Christ Church School, Hampstead
A village school in London inspiring ***life in all its fullness***

Curriculum report to Governors
Computing
October 2022
Subject leader: David Polidano

Intent

Computing supports our school vision of inspiring *life in all its fullness* through its contribution to our provision of the widest possible breadth of curriculum, equipping our children to use computational thinking and creativity to further understand and contribute to the wider world. We believe that computing, and computational thinking, are an integral part of all learning.

Our intent and aims for computing are that all children will be able to develop a range of skills, knowledge and understanding that will equip them for the rest of their lives. We are aware that each child's starting point is very different, so our computing curriculum is designed with high expectations and to develop skills sequentially in all of our children, drawing on and extending their prior knowledge in the subject. Our breadth of provision is also designed to allow children to discover and develop new talents in the area and to make links with other areas of learning. We offer a range of enrichment activities, both within our school setting and outside the classroom.

With computer science at the heart of our computing curriculum, we aim to teach children the principles of information and computation, how a range of digital systems work and operate, and how to put this knowledge into practice through programming, as stated in the National Curriculum. Our children will be able to use technology efficiently and access the online world safely, respectfully and responsibly – skills that are compatible with other aspects of their lives and learning. The skills learnt in computing are transferable to a range of different subjects, as well as later in life for the future workplace. Our aim is that our children will become digitally literate contributors and active participants in a digital world.

Implementation

- Taught by class teachers, with support from part-time specialist teacher.
- Class teachers are given ongoing support by the Computing subject leader and specialist teacher, who have also provided CPD to class teachers.
- Ongoing assessment by class teachers, with end of year assessments against key statements reported to parents in annual reports.
- Enrichment in the subject is offered through after school clubs such as Code Club and Tech Club, and yearly trips to the City Learning Centre in Camden.
- Computing, and Digital Literacy in particular, is often linked to other areas of the curriculum – publishing work on the computer, graphs created in different programs, researching information for different topics.
- School has a good supply of computing resources for different needs and is able to borrow equipment from the CLC if needed.
- Wifi throughout the school allows children to use the class sets of Chromebooks and/or iPads throughout the school building
- Licences and subscriptions have been purchased for various programs, websites and organisations to help facilitate learning and the use of technology, e.g. RodoCodo, PurpleMash.
- Our progression in the teaching of coding skills is guided by our use of the Rodocodo children's coding program. The development of coding skills in Years 1 -6 begins with lessons focused on the appropriate levels and coding elements taught within Rodocodo.
- Children are expected to transfer the skills learnt in Rodocodo to other software and platforms, including those using different coding formats or languages. Teachers select and introduce a range of programs and platforms where children can practise and consolidate their coding learning (e.g. J2code, Scratch, Purple Mash coding, Unplugged activities), including by transferring their coding knowledge to specific tasks (e.g. creating a maths game, animating a fairy tale). This is linked to our termly lessons expectations as set out in the *Coding Overview* document.
- Within a range of digital literacy activities across the curriculum, all children are given the opportunity to develop the specific IT skills as set out in our skills progression. Children may have varying access to and experience of technology outside school and some children may need specific or additional teaching or support to build confidence in these key skills.
- Teachers give ongoing, age-appropriate reminders about safe and responsible use of technology before and during all computing and online activities.

- Each year, teaching about online safety and digital citizenship, as set out in our skills progression document, is also taught in all classes in a specific whole-school theme day or week. These are also given in regular reminders before and during computing lessons, or whenever children are using technology.

Impact

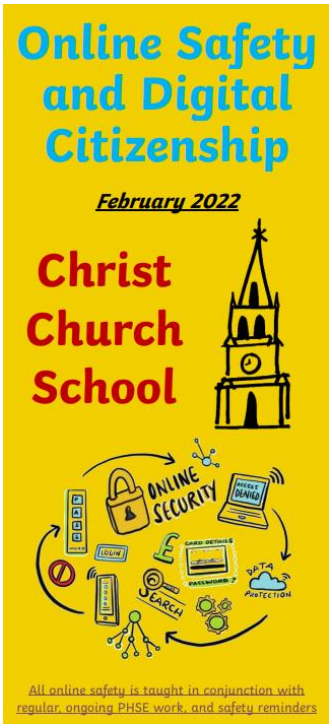
- Children enjoy taking part in computing lessons.
- All children develop their skills using a range of programs and devices. These skills are built cumulatively over children's time at Christ Church and build upon previous learning in a planned sequence.
- Children have a very good knowledge of coding and are able to transfer this to different platforms (e.g. Scratch, RodoCodo, J2Code, PurpleMash) and to other curriculum areas, (e.g. problem solving to create a night light using crumble coding in DT)
- Children have the opportunity to use computers and technology across the curriculum and produce digital work of a high standard.
- Children use relevant computing vocabulary and can discuss the meaning of these words

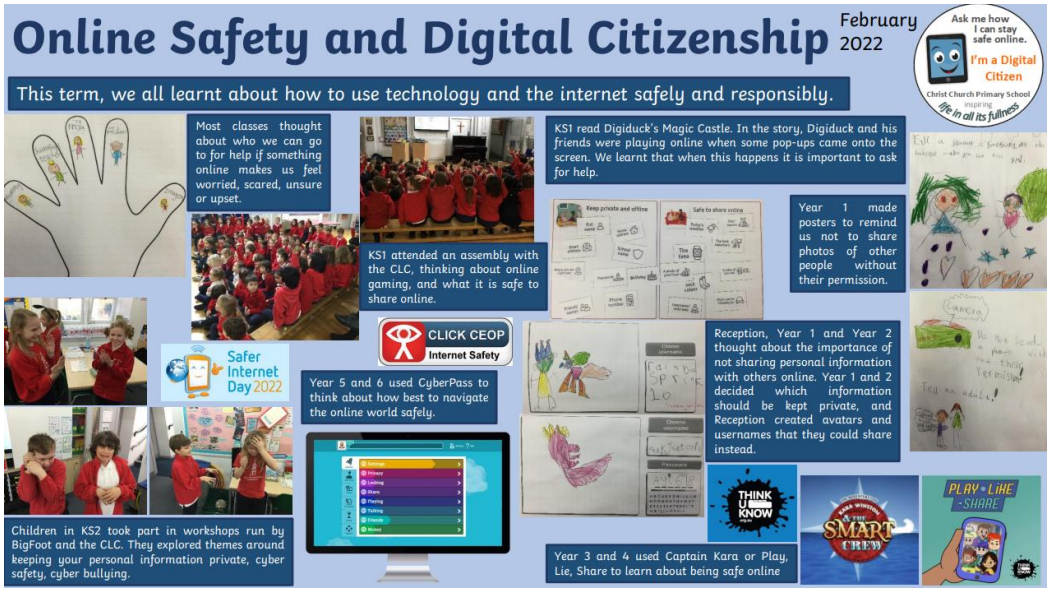
Whole school standards (three-year trend)

Last year's key developments and successes in 2020/21:

- New termly coding expectations set out with planning and lessons stipulated to teachers (as seen in *Coding Overview* document). (21/22 target achieved – to be refined further in 22/23 in light of latest research)
- Continued annual visits to CLC (Spring term) and started a coding club for KS2 children as enrichment in the subject (21/22 target achieved – enrichment has exceeded pre-covid levels)

- Training for class teachers in Scratch to continue building staff confidence in teaching coding (21/22 target achieved)
- Annual Digital Citizenship/Online Safety day (additional successful development – back to pre-covid levels and links to PSHE curriculum) https://christchurchschool.co.uk/wp-content/uploads/2022/03/Digital-citizenship-leaflet-2022.pdf





Our approach to assessment in Computing

Within a lesson, teachers assess children's needs and successes and are able to adapt the level at which they model and provide support to the class. Children who are identified as needing additional support can receive this within lessons from teachers and additional adults. Each lesson comes with supplied plans that have objectives and assessment opportunities that teachers can use. Children who are exceeding in the subject will receive less teacher modelling, and be encouraged to work through tasks more independently. They may also be directed to other websites, such as *hourofcode,* where they can apply learning in different contexts.

At the end of a unit of work, teachers use summative assessment against key learning points (found within planning) and skills statements found in both our *Skills Progression* document and our end of year reports.

Key targets and actions moving forward (development priorities for 2022/23):

Target and *intended outcome*	Planned actions (including dates where applicable)
1. Refine teaching of coding by following updated *Coding Overview* document and continuing to improve staff confidence in light of research in recent Ofsted review. *All children to have experience of coding using a range of programs/platforms over the academic year.*	Staff meeting with all class teachers and specialist teacher to explain *Coding Overview* document. Ongoing staff training and support from specialist computing teacher and subject leader. Open this training to support staff as well as teaching staff.
2. Refine assessment of coding to ensure there is consistency across the school. *Effective and consistent summative and formative assessment tools for staff to use to assess against key learning.*	Consider existing resources in the range of platforms used to use for assessment purposes. Review with teachers the assessment opportunities highlighted in planning and share best practice in the use of these. Use this data to help inform end of year assessment decisions.
3. Continue building on Computing enrichment with visits to the CLC, other workshops and after school clubs. *All children to receive enrichment opportunities to build on computing skills and enjoyment in the subject.*	CLC visits to target aspects of the curriculum that are more difficult to cover at school due to equipment/expertise. Speak to KS2 children to see if they would like Code Club to start in Spring term again. Possible re-introduction of Tech Club and Typing Club in Spring/Summer term.
4. Audit of technology in the school	Assessment of devices to see if any need updating – possible fundraising.

Technology in school is fit for purpose, up-to-date and well used for computing and across the curriculum.	Working with specialist teacher and office staff to audit all devices in the school.

Ofsted curriculum research review – summary and response/reflection

The Ofsted curriculum research review for Computing (June 2021) reviews a wide range of relevant educational research into both primary and secondary computing teaching and identifies factors which may contribute to high-quality computing education.

Summarised information about features of high quality computing education identified in the review	Our response – how does this align with our teaching and learning at Christ Church
The planned curriculum includes a breadth of knowledge relating to the three pillars - **computer science**	At Christ Church, we have clearly defined and given importance to all three pillars, as well as showing how each is able to be taught in relation to each other. Each term, children are taught lessons relating to computer science, using different programming platforms to apply this knowledge following our planned curriculum progression.
The planned curriculum includes a breadth of knowledge relating to the three pillars – **information technology**	Classes will produce digital artefacts and use technology in different contexts, building on prior learning for tasks across the curriculum. E.g. children may be taught how to change font sizes in one sessions, and then may be required to do this when typing a presentation in a different sequence of lessons, using a different application and in a different subject area. They may also use technology to research or use digital mapping prior to going on a school trip.
The planned curriculum includes a breadth of knowledge relating to the three pillars – **digital literacy**	Our curriculum is carefully sequenced, building on what the children have already learnt. Each time children use devices, they are reminded of digital literacy and the importance of esafety, we also focus heavily on this each year during our PSHE week on keeping safe in the Spring term.
Declarative (conceptual, 'knowing that') and **Procedural** (methods or process, 'knowing how') knowledge are distinguished in the review	Our approach to teaching computing clearly distinguishes between these. For example, in coding, children *know that* loops are used to make code for a repeated task more efficient and they *know how* to create a loop in a range of programs.
Curriculum sequencing and Pedagogy – need for structured approach to progression, and building on prior knowledge with the aid of worked examples and modelling.	Our curriculum uses a spiral curriculum model. Children are always building on their prior knowledge, things they have learnt in previous year groups, enabling them to develop expertise in the subject. Teachers clearly model and use worked examples to help children to progress and problem solve.
Systems – teacher subject knowledge and infrastructure: need for teachers to have high quality CPD and using expertise of computing community	Through our use of both a computing teaching expert and the Camden computing leads network, teachers at Christ Church are able to receive high quality CPD to help them with subject knowledge. We are able to both visit the CLC and borrow equipment from them to assist us with teaching the computing curriculum and providing enrichment.

City Learning Centre trips

Reception using technology: https://christchurchschool.co.uk/wp-content/uploads/2022/04/Reception-CLC-trip-April-2022.pdf

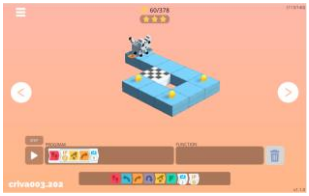
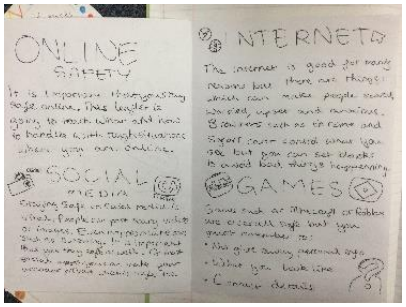
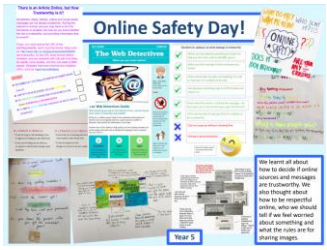
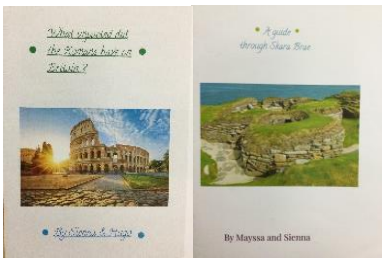
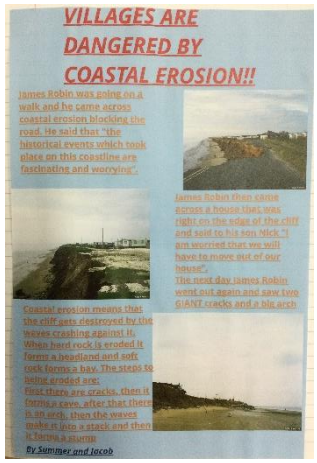
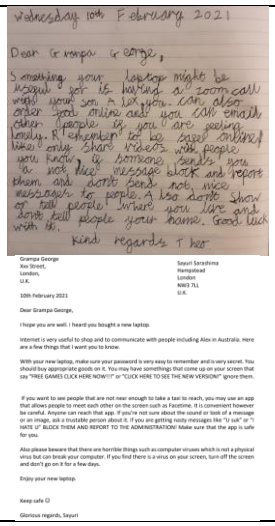
Year 2 Blue bots: https://christchurchschool.co.uk/wp-content/uploads/2022/05/Y2-CLC-trip-May-2022.pdf

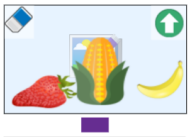
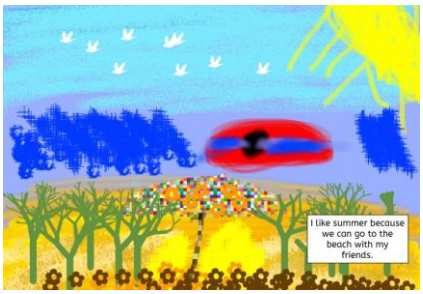
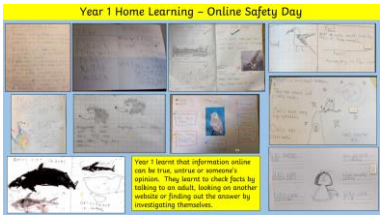
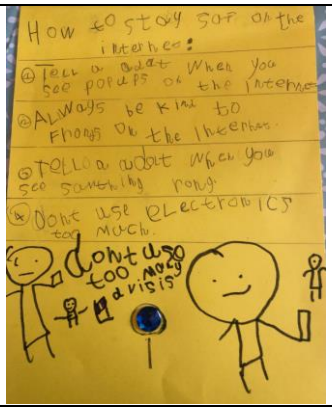
Year 3 Lego model coding: https://christchurchschool.co.uk/wp-content/uploads/2022/03/Year-3-CLC-trip-March-2022.pdf

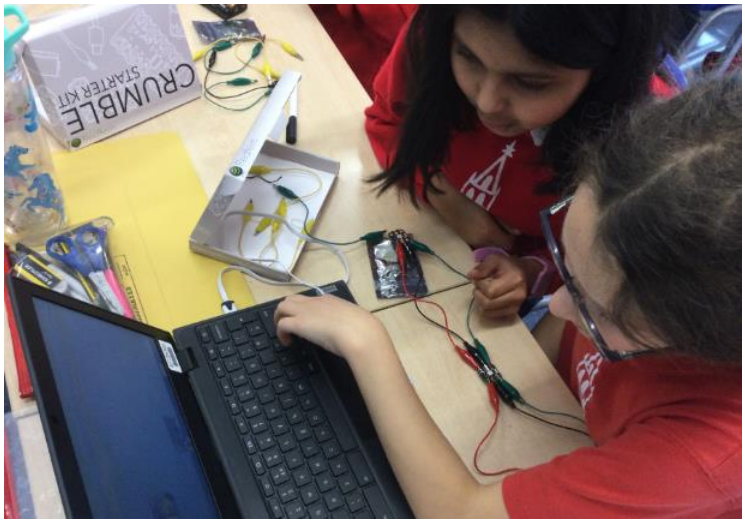
Year 4 Virtual reality and book creator: https://christchurchschool.co.uk/wp-content/uploads/2022/03/Year-4-CLC-trip-March-2022.pdf

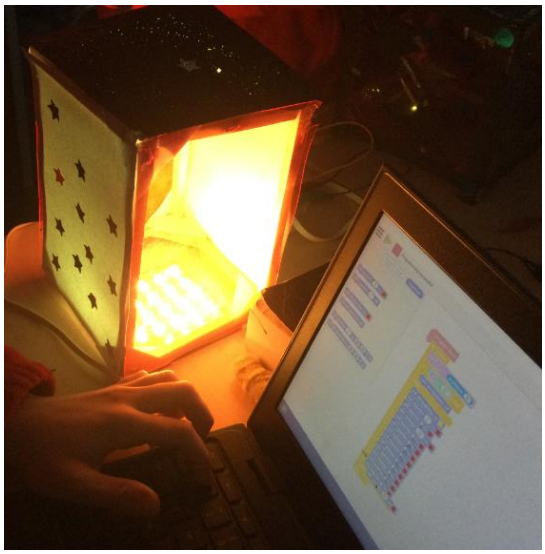
Year 5 Creating games: https://christchurchschool.co.uk/wp-content/uploads/2022/05/Y5-Programming-games-at-the-CLC-May-2022.pdf

Work sampling across three strands of Computing

	RodoCodo Progression (one platform used for our coding progression)	Digital Literacy	Online Safety
Year 6	Year 6 – If statements 		
Year 5	Year 5 – Trickier patterns 		
Year 4	Year 4 – Practising functions 		
Year 3	Year 3 – debugging buggy code 		

Year 2	Year 2 – looping movement 	CHRIST CHURCH NEWS by ArbellaTO STOP FOOD POVETY year 2  year 2 children at christ church primary school in Hamsted have been learning about food poverty crsis affecting children in London. About 400,000 childrenin London experience hunger because of food poverty.More children need to eat healthy food not fast food because to much fast food causes obesity. Many children in the UK get hot school meals but during the weekends, Holidays and when they're not at school they can't affordhot meals and this is known as Hunger Holidays.year 2 have collected food to donate to local food banks.They have written letters to Tulip Sidddiq and have talked to their Parents about this situation. you ca n help to you can or food to food charities,write leters to your local mps and tell other people about the issue. No child should ever go hungry inthe UK.	
Year 1	Year 1 - sequences 		
Reception	BeeBots – Directions 	*Can you finish the sentence?* My favourite part of Goldilocks is when the three bers cam home. 	





<u>Year 6 night lights</u> – using crumble coding in DT to code nightlight and sensors

Pupil voice

Pupil voice discussions in the last year have demonstrated that:

Children could talk about what they had been learning about recently and clarify skills they had learnt with confidence:

Year 5 – we have just started Purple Mash coding – we were coding a traffic light. In Rodocodo we were trying to make our coding more efficient to get three stars and to make it quicker using e.g. a loop.
Year 4 – we have been doing coding using Purple Mash – making things move around. We have making animations – making sprites talk and move.
Year 3 – We have been doing Purple Mash coding – Last time we were trying to make a turtle move in a square.
Year 2- We were making the princess move to the right and then making the frog turn into prince using code.
Year 1 – We have been using Purple Mash games to learn number bonds. We are using chrome books and learning how to log in & use the mouse. - We have been using beebots and learning how to control them.

Children could explain specific terminology in detail:

"I can see you have been using RodoCodo. What is a function and loop?"

Y2 – a function could be if you walk forward two times and then pick up a coin, the function does it all in one go
Y4 – a loop is when you do something over and over more than once – e.g. move forward or turn right. Then it does it over and over
Y5 – Functions are things to help you make your code more efficient
Y6 – you have to make a function to do something in your code, a set of instructions. A loop is where you do something again and again

Children were able to explain why it is important to be an efficient coder and why computing skills are important:

It is important to be an efficient coder so that you can use a computer properly. To make everything quicker and easier. Important skills you need to be a good coder are to use the keyboard / mouse quickly. You need to learn about algorithms, you need to know how to debug which means if the code was not working / didn't go the way you wanted to go you need to look back on your code and fix it. You need to know what certain words mean: loops, events, functions. We might need them for work. It's good to learn about it because you need to know what to do when you are older. Even if you don't have a computer job they are life skills

Children could talk about how prior learning – previous lessons or even years – has helped with their computing learning now:

"How does your learning in Computing at the moment fit with your learning in Computing last year? How does your learning in Computing last year help you with your learning now?"

Y2 – last year we learnt simple things and this year it is more difficult like functions
Y5 – we are doing similar things in Rodocodo that we did last year, but we are levelling it up (making it more difficult). It slowly builds up to get harder
Y6 – it's similar to what we did in y5 but it is getting much more difficult

Children could talk about what helped them to remember what they had learnt in computing:

"How are you helped to remember what you learn in Computing?"

Y2 – the adult helps us
Y3 – when we finish our work, we have to save it so we can look at it again
Y4 – we do something again and again.
Y5 – we recap what we did in the last lesson.

Additional comments during discussions:

"How have you used computing in other subject areas?"

Y2 – we looked at maps on the iPad in geography
Y4 - we research things for other subjects, like geography, and put this in our books
Y5 - we have been researching during other lessons

Y6 - in English, we will be using the Chromebook to remake our Alex Ryder posters digitally. Computing is really fun because you get to discover and learn new things

"What can you tell me about online safety?"

Y2 – if we get our iPad and there is something wrong, we don't press it. We tell a teacher. At home it's similar. You tell your parents
Y3 – if there is a pop up we have to tell a teacher
Y4 - for online safety, there might be a poster that has rules about being safe online - SMART. If there is something like YouTube and there is something rude, we should turn it off and tell an adult.

What makes our curriculum provision for Computing exceptional and beyond the expected?

- ❖ Computing enrichment opportunities at the CLC
- ❖ Use of coding skills in other curriculum areas – e.g. Y6 crumble coding for DT
- ❖ The skilled support and training provided by our specialist computing teacher is beyond the expected
- ❖ Student confidence using devices appropriately is exceptional
- ❖ Children can confidently discuss how what they have learnt in the past is able to help them now, with different programs

Key points for discussion with governors about this report

- Sharing *Skills Progression* and *Coding Overview* – reviewing with governors how this all fits together and builds year on year
- Enrichment back to pre-covid levels and above
- Importance of online safety work – within computing and across curriculum, as well as school day/routines
- Three strands – Coding (computer science), Information Technology (Digital Literacy), and Online Safety (Digital Citizenship)