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| **Date:** Week 1 | **No. Of Pupils:** 30 aprox. | **No. Teachers:** 2 | **Duration:** 60 mins |

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| **Role of Teaching Assistants:**  To provide support when students are in groups and engage in group performances. |
| **Prior Knowledge of Pupils:**  Possibility of basic coding and past use of a Raspberry Pi. |
| **Contents: Lesson 1 of 11(12)**  Students will be exploring the Raspberry Pi/Sonic Pi independently and begin using basic terms of *Play* and *sleep* to complete a familiar tune |
| **Vocabulary/keywords**  Raspberry Pi, Sonic Pi, Code, Commands: *Play, Sleep, Run* |
| **Anticipated problems:**  Issues with Raspberry Pi/Sonic Pi (*check all Pi’s before use*)  Template missing from Pi (*Handout with template on*)  Accidental deletion of template (*Handout with template on*) |

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| **Learning Objectives**  **1.** To be able to set up/operate Sonic Pi  **2.** Explore the functions of Sonic Pi  **3.** Perform basic coding with the use of pre-prepared templates | **Learning Outcomes**  **All** pupils would be able to operate the Raspberry Pi/Sonic Pi  **Most** pupils would be able to alter pre-prepared templates  **Some** pupils would be able to create a basic code from blank |

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| **Resources**  Prepared piece of coding for demonstration.  Template for pairs work  Flashcards |
| **Risk Assessment**  Medium – Trip hazard due to multiple cables, use of electrical equipment. |
| **Ultimate Learning Outcomes**  **1.** To compose a piece of music using Sonic Pi  **2.** To create a live performance as a group using Sonic Pi  **3.** To understand how a Computer can be used as a musical instrument |

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| **Timing** | **Task/Activity** | **Resources** |
| **Engage** | Raise interest by playing a prepared piece of music composed using Sonic Pi without revealing its origin. Show them a raspberry Pi and engage in discussion about how a computer can be a musical instrument. | Prepared piece of coding.  (*See recommended list*) |
| **Explain** | Using 7 – 9 pupils act out how coding works using flashcards. (*Flashcards should use the terms Play, Sleep. A ‘Run’ card should be passed down by the students who act out their* card) Demonstrate basic coding using the flashcards. | Flashcards. |
| **Explore** | Pupils should in pairs set up their Raspberry Pi with the equipment laid out on the desk and open the software. On opening Sonic Pi there will be a template of Twinkle, Twinkle that can be altered to create different sounds using knowledge from activity 1. (*note: any piece can be used, easy more recognisable tunes are recommended*)  **Extend**: fast finishers can try to create a melody from blank. | Template of song (*Twinkle Twinkle*) |
| **Evaluate** | Share a couple of student’s compositions with the rest of the class and reflect upon the exercise. |  |

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| **Equipment**  x15 Raspberry Pi, x15 Monitors, x15 keyboards and Mouse, x30 sets of headphones, x15 headphone splitters, x15 SD cards, x15 power supplies. |

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| **Possible Questions for Reflection/Recommended Resources** |
| Can a computer be a musical instrument?  What are the parameters for a musical instrument?  How are the terms *Play* and *Sleep* represented in sheet music?  How are notes represented in Sonic Pi?  Do you feel like a musician?  Template ideas: *Twinkle, Twinkle/Old McDonald*  Existing song ideas: *Daft Punk – Get Lucky* |

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| **Assessment** | **Assessment Criteria** |
| **Individual** – Using all knowledge gathered throughout the course students should create their own personal composition based around the suggested briefs listed (*Can be altered*).  **- Compose an original piece in any style.**  **- Compose a horror soundtrack for a film**  **- Rewrite a famous/well known song using Sonic Pi.**  Documentation on planning and development of the composition is also recommended to aid assessment. This can be completed via: written, audio diary, video diary. (*Due week 10*) | Use a system of 1-4 to assess different aspects of the composition  **Technique**  **1** (*easy*) – correct use of commands: play, sleep, loop do, end  **2** (*Intermediate*) – correct use of commands above plus: use\_synth, use\_sample,  **3** (*Upper Intermediate*) – correct use of commands above plus – in\_thread do, with\_fx, attack, release, sustain.  **4** (*Advance*d) – correct use of commands above plus: rrand, .choose, default.  **Structure/Texture**  **1** (*easy*) – use of 2-4 loops to create different sections  **2** (*Intermediate*) – The above plus use of multiple synths and instruments.  **3** (*Upper Intermediate*) – Use of threads to layer instruments in time  **4** (*Advance*d) – Advanced use of threads and instruments.  **Timbre/FX**  **1** (*easy*) – correct use of at least 2 FX  **2** (*Intermediate*) – the above plus altering parameters of FX throughout piece.  **3** (*Upper Intermediate*) – the above plus use of instrument manipulation.  **4** (*Advance*d) – the above plus combination of other features into FX such as rrand.  **Style/Write Up**  **1** (*easy*) – piece matches overall feel of brief.  **2** (*Intermediate*) – Clear sense of influences and application.  **3** (*Upper Intermediate*) – Detailed reflection using correct musical terms on piece.  **4** (*Advance*d) – piece stands on its own as a composition with a detailed write up explaining thought process of creation. |
| **Performance** – All students will engage in a soundscape performance at the end of the term. There will also be opportunity for students to conduct as well. Possible environments. (*Due week 11*)  - **Space, City, Forest, Underwater** | **Preparation**  **1** (*easy*) – inadequate preparation of 4 soundscapes.  **2** (*Intermediate*) – 4 basic loops for performance with a clear contrast in sound  **3** (*Upper Intermediate*) – use of advanced techniques to create soundscapes.  **4** (*Advance*d) – Loops display clear understanding of sounds in relation to music using advanced techniques  **Performance**  **1** (*easy*) – Compositions are played without interaction.  **2** (*Intermediate*) – correct use of faders to alter dynamics.  **3** (*Upper Intermediate*) – basic use of live coding within performance.  **4** (*Advance*d) – Advanced use of live coding potentially from a blank workspace during the performance. |