



Highcliffe St Mark Primary School

Computing Curriculum Overview



Subject Rationale — A high-quality computing education equips pupils to use computational thinking and engages and inspires them to use their creativity and work collaboratively through project-based tasks to understand and change the world. Through applying their knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content.

Topic Knowledge

EYFS curriculum

Show curiosity about the world around them.

Share own knowledge and ask question of other to find out more.

KS1 National Curriculum—Programme of Study

Computing has deep links with mathematics, science and design and technology. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work and how to put this knowledge to use through programming. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop.

KS2 National Curriculum—Programme of Study

To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. To use sequence, selection, and repetition in programs; work with variables and various forms of input and output. To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. To understand computer networks including the internet.

Skills Progression

EYFS

By the end of EYFS the children will have been introduced to a variety of different electronics. The children will have some directional language and they will have some understanding of a step by step sequence.

KS1 By the end of KS1, children will have explored how beebots work and they would have created their own algorithm using left, right, forwards, backwards signs/signals. They children would have further improved their skills on how to use different apps on an Ipad and they would have completed different projects. Through these projects, the children will have deepen their knowledge of computing by applying it to solve problems and create content.

KS2

Pupils are taught to: 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, understand computer networks including the internet.

The Curriculum Sequence

EYFS

Understanding the world— variety of electronic toys, role play with phones, cameras. Literacy—beebots, children can create their own stories about where the beebot is going. Communication Language — verbal step by step guide on how to make a sandwich. Mathematics— directional language

KS1

- Use technology safely, respectfully and understand the importance of keeping personal information safe.
- Understand what algorithms are.
- Create and de-bug simple programmes.
- Use technology purposefully to create, organise and retrieve digital content.

KS2

Year 3: Making 360 degree images (AR/VR), story graphs (data handling), digital comic (presentations), voiceovers (video creation), podcasting (sound), animation (programming), historical scenes (programming), network explorer (computer networks).

Year 4: Digital posters (presentations), movie soundtrack (sound), online questionnaire (data handling), dynamic video (video creation), AR Museum (AR/VR), games controller (programming), robot orchestra (programming) and understanding the internet (computer networks).

Year 5: Interactive poster (AR/VR), 4 Chord Remix (sound), character interview (animation), news report (video creation), google sheets (data handling), platform game (programming), quiz (programming) and search engines (computer networks).

Year 6: Interactive VR (AR/VR), app prototype (presentations), 3D animation (animation), greenscreen special effects (video creation), interactive AR scene (AR/VR), 3D lettering (programming), video game (programming), HTML

Central Substantive Concepts

Beauty, care, change, choice, creativity, equality, friendship, free will, identity, individuality, integration, media, pride, resilience, responsibility, transformation, trust, value, well-being, wisdom.

Assessment

Upon completing their desired outcome, pupils are given the opportunity to reflect and consider how effectively they have achieved their goal. Their learning will be stored on an iPad assigned to the children, who will work in pairs. This allows the teacher to assess during the evaluation stage, but also look back at the children's projects and discuss their learning with them. Teachers will be able to observe the application of each child throughout.

SEND

Applications which are used in line with the D.A.R.E.S curriculum are designed for a wide range of learning needs and abilities. Examples of plans and projects, as well as videos are available for supporting pupils.

Links Across the Curriculum

Projects relate to topics learnt in each year group, as well as use of technology to support learning in all subjects.

Subject Leader: George Fullerton (KS2) and Laura Simmons (KS1)



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Experiencing Computing

Subject Enhancements

How do children experience computing in different contexts e.g. real life, trips, visits, their immediate environment

Resources and Texts

What are the key resources that the children will encounter and explore throughout their time in our school?

Key Vocabulary

EYFS

The children will access computing through continuous provision and role play.

EYFS

- Beebots
- Role play: keyboard, microphone, camera, electronic toys

EYFS

Beebot, move, create, story, keyboard, microphone, electronic.

KS1

The children will have the opportunity to take part in the yearly e-safety day.

E-safety talks carried out by a member of the police force.

KS1

- BeeBots
- Ipads
- Applications (software for netbooks/iPads)

KS1

E-safety, software, iPad, code, internet, Image, edit, create, algorithm, sequence, order, bug, fix, precise, Digital, program, follow, code, bugs, fix, order, ScratchJ, search, select, rearrange, title, text, pause, undo, zoom, pan, highlight, Upload, cut out, pinch, resize, drag, record, stop, save, export, character, draw, record, playback, filter, stickers, animation, surroundings, objects, interact, photography, video, camera roll, play, microphone, server, client, LAN (Local Area Network), switch, camera, timeline.

KS2

The D.A.R.E.S computing curriculum prepares children to engage with real life situations through each project. The array of skills taught for each unit will allow children to interact with technology in a skilled, safe manner, allowing them to thrive in a modern civilisation where e-literacy is becoming essential.

The children will be able to visit museums which teach them more about technology over the course of history and its significance to humankind, especially in the past decade. Art galleries are becoming more interactive nowadays; some exhibitions feature interactive, technology-based pieces of art, which the children will be able to experience with intrigue and confidence.

KS2

- Netbooks
- iPads
- Applications (software for netbooks/iPads)

KS2

Year 3: touch type, edit, format, size, borders, shadows, duplicate, organise, undo, redo, autocorrect, table, column, row, cell, spreadsheet, graph, media, interactive, audio, annotate, background, prototype, web page, timeline, frame, framerate, layout, trim, sequence, trailer, close up, action shot, manipulate, transparent, PNG, field of view, holograms, virtual reality, explore, input, output, cyberbullying, accurate, belief, engaged, restrictions, data, copyright, digital footprint.

Year 4: group, crop, source, object, posters, documents eBooks, scripts, leaflets, spell check, record, animation, design template, multimedia, export, hyperlinks, 3D, exposure, dynamic, media, subtitles, overlay, playback, adjust, pan, tilt, brightness, contrast, resize, digital shapes, focus, recognition, panoramic, podcast, clipping, crossfade, fade, gain, logical reasoning, selection, repeat, loop, condition, internet, router, data, web page.

Year 5: import, export, hyperlinks, animate, arrange, formula, autosum, autofill, value, blog, collaboration, slide show, transition, embed, publish, explorer, split screen, cutaway, montage, fade, Photoshop, landscape, portrait, channel, feedback, chorus, compose, evaluation, effectiveness, data, prediction, data, memory, control, simulate, index, ranking algorithm.

Year 6: alignment, application, tabs, toolbar, layout, PDF, columns, graphics, range, placeholder, dropdown, navigation, homepage, footer, sidebar, HTML, staging, aspect ration, computer generated imagery (CGI), angles, overlay, cut scene, exposure, ARKit, ARCore, reverb, pattern.