Mendell Primary School

Aspire   Challenge   Achieve

Medium Term Plan Design Computing

Year Group: 4	Term: Autumn #1 2021	Teacher: Hannah Jones	Subject lead: Justin Cowley	Overview: Online safety and an introduction to programming: Chatting online, sharing images and videos. Advanced/nested loops and 'if' statements
Links to other learning: PHSCE	Prior Learning: In Y3 children used algorithms to predict the behaviour of a computer, found out about binary and used conditionals and events in their code.	Future Learning:	Risk Assessment: Safeguarding	Teacher CPD: Please read the CEOP online safety toolkit prior to the lessons. You must complete level D of Code.org including watching the relevant videos included in the course. This must be completed prior to commencing teaching (https://studio.code.org/s/coursed-2020?section_id=3503834)

	Learning Intention	Real Life Links	Lesson Outline (Key Questions in colour)	Resources	Vocabulary	Lowest 20% Adaptations
1	- I know to ask permission before posting images or videos of others online - I know who to speak to if anything happens online that		*Online safety* *Recap Year3 – I know to tell a trusted adult / sharing images online / live streaming*	Large screen to show video CEOP lesson toolkit	Online Images Videos Trusted permission	

	worries or upsets me					
2	- I know that a loop is a repeated instruction - I know that loops reduce the amount of code needed to achieve a goal		**Coding** **Code.org – Course D introduction** - As a class watch the video 'Graph paper programming' to recap last year's key learning. https://studio.code.org/s/courseb-2017/lessons/1/levels/1?section_id=3503834 - Key knowledge for teacher – a loop is a sequence of instructions that is continually repeated until a certain condition is reached. Typically, a certain process is done, such as getting an item of data, and then a condition is checked such as 'have I collected five lots of data?' - Chn working in pairs. Provide each pair with ten cubes (or counters). Ask the children to move one counter away from the group of ten and place it on the other side of the table. Now ask them to keep doing this until they have five counters in each group. Explain that they have just used a loop to repeat a single instruction. Ask the children to write this algorithm on their whiteboards. Recap the definition of a loop and ask the children what would change if you wanted 7 cubes to be moved. - Explain that they have given their loops a condition (keep going until you reach a certain number of cubes). What would happen if we didn't put a condition in our loops? The loop would continue forever and the computer would get stuck repeating the same instruction. - Recap the need to keep passwords and user information secret. Give out each child's picture login. - Demonstrate how to access the internet (using Google Chrome on laptop or Safari on ipads). Show the children how to search for our school website and where to find the Code.org link. - Demonstrate how children access the lessons, what they must do to complete a lesson and how they move to the next lesson. Show children how to restart a lesson and what to do if they are stuck. - Children work through Course D during lessons 2-6. - Children write in their books the definition of a loop and why they are used in coding.	Large screen to show video		
3	- I can use a conditional with an event to achieve an outcome	Designer, inventor,	**Coding** **Code.org – Course D** Watch this video about 'Conditionals' https://studio.code.org/s/coursed-2020/lessons/11/levels/1?section_id=3503834 - In pairs, ask the children how a teacher uses conditionals to decide who to allow to answer a question in class (Conditional is 'Do they have their hand up?'). Can the children think of any other examples of where conditionals are used in real life? - Recap the need to keep passwords and user information secret. Give out each child's picture login. - Demonstrate how to access the internet (using Google Chrome on laptop or Safari on ipads). Show the children how to search for our school website and where to find the Code.org link. - Demonstrate how children access the lessons, what they must do to complete a lesson and how they move to the next lesson. Show children how to restart a lesson and what to do if they are stuck. - Children work through Course D during lessons 3-6. - In their books, the children are to write in their books how a conditional could be used in real life to decide who can go outside at lunchtime when it is cold / raining.	Large screen to show video Ipads or laptops (one per child)		
4	- I can use a nested loop to make my code more efficient	Designer, inventor,	**Coding** **Code.org – Course D** Watch this video about 'Nested Loops' https://studio.code.org/s/coursed-2020/lessons/10/levels/3?section_id=3503834 Why did the boy put his loop inside another loop? Because it meant the bee was able to repeat its instructions three times to collect the nectar on the three sides of the garden. - Use the example of playing a game of TTRS and then being asked to play ten games in a row. The teacher doesn't wait until you finish each game to give you the instructions but they ask you to repeat the instructions ten times. The first loop is turn the ipad on, log into TTRS, play a game, check your score. This is then put into another loop which says play the game 10 times. - Recap the need to keep passwords and user information secret. Give out each child's picture login. - Demonstrate how to access the internet (using Google Chrome on laptop or Safari on ipads). Show the children how to search for our school website and where to find the Code.org link.	- I can use a conditional with an event to achieve an outcome	Designer, inventor,	

			- Demonstrate how children access the lessons, what they must do to complete a lesson and how they move to the next lesson. Show children how to restart a lesson and what to do if they are stuck. - Children work through Course D during lessons 3-6. - Take photographs of children working on Code.org for their books.			
5	- I know how an 'if' conditional is used.		**Coding** **Code.org – Course D (continued)** - Recap: Ask the children what a loop is. (A loop is a sequence of instructions that are repeated until a certain condition is met) - Watch the video about 'if statements' https://studio.code.org/s/coursed-2020/lessons/12/levels/1?section_id=3503834 . Discuss when 'if' statements are used in real life. Gather examples on the board (if your room is tidy you can watch tv, if the weather is warm we will go to the beach). - How could an 'if' statement be used to create an algorithm to fill a jar full of marbles but not to allow it to overflow? (you will need to use a loop). - Recap the need to keep passwords and user information secret. Give out each child's picture login. - Recap how to access the internet (using Google Chrome on laptop or Safari on ipads). Show the children how to search for our school website and where to find the Code.org link. - Recap how children access the lessons, what they must do to complete a lesson and how they move to the next lesson. Show children how to restart a lesson and what to do if they are stuck. - Children continue to work through Course D - - In their books, the children are to write a sentence to describe what they have learnt from today's lesson. Provide a sentence starter 'Today, in computing, I learnt . . . .'	Ipads or laptops (one per child)	Algorithm Programming Code Internet Google chrome Safari Event	
6	- I can use loops and conditional statements to create algorithms that achieve an outcome		**Coding** **Code.org – Course D (continued)** - Recap the need to keep passwords and user information secret. Give out each child's picture login. - Recap how to access the internet (using Google Chrome on laptop or Safari on ipads). Show the children how to search for our school website and where to find the Code.org link. - Recap how children access the lessons, what they must do to complete a lesson and how they move to the next lesson. Show children how to restart a lesson and what to do if they are stuck. - Children continue to work through Course D - - In their books, the children are to write a sentence to describe what they have learnt from today's lesson. Provide a sentence starter 'Today, in computing, I learnt . . . .'	Ipads or laptops (one per child)	Algorithm Programming Code Internet Google chrome Safari Event	