EYFS Curriculum Pathway – Computing

Our EYFS Curriculum Pathway to KS1 builds on pupils' past knowledge and prepares them well for the learning that is to come in KS1.

The most relevant early years outcomes for Computing are taken from the following areas of learning:

- Understanding the World
- Communication and Language
- Expressive Arts and Design

Our approach to the Computing Curriculum in Early Years Foundation Stage
"A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world." DfE 2013 In the EYFS at Ryton Federation we lay the foundations on which future learning is built. Our aim is for children to be digitally literate: the ability to be able to express themselves and communicate ideas using tools and technology and participate fully in the modern digital world and laying the foundations of computational thinking. We recognise that computing as a subject can be learned without using computers. We plan computing activities which ▪ are imaginative and fun ▪ challenge ▪ involve being creative ▪ require collaboration and sharing ▪ involve listening, understanding, following and giving instructions ▪ encourage describing, explaining and elaborating ▪ encourage investigation ▪ involve problem solving ▪ include lots of 'unplugged' activities: computing without computers We recognise that many children have devices at home. We use iPads with precision - teaching specific skills, for research or educational apps which enhance other areas of learning. We focus greatly on computational thinking which is the golden thread which runs throughout our curriculum. Internet safety is paramount and we understand we have a duty to keep children safe and teach them how they can keep themselves safe online – we take part in Internet Safety day/week, as part of computing lesson and through stories such as Penguin Pig and Monkey Cow, it is incorporated into Anti-Bullying Week and we educate parents through workshops, during remote learning and give support where needed. Children also learn how to keep equipment safe. How to use properly, store, clean, charge and handle equipment.

Computing		
	A Unique Child	What this looks like at Ryton Federation
	To know how to operate simple equipment. To show an interest in technological toys with knobs or pulleys, or real objects. To show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images To know that information can be retrieved from computers. To complete a simple program on a computer. To interact with age-appropriate computer software. To recognise that a range of technology is used in places such as homes and schools. To select and use technology for particular purposes.	Simple ICT Equipment available in EYFS – Code-a-pillar, Duplo programmable train, iPads, Blue Bots, cameras, desktop computers, whiteboards, torches, interactive books. Tools used and skills taught on iPads – demonstrating through screen mirroring on the IWB as visualiser, take and edit photos, use educational apps, use google search for information, direct Blue Bots, explore the potential of green screen to support other areas of learning. Computer software and websites – Tux paint, smart notebook, Fizzy's Maths, ICT games, Topmarks, Phonics Play, Cbeebies etc. At Ryton we help children to be curious about technology in real world contexts: what happens inside a microwave? or a photocopier? What happens when Mummy puts her card in the machine outside the bank? What is the machine called? Why does she have to type a number in? Why does she keep it secret? Through role play and natural discussions like these the children make sense of their world. We ensure that we have play phones and laptops in role play areas to support children's developing understanding of computing. We also provide books with buttons, flaps and time to tinker with technological toys where children can explore cause and effect. By providing open ended activities within our highly engaging and effective learning environment we encourage children to use all their senses to observe, discover and engage with the world, we encourage them to tinker, play and explore. Opportunities to take things apart, to build and make models help children to be creative. Getting children to do a jigsaw, recreate a pattern or draw a picture can all encourage them to debug. We provide activities that require longer periods of engagement, concentration and perseverance. Sharing books and toys, playing with puppets or taking part in a nativity play or harvest festival all help develop collaboration. As part of our learning we explore the technology used in our school by going on a 'technology walk' – photocopier, laminator, phone, microwave etc. When we go into our community we find out about technology outside – traffic lights, crossings, cashpoint etc.

Written by Mrs. K Bolland – EYFS Leader

		This leads into discussions with children about how things work – equipping children with an understanding about how computers and computer systems work so that they develop transferrable skills which will enable them to design, develop or even just adapt to new tools and technologies in the future.
		There is a technical vocabulary - batteries, electricity, charge, remote etc. which children need to be taught. There are symbols which they need to recognise to be successful such as the triangle for 'play' and on/off symbol.
		Linked to literacy (story sequencing and non-fiction), Science (finding out), we use Google and Google Maps (Geography - local area).
Computational Thinking and CoEL	In EYFS we lay the foundations for future development of children's computational thinking. Our approach is deep rooted in our characteristics of learning **Playing and exploring** links closely with tinkering and collaborating, as well as abstraction. **Active learning** is tied to debugging and persevering. **Creating and thinking critically** connects with 'creating', as well as back to the concepts of logical reasoning and algorithms.	Computational Thinking is about transforming a seemingly complex problem into a simple one that we know how to solve. It involves taking a problem and breaking it down into a series of smaller, more manageable parts (**decomposition**). Each part can then be looked at individually, considering similarities between and within other problems (**pattern recognition**), and focusing only on the important details whilst ignoring irrelevant information (**abstraction**). Next, looking for solutions to other problems and adapting them to solve new problems **(generalisation)**. Then, simple steps or rules to solve each of the smaller problems can be designed (**algorithms**). Once we have a working solution, we then use **(evaluation)** to analyse it and ask – *Is it any good* ? *Can it be improved? How?* We encourage computational thinking by encouraging children to self-evaluate through questioning, peer assessment and plan do review.
Links to EAD / creativity		We explore using photography, record music that they make, video one another and paint with fingers or a mouse.

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