ESAFETY (5 lessons)

Prior Knowledge	National Curriculum Objectives Covered	End of Unit Assessment
EYFS • Describe ways that some people can be unkind online • Offer examples of how this can make others feel • recognise some ways in which the internet can be used to communicate. • Give examples of how they might use technology to communicate with people they know (e.g. video call)	• Recognise common uses of information technology beyond school • Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	• Know what to do if they see something they do not like online • Explain why it is important to be considerate and kind to people online • Recognise that there may be people online who could make them feel sad, embarrassed or upset • Give examples of when and how to speak to an adult they can trust • Know that information to help us learn can be found on the internet • Know that not everything on the internet is true • Know how to deal with unexpected pop-ups or pictures when using the internet

Key Concepts	Links Made	Vocabulary
KC4 - esafety		Technology, safety, online, internet, positive, encounters, experiences, communicate, reliable, trust, safe, stranger, pop up, email, attachment, message, appropriate, personal information, share, sensitive, trusted adult, advice, help, uncomfortable, upsetting

Key Concept(s)	Learning Intention	Crucial Knowledge	Activities	Resources
esafety (5 lessons)				
KC4 – esafety	**To identify the many uses of digital technology**	Explore and try out various uses of the online world Identify things they like to do online Identify any rules that help them to use the online world positively and responsibly	<u>Retrieval – show children a beebot, an ipad and a laptop. Can they name each one and say what it does?</u> Talk about the fact that the online world offers lots of positive but that we also need to be aware of the sometimes less good encounters and experiences. Explain that by learning how to stay e-safe, they can enjoy the online world. Explain that today they are going to think about the different ways in which we use and enjoy the online world and will be creating a class set of online guidelines for fair and safe use of ICT. Show the BBC video and ask them which kinds of technology they have access to and what they use it for. Have set up around the room a range of online experiences on tablets and laptops e.g. • Cbeebies website http://www.bbc.co.uk/cbeebies • Alphablocks http://www.bbc.co.uk/iplayer/cbeebies/a-z?sort=atoz&page=1 • Take a selfie on the tablet • Read an online book https://www.oxfordowl.co.uk/for-school/for-school/oxford-owl-ebook-collection • Do some shared research online – e.g. find out about an animal • Send a safe email (use zilladog.com username ks1 password kiveton) to school office/another teacher Allow 5 mins on each, then in pairs give them the online use cards: Play/Communicate/Share/Watch/Read/Discover and get them to place them on the activity that they think they relate to. In their groups, children share which activity they enjoyed the most and share with class something they do at home that they enjoy doing online Add comments to floor book	Beebot, ipad, lapop Ipads and laptops, set up with activities Online use cards **Vocab** Technology, safety, online, internet, positive, encounters, experiences, communicate

KC4 – esafety	**To understand that information online is not always reliable**	Understand the dangers of 'meeting' people online - who to trust and who not to trust Identify some basic features of a reliable and unreliable website and carry out a 'safe' online search Understand that attachments and pop-ups are not always from reliable sources and can be unsafe to open	Retrieval – what activities can we do online? Use online use cards from previous lesson What is 'reliable'? watch the Smart Crew video (this is aimed at 7-11 year olds, but is appropriate content for KS1) and explain that sometimes websites can be unreliable and sometimes the links that come up might not be appropriate for children. Play 'find the fake' game (choose a category) Discuss scenarios e.g. they see a pop up on a website that says they've won an iphone/they get an email or message through a game asking them to meet someone - what they think the best thing to do would be? It's important that children understand that they should always tell a trusted adult (teacher or parents) and ask whether it is ok to open something or not	Online use cards **Vocab** Reliable, trust, safe, stranger, pop up, email, attachment, message, appropriate
KC4 – esafety	**To understand what personal information is and how to keep it safe**	Know when sharing of personal information is and is not safe Identify information that is safe to share and what is not	Retrieval - discuss scenarios from previous lesson e.g. they see a pop up on a website that says they've won an iphone/they get an email or message through a game asking them to meet someone - what they think the best thing to do would be? Play all about me game. Ask what children found out about each other. Introduce term 'personal information' - information (facts) about yourself. Look at 'sharing information' poster and explain.	All About Me game Sharing Information poster Sharing Information discussion cards **Vocab**

		safe to share online	Look at sharing information discussion cards. As a class or in in groups/pairs, and decide which ones are safe to share with someone you don't know (can be online or in real life) Remind children that they should *always* ask a trusted adult to check before sharing information. Explain that it is also important not to give out personal information to people online who we don't know - either via email, in a game, or in a text.	Personal information, share, safe, sensitive, trusted adult
KC4 – esafety	**To know when to ask an adult for help or advice about something online**	Know how to recognise when something isn't right online Suggest when they need to tell an adult about something online Identify 'safe' adults, who children can tell about online worries	Retrieval – Smartie the Penguin, slides 1-11 (pop ups) then discuss slides 12-16 Read the rest of the Smartie the Penguin story and discuss as a class the times when Smartie felt unsure, uncomfortable or that something wasn't right (pop ups, a website for older children, people being mean). When else might children feel something is not right? (e.g. when children are asked for personal details; images or websites for older children or adults; messages/emails from people they don't know etc.) Ask children who Smartie went to for help and emphasise that these are 'safe adults' to approach for help. Other than parents, who else do children think might be a safe adult?. Explain that today children are going to think out about getting help with the online world and who to voice their concerns to. Get children to create their own 'safe adults circle' - children to draw a picture of each adult they can trust and then cut them out and stick them onto a circular piece of coloured card.	Smartie the Penguin Story Squares of paper Circular piece of paper (1 per child) **Vocab** Advice, help, online, trusted adults, uncomfortable, upsetting
KC4 – esafety	**To understand and talk about online safety**	Understand what is meant by a safe and unsafe decision online	Retrieval – esafety quiz (note any confusion or misconceptions and clarify) Introduce online safety song (to be sung to the tune of 'if you're happy and you know it'): *If you find a dodgy website tell an adult*	Paper for posters **Vocab** Safe, unsafe, online, upsetting, trusted adult

		Discuss a range of online scenarios and offer advice	*If you find a dodgy website tell an adult* *Tell an adult who you trust - it's an absolute must* *If you find a dodgy website tell an adult* Children create posters about staying safe online, drawing together all the learning from the unit. Choose some to add to floor book.	

KS1 Computing Medium Term Plan – Cycle B

Coding (11 lessons)

Prior Knowledge	National Curriculum Objectives Covered	End of Unit Assessment
<u>EYFS:</u> • Use a mouse, touch screen or appropriate access device to target and select options on screen • Input a simple sequence of commands to control a digital device with support (Bee Bot)	• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs	• Create a simple program e.g. sequence of instructions for a Bee Bot • Use sequencing in programs • Locate and fix bugs in a program • Understand that programs work by following precise and unambiguous instructions • Create programs on a variety of digital devices • Debug programs of increasing complexity • Use logical reasoning to predict the outcome of simple programs

Key Concepts	Links Made	Vocabulary
KC1 - Computer programming and perseverance		Algorithm, sequence, instructions, programming, code, forward, backward, left, right, pause, clear, bug, debug, error, mistake

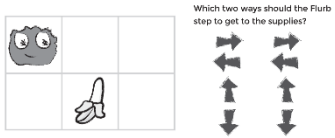
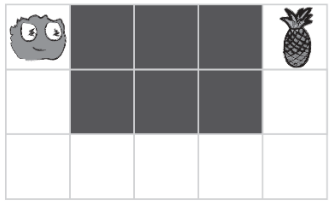
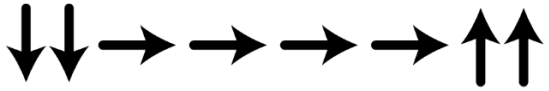
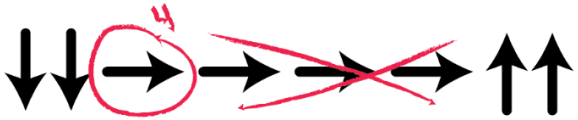
Key Concept(s)	Learning Intention	Crucial Knowledge	Activities	Resources
Coding (11 lessons)				
KC1 - Computer programming and perseverance	**To understand and use algorithms (beebots)**	Understand and follow sequences of instructions Know that instructions for computers are called algorithms Use BeeBots to program a simple algorithm (e.g. forward, left, forward, forward)	Retrieval – show children a beebot, an ipad and a laptop. Can they name each one and say what it does? Be 'bossy' and instruct a child to do something e.g. stand up, go to door, open it, come back to carpet place and sit down. Say that sequences of instructions are important as they help us to know what to do and how to make things happen. Explain the lesson is going to be about programming and how **algorithms** help us write code (that algorithms are steps to make something happen and are for people to understand but that programs are for computers) . Use BBC Bitesize website to explain, if needed. Show children a Bee-Bot. Ask children how we program it ('what do the different buttons do?'). Sit your group in a circle and ask them how we could get the Bee-Bot to write the numeral 1. Write the numeral 1 on a whiteboard to show them. They might suggest forward, forward. Some might start at the top of the number, others at the bottom. Both options are valid. In groups children use small BeeBot button cards to make their instructions (algorithm). Explain it is often a good idea to walk through an algorithm before we program it. Stand up and say, 'I start here, facing this way, I take a step forward, and another step forward – yes that makes a number 1'. Choose a child to be a coder and input the algorithm into the BeeBot. Repeat with a different pattern for the BeeBot to make.	BeeBots BeeBot Functions Poster BeeBot buttons (cut out) **Vocab** Algorithm, sequence, instructions, programming, code, forward, backward, left, right, pause, clear

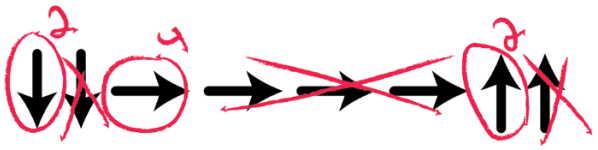
KS1 Computing Medium Term Plan – Cycle B

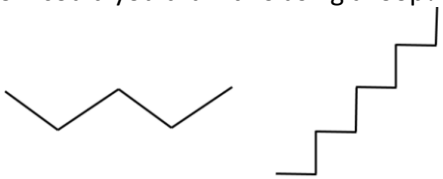
KC1 - Computer programming and perseverance	**To understand bugs and begin to fix them (beebots)**	Understand what a bug is in computing Spot a bug (error) and say a way to correct it Use BeeBots independently and move them through spaces on a mat, correcting errors as they go	Retrieval – esafety quiz Explain bugs and debugging (debugging is the process of detecting and correcting the errors in a program). Bugs happen in programs all the time and therefore debugging is important knowledge to have. Show children the online BeeBot moving through a maze/pattern but with an instruction that is wrong. Can children spot the bug and correct it? Place Beebots and mats/ipads with online BeeBot into the provision for children to access independently	BeeBots BeeBot mats **Vocab** Bug, debug, error, mistake, algorithm, code
KC1 - Computer programming and perseverance	**To know how to drag and drop**	Know how to drag and drop: - Move the arrow to the block. - Click and hold the mouse button. - Move the mouse. - Let go of the button.	**Code.org Course A, Lesson 2: Drag and Drop** The main goal of this lesson is to build students' experience with computers. By covering the most basic computer functions such as clicking, dragging, and dropping, we are creating a more equal playing field in the class for future puzzles. This lesson also provides a great opportunity to introduce basic computer hardware terminology, potentially including "mouse", "trackpad" or "touchscreen", depending on your devices.	Laptops/iPads/desktop computers (individual or pairs) **Vocab**
KC1 - Computer programming	**To understand and use algorithms**	Decode and run a program created by someone else	**Code.org Course A, Lesson 3: Happy Maps** The bridge from algorithms to programming can be a short one if students understand the difference between planning out a sequence and encoding	Happy Maps sheets **Vocab**

and perseverance		Identify and address bugs or errors in sequenced instructions Translate an algorithm into a program	that sequence into the appropriate language. This activity will help students gain experience reading and writing in shorthand code. Recap 'algorithms' (instructions for computers) from the BeeBot lessons. In this exercise, the class will get map cards that have a pre-defined start space (Flurb) and end space (fruit). Students will need to get the Flurbs to the fruit on each card, using the arrows provided. Select one of the maps from the Happy Maps Cards worksheet. Display it for the class and work through the puzzle together. Have students look at the puzzle, then think-pair-share their solution for how they would get the Flurb to the fruit (the 'code' they will use) Children continue own sheets.	Algorithm (a list of steps to finish a task), debugging (finding and fixing problems in an algorithm or program), program (an algorithm that has been coded into something that can be run by a machine)
KC1 - Computer programming and perseverance	**To understand and use sequencing**	Experiment with standard block-based programming actions such as: clicking, drag and drop, etc.	**Code.org Course A, Lesson 4: Sequencing with Scrat** In this lesson, students will develop programming and debugging on a computer platform. The block-based format of these puzzles help students learn about sequence and concepts, without having to worry about perfecting syntax. Project a puzzle from the lesson. Show the class how to click on a block and place it in the correct spot by dragging and dropping. Purposely make mistakes such as clicking the background or dropping the image before it's at the right spot. Ask for help from volunteers in the class when you run into these problems, and help them use the techniques that they developed in the last unplugged lesson to make things right. Children then complete the level (pairs or individually)	Laptops/iPads/desktop computers (individual or pairs) **Vocab** Click, double-click, drag, drop
KC1 - Computer programming	**To understand programming**	Build a computer program from a	**Code.org Course A, Lesson 5: Programming with Scrat**	Laptops/iPads/desktop computers (individual or pairs)

and perseverance		set of written instructions Choose appropriate debugging practices when solving problems Construct a program by reorganizing sequential movements	In this lesson, students will develop programming and debugging on a computer platform. The block-based format of these puzzles help students learn about sequence and concepts, without having to worry about perfecting syntax. Show Lesson 5, Puzzle 5. Point out the "Play Area" with Scrat, as well as the "Work Space" with the Blockly code. Explain that this Blockly code is now the language that students will be using to get Scrat to the acorn. Do they see any similarities to the exercise that they just did? What are the big differences? Work with your class to drag code into the workspace in such a way that Scrat (eventually) gets to the acorn. Children then complete the level (pairs or individually)	**Vocab** Algorithm, bug, debugging, program, programming
KC1 - Computer programming and perseverance	**To know how to improve programming**	Recognize problems or "bugs" in a program and develop a plan to resolve the issues. Sequence commands in a logical order.	**Code.org Course A, Lesson 6: Programming with Rey and BB8** In this lesson, students will use their newfound programming knowledge in more complicated ways to navigate a tricky course. With transfer of knowledge in mind, this lesson gives students a new environment to practice the techniques that they have been cultivating. Each puzzle in this series has been added to provide a deeper understanding of the basic concepts that they will be using throughout the rest of this course. Model first, then children complete the level (pairs or individually)	Laptops/iPads/desktop computers (individual or pairs) **Vocab** Algorithm, bug, debugging, program, programming
KC1 - Computer programming and perseverance	**To understand loops**	Identify repeating code and shorten multiple actions	**Code.org Course A, Lesson 7: Happy Loops** This lesson serves as an introduction to loops. Loops allow for students to simplify their code by grouping commands that need to be repeated.	**Vocab** Loop, repeat

		into a single loop. Interpret a program with loops as a series of multiple actions.	Students will develop critical thinking by noticing repetition in movements of their classmates and determining how many times to repeat commands. Discuss (ctrl+click to view bigger images):   The resulting code might look something like this:  It's a bit long, isn't it? Model how to say it in a shorter way – 'east 4 times' is quicker than 'east east east east'.  To	

			 To  Once students have put together the idea of “repeating” code, give them the vocabulary around it. Make sure to share with them that often the terms “repeat something” and “loop something” will be used interchangeably in Code Studio.	
KC1 - Computer programming and perseverance	**To practise using loops in programming puzzles**	Construct a program using structures that repeat areas of code Improve existing code by finding areas of repetition and moving them into looping structures	**Code.org Course A, Lesson 8: Loops with Scrat** In this lesson, students will be learning more about loops and how to implement them in Blockly code. Using loops is an important skill in programming because manually repeating commands is tedious and inefficient. With these Code.org puzzles, students will learn to add instructions to existing loops, gather repeated code into loops, and recognize patterns that need to be repeated. Model first, then children complete the level (pairs or individually)	Laptops/iPads/desktop computers (individual or pairs) **Vocab** Loop, repeat
KC1 - Computer programming	**To practise using loops in**	Break down a long sequence of instructions into	**Code.org Course A, Lesson 9: Loops with Laurel**	Laptops/iPads/desktop computers (individual or pairs)

and perseverance	**programming puzzles**	the smallest repeatable sequence possible. Identify the benefits of using a loop structure instead of manual repetition.	In this skill-building lesson, students continue learning the concept of loops. Here, students use loops to collect treasure in open cave spaces. This lesson gives students more practice with loops and introduces a new block, 'get treasure'. Model first, then children complete the level (pairs or individually)	**Vocab** Loop, repeat
KC1 - Computer programming and perseverance	**To explore ways to use loops when programming**	Count the number of times an action should be repeated and represent it as a loop. Create a program that draws complex shapes by repeating simple sequences. Decompose a shape into its largest repeatable sequence.	**Code.org Course A, Lesson 10: Ocean Loops** This lesson gives a different perspective on how loops can create things in programming. Students can also reflect on the inefficiency of programming without loops here because of how many blocks the program would require without the help of repeat loops. Quickly review the definition of a loop, the action of doing something over and over again. Discuss different patterns like zigzags and stairsteps. How would you explain to someone how to draw that pattern? How could you draw this using a loop?  In the artist levels students will be using 45 degree angles described as northwest, northeast, southwest, southeast. It is recommended to briefly discuss these directions with the class and drawing an image for students to refer back to.	Laptops/iPads/desktop computers (individual or pairs) **Vocab** Loop, repeat

			Model first, then children complete the level (pairs or individually)	
			Continue Lesson 10	

KC1	**Computer programming and perseverance**	Understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation Analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
KC2	**Using technology to solve problems**	Evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
KC3	**Creating digital content**	Be responsible, competent, confident and creative users of information and communication technology
KC4	**esafety**	The safe and responsible use of technology