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| **Date:** Week 4 | **No. Of Pupils:** 30 aprox. | **No. Teachers:** 2 | **Duration:** 1 hour |

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| **Role of Teaching Assistants:**  To provide support to student’s who were absent or struggling. To participate in group performances and discussion. Advanced peers should also be used to assist other peers.  Aid with set up and take down of equipment. |
| **Prior Knowledge of Pupils:**  An understanding of how to operate a Raspberry Pi and write basic coding using the application Sonic Pi.  Commands: *Play, Sleep, Run, use\_synth, loop do, end, use\_sample, sleep sample\_duration* |
| **Contents: Lesson 4 of 11(12)**  Students will experiment with texture using the *thread* function within Sonic Pi |
| **Vocabulary/keywords**  Commands: *in\_thread do, 4x times.* |
| **Anticipated problems:**  Issues with Raspberry Pi (check all Pi’s before use)  Possibility of absence students (peers/teaching assistants to assist with catch up) |

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| **Learning Objectives**  **1.** To create a thread using two or more sections of code  **2.** Perform basic coding from blank  **3.** Correct a section of code | **Learning Outcomes**  **All** pupils would be able to correct a section of code  **Most** pupils would be able to create a thread using two sections of code  **Some** pupils would be able to create multiple threads |

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| **Resources**  Error template, Example of Threading |
| **Risk Assessment**  Medium – Trip hazard due to multiple cables, use of electrical equipment. |
| **Ultimate Learning Outcome**  **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** | Error Troubleshoot activity, using pre- prepared templates in groups students are to correct the errors in the code then discuss with the class. | Error Templates |
| **Explain/**  **Explore** | Demonstrate the concept of threading in relation to structure/texture and how to layer instruments. Students should try to layer two loops. Commands: *in\_thread do* | Examples of Threading |
| **Evaluate** | Examples of students work should be played and reflected upon by the class. |  |
| **Extend** | Fast finishers may start their own code from blank using knowledge so far. |  |
| **Explain** | Introduce final composition and assessment criteria. Pack down the equipment. | Assessment criteria |

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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** |
| Could an error become a useful compositional tool?  What musical term do we use for layering sounds? (Texture)  How many layers could we add? (Emphasise limitation of the Raspberry Pi)  How would you describe the texture of this student’s work?  Template ideas:  Existing song ideas: |

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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. |