KNOWLEDGE OVERVIEW GRID

	Subject: Computing				Year Group: 4	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
	Hour of Code D Part 2 (they've done Part 1 last year)	**BBC Microbits-**	**Microsoft Word**	**Data Logging – NEW UNIT –NEEDS RESOURCES ORDERING SEE NOTES**	**Microsoft PowerPoint**	**Theory – The Internet**
NC Objectives Covered **(Taken directly from the National Curriculum)**	Design, write and debug programs that accomplish specific goals. Use sequence, selection, 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 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Design, write and debug programs that accomplish specific goals. Use sequence, selection, 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 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	Use search technologies effectively Appreciate how results are selected and ranked, Be discerning in evaluating digital content Select, use and combine a variety of software to design and create a range of programs, systems and content. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Use search technologies effectively Appreciate how results are selected and ranked, Be discerning in evaluating digital content Select, use and combine a variety of software to design and create a range of programs, systems and content. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.
Digital Literacy Strand	Privacy and Security AUP Password setting	Online Relationships and Online bullying.	Health Well Being Bramhope Change One thing competition	Self-Image and Identity	Managing Online Information. Copywright	Online reputation
Previous Knowledge **-What have children learnt previously that will support this next step?**	Block coding – Year 3 Due to mixed year cohort this year group will already have started course D so will start this unit from part way through the Course D course – see lesson plans. Combining blocks together. Some experience of forever blocks – loops. They will have practised nested loops	Microbits – some experience in year 3 for this cohort. Going forward Microbits will start in year 4 Closed projects involving loops	LKS2: Previous use of Microsoft word. Previous Office skills 3/4 Save/Save as, Embolden and other features, Bullets Spell check – they will be recapped and practised in Year 4 before moving onto more advanced skills in 5/6	Data Collection in Pictograms Year 2.	LKS2 Previous use of Power Point. Previous Office skills 3/4Save/Save as, Embolden and other features, Bullets Spell check – they will be recapped and practised in Year 4 before moving onto more advanced skills in 5/6	Connecting computers in Year 3

Misconceptions **-What are the common misconceptions in knowledge for this unit?**	Using incorrect blocks for selection. Using too many blocks – not as efficient as it should be. Failing to use -Step to break down into smaller steps. Creating passwords which are too difficult to remember. Sharing passwords with friends.	Not downloading the HEX file. How to deal with issues – how to report. CEOP	Post covid – some skills gaps including saving documents. Recaps built in to address this. Not understanding that all families have different rules and that it works best when there is a set of agreed family boundaries.	First year of teaching – please add to this. Children often unaware of the process of image manipulation we see in media and impact on their mental health	Over-loading slides with mang features without thinking of the audience and making it difficult to read. Writing all content on the slide rather than thinking about key messages to share. Some prior knowledge of copywrite but often unaware how to credit the original author/artist.	Permanence of information, reliability of information online. The permanent nature of anything searched, written, posted online.

Learning Sequence -Detail the learning sequence using key questions in an ordered sequence. -The questions should have a sequential build up to answer the overall learning challenge. Red= Declarative knowledge ('knowing that') Blue= procedural knowledge ('knowing how')	1. Acceptable Use Policy Lesson. 2. Recap features of good programming – e.g good partner work (driver navigator), Driver navigator video Recap. Can I use loops? Lesson 9 Loops in Ice Age 3. Can I use Nested Loops? Lesson 11 Nested Loops in Maze 4. Can I start to understand principles of conditionals? Lesson 12. Unplugged conditionals with cards activity 5. Can I begin to use conditionals? Lesson 14 If Else with Bee. 6. End of Unit task E Safety Warm Up content: I can explain what a strong password is and show how to create one. I can explain how many free apps or services may read and share private information such as location etc. I can explain what app permissions are and give some examples.	1. Recap features of a Microbit and how do I programme and download my programme to the Microbit. 2. Can I use loops and variables to make a light sensor? 3. Can I use variables to make a step counter? 4. Can I use radio function e.g. for project 'Share a secret'? 5. Can I make an environment data logger? 6. Can I use Microbit features to create my own program? E Safety Warm Up Content I can describe strategies for safe and fun experiences when live streaming or gaming. I can give examples of how to be respectful and recognise healthy and unhealthy behaviours. I can explain how content shared online may be unimportant to someone yet very important to another. I can recognise why someone is hurt online. I can describe different online ways people might be bullied e.g image, chat.	1. What is the purpose of a Microsoft Word document and how do I open, name and save my word document. 2. Can I recap how to add bullet points? 3. Can I add hyperlinks? 4. Can I embed imagery? 5. Can I edit and improve my PowerPoint? 6. Can I present my PowerPoint to an audience? 7. E Safety Warm Up content: I can explain how using technology can be a distraction and why this can be positive and negative. I can identify times when someone might need to limit the use of technology.	1. What is the purpose of data collection? 2. How do data loggers work? 3. Can I use a data logger? 4. Can I analyse data? 5. Can I use my data to search for answers? 6. Can I answer my own question? E Safety Warm Up content: I can explain how my online ID may be different to my offline ID. I can describe positive ways to interact with others online. I can explain that others may pretend to be someone else online	7. What is the purpose of a PowerPoint presentation and how do I open, name and save my PowerPoint presentation? 8. Can I recap how to add bullet points? 9. Can I add hyperlinks? 10. Can I embed imagery? 11. Can I edit and improve my PowerPoint? 12. Can I present my PowerPoint to an audience? E Safety Warm Up Content: I can judge accuracy of content. I can describe how to search to check for accuracy by using wide range of sources. I can describe methods some pople used to get people to buy things e.g pop-ups. I can explain why sharing opnions online is not the same as fact. I can explain that technology can impersonate living things eg bots. I can explain what fake news is. I can explain why I need to consider who owns content. I can give examples of content which I can't use without permission from the owner e.g videos, images.	1. Can I understand computer networks? 2. Can I explain what the internet is made from? 3. How is information shared on the internet? 4. What is a website? 5. Who owns the web? 6. Can I believe what I read online? E Safety Warm Up content: I can describe how to find information about others by searching online. I can explain ways that some of the information could be created,copied, shared.

		I can explain why people need to think before posting.				
Curriculum End Points **-What will children know and be able to do by the end of the unit?** **-What will the children produce to demonstrate this knowledge?**	Course D is completed. No specific work as end point. Each lesson allows for completion of Hour of Code task to meet procedural knowledge. E	Can showcase a variety of skills to programme Microbit using loops, variables and conditionals.	Children will create a Word document based on a Change One Thing competition. They will be able to: -Use knowledge/skills from previous years	children use data loggers to answer their own question. This is a new unit and needs planning to adapt Teach computing unit to resources we have in school Resources will need to be purchased.	Children will create a PowerPoint based on a curriculum topic. They will be able to: -Use knowledge/skills from previous years. -Use new knowledge/skills: • Can I create and Present a Use bullets • Hyperlinks • Embed imagery	Children will understand how the internet is made.

Knowledge Sentences **-Using the end points, what are the key statements children need to remember by the end of the unit?** **(I know that…)** **(To share with children when it is taught during the unit)**	I know that the features of good programming include: 1) thinking about the most efficient way to achieve an outcome. 2) be able to test that your code works effectively.	I know that a micro bit is a tiny, pocket-sized computer. A micro-bit can contain: • Temperature and light sensors. • Motion sensors. • Wireless communication.	I know there are a range of digital sources from which I could find information. I know that refining key words will improve the accuracy of my search. I know that *not all* online content is reliable. I know that Microsoft Word is a piece of software to create text documents. I can: a) Add bullet points b) Add hyperlinks c) Embed imagery d) Edit and improve e) Open and save a document I know that some online content is age related and how to find that out. I know that using technology can be a distraction and why this can be positive and negative. I know I might need to limit the amount of time I use technology. I know who to contact if I am concerned about what I see online.	I know that data collection is the process of gathering, measuring, and analysing accurate data. I know that a data logger is an electronic device that records data over time or about a location. It uses either a built-in instrument or sensor or via external instruments and sensors. Data loggers capture, store and display information.	I know that Microsoft Powerpoint is a piece of software used to create and present information. On Powerpoint I can: - Add bullet points - Add hyperlinks - Embed images - Edit and improve - Present it	I know that computer networks such as the internet provide multiple services, such as the world wide web. They provide opportunities for communication and collaboration.
Key Vocabulary **(To share with children and add to working walls/knowledge mats)**	Event blocks Block coding Loops Nested Loops Introduction to if/else/while (conditionals,variables – to be continued in Year 5/6) Debug Algorithim	Hex file, Download, Make code blocks, conditional, variable blocks	e, Save As, Microsoft Word, Image, text box, font, bold, italic, underline.	Data logger Data Collecting Data Analysing Data	e, Save As, Microsoft Word, Image, text box, font, bold, italic, underline.	Networks, WWW, websites, connecting.
What does **Enrichment Activities (trips, residentials, speakers, SMSC)**	Digital Leader assembly	Digital Leader assembly Parent Workshop linked to Parents evening.	Digital Leader assembly Change One Thing Competition Parent Workshop linked to Parents evening.	Digital Leader assembly	Digital Leader assembly	Digital leader assembly

	Physical Resources (artefacts)	Hour of Code Course D Ipads – this link is saved as a shortcut on ipads Link to AUP lessons on Sharepoint Kara and Smart Crew - email links Chapter 1 Kara and Smart Crew - keeping safe online LKS2 Autumn 1 Privacy and Security	Microbit website Microbits. 16 V1 16 V2. Also requested government Microbit as part of additional funding. Kara and Smart Crew Online Bullying Chapter 3 KS2 Summer 1 Online Bullying Kara and Smart Crew - be careful meeting up Chapter 5	Microsoft Word NB This is year 3 PLANNING IT MUST BE ADAPATED. SAME SKILLS AS YEAR 3 BUT A RECAP AND EMBEDDING OF KNOWLEDGE. LKS2 Spring 1 Wellbeing	This is a new unit – It needs planning and resources sourcing. – Link to science Data Logging Children use data loggers to answer their own question. This is a new unit and needs planning to adapt Teach computing unit to resources we have in school Resources will need to be purchased. Options include: Using existing BBC Microbit. Buying TTS Data Loggers.	PowerPoint NB This is year 3 PLANNING IT MUST BE ADAPATED. SAME SKILLS AS YEAR 3 BUT A RECAP AND EMBEDDING OF KNOWLEDGE. Kara and Smart Crew Online Information Chapter 2 LKS2 Autumn 2 Managing Online Information	Year 4 Internet
	Cross Curricular learning (Include opportunities for writing and quality texts)		Science – data loggers, temperature, light sensors, electricity conductivity (all projects listed on BBC Microbit website and depending on X curricular science topic.	Change One Thing Competition Link		PowerPoint linked to history/science/geography topic.	
	Local Learning including outdoor learning						
	Opportunities for cultural Diversity					PowerPoint linked to history/science/geography topic.	