



TSS Primary Computing MTP 2022-2023 Year 3 Block 2 – Secret Codes

Week	Key Targets and Learning Objectives	Key Activities	Key Vocabulary
1	<ul style="list-style-type: none"> • Know that ciphers are a way of making sure that information stays secret. • Know how to write and decode messages using very simple code, including converting letters to numbers (1=a 2=b, etc.). 	<ul style="list-style-type: none"> • How long have computers existed? • Look at common items and how long they have been around for. • Discuss when computers were invented and for what purpose. • Introduce the word – cipher and discuss meaning in terms of privacy. Discuss why we might want to keep things private. • Introduce a simple number/letter cipher and decode a simple message. • Practice writing names and composing a simple message in code. • Give children a choice of whether to devise their own code or solve coded activities. • Revisit the main idea and vocab for the lesson. 	<ul style="list-style-type: none"> • code • cipher • secret • private
2	<ul style="list-style-type: none"> • Follow, understand, edit and correct linear algorithms. • Identify the inputs to an algorithm. • Know how to make a change within a block of code to achieve desired outcomes in programs, such as changing the number of steps a sprite moves. • Predict the outcome of a change to an algorithm that is presented as a sequence of steps. • Outline the benefits of working with others when creating programs. 	<ul style="list-style-type: none"> • Review the ideas of ciphers and codes • Introduce Scratch Scratch - Imagine, Program, Share (mit.edu) • Make sure the children understand that the blocks of code can make the sprite do different things. • Make sure the children understand the following vocabulary: Block Palette, Script Area, Sprites Area, Stage, Sprite • Demonstrate how to put a simple sequence together. • Clarify that the blocks of code are the inputs and that the actions are the outputs. • Change the blocks – what was the input/output? • Allow the children to work in pairs and experiment. • Children to show another pair their ideas. • Discuss blocks of code used and what they have discovered. 	<ul style="list-style-type: none"> • Block Palette • Script Area • Sprites Area • Stage • sprite • input • output • program
3	<ul style="list-style-type: none"> • Follow, understand, edit and correct linear algorithms. • Identify the inputs to an algorithm. • Know how to make a change within a block of code to achieve desired outcomes in programs, such as changing the number of steps a sprite moves. • Predict the outcome of a change to an algorithm that is presented as a sequence of steps. 	<ul style="list-style-type: none"> • Introduce the Code.org login • Share the slides for lesson 3 (code.org) • Discuss the similarities and differences to what they were doing on Scratch last lesson. • Identify the sprites and programming area. • Allow the children to run through activities to level 9 • Introduce the idea of predicting. 	<ul style="list-style-type: none"> • algorithm • program • sequence • bug • debug • prediction

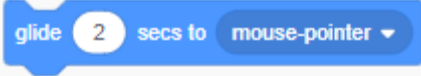
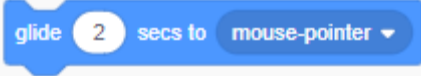
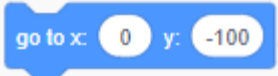


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	<ul style="list-style-type: none"> Outline the benefits of working with others when creating programs. 	<ul style="list-style-type: none"> Review learning and vocabulary 	
4	<ul style="list-style-type: none"> Follow, understand, edit and correct linear algorithms. Understand that efficient algorithms are concise. Know how to make a change within a block of code to achieve desired outcomes in programs, such as changing the number of steps a sprite moves. Know how to create programs with more than one algorithm running at the same time. Know how to develop a program that contains more than one object, including a static object. Know how to develop a program that includes code to reset objects to their original state (initialisation). Outline the benefits of working with others when creating programs. Understand that programmers use their mistakes to inform the programs that they create. Know how to test and debug programs so that it will run and will produce the desired output. 	<ul style="list-style-type: none"> Review learning from previous week. Display code that is not concise and discuss how this can be made shorter. Demonstrate on Scratch how to change the backdrop and add another sprite – just make sure to encourage 1 more sprite and discuss why multiple sprites are not a good idea. Demonstrate that the sprites have to be programmed separately. Look at move and glide blocks and discuss the difference. Look at conversation blocks in the Looks section Introduce the wait block Introduce the word initialisation and discuss. Give children a copy of the conversation code and ask them to choose a backdrop and choose 2 different sprites and change the conversation code in any of the following ways: <ul style="list-style-type: none"> alter the spoken script within the 'say' blocks alter the timings change the background change one or both sprites add a new sprite extend the conversation. If time allows share some of the projects Children can choose to work in pairs or independently. 	<ul style="list-style-type: none"> Initialisation sprite backdrop conversation
5	<ul style="list-style-type: none"> Know that many tasks can be divided into smaller sections to make them easier to follow and to edit. Know how to develop programs that include code to reset objects to their original state (initialisation). Know how to create a program with more than one algorithm running at the same time. Know how to develop programs that contain more than one object, including a static object. 	<ul style="list-style-type: none"> Review learning from the previous lesson. Use Lesson 4 from Code.org Show https://youtu.be/RUZTRNakV9c and discuss the ideas of bugs and debugging in an algorithm. Get the children to work through Skills levels 2-7 Review the idea of a prediction before the children work on the levels 8-10 Children to work independently. Deal with any difficulties as they occur. 	<ul style="list-style-type: none"> Bug debug code program algorithm step run



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	<ul style="list-style-type: none"> • Know how to create programs to produce an output from an input device. • Outline the benefits of working with others when creating programs. • Understand that programmers use their mistakes to inform the programs that they create. • Know how to test and debug programs so that they run and produce the desired output. 		
6	<ul style="list-style-type: none"> • Know that many tasks can be divided into smaller sections to make them easier to follow and to edit. • Know how to develop programs that include code to reset objects to their original state (initialisation). • Know how to create a program with more than one algorithm running at the same time. • Know how to develop programs that contain more than one object, including a static object. • Know how to create programs to produce an output from an input device. • Outline the benefits of working with others when creating programs. • Understand that programmers use their mistakes to inform the programs that they create. • Know how to test and debug programs so that they run and produce the desired output. 	<ul style="list-style-type: none"> • Review the learning from last week. • Remind the children how to change a background/backdrop on Scratch Scratch - Imagine, Program, Share (mit.edu) • Explain that the task is to create a game where the ball goes into the net without being saved. <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> • Share this block:  and discuss what they think the input device is. What is the output from this block? • How many sprites are there? • What does each sprite do? • Children to create, in pairs, a football program to demonstrate the skills learnt. • Children to share and save their work. • Share some of the ideas with the rest of the class. Do any lines of code need to be changed? 	<ul style="list-style-type: none"> • Sprite • code • bug • debug • program • output • input
7	<ul style="list-style-type: none"> • Follow, understand, edit and correct linear algorithms. • Understand that efficient algorithms are concise. • Know how to make a change within a block of code to achieve desired outcomes in programs, such as changing the number of steps a sprite moves. • Know how to create programs with more than one algorithm running at the same time. 	<ul style="list-style-type: none"> • Review the learning from last week. • Introduce the idea of initialisation. <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> • Share this block with the children: Demonstrate what this does • Get the children to add this block to their algorithms from last week to return the sprites to a starting position. 	<ul style="list-style-type: none"> • All vocabulary previously covered.



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