Foundation subject lesson - Computing

Year Group: Year 5
Question: Coding: How do I think…? (Also E-Safety for 2 weeks)

Learning objectives:	**Key resources/stimuli**
-To describe, demonstrate and code using commands and sequences. -To describe, demonstrate and debug with code. -To describe, demonstrate and code using functions and loops. -To describe, demonstrate and code using functions and loops. (E-Safety) - To recognize that seeking help for oneself or others is a sign of strength. -To talk about why and when to report abuse.	iPads Swift Playgrounds Everyone Can Code teacher guides Google Interland scheme of work
Key vocabulary	**Key knowledge**
code command digizen switch bug/debugging function composition/decomposition pattern (for) loop online tool abuse report uncomfortable/safe	-Children will solve puzzles in order to develop a set of coding skills to build up their basic programming vocabulary. -Children will learn to add conditional code that responds to changes in the environment. -Children will learn to add operators and while loops to make their code more precise and easier to use. -Children will learn about the 'when in doubt, talk it out' principle with regards to feeling uncomfortable online. -Children will learn that there are online tools for reporting abuse and know when to use them.

Coding: How do I think…?

1) E-Safety (When to get help)
Reinforce the idea that seeking support when hurtful things happen online is not "tattling;" it's about getting help for themselves or peers when people are getting hurt. Explore different scenarios children may encounter online and how to deal with these (group-class discussion.)

2) E-Safety (Report it online, too)
Using a school device to demonstrate where to go to report inappropriate content and behavior in apps, the class considers various types of content, decides whether to report it, and talks about why or why not. Before exploring scenarios, make sure everyone knows that there is not just one right answer or approach.

3) Commands and sequences.
Using *Swift Playgrounds*, children write commands to move a character around a puzzle world, performing tasks such as collecting gems, toggling switches and moving from one place to the other.

4) Debugging
Using *Swift Playgrounds*, children rearrange commands into the right order in order to solve puzzles and fix bugs. They learn to run the code each time they make a change so that they have located and fixed each bug.

5) Functions and bits of loops.
Using *Swift Playgrounds*, children learn that functions are commands that can be run multiple times. They define a function for a repeating pattern and decompose a solution across multiple functions.

6. Functions and bits of loops.
Using *Swift Playgrounds*, children use a 'for' loop to repeat a sequence of commands. They decompose repeating patterns into functions and 'for' loops. They practise patter finding, decomposition, functions, and 'for' loops.

Knowledge, Skills and Understanding breakdown for Computing			
Year Five			
	E-Safety	Computing & Digital Literacy	Coding
Expected	The child can demonstrate that they can act responsibly when using the internet. The child can discuss the consequences of particular behaviours when using digital technology. Know how to report concerns and inappropriate behaviour in a range of contexts. The child can decide whether digital content is reliable and unbiased.	The child can use and combine a range of programs on multiple devices. The child can analyse and evaluate information. The child can collect and present data.	The child can use logical reasoning to detect errors in algorithms. The child can use sequence, selection and repetition in programs. The child can explain a rule-based algorithm in their own words. The child can design, write and debug a program using code language based on their own ideas. The child can plan a solution to a problem using decomposition.
Exceeding	The child can show that they can think through the consequences of their actions when using digital technology The child can identify principles underpinning acceptable use of digital technologies. Know a range of ways to report concerns and inappropriate behaviour in a variety of contexts. The child can form an opinion about the effectiveness of digital content.	The child can select, use and combine a range of programs on multiple devices. The child can analyse and evaluate information from multiple sources. The child can collect, analyse and present data	The child can use logical reasoning to detect and correct errors in algorithms. The child can use sequence, selection, repetition and variables in programs. The child can give a clear and precise explanation of a rule-based algorithm. The child can design, write and debug a program using coding language based on their own ideas; the child can use iterative development to make improvements. The child can solve problems using decomposition, tackling each part separately.