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Lesson Plan: Creating soundscapes with littleBits synth kits

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# Creating soundscapes with littleBits synth kits

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## Class Description

This lesson introduces students to digital music creation using circuitry and recording software. Students will create digital soundscapes using littleBits Synth Kits and then record them using Audacity. They are then asked to reflect on how they can use digital tools to solve creative challenges.

While the main focus of the lesson is on creating a digital music artefact, students will also gain an understanding of learning and creativity as a process.

## Duration

90 minutes

## Learning Objectives

* Create a digital music artefact in the form of a soundscape using littleBits and Audacity
* Reflect on the creative process in a digital context

## Audience

* Coursework students (undergraduate and postgraduate)
* Researchers
* Professional staff

## Room requirements

* Devices with Audacity installed (alternately participants BYO devices with software installed before session)
* Lectern or computer set up for PowerPoint presentation

## Resources

* “Creating soundscapes with littleBits synth kit” PowerPoint presentation
* littleBits Synth Kits  
  Available from: [https://shop.littlebits.com/products/synth-kit%20](https://shop.littlebits.com/products/synth-kit)
* littleBits USB I/O   
  Available from: <https://shop.littlebits.com/collections/bits/products/usb-io>
* littleBits Synth Kit booklet.   
  Available from: <http://d2q6sbo7w75ef4.cloudfront.net/SYNTH-booklet.pdf>
* Devices with [Audacity](https://www.audacityteam.org/) installed.   
  Free open source software available from: <https://www.audacityteam.org/>

## Preparation Checklist

* littleBits Synth Kits – ideally 1 kit per person
* littleBits Synth Kit booklets. Available from: <http://d2q6sbo7w75ef4.cloudfront.net/SYNTH-booklet.pdf>
* PowerPoint accessible on lectern or presentation computer
* Audacity installed and working on devices

## Lesson Plan

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| --- | --- | --- |
| Timing | Topic | Notes |
| 5 min | Introduction | * A brief introduction to music * Creating a soundscape with littleBits and Audacity * Share soundscapes with group and reflect on creating and problem solving |
| 10 min | **A brief introduction to music** | *Activity:*   * Play audio clips in PowerPoint * Ask students to identify things such as layers, melody vs texture.   *Explain:*  Music is about layers:  Play examples from <http://freemusicarchive.org/> (on powerpoint). Highlight the different layers coming in and out, how some sounds are noticeable ‘immediately’ (how the layers interact with each other) and other sounds progress linearly (by following the melody)  Explain that music is multidimensional:  Horizontal/linear/temporal/sequential (think melody). For this dimension we will be using the littleBits.  Vertical/immediate/compound (think harmony or texture). For this element we will be using Audacity. |
| min | Connecting the littleBits to Audacity | *Demonstrate:*   * Open Audacity * Connect littleBits circuit to PC/Mac using USB I/O * Change audio input (microphone symbol) from “Built-in Microphone” to “KORG 2ch Audio Device”   *Activity:*   * Have class connect their USB I/O to their devices and connect to Audacity * Walk around and help |
| 30 min | Recording layers/tracks | *Demonstrate:*   * Creating a layer. Students will need to create a circuit using the littleBits booklet. * To record, they will need to hit the record button (round red button in the top left of Audacity).   *Activity:*   * Get students to create a circuit from the booklet * Students record track in Audacity * Students rename track * Students create another circuit from booklet, record track and rename * If time permits, students create and record another track |
| 15 min | Editing (layering and panning) | *Demonstrate*:   * Leveling track. Show how if level is too high it will distort (go into yellow and red) and that if it goes too low it will be hard to hear the track.   Explain   * Explain that this serves two functions:   1. Prevents the track from distorting signals. The ideal here is to remain below the yellow or 0dB (the circle indicator will most likely be significantly lower than that—around 10dB)  2. Can be used to build up texture. This is where you can emphasize some layers, while keeping others as details for the keen listener  *Activity:*   * Get students to change their levels on all of their tracks to prevent distortion and to add interest to the track by having some tracks louder than others. * Walk around and help   *Demonstrate:*   * Panning the levels to one or the other side.   *Explain*:   * Panning is a great way to add movement to a track as it stops the sensation that everything is coming from the same place all the time * For bass or rhythm tracks it’s best to keep them in the middle as it can sound lopsided if panned to either side (it removes any sense of balance) * Although you can pan things too hard left or right, generally it’s better to go for a 3 o’clock/9 o’clock approach, as people are generally not in a true stereo listening environment   *Activity:*   * Get the class to pan their tracks, being sure to keep rhythm tracks centered * Walk around and help |
| 10 min | Exporting | *Demonstrate*   * File > Export Audio * Naming the project and selecting where to save the project * Click OK on the warning of the tracks being mixed down to two stereo channels * Enter project metadata   *Activity:*   * Get the class to export their projects following the steps demonstrated * Walk around and help |
| 15 min | **Reflective exercise** | This can be done in class or online.  In class, have participants play their soundscapes and then talk through the process, using guidance questions (see below under ‘Activity’).  Online, participants can share soundscapes on a blog and provide written responses to some or all of the questions below.  *Activity:*   * How did you feel during the process of creating digital music? What did you like or not like? * What part was the easiest and what was the most challenging? * Were there any problems you had to solve while making your music? How did you approach solving those problems? * Can you think of other tools you could use to create digital music? What else could you create with the technology you used today? |
| 5 min | **Wrap up** | * Re-iterate key / shared points from presentations |

## Additional References

* Getting started with the littleBits & Korg USB I/O Module:  
  [https://www.youtube.com/watch?v=fXvUZHg4GkY](https://www.youtube.com/watch?v=fXvUZHg4GkY%20)
* A Brief Introduction of how to use Audacity:   
  <https://www2.le.ac.uk/departments/beyond-distance-research-alliance/learning%20inn/media/A%20Brief%20Introduction%20of%20how%20to%20use%20Audacity%2012.pdf>
* Audacity Tutorial – Recording and Editing:  
  https://manual.audacityteam.org/man/tutorial\_recording\_and\_editing.html
* Audacity Basic Audio Editing Tutorial 2018:  
  [https://www.youtube.com/watch?v=ZWoycsTWLQk](https://www.youtube.com/watch?v=ZWoycsTWLQk%20)