and the course of study.
  - those with SEND achieve the best possible outcomes.
3. Pupils' work across the curriculum is of good quality.
4. *Pupils:*
  - *read widely and often, with fluency and comprehension appropriate to their age.*
  - *apply mathematical knowledge, concepts and procedures, appropriately for their age.*

## The Copperfield Way Computing

### **Intent:**

Preparing our pupils for the digital world by unlocking the potential of technology, which is changing the lives of everyone. Through teaching computing, we equip our children to participate in a rapidly changing world where work and leisure activities are increasingly being transformed by technology. It is our intention to enable children to find, explore, analyse, exchange and present information. We focus on developing the skills and knowledge necessary to be able to use information in an effective way. Computing skills are a major factor in enabling children to be confident, creative, and independent learners. It is our intention that children have every opportunity available to allow them to achieve this.

### **Implementation:**

The programme of study for pupils at Copperfield Academy is devised using prior knowledge whilst meeting the national curriculum requirements. We use well planned lessons from The National Centre for Computing Education, National Online Safety and REAch2 Computing Scheme.

At Copperfield our aim is to help pupils effectively communicate, evaluate, and apply information technology, including new or unfamiliar technologies, analytically to solve problems. We want pupils to connect with others responsibly and are competent, confident and creative users of information and communication technology.

In KS1, we are teaching the pupils about the language and concepts associated with computer programming by using Bee Bots, which are simple programmable robots. We also plan to introduce pupils to the program we use for coding but a more simplified version - Scratch Junior. In this program, pupils will be able to make their own backgrounds, move sprites across the screen and add sound.

In KS2, we are developing a widespread use of two computer programs called Scratch and Kodu; these programs enable pupils to develop knowledge, understanding and skills in computer programming. They use a programming language where children can create interactive programs such as stories, games, and animations. As children create with Scratch, they learn to think creatively, work collaboratively and reason systematically.

### **Impact (Anticipated/expected):**

- All children will be confident in their ability to use technology safely and effectively.
- Children will develop new skills of using equipment in an efficient way applying concepts to real world examples.
- An increasing number of children year on year will reach expected and greater depth by the end of each Key Stage.
- The gender gap in Computing attainment will decrease.

The Copperfield Way

Computing- LONG TERM PLAN

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Technology all around us	Mouse skills	Keyboard skills	Data Collectors	Programming Professionals	Digital Divas
EYFS	Editing a photo Technology in the home Digital or not digital Hardware Fine motor skills – drawing an image Input and output E-Safety	Using a separate mouse to create images in paint  Use touch pad to create images in paint	Typing on a laptop keyboard  Typing on an iPad	Gather data together Making a 3d pictogram Make a group pictogram	Bee-Bots basic programming  Bee-Bots mats – directions (up, down, left, right)  Making our own Bee-Bot mats	Taking photos of each other Creating a group photo slideshow
	Introduction to Computing	Internet Explorers	Programming Professionals	Data Collectors	Time Travelers	Digital Creativity
Year 1	E-Safety Typing usernames Keyboard layout Typing practice Mouse skills iPad stylus skills Photo editing  By the end of Autumn 1 – children to have an understanding of keyboard layout and upper and lower case lettering.	What is the internet? What <b>do</b> we use it for? What <b>can</b> we use it for? How do we get it in our homes?	Algorithms Bee-Bots basic programming Bee-Bots mats – directions (up, down, left, right) Making our own Bee-Bot mats Typing up Bee-Bot instructions	Statistic data – linked to class topic  Tables in Microsoft Word to create pictograms  Questions to gather data	How it all started What computing looked like through the ages Focus on gaming – Pong, Snake, Space invaders, Mario, Tetris etc.  Create a game on Scratch using iPads.	Taking photos Editing an image Creating a photo slideshow Adding music



Year 2	<p>E-Safety Typing usernames Keyboard layout Typing practice Mouse skills iPad stylus skills Photo editing</p> <p>By the end of Autumn 1 – children to have an understanding of keyboard layout and upper and lower case lettering.</p>	<p>What is the internet? What <b>do</b> we use it for? What <b>can</b> we use it for? How do we get it in our homes?</p>	<p>Bee-Bots basic programming Bee-Bots mats – directions (up, down, left, right) Making our own Bee-Bot mats Typing up Bee-Bot instructions</p>	<p>Statistic data – linked to class topic</p> <p>Tables in Microsoft Word to create pictograms</p> <p>Questions to gather data</p>	<p>How it all started What computing looked like through the ages Focus on gaming – Pong, Snake, Space invaders, Mario, Tetris etc.</p> <p>Create a game on Scratch using iPads.</p>	<p>Taking photos Editing an image Creating a photo slideshow Adding music</p>
Year 3	<p>E-Safety Logging on and off Editing a word document Creating a fact file Creating PowerPoint x2 Creating a leaflet (Publisher)</p> <p>By the end of Autumn 1 – children to have used all basic Microsoft Software.</p>	<p>What is the internet? What <b>do</b> we use it for? What <b>can</b> we use it for? How do we get it in our homes?</p> <p>URLs WWW</p>	<p>Produce a plan to create a game Try it – Test it – Fix it Use Kudo to create a basic game Create marketing – poster etc</p>	<p>Statistic data – linked to class topic Excel to create basic bar chart Microsoft Forms to create basic quiz</p>	<p>How it all started</p> <p>What computing looked like through the ages Focus on gaming – Pong, Snake, Space invaders, Mario, Tetris etc.</p> <p>What do we think will be in the future.</p> <p>Create a game on Scratch using iPads.</p>	<p>Taking photos Editing an image Creating a photo slideshow Adding music</p> <p>Taking video Editing video Adding music</p>
Year 4	<p>E-Safety Logging on and off Editing a word document Creating a fact file Creating PowerPoint x2 Creating a leaflet (Publisher)</p> <p>By the end of Autumn 1 – children to have used all basic Microsoft Software.</p>	<p>What is the internet? What <b>do</b> we use it for? What <b>can</b> we use it for? How do we get it in our homes?</p> <p>URLs WWW</p>	<p>Produce a plan to create a game Try it – Test it – Fix it Use Kudo to create a basic game Create marketing – poster etc</p>	<p>Statistic data – linked to class topic Excel to create basic bar chart Microsoft Forms to create basic quiz</p>	<p>How it all started</p> <p>What computing looked like through the ages Focus on gaming – Pong, Snake, Space invaders, Mario, Tetris etc.</p> <p>What do we think will be in the future.</p> <p>Create a game on Scratch using on the laptops.</p>	<p>Taking photos Editing an image Creating a photo slideshow Adding music</p> <p>Taking video Editing video Adding music</p>

Year 5	<p>E-Safety Logging on/off and Editing a word document Creating a fact file Creating PowerPoint x2 Creating a leaflet (Publisher) Introduction to touch typing</p> <p>By the end of Autumn 1 – children to have used all basic Microsoft Software.</p>	<p>What is the internet? What <b>do</b> we use it for? What <b>can</b> we use it for? How do we get it in our homes?</p> <p>URLs WWW HTTPS</p> <p>Fair usage Copyright</p>	<p>Produce a plan to create a game Story board Try it – Test it – Fix it Use Kodu to create a game Create marketing – poster etc Discuss other programming languages</p>	<p>Statistic data – linked to class topic Excel to create graphs Microsoft Forms to create quizzes and polls Databases</p>	<p>How it all started What computing looked like through the ages</p> <p>Focus on gaming – Pong, Snake, Space invaders, Mario, Tetris etc.</p> <p>What do we think will be in the future.</p> <p>Create a game on Scratch using on the laptops.</p>	<p>Taking photos Editing an image Creating a photo slideshow Adding music</p> <p>Taking video Editing video Adding intro Adding music</p> <p>Uploading to a separate school owned YouTube channel.</p>
Year 6	<p>E-Safety Logging on/off and Editing a word document Creating a fact file Creating PowerPoint x2 Creating a leaflet (Publisher) Introduction to touch typing</p> <p>By the end of Autumn 1 – children to have used all basic Microsoft Software.</p>	<p>What is the internet? What <b>do</b> we use it for? What <b>can</b> we use it for? How do we get it in our homes?</p> <p>URLs WWW HTTPS</p> <p>Fair usage Copyright</p>	<p>Produce a plan to create a game Story board Try it – Test it – Fix it Use Kudo to create a game Create marketing - poster etc Discuss other programming languages</p>	<p>Statistic data – linked to class topic Excel to create graphs Microsoft Forms to create quizzes and polls Databases</p>	<p>How it all started What computing looked like through the ages</p> <p>Focus on gaming – Pong, Snake, Space invaders, Mario, Tetris etc.</p> <p>What do we think will be in the future.</p> <p>Create a game on Scratch using on the laptops.</p>	<p>Taking photos Editing an image Creating a photo slideshow Adding music</p> <p>Taking video Editing video Adding intro Adding music</p> <p>Uploading to a separate school owned YouTube channel.</p>

## KEY ASSESSMENT CRITERIA

### KS1

To understand what an algorithm and create simple programmes using logical reasoning and predictions to debug the program is and how this can be used to programme items in order to complete precise instructions. **To use technological devices to manage, organise and present digital content.** Begin to recognise the uses of technology in the wider world beyond the school environment. To safely and respectfully understand content which is available on the internet and how to keep information personal or private.

### KS2

To design and write programmes with a desired output. Using knowledge of debugging to break the steps to solutions smaller. Understand how a sequence of instructions will be impacted by the variables given in the forms of input and outputs. To be able to understand computer networks such as the internet and how they can be used to provide a service. **Use and combine a variety of software on a range of devices to design and create programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.** To use the technology whilst recognising acceptable and unacceptable behaviour safely, respectfully and responsibly. Knowing how, where and who to report concerns about content and contact which has been made.

## VOCABULARY PROGRESSION

### Computing

#### EYFS:

computer, control, electronic, game, home, instruction, keyboard, mouse, remote, screen, smartphone, tablet, technology, enter, information, internet, link, online, password, search, select, username

#### Year 1:

aim, algorithm, app, command, debug, device, fix, function, instruction, objective, problem, program, programming, sequence, solution, solve, step, symbol, task, test, access, collate, content, copy, data, delete, edit, file, folder, hyperlink, paste, recover, retrieve, save

#### Year 2:

animation, code, detect, error, hardware, logic, logical, pixel, precise, reason, rules, sequential, software, specific, sprite blog, browser, email, hardware, media, medium, publishing, slideshow, software, spreadsheet, video conference, window, word processor

#### Year 3:

block language, computational thinking, controlled, expected, impact, input, interaction, outcome, output, pattern, random, reasoned, repeat, result user, variable, autocomplete, chart, data, html - hypertext markup language, http - hypertext transfer protocol index Internet service provider (ITP) IP address, network

#### Year 4:

conditional, decibel, dependent, GPS - global positioning system, independent, light, motion, prioritise, priority, proximity, repetition, selection, sensor simulate, collaboration, collect, communication, filters, global, web server, wide area network (WAN) Local area network (LAN)

#### Year 5:

decomposition, server, accuracy, analyse, assumption, sheets, field, file, transfer, protocol, reliability

#### Year 6:

generalisations, response, bias, components, evaluate, interrelated, optimise, protocol, system, usage

## OVERVIEW OF SUBJECT/MONITORING/PROGRESSION/COVERAGE AND OUTCOMES

- Has the school made the objectives of their curriculum clear for your subject?
- Does the school's curriculum for your subject align with national policy and statutory requirements?
- How do you know your curriculum is working? Can you demonstrate how you know?
- Why is the curriculum right for the children in your school at this time?
- What are the strengths of your current subject curriculum?
- What are the areas of the curriculum that might need development?
- How effectively are curriculum policies and plans translated into practice?
- Is the same importance given to all foundation subjects?
- How is the curriculum delivered across each year group and across key stages, ensuring progress in skills, knowledge and understanding from different starting points?
- How is progress and attainment measured?
- How are pupils given opportunities to apply basic skills in your subject?
- Where is the evidence of pupils' SMSC development?
- What is the impact of the curriculum in your subject on the pupils' outcomes?

