Level 6 – New Zealand Curriculum

Teaching and learning programme

Music and digital technologies (DAW and virtual instruments)

MINISTRY OF EDUCATION
TE TĀHUHU O TE MĀTAURANGA

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The full teaching and learning programme resources, associated materials and an assessment task will be supplied in 2018.

External links to websites
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Summary

In this programme, students will learn to use a digital audio workstation (DAW) and virtual instruments to compose an original piece of music in response to a design brief. Students will develop a design for their composition, considering the constraints of the brief, and then develop their composition using digital music production techniques

Briefs could include:

- a recorded soundtrack for a video or theatre production

- a composition of original music

- a live performance of electronic music using MIDI instruments and hardware controllers.

Students could work with students of dance or drama to develop their design, consulting with the end-users and giving their final outcome a real-world application, for example, as a soundtrack for a devised theatre performance piece for a NCEA Level 1 drama class, or a piece of music for a dance choreography.

Students will use MIDI (Musical Instrument Digital Interface) recording and editing techniques, as well as audio capture using microphones and instruments, to develop and structure their ideas to best fit the purpose they are working towards.

Students will learn to use common compositional devices when developing and structuring their composition.

Throughout the process, students will consider the effectiveness of their composition for the given purpose and make adjustments where necessary.

By the end of this teaching and learning programme, students will be able to:

- consider a composition task and develop a plan to achieve it

- consult with end-users to refine a plan and outcome that is fit for purpose

- reflect on iterations of a project in development

- set up and operate a "session" in a DAW (Logic Pro, Pro Tools, Ableton Live, Reaper, or similar)

- load virtual instruments and play them using a MIDI controller

- record and edit MIDI information

- understand the control functions of a virtual instrument and make changes to the parameters to achieve a desired sound

- understand the Record and Arrange window of a DAW

- set up and record audio using an analogue to digital converter and microphones or instruments

- create and use loops and samples in a composition

- use the Mix window of a DAW to balance sound levels and add digital effects

- use compositional devices to create an effective composition

- bounce and save a completed project as an MP3 or .Wav file

- name and manage files coherently.

Duration (terms, weeks, teaching periods)

1 term: 9–10 weeks; 36–40 teaching periods

Key teaching and learning concepts – the big ideas

Sound design, audio production and studio engineering, including composition, arranging and sound effects.

Alignment to NZC and/or Te Marautanga – (DTHM progress outcomes and progressions)

Designing and developing digital outcomes, specifically:

DTHM 1.2: Develop a design for a digital outcome

DTHM 1.4: Develop a digital media outcome

Links to other learning areas

This programme links to The Arts curriculum, specifically Music – Sound Arts, level 6, Developing Ideas strand. It could be used in conjunction with AS91092: Compose two original pieces of music. Some additional teaching around compositional techniques and devices may be required.

Teaching and learning pedagogy

- Project-based and inquiry learning.
- Using creative thinking and processes.

Prior knowledge/place in learning journey

Level 5 Music – Sound Arts would benefit students attempting this programme.

Resources required

- A suite of computers capable of handling the software requirements
- DAW software – there are many options available
- MIDI controller keyboards for each computer
- MIDI guitar would be useful for any guitarists
- An audio/digital converter/interface for recording audio – many options available
- Microphones, cables, and stands
- A variety of musical instruments.

How you might adapt this in your classroom

This programme would particularly suit students of music, who have some prior knowledge of music theory and composition and some instrumental skills. However, it could also be used in a drama or dance context.

The task could also be used in a media studies context, especially AS90993: Produce a design and plan for a media product using a specified range of conventions, and AS90994: Complete a media product using a specified range of conventions, from a design and plan.

For students who do not have a music or performing arts background, the task could focus less on the compositional element and more on the production of a digital outcome; for example, creating Foley effects and doing a voiceover for a radio commercial or a film excerpt, where the focus is on the technical production rather than the artistic merit of the final product.

Assessment

DTHM 1.2: Develop a design for a digital outcome

DTHM 1.4: Develop a digital media outcome

Music 1.3: Compose two original pieces of music

Term outline

The Learning context:

What is being covered	Approximate duration	Specific Learning Outcomes Students will be able to:	Learning Activities	Resources
• What is "digital audio production"? • Planning a digital media outcome • Introduction to a DAW • What is MIDI? • Basic MIDI recording	Week 1–3	• Identify an end-user for a digital audio production • Identify musical elements that contribute to the effectiveness of a composition • Select and manipulate musical elements for a desired outcome • Describe the basic functions of a DAW • Understand the Arrange, Mix and Edit windows in DAW • Understand and describe the difference between "audio" and "MIDI" tracks • Understand and describe the function of a MIDI or virtual instrument	• Listen to/view a range of digital audio productions: hip-hop recordings, electronic dance music and ambient music, film scores, theatre productions. Discuss the purpose of each and elements that contribute to its success. • Discuss potential projects; Choices could be given at this point: Students who are also studying drama or dance may see possibilities for incorporating their composition into a L1 devised drama piece or dance performance • Decide on a project. Consider/discuss the parameters of the project. • Use a template to begin planning (template to be provided) • Explore the basic functions of Logic Pro X: Arrange, Mix, Edit windows, Transport, Inspector. • Set up a recording session: tracks, input and output • Select and set up a MIDI instrument on a MIDI track	• Example: https://youtu.be/uSCzIy-1kTg • Logic Pro X or similar • MIDI controller keyboard • Headphones or monitor speakers • Planning template (to be developed)

The Learning context *(continued)*:

What is being covered	Approximate duration	Specific Learning Outcomes Students will be able to:	Learning Activities	Resources
• Virtual instruments • Digital synthesisers/ synth concepts	Week 4	• Understand and experiment with modifying the "timbre" of sound	• Listen to a range of music that uses synthesiser sounds – both historical and current. • Create a unique sound using a software synth. Learn about waveforms, oscillators, ADSR, glide/ portamento and filters, and experiment with adjustments to create and save a sound. • Consider the implications and aesthetic of the design brief and begin to create a range of synth sounds that are appropriate to the project. • Save sounds as presets in a folder.	• Mini Moog short doco: https://youtu.be/sLx_x5Fuzp4 • Synth tutorials: eg: https://youtu.be/179InHT8NZw
• Samplers/ sampling • Quantising rhythms • Using tempo and grid functions in a DAW	Week 5	• Create a "loop", Quantise rhythms in a DAW • Find and use a sample • Understanding the legal and ethical implications of sampling other's work	• Listen to a range of sample-based music (early hip-hop, for example), compare with the original music that the samples were taken from. Discuss the manipulations and the differences. There is a great example in Cyprus Hill's "Insane in the Membrane" which uses a horse neighing taken from a 1960s Western TV show as an integral part of the music. • Discuss recent copyright cases, eg: Sam Smith vs Tom Petty for "Stay with Me", Marvin Gay family vs Robin Thicke "Blurred Lines". • The process for "clearing" a sample for use. • Find a piece of music or other sound to sample – or create one using instruments or found sound. Encourage creativity! • Use either a stand-alone sampler such as a Roland SPD-SX, or sample directly to the DAW. • Use the tempo grid to align the sample to create a loop.	• Website compares new tracks with the originals they sampled from: https://www.whosampled.com/

The Learning context *(continued)*:

What is being covered	Approximate duration	Specific Learning Outcomes Students will be able to:	Learning Activities	Resources
• Developing motifs • Writing and recording beats and rhythms • Composing chord sequences • Arranging musical materials • Creating a structure	Week 6–7	• Use the functions of a DAW to develop a composition • Keep a record of iterations, manage files effectively • Reflect on the development of a composition and suggest changes	• Using the samples and synthesiser sounds created earlier, experiment with arranging the samples, and recording using MIDI, to develop and refine a musical motif, either a groove/beat, a bassline, a chord sequence or a melodic idea. • Take care to align musical ideas to tempo grids, selecting the right time signature and quantising where necessary. • Continue developing ideas and begin to structure them, using the arrange window of the DAW. Bear in mind musical conventions such as even bar numbers and compositional devices such as syncopation, call and response, augmentation/diminution, etc . • If composing in response to a film excerpt it may be more appropriate to import the video into Logic Pro X and synchronise the music to the film.	

The Learning context *(continued)***:**

What is being covered	Approximate duration	Specific Learning Outcomes Students will be able to:	Learning Activities	Resources
• Refining a structure • Refining musical materials • Using plug-in effects to enhance audio • Automation in a DAW • Mixing	Weeks 8–9	• Make final decisions to bring a composition to completion • Understand the purpose of a range of plug-in effects • Select and use appropriate plugins for mixing • Balance a mix, using plugin effects, EQ, Pan and Automation for an effective outcome • "Bounce" a final mix and save as an MP3 or .Wav file.	• Review brief, listen back, evaluate composition in relation to purpose. Make adjustments and finalise structure. • Plug-in effects and their purposes – demonstration • Explore EQ, compression, reverb, delay and modulation (chorus, flanger, tremolo, etc) effects. • Experiment with applying effects to recorded audio or MIDI tracks and adjusting parameters to vary the sound. • Balance the levels of the recorded tracks so that all instruments are audible and "sit" in the mix. Use compression and automation if necessary to smooth out volume levels.	• Demo video (to be developed)