



Fierté Multi Academy Trust
Ankermoor Primary Academy



Computing at Ankermoor

A guide to expectations

(Sept 2022-23)



Computing overview

At Ankermoor, the whole school uses the shared Fierté Trust overview created by the trust computing leader. The overview is linked heavily with the National Curriculum and gives a guide to help teachers create their MTPs and lessons. Furthermore, the overview is broken down into four key topics that will be covered over the year. These are 'E-safety & Networks', 'Collecting, presenting and analysing data', 'Multi-Media' and 'Computer Science'. Each year group will be taught these topics at the same to allow ease of teaching, resources, and differentiation.

The overview continues to break down each topic with learning objectives which teachers need to cover within their MTPs and suggested activities are given to help create lessons. Useful resources have been added with hyperlinks. Everything inside the overview has been added and can be accessed with the equipment the Ankermoor currently uses. The overview also ensures that the children get great exposure to different devices as this is extremely important.

Long term plan

Using the Fierté Computing overview, a long-term plan has been created. This shows the strands which will be taught across the school, topic LO's, any cross-curricular links, and any programs or apps that children will be expected to be taught and use during each area. Although the strands within Computing that are being taught are the same across the school, the skills used within them are very different, show progression, and will ensure the children use their skills in a different and possibly more challenging way. For example, a child in Year 1 will be expected to be able to access the internet and navigate around a website by clicking links and pictures, whereas, in Year 4, children will be expected to navigate around a website looking for a resource to print off. The LTP gives a clear showcase of everything children at Ankermoor will be exposed to.

The LTP has six different areas that are covered during the year. From Computer Science to Productivity and through to E-safety and Networking.

Unlike the shared Fierté Trust overview, the LTP covers these areas in a different order. Each topic and LO'S has been given a color-coded grid which, using the key on the LTP, shows the theme/ area that will be covered. Some units will cover more than one area.

Medium term plan

The MTP shows a weekly overview of each lesson taught across the school. Using the topic theme, each lesson will have its own LO'S and focus for the lesson. The MTP will show what the LO'S will be, key vocabulary and skills and a brief overview of the lesson. The MTP helps to show the progression from lesson to lesson and across the year groups. Furthermore, it will show how lessons will be differentiated for 'More able' children and 'less able'/'SEN' children. Links to resources can be added to allow ease of access when preparing each lesson.



Subject: Computing		Term: Autumn 1		Topic: Computer Science- Robotic Programming		Year group- Year 1	
Vocabulary- Debug, Algorithm, programme, precise						National Curriculum-	
Skills- Debugging, programming.						<ul style="list-style-type: none"> To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. To create and debug simple programs. 	
Assessment:							
<p>Y1 WTS- Children are aware of algorithms as instructions. They understand that debugging means fixing. Children can programme aBee-Bot to move. Finally, children begin to start debugging simple instructions.</p> <p>Y1 ARE / Expected- Children understand what an algorithm is and know that they need to be precise. They can begin to debug. Children can programme aBee-Bot to move and then can debug an algorithm for aBee-Bot. Finally, children can use algorithms for a purpose.</p> <p>Y1 GD / Exceeding- Children understand what an algorithm is and know how to make sure they are precise. They can debug their algorithms. Children can programme aBee-Bot to move for a purpose and then can debug an algorithm. Finally, children can use algorithms effectively for a purpose with multiple steps.</p>							
Week	Learning Objectives	Planned learning experiences		Differentiation	Plenary / AFL/ 3 qs.		
1	To understand what an algorithm is.	<ul style="list-style-type: none"> Introduce the word 'algorithm' to the class. Chn to list different ways we use instructions. Chn to create a picture of a character (Spotty) by following instructions given by the teacher. Chn to then give their partner instructions to make a character of their choice. Introduce the word 'precise' at the end of the lesson, ready for next lesson. 		<p>MA- Chn will be given more complex instructions and use more technical language.</p> <p>LA- Chn will practically complete their instructions.</p>	Q1- What is an algorithm?		
2	To create a precise algorithm.	<ul style="list-style-type: none"> Chn to follow a set of precise instructions. Discuss why most of the pictures are the same. Discuss what precise means. Chn to create their own precise set of instructions for making a sandwich. Chn will work in pairs to create their instructions then swap partners to test how precise they are. Discuss the results. Are they all the same? Should they be? 		LA- Chn to complete a practical list of instructions but still encouraged to be precise.	<p>Q1- All algorithms need to be _____.</p> <p>Q2- Algorithms are _____ that computers follow.</p>		

Areas of learning

Computer Science- Computer Science dives into learning all about how Computers think, communicate and how to control them. Children will learn about coding, programming, debugging, and digital devices. Programs such as Scratch will be used as a tool to develop these skills. Beebots and Microbits are great resources to also further practical learning. Our Year 6 children will learn about 'Binary code' which is a topic that becomes more apparent to them once they reach High School. Binary code is the language computers use to communicate.

Word Processing-

Multi-Media- Multi-media allows the children to be creative and explore elements of presentations, music, photography and animation. Children will be encouraged and taught to use many different skills ranging from copying and pasting, recording sound or videos to word processing and editing. During this topic, the children will be exposed to a range of different programs and applications such as, Garageband, Book Creator, PowerPoint and Toontastic.

Productivity- Productivity is a topic that the children will be learning about data. In this topic, the children will be exposed to graphs, pictograms, databases and spreadsheets. Children will be required to learn about different ways to collect, record, present and analyse their data. Microsoft Excel will be heavily used across the school with some children expected to explore formulas as they develop their skills further.

Collaboration and Communication- This unit of work is all about messaging. Children will discover all they need to know about how they can safely communicate in the 'Online World'. From emails to group conferences to writing a blog, children will be exposed to all possible ways. With the forever advancing 'Digital Age', this



unit of work is important to our children. Children will be taught about any possible dangers they may face, correct ways to deal with issues and how to reduce their own risks.

Networks and Internet Safety- This unit of work requires children to understand about different types of networks, shared storage areas and understanding the internet. Children will look at their own personal online spaces and also a shared space for them to share resources with their peers or teachers. They will be further taught about the risks of sharing information or work and also, begin understanding the advantages of a shared network.

Computing in Reception and EYFS

Computing is mentioned within the Early Years Framework within the '**knowledge and understanding of the world**' area. So, we have plenty of opportunities for children to explore technology. Children are encouraged to use the correct fingers to type and use the mouse correctly. Easy-speak microphones are accessible for the children to record sounds or speech and then have instant feedback as they listen to their results. Finally, a Beebot can be programmed to move in the directions the children instruct it to. Computing is used across the EYFS curriculum as staff consistently look for areas where they can use the technology and promote Computing further.

Knowledge grids

Knowledge grids are a great way to showcase each unit of work that is taught. Each grid shows the applications/ programs that will be used, technology the children will have access to, skills that the children will be expected to learn and use, any key vocabulary that will be exposed and any useful links to websites or activities. The knowledge grids will be shown to the children and added to their Teams areas for them to refer throughout that unit.

Lesson expectations

All Computing lessons will follow the same structure to our core lessons. Each lesson will start with a shared flashback which will look to recall information from the children's long-term memory. The teacher will share the questions and then scan the room being aware of the children who may be struggling and the children within the lowest 20% strand. After this, the teacher will look to activate any prior knowledge the children will have. A few questions from previous year's learning will be asked to gain a knowledge of what the children have retained regarding the current unit of work.

Following this, a quick review of the answers and then the teacher will share the current lesson's LO. The LO will be referred to frequently during the lesson. Following this, some technical vocabulary will be shared or revisited consistently. Teachers need to ensure this vocabulary is pushed so that the children fully understand what they are learning and practicing. Vocabulary needs to be referred throughout the lesson so that children can begin to recall this from their long-term memory.



Once the vocabulary has been shared the teacher will model the lesson or skill that the children will be using or completing during that lesson. After this has been shown, the children will then have a go as a class (sharing ideas and thoughts). After the 'I do we do', the children will then complete the same task independently. The teacher needs to be constantly scanning the children making sure they identify any potential problems or any children that need to be pushed further. This process needs to be repeated so that the children get exposure to quality modelling and then the ability to practice the same skills.

Differentiation

It is vital that all children can access all the Computing curriculum, all children are challenged, and the curriculum is engaging. Each Computing topic can be differentiated to suit all children. Whether this is to push the more able further or allow for the less able/ SEN children to achieve more as well. Depending on the topic/ unit of work will then change what type of adaptations need to be made. For example, A lesson about data collection on Microsoft Excel may need to have a scaffolded template to help 'less able' children complete the work whereas, 'more able' children should be able to create their own grids/ table to input their own data.

It is important to get this right consistently so all children can achieve, move forward and progress. The lesson structure allows all children to attempt the learning or skill after seeing the teacher model before. This then allows them to implement their learning instantly. The teacher can then identify any children who need further support and adapt the lesson accordingly.

Computing evidence book

Each class has their own evidence book. These books are to allow the children and teachers to showcase the learning that has been happening in the lessons during the term/ topic. Each page should show the LO'S with the date, the assessment questions with initials of children's answers, a teacher assessment for the lesson and a range of pieces of work. The work shown can be screenshots, photocopies of the children's work or the actual work, if it will not be used for a display. Speech bubbles can be added around the page; these are a good way to show examples of children's responses to questions or thoughts throughout a lesson. Work that is added does not need to be always the best standard or quality from that lesson. The page should show a range of work completed. This is a good way to further show the differentiation during the lesson.

Assessment

For Computing, we have many ways of assessing our children's ability. Firstly, the assessment questions at the end of a lesson are a good way of quickly gaining knowledge of how much each child has understood. These are backed up over the following weeks and terms as they give opportunities to ask questions as a recap. Alongside these assessment questions, the teacher can add each child's initials next to a grid which will grade the child's ability based on the skills used during that lesson.

Each child is assessed throughout each lesson and unit. The teacher will show their assessments on a designed spreadsheet. The spreadsheet allows teachers to see which of their children are below target (LA), on target (Core), above target (MA) and greater depth (GD).



Through-out the Computing curriculum there has been numerous opportunities for cross-curricular learning to be embedded. E.G: Elements of MFL and British values have been given their own topics within the Multimedia topics and KS3 subjects such as Business studies have been added too. Overall, the LTP showcases how each unit of work will cover a selection of different subjects and allow for an enriched Computing curriculum.

Resources

There are a number of resources in school that we can utilise for our Computing curriculum.

Chromebooks are quick and accessible for all ages to use. Research, emailing or creating projects they are perfect to allow our children to access the entire Computing curriculum. The children are encouraged to use the correct typing strategies, so this helps with their speed and accuracy.

Ipads are used across the school and across the entire curriculum. These devices have plenty of applications installed to cover different subjects. Reading, Maths, Science and Computing lessons can be resourced with technology. Apps like Garageband, Book creator and Toontastic are used.

Microbits are a coding device that allows children to program it for many different uses. Using the online program, children can learn about algorithms and debugging to complete their code. They see their results on-screen before uploading it to their Microbit device. Their uses are endless and can even be used to track step (pedometer), electronic name tag or as communication device.

Beebots are another coding device which is very hands-on and aimed at KS1 children. These 'bee-shaped' devices have coloured arrows on their bodies which, when pressed, programs the bee to move. Children can see their results once they press the 'go' button. Floor mats can be used to encourage the children reach a certain goal/aim.

Interactive Whiteboards have been installed into every classroom for teachers to use. This has allowed teachers to feel free to plan lessons to an outstanding quality knowing that they will be able to rely on the technology working and performing consistently. Children across the school are welcomed during teaching times to use the boards to answer questions or share ideas.