# Computing: Year 2 Term 3.

| Learning Theme: - Computer science | | | | | | | |
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| Term 3 | **Learning Question & NC Link** | **Substantive Knowledge**<br>To know that… | **Disciplinary Knowledge**<br>I can… | **Vocabulary** | **Evidence & Assessment Opportunity** | **Equipment & resources** | **Lesson ideas** |
| Session 1 | How do I load an application on a digital device?<br><br>*NC Link: To know what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.* | To know how to load and make simple changes in Scratch Jr. | Load an application on a digital device. | Digital device<br>App (application) | Photos of finished backgrounds to share next week. | Ipads<br>Floor book | Explain that today you are all going to be using the iPads a digital device, iPads connect to internet, whenever we use a device which can go online we need to think about how we can stay safe online. Share the online safety poster, discuss each point, asking children for their own ideas, challenge misconceptions.<br>Give iPads out to pairs of children, model turning on the iPad, opening the lock screen – looking at all the apps – Today we are going to use Scratch Jr. Can they follow each instruction? Ensure that each pair has loaded Scratch Jr, does it look the same as yours? (have desktop application open on IWB).<br>Explain that Scratch Jr is an app where you can programme your own interative story or game. Click on the house – question mark – farm project. Use this as an example of what can be done (tap on the animals). Today we are going to learn how to choose and change our background. Work through the 'Session 1 background PDF' explore different backgrounds and the editing tool. |
| Session 2 | How do I make simple changes on an application?<br><br>*NC Link: To know what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.* | To know how to explore and make simple changes in Scratch Jr. | Explore an application. | Digital devices<br>App (application) | Children should be able to follow instructions and create their own character. | ipads | Remind the children that today they are going to be using the iPads again which can go online – quickly review the internet safety poster. What did they do last week? What is Scratch Jr? Share pictures of the backgrounds they made last week.<br>Explain that this week they are going to explore changing their character. Model turning on the iPad, unlocking the lock screen, looking through all the apps and finding Scratch Jr. Can they do the same with their partner? Ensure that each pair has loaded Scratch Jr. Model how to load a previous project. Work through the 'Lesson 2 - character PDF', explore the different ways characters can be edited or created from Scratch Jr. Ask the children to choose their favourite character, model how to delete the extra ones. Show the children how to save the changes they have made. |
| Session 3 | What is an algorithm?<br><br>*NC Link: To know what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following* | To know that algorithms are used in digital devices. | Programme a simple algorithm on an application. | Digital Devices<br>App (application)<br>Algorithm | Children to follow the 2-step instructions to explore programme blocks and save their progress. | ipads | Quickly review the internet safety poster ready to use the iPads. Share your project from last week on the board. What have we done so far? Today we are going to be making an algorithm, what does that mean? Explain that an algorithm is a set of |

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| | *precise and unambiguous instructions.* | | | | | | instructions that we programme to enable our character to move – share the farm project again highlighting the use of blocks at the bottom. Work through lesson 3 PDF, exploring simple movements and 2-step instructions. Allow children time to independently explore the programme blocks. Model deleting blocks and saving your project. |
| Session 4 | How do I debug a program?<br><br>*NC Link: To know what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.* | To know how to debug a simple program. | Debug a programme so that my application runs smoothly. | Digital Devices<br>App (application)<br>Algorithm<br>Bug<br>Debug | Note any of the children's suggestions for debugging for the floorbook. | ipads | Review internet safety poster and key vocabulary learnt so far. Explain that today you are going to create a new project on Scratch Jr. Can they turn on, find and load Scratch Jr? Can they make a new project (by pressing the plus)? Share the car project pdf (print A3), explain that it is a set of instructions for us to programme an algorithm. Model on the board looking at the instructions and following them on the Scratch Jr, children join in at each stage. Miscount the amount of forwards the car has to go. Show this finished project by pressing the flag. Did it work? Why not? How can we fix it? We need to debug – explain that to debug is to problem solve an error in an algorithm. How can we fix it? Try the children's suggestions, did they work? Fix the programme. Can they fix theirs?<br><br>If time: *Hand out different projects to the pairs (differentiate by ability) ask them to start a new project and see if they can follow the instruction. Allow children time to programme a project.* |
| Session 5 | How can I predict what will happen on a program?<br><br>*NC Link: To know what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.* | To predict what the outcome of a simple program will be. | Make predictions based on my knowledge of an application. | Digital Devices<br>App (application)<br>Algorithm<br>Bug<br>Debug<br>Logical reasoning | Follow instructions to explore the application. | ipads | Review internet safety poster – ask children to tell you what each point means and share key vocabulary learnt so far. Open Scratch Jr and ask the children to do the same. Load a new project and explain that today you are going to explore what different blocks can do ask them to use logical reasoning to predict what they might do. Follow 'lesson 5 – Blocks' PFD. Start with the motion ones (allow children a little time to independently explore between each section), move through each section modelling the use of these blocks – flag & tap, adding speech & growing/shrinking & disappear/reappear, pop sound & recording voice, time delay & repeat, end & repeat forever.<br>Explain that next week they are going to create a project set on a farm, allow the children time to explore the blocks, backgrounds and characters. |
| Session 6 | How do I know if my program is successful?<br><br>*NC Link: To know what algorithms are; how they are implemented as* | To know how to write a simple program and test it. | Write a simple programme and test to ensure it is successful. | Digital Devices<br>App (application)<br>Algorithm<br>Bug<br>Debug | Upload and share any finished projects onto the shared drive. | ipads | Review internet safety poster and key vocabulary. Model loading up Scratch Jr and starting a new project choosing the farm background, selecting two characters, model thinking about what you would like |

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| | *programs on digital devices; and that programs execute by following precise and unambiguous instructions.* | | | Logical reasoning | | | them to do (walk to the trees and say "Hello" – See 'lesson 6' pdf for instructions).<br>Print out the farm scene for each child, explain that their story will have to have at least 2 characters who move and talk. Ask them to work together to quickly write a short story they would like to create. Once they have finished give them an iPad to begin.<br>Upload and share any finished projects. |
| Notes | | | | | | | |