

## **Computing at Old Park (inc. Online Safety)**

### **Why Do We Teach Computing?**

We believe that digital literacy is a vitally important part of everyday life. A huge variety of tasks in both personal and professional life now rely on being able to work effectively with technology to communicate, collaborate and create. This is a requirement that is only going to increase as our children continue on their journey through higher education and into the world of work. We see it as our mission to develop the skills necessary to prepare our children for society and future job roles that are yet to have even been imagined and in doing so offering our pupils a real opportunity to better their life chances.

To this end, we aim to deliver a curriculum that both closely matches and goes beyond the requirements of the 2014 National Curriculum. Our aim is to ensure that children leave us able to:

- Use technology to work collaboratively with others
- Create and curate a variety of digital content using different devices and different media
- Follow, debug and create simple algorithms using different programming languages including the use of different physical devices
- Use technology to store, manipulate and query data and understand key concepts behind this
- Understand key concepts behind how computers work
- Understand the risks around using technology and the concrete steps they can take to protect themselves from these.

As KCSIE 2021 makes clear, online safety is also a major issue for children and young adults. A failure to understand the dangers posed by unsafe or inappropriate use of technology poses a real risk of exposing individuals to real world harm. This is an issue that has been made more pertinent as more of life has shifted online during the pandemic. For our pupils, it will also become more important as they age, particularly with regards to their usage of social media.

We believe that Online Safety deserves a high priority within the curriculum and across the school. Broadly based on 'Education for a Connected World', our bespoke and stand alone Online Safety curriculum aims to prepare our pupils not just for the challenges and dangers that they may face now, but also to prepare them for those of the future. The online safety elements within the Computing and RHE curriculum continue to revisit and build on these skills. Additionally, we believe that online safety is the responsibility of all stakeholders in the school community including parents and we regularly seek ways to share information and upskill others in this regard.

### **How Do We Teach Computing?**

From September 2021, we have begun the 'Teach Computing' curriculum as laid out by the National Centre for Computing Excellence, following a successful small scale trial. This curriculum promotes some pedagogical principles which we believe will lead to excellence within the curriculum.

These principles are as follows:

- Lead with concepts so that children develop their understanding of key concepts, terms and vocabulary.
- Unpack complex ideas by exploring them first in 'unplugged' (i.e. offline and familiar) contexts.
- Use project based learning to allow for opportunities for applying and consolidating knowledge.
- Challenge misconceptions through the use of questioning and retrieval strategies.
- Structure learning around the use-modify-create framework to scaffold learning.
- Encourage collaboration with peers.
- Model processes through relevant and meaningful examples.
- Add variety to tasks, moving from highly structured to exploratory.
- Make abstract concepts concrete with real-world, contextual examples, making links to other areas of life and curriculum.
- Focus on code reading and understanding before creation.
- Explore computing through a variety of devices and settings.

Computing is delivered as a discrete subject although, where possible, staff are encouraged to link learning to other areas of the curriculum to give tasks additional impetus and provide a context.

Computing is delivered weekly so that knowledge of skills can consistently be revisited and reinforced. There are 6 units half termly units (each containing 6 lessons) delivered in each year group. Programming and creating media are given additional curriculum time to reflect their weighting within the National Curriculum. The overarching theme of these units is repeated in each year group and is as follows:

- Understanding computer systems and networks
- Creating media (x2)
- Programming (x2)
- Data and information

The order in which these units are taught allows for progression within year groups. For example, the initial programming unit taught in Spring term introduces core concepts for that year group and will focus more heavily on reading and modifying existing code whereas the second programming unit delivered in Summer takes these skills further and adds additional expectations in terms of code creation. The order in which these units are to be delivered is laid out in a separate document which has been shared with staff.

The repetition of the unit theme across year groups allows for progression as children move through the school in two ways. Firstly, revisiting topics such as coding and computer systems allows knowledge to be drip fed and built upon incrementally. To give an example from the 'Computer systems and networks' theme, in Yr1 children learn the names and functions of core input and output devices and practise using these. In Yr3, input and output devices are revisited with the increased expectation that children can begin to explain and model how they function. Secondly, the repetition of units allows for the curriculum to be broadened, particularly when it comes to content curation. Over the course of both key stages, the curriculum supports children to build skills within a wider variety of digital media than would be possible without this structure.

Carefully considered coverage documents clearly lay out how and where the curriculum covers the requirements of the 2014 national curriculum and show where progression is made across year groups and key stages with reference to national curriculum targets. They also show which skills are being taught and developed on a lesson by lesson and unit by unit basis. This means that as a school we can be confident that the curriculum that we are delivering meets the needs of the national curriculum and our children.

The inclusion of oral retrieval practise at the beginning of lessons helps to ensure that learning from previous lessons is retained and also helps to highlight to staff and children what the key learning from each lesson is. Opportunities for including retrieval practise at intervals greater than this will be explored once the curriculum is fully embedded.

We have ensured that the curriculum is well resourced and that the children have access to a range of devices and technology. These include a range of toys to support early coding skills in EYFS and Yr1, desktop computers, laptops and chromebooks, iPads and physical computing devices such as micro:bits and crumbles. Selecting the appropriate device to support the learning taking place is important and using such a wide range of devices allows us to develop pupils skills with a range of inputs, outputs and operating systems. Pupils will also use a range of software to support their learning. This software has been selected to offer the correct level of scaffolding for each year group. For example, within coding pupils move from using simple devices like bee-bots to Scratch Jnr within KS1. In KS2, this develops into using Scratch and then closely related languages such as that used by the micro:bit and crumble. Finally, children move on to using scaffolded versions of real-world languages such as python. Again, the devices and software that each year group uses has been carefully mapped out to ensure that they are appropriate, provide a variety of experience and allow for a progression of skills. Details of this are included within unit plans.

Staff are offered regular training and support which takes into account the areas of the curriculum that they feel less confident with. This support takes the form of structured development groups, 1:1 support with lesson planning and delivery and quick refreshers on how to use a particular program or device. Recently, much of this support has been focussed on preparing for the implementation of the new Teach Computing curriculum including how to use new devices and software. All teaching staff have also had additional training on the coding aspects of the curriculum. This has helped to ensure that our staff are confident when delivering what can be tricky concepts and are able to support children effectively in developing the key skills that the curriculum requires.

Online Safety is delivered throughout the year as part of the main Computing curriculum and RHE curriculum where appropriate. Our Computing curriculum maps out where it links to 'Education in a Connected World' and our RHE curriculum maps out where it covers the requirements of KCSIE. We have gone above and beyond this as a school by delivering a discrete stand alone Online Safety curriculum on top of this.

The curriculum has been created in house with the needs of our children in mind and it's content is revisited regularly to ensure that it remains relevant, useful and complies with national safeguarding requirements.

The curriculum is delivered in a 6 week block unit, 1 lesson per week. Each year group will cover the same 6 themes. These lessons are progressive from year group to year group to ensure that content is age appropriate and that information about risks and how to deal with these is introduced in a timely manner. These themes are:

- Personal information
- Communicating
- Cyberbullying
- Gaming
- Grooming
- Trustworthiness of information

These themes were arrived at after examining recommended schemes of work and following consultation with pupils and parents about which areas they had the most concerns about and would like support with.

We also continually engage with the wider school community over online safety issues through partnerships with agencies such as Safety Net. We provide training sessions and information for parents on online safety issues and will also tackle any issues that we are made aware of. We participate in Safer Internet Week each year to help keep the profile of online safety high across school. We will also be restarting our Digital leaders programming following a break over the pandemic. This will consist of a group of children from KS2 who will be responsible for sharing online safety messages and information across the school through assemblies, website updates and activities within school.

### **Does Our MFL Curriculum Influence Our Children?**

Our ambition is that the Computing curriculum we deliver will equip our pupils with the digital skills that they will need to succeed in higher education and the world of work. It is also our ambition that our Computing and Online Safety curriculum will give our students the tools that they need to navigate the digital world safely and not engage in activities that may endanger themselves, others or their future job prospects.

We use a range of strategies to assess the impact and effectiveness of our computing curriculum. One difficulty that faces Computing is that work is often unsaved or saved in individual user areas. This makes it difficult for teachers to assess progress and subject leaders to gain an overall understanding of the progress within the curriculum. To overcome this, evidence is collected in a variety of ways. In KS1, children have physical books that written tasks are completed in and in KS2 these tasks are completed and saved within a year group google classroom. This means that teachers can view and judge work within the lesson and also return to it at a later date to aid in making summative assessments. Skills based work is photographed or filmed and uploaded to a single document for each year group. When working in Scratch, each year group has a dedicated login so that work can be saved centrally for review at a later date.

Formative assessment judgements are made regularly by teachers and planning adapted and changed because of this. This may happen within a lesson as misconceptions are noticed or it may happen in time for the next lesson. Overall progress in computing is assessed at the yearly end point and pupils are awarded a grade of Working Towards, Secure or Greater Depth. Most units include an assessment document which sets out the skills and knowledge that children who are working at the expected standard should be able to demonstrate. Teachers are expected to access and review these in order to support them in making an overall judgement about progress. The subject lead is also available to support teachers in making judgements about progress.

Computing is included as part of the monitoring cycle so that we can be confident that the curriculum is being delivered well and offer support to year groups where it is not. Books and other evidence are monitored on a termly basis by the subject lead and outcomes are fed back to staff. Lesson observations also form part of this monitoring. When undertaken, strengths and next steps are fed back to staff and support is offered where needed. Staff are also consulted on their views on the curriculum in terms of what is working well and what needs further development or changes. This is particularly important over 2021-22 as we transition to the new curriculum. Outcomes from all these activities inform the SIP and next steps for the subject. Recent feedback has shown that staff agree that the new curriculum is easy to follow, is more effective at increasing the children's understanding of computing concepts and is engaging for most pupils. Staff have also been proactive in identifying areas where improvements could be made within the units already delivered.

Recent monitoring has shown that the quality of delivery across the school is good. Teachers are delivering the curriculum as planned and most children are able to talk about their learning well. Key terminology is being embedded and verbal retrieval practice is taking place embed knowledge. A real strength of all the lessons observed were the links being made to real life uses and skills by both teachers and pupils. It also showed that we need to do further work on ensuring that children understand what Computing as a subject actually entails.

### **Online Safety**

The online safety curriculum that we have in place remains effective and is supported by our RHE and main Computing curriculum.

The school utilised a monitoring system to keep the children safe. In the first two terms of 21/22 we had four alerts where concerns were raised over typed screen captures. These were dealt with through pupil and parent discussions and support.

The majority of e-safety concerns occur outside of school on games, social media and messaging apps on phones, tablets and gaming consoles. The children are taught safe use and advised about how to report concerns. They are also encouraged to discuss issues with parents and parents are advised and supported to monitor their children usage.

The effectiveness of this provision can be seen by the relatively low number of online safety incidents that occur each year, these are the e-safety issues that occur out of school and are brought to the school's attention.

2020-2021	2021-22 (to March 22)
External reports: 5	In school alerts: 5 External reports: 2

Although low, we are pleased that both pupils and parents know that they can share concerns with the school so that we can support in resolving issues and continue to support and educate those involved. Social media, gaming and messaging platforms are something that will be part of the children's lives as they move to the next stage of their education and beyond. We are responsible for equipping them safely to deal with a range of situations including cyberbullying and exploitation.

We are aware that the scale of known incidents is likely to be higher than this as many issues outside of school may remain unreported. This is why our Online Safety delivery is frequently revisited to ensure the message is at the forefront of their minds, the curriculum is also reviewed regularly to ensure that it remains relevant in supporting our pupils with the issues that they face.