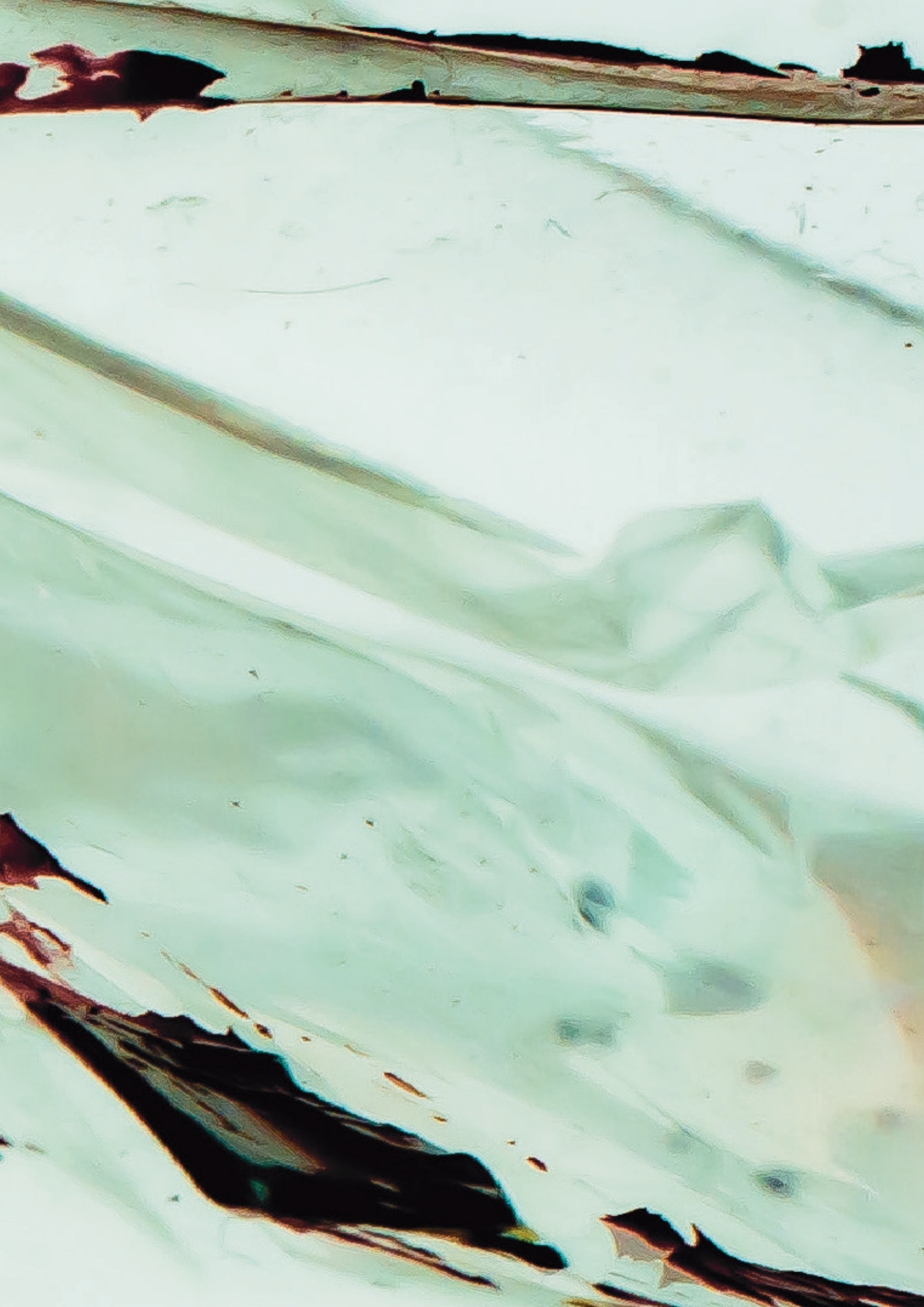


Other Voices

Creative Education Kit

Cat Hope - Her Pockets Full of Inertia



About this resource

Other Voices is a performance, recording and education project based on three new electroacoustic works for flute and electronics by Australian composer/educators Cat Hope, Tristan Coelho and Fiona Hill. It provides access points for young composers, performers and their teachers to explore the potential for combining electronic music with instruments and voice.

This education kit provides detailed lesson plans and resource materials for Stages 4, 5 and 6 (including Music 1 and Music 2). The activities in the kit draw together the key learning areas of composition, musicology, performance and aural skills. The content utilises a range of musical genres from pop to art music, to assist students in their understanding of the electronic genre, and to provide a stepping stone into the art music of today.

There is much to be explored through this music including extended flute and voice techniques, creating soundscapes, graphic score interpretation, and basic computer/electronics skills for exploring techniques such as delay, reverb, EQ, and looping. All technological components within the kit come with videos with step by step instructions on how to use them, and how to best implement the technology within the classroom for teaching and learning purposes.

We hope that you enjoy exploring what the electronic genre has to offer, and that it assists you in how to effectively teach this exciting and engaging style of music to your students.

Watch the introduction video on the [**Other Voices website**](#).

How to use this resource

There are three works included in the Other Voices Creative Education Kit. Each piece has Teaching and Learning activities for Stage 4, 5 and 6 Music which can be taught as individual activities, or become the basis for a whole unit of work.



DAYBREAK

by Tristan Coelho

The notion of mimicry forms the point of departure for Tristan Coelho's new work, Daybreak for flute and electronics. Transcribed birdsong has been worked into the composition through a process of looping and gradual transformation - the original mimics (the birds) are playfully imitated by the flute soloist while the electronics interact with the live flute sound through delay effects.



HER POCKETS FULL OF INERTIA

by Cat Hope

Her Pockets Full of Inertia is a graphic score by Cat Hope based on the poem of the same name, by Claire Gaskin. It is scored for solo bass flute, flute choir, transistor radios and sub-contra bass flute. The work treats the poem as an inspiration for the mood of the piece, and creates an eerie atmosphere of stasis and cloud-like sounds through the use of extended flute techniques.



IMAGO

by Fiona Hill

Fiona Hill's new work Imago has a very serious and emotive origin. It is a response to the stories of those affected by forced adoption within Australia. The work layers text derived from victim transcripts, interviews and governmental hearings with live and processed flute and voice with music concrete derived from domestic soundscapes.

Introduction to the topic

The following resources can be accessed as required through the activities or as an introduction to the topic:

- people involved in this project
- digital resources introducing some of the basics of the electroacoustic sound world
- performance tips for working with technology

Digital resources include:

- Electronic Sandbox
- Introduction to basic electronics FX by Ciaran Frame
- MaxMSP instructional patch

Scores and listening files

You will find the following resources for use throughout the kit from the

Her Pockets Full of Inertia resources web page:

- the score
- a video the work for viewing the piece as a live performance
- full high-quality downloadable WAV audio file.

The teacher should use this audio file for all listening. Timings will be given for each listening activity and the transport bar can be used to slide to the appropriate timing.

Musicians from a broader stylistic background will be able to use the pack, as an understanding of traditional notation is not an essential prerequisite for all activities.

Background information

Each piece contains background information relevant to all activities:

- composer biography
- background to the work
- composer Q and A
- performer information.

This information can be accessed at any point but are not essential for completing any of the activities.

Structure of activities for each stage

- an overview of the unit and the syllabus outcomes that are addressed through the teaching and learning activities
- teaching and learning activities for composing, performing, listening and musicology
- suggested answers for the teacher.
- glossary of electronic, instrumental and compositional terms.
- reference list and resources (audio files, web pages, listening files, videos).

Additional resources provided for activities

Where applicable there are additional resources to complete activities:

- links to standalone downloadable electronic software tools for teaching music technology techniques such as delay, reverb, EQ, looping
- video instructional clips for working with relevant technology including instructional clips of composers using their software
- video demonstrations of extended techniques using the flute and voice
- YouTube links for repertoire for additional listening – a range of musical styles are covered to appeal to a range of listeners.

All technical requirements are freely available or affordable.

Video introduction to Other Voices

- about Other Voices and brief introduction to the works
- highlights showreel of the pieces.

Syllabus outcomes

If used in its entirety, teachers will cover aspects of listening, composition and performance from Stages 4, 5 and 6 of the NSW Music syllabus.

Stage 4: 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.10

Stage 5: 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 5.10

Music 1 Stage 6: P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, H1, H2, H3, H4, H5, H6, H7, H8, H9, H10

Music 2 Stage 6: P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, H1, H2, H3, H4, H5, H6, H7, H8, H9, H10

Contents of this eResource assist with the Preliminary and HSC Topics of:

- An instrument and its repertoire
- Australian music
- Methods of notating music
- Music of the 20th and 21st centuries
- Technology and its influence on music
- Music of the last 25 years (Australian focus).

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Cat Hope

Her Pockets Full of Inertia

Contents

Introduction to the composer	15
Introduction to the music	17
Creativity and collaboration	18
Introduction to Decibel ScorePlayer	21

Stage 4

Activities and resources	26
Answers	32
Reference list and resources	35

Stage 5

Activities and resources	36
Answers	46
Reference list and resources	51

Music 1 Stage 6

Activities and resources	52
Answers	61
Reference list and resources	63

Music 2 Stage 6

Activities and resources	64
Glossary	76
Answers	77
Glossary answers	82
Reference list and resources	83

Her Pockets Full of Inertia resources: score, audio, video, downloads

Introduction to the composer

Cat Hope is an accomplished Australian based musician, composer, songwriter, sound and performance artist whose practice is an interdisciplinary one that crosses over into film, video, performance and installation.

Her work has taken her on numerous tours around Australia, the USA, Japan and Europe. Her recordings are distributed and published worldwide, and she has written soundscapes for dance and theatre companies as well as commissions for film and pure music works.

Cat is a classically trained flautist, vocalist, improviser, experimental bassist and electronic composer. She has directed and edited numerous short



music videos and created audiovisual installations. She has conducted extensive funded research into digital archiving, graphic and digital notation, low frequency sound and surveillance techniques for use in performance.

Her music is conceptually driven, exploring the physicality of sound in different media, using graphic scores, acoustic/electronic combinations, aleatoric elements, drones, noise and glissandi. Her work has been discussed in books such as *Loading the Silence* (Kouvaris, 2013), *Women of Note* (Appleby, 2012), *Sounding Postmodernism* (Bennett, 2011) as well

as periodicals such as The Wire (UK, 2013), Limelight (Aus, 2012) and Neu Zeitschrift Fur Musik Shaft (Germany, 2012). Her works have been recorded for Australian, German and Austrian national radio, as well as range of international labels.

She is also an active researcher in the area of music archiving, film music, digital art and electronic music performance. She has managed a small label/production company, Bloodstar Music.

In 2013 Cat was awarded the Churchill Fellowship to study digital notation in Europe and USA and in 2014 she was awarded APRA/AMC National Award for Excellence in Experimental Music and Civitella Ranieri Fellowship.

Cat is currently Professor of Music, Head of School, Zelman Cowen School of Music Arts, Monash University, Melbourne, Australia and Artistic Director, Decibel music ensemble.

For further research and information please see [**Cat Hope's website**](#).

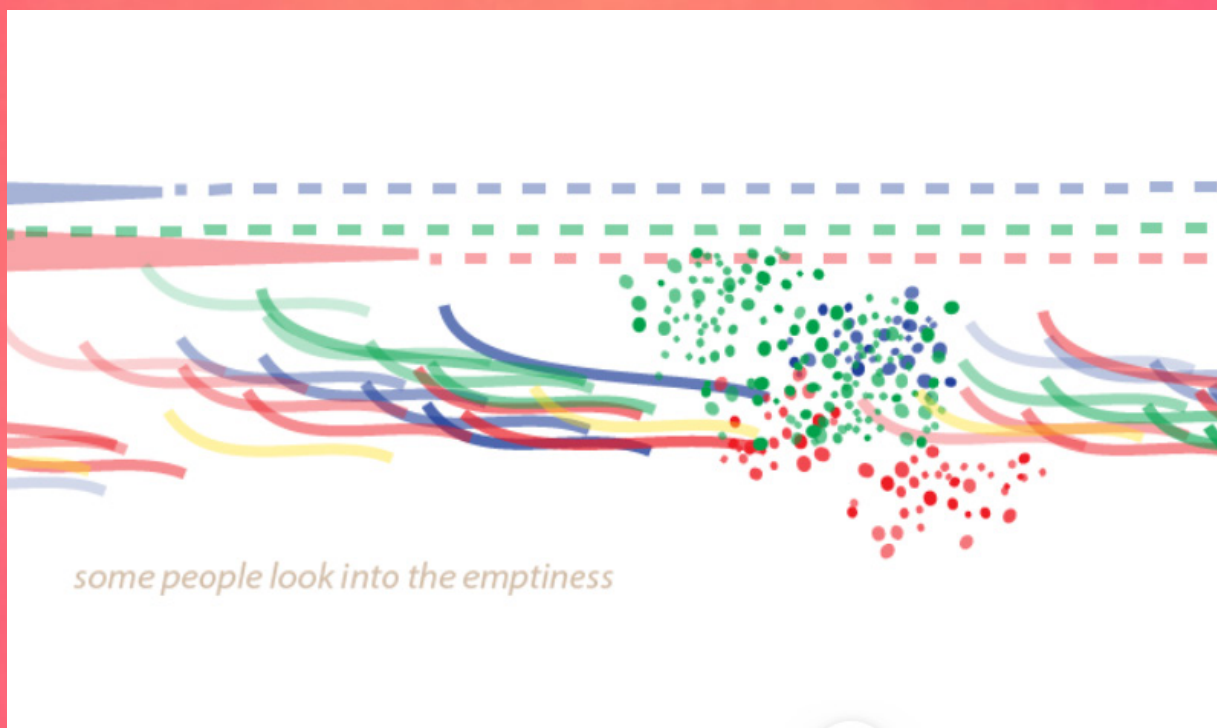
Introduction to the music

Her Pockets Full of Inertia is written for solo bass flute and flute choir. The flute choir is separated into three groups, each with an AM transistor radio plus sub contra bass flute (or very low keyboard)

The piece is named after a poem by Melbourne poet Claire Gaskin. The mood of the poem itself is the inspiration for the piece, treating the poem as a whole, rather than a descriptor of each line, and creates an eerie atmosphere of stasis and cloud like sounds.

The work was commissioned by Lamorna Nightingale for the NOW Flute Ensemble and premiered at the **Australian Flute Festival**, Canberra, 4 October 2015.

Cat Hope





Creativity and collaboration

In an interview with Cat and Lamorna, they outline some of the compositional processes, uses of technology and performances.

What was your compositional process?

Cat: I use graphic notation for my compositions. This is because the information that traditional music notation is good for (exact pitches of notes, harmony, rhythms and beats) is not what

is important to me as a composer. I don't want beats in my music. But I like my notation to be exact in other ways. I want players to start and stop at exact spots. And I am interested in the shapes of sounds, and how people read shape and colour as music. So using them works well for the music I like to make, and the sounds I am looking for. I like performers to have more choice and control in my music, I don't want to decide everything for them. When I started making this graphic notation, drawing long lines that go in different directions, to indicate pitch, and different widths or opacity to describe volume, I had to work out how to coordinate all the players so they could be in one place at the same time. Traditional

music notation is very good at this! So I developed a way to read my notation on the iPad.

How has the technology that you have used enhanced or hindered the musical possibilities of your piece?

Cat: This piece uses the Decibel ScorePlayer, a software application for iPad for reading graphic scores. This enables the player to change the speed/length of the piece and to see their own part in the score. The technology helps me make sure all the performers are coordinated with each other and the electronic part. It makes my music easy to share over the internet, and I can get a great range of colours using a computer.

Why did you choose to work with the performing media of acoustic instruments combined with electronics? What were the challenges you faced in combining the two and how did you overcome them?

Cat: Like many of my pieces, there are different versions of the same piece. You can play with piece acoustically if you have all the instruments you need. Or you can play with a recording of other flutes that I have provided. It is a great development for composers working with electronic tracks that we can put the playback track in the

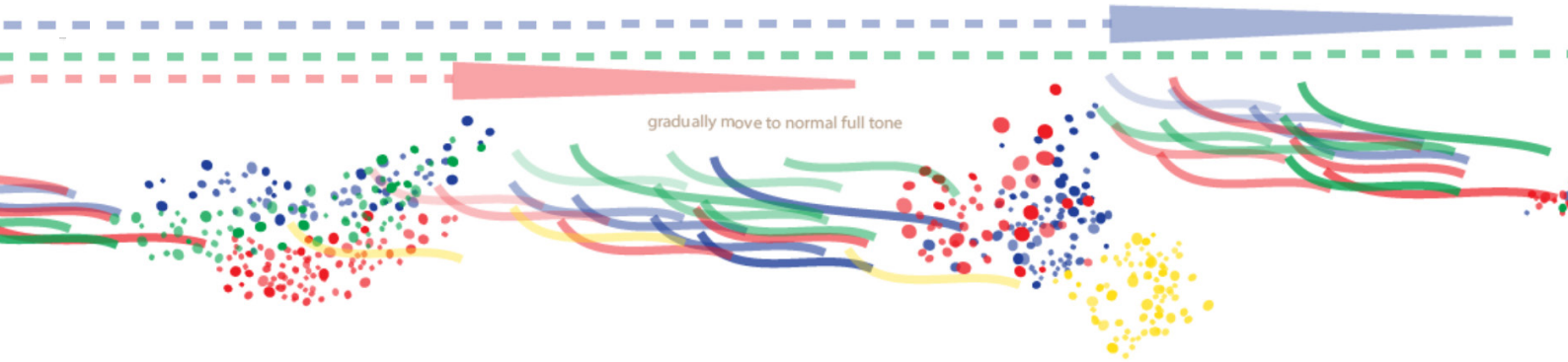
score – so the acoustic instruments line up perfectly with the electronic tracks every time.

How did you develop your musical material throughout the piece?

Cat: In *Her Pockets Full of Inertia*, there are several contrasting motifs: staccato as opposed to long notes, for example. The ghost like tones ending with a downward glissandi is the principle motif of the piece, contrasted with staccato and a glissandi tones that go up and down, are all used in ‘clouds’ of different constructions. The radio static (something I use a lot in my work) sounds like raspy breath, also in cloud like groups. The placement and manipulation of these four materials are guided by the text. If you look at the score as a whole, you will note the whole structure is a slow, downward glissando. This is a structural device I have used in other pieces too, most obviously, *In The Cut* (2009).

How would you describe the process of collaboration?

Cat: There are lots of different kinds of collaboration: between composers, performers, computer programmers and listeners. Collaboration is very important to me. It helps me to keep getting new ideas and understand my own work better. The process is different

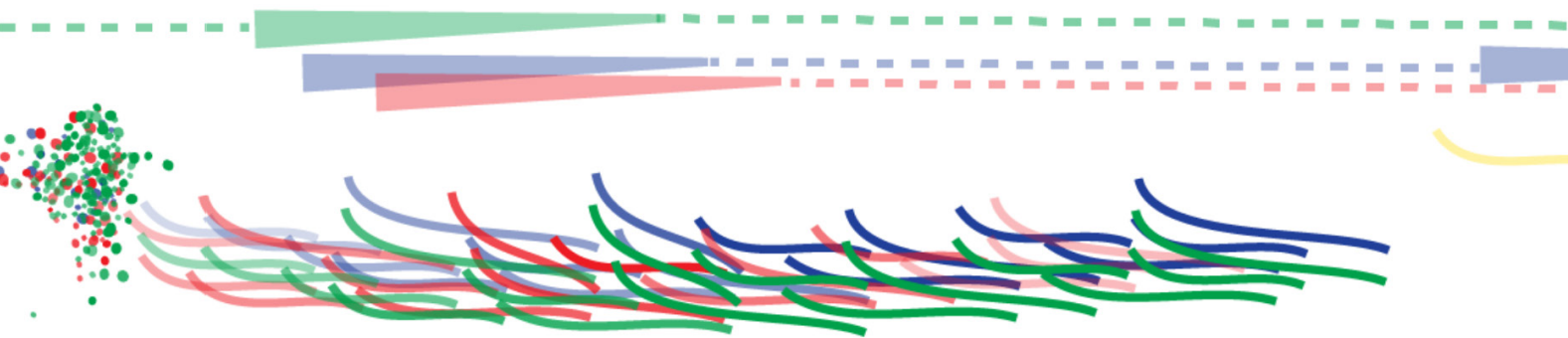


each time, it depends on the aim you have. But one thing all collaborations have in common is sharing. Ideas and sounds, ways of doing things.

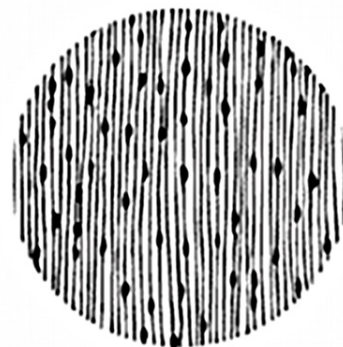
Lamorna Nightingale, could you discuss the process of collaboration between yourself and the composer during the recording process?

Lamorna Nightingale: Rather than organise full choir for the recording session, Cat and I decided to make a backing track together. This involved numerous takes of duet performances of each of the 3 parts of the flute choir

on various different flutes (C flute, alto and bass flutes.) Recording the contra-bass part was a little bit tricky because we didn't have an instrument so we experimented with recording it on bass flute and then electronically manipulating the sound – pitch shifting it down the octave. Once we overdubbed all the parts I was able to play the solo bass flute line over the top. It was great to have the composer in the recording studio and playing with me – any questions about the score or the type of sound to use were answered straight away!



Introduction to Decibel ScorePlayer



The graphic score was designed to be viewed on [**Decibel ScorePlayer**](#) – a software application for iPad, downloadable from the Apple App Store. The score will already be available in the app.

Each group of flutes is assigned a colour and you will be able to change the duration and speed of the piece and choose to see your own part in the score, instead of all the parts at once. The app works like a tape going over a playhead in an old tape machine; where the tape touches the playhead, represented by a vertical, orange line, that's where you play.

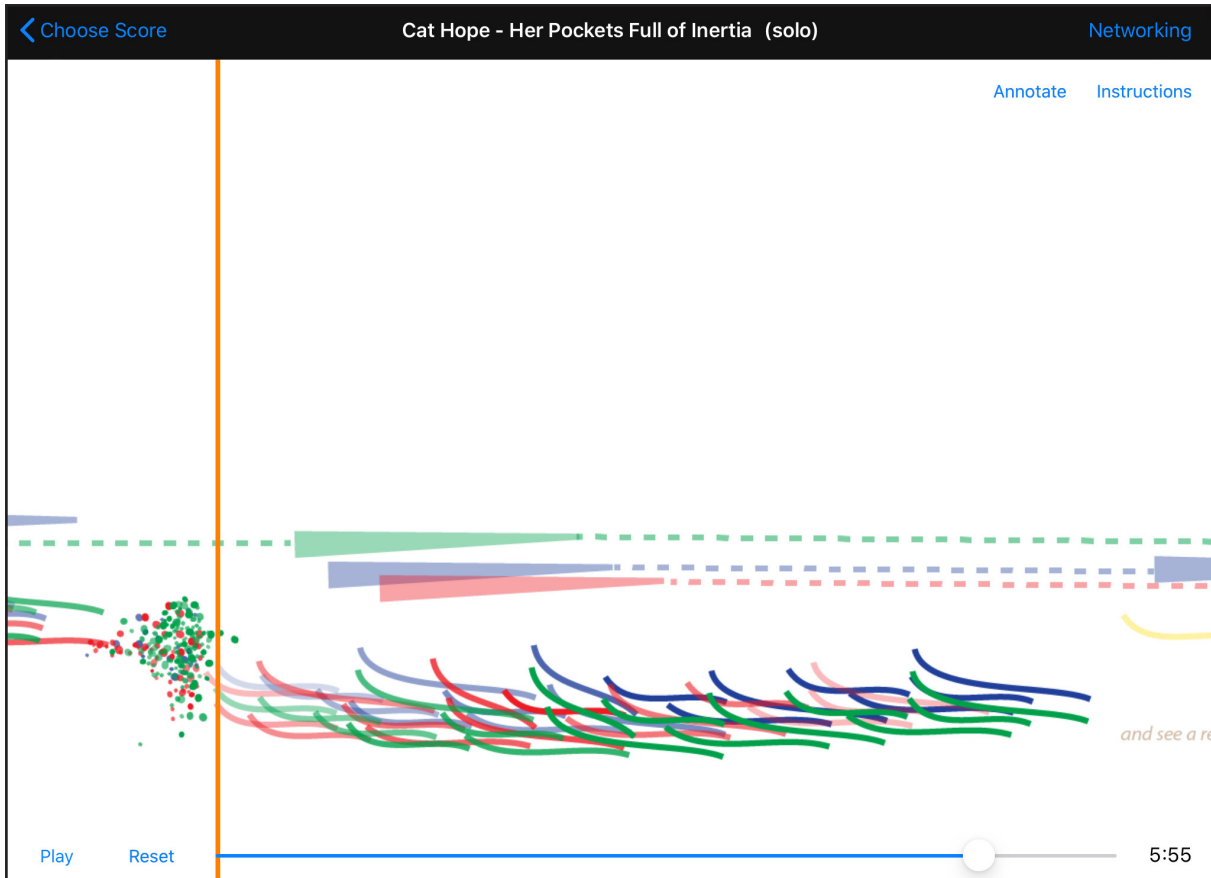
Using Decibel ScorePlayer in performance

- The flute choir part is embedded in the score for a soloist to play along with.
- If you have a choir, you can still use the app for performance – simply set the volume of the iPad to zero.
- If you have multiple iPads, you can get them to network with each other to play the score in sync.
- You can 'annotate' the score to make notes on your part.
- You can choose to project the score from the iPad for the audience.

Alternatively, videos and PDFs of the score, are available from the [**Her Pockets Full of Inertia resources**](#) web page.

Instructions

After you've selected the score for Her Pockets Full of Inertia in the app, you will be taken to the player for the score. The vertical orange line acts as a playhead, signifying the part of the score that is currently being played.



- **Choose Score:** back to list of scores in the app
- **Networking:** select other iPads on the same wifi network (refer to the User Guide in the app for more details)
- **Annotate:** mark the score with your notes
- **Instructions:** information about how to interpret the score
- **Play/Pause:** play and pause the score
- **Reset:** send you back to the beginning and pauses playback

Additionally, there is a playback progress bar to show you how far in the composition the playback is currently at.

Gestures

- **one-finger swipe up/down:** switch between various versions of the script (full ensemble, soloist, flute choir, individual instruments)
- **double-tap timer** (when the player is paused at the beginning of the score): specify a new duration for playback. Shorter duration means playback is faster, longer duration will play the score slower. Reset the player to change the duration.

To reset the duration of the score to default length, tap on Choose Score to go back to the list of scores and reselect Her Pockets Full of Inertia.

Activities and resources

Her Pockets Full of Inertia

Stage 4

Musicology: what is music?

Listening – Her Pockets Full of Inertia

Research and composition
Creating graphic notation

Performance

Answers

Reference list and resources



Syllabus outcomes

- 4.2 performs music using different forms of notation and different types of technology across a broad range of musical styles
- 4.4 demonstrates an understanding of musical concepts through exploring, experimenting, improvising, organising, arranging and composing
- 4.5 notates compositions using traditional and/or nontraditional notation
- 4.6 experiments with different forms of technology in the composition process
- 4.7 demonstrates an understanding of musical concepts through listening, observing, responding, discriminating, analysing, discussing and recording musical ideas
- 4.8 demonstrates an understanding of musical concepts through aural identification and discussion of the features of a range of repertoire
- 4.10 identifies the use of technology in the music selected for study, appropriate to the musical context

Music 7-10 Syllabus

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Musicology: what is music?

1. Discuss the question 'What is music?'. Consider the following questions:

- Does all music require musical instruments?
- When does 'sound' become 'music'?
- What are some ways we can organise sound?

2. Watch **Thunderstorm (YouTube)**

- Draw in the symbols in the boxes below that you feel represent the following sounds from the clip.
- Discuss as a class how you determined which symbols belonged with which sound.

Rain
Lightning
Thunder
Wind
Scream

Listening

Her Pockets Full of Inertia by Cat Hope (0:00-0:36)

1. Can you describe the different sounds that you can hear?
2. There are 5 ways of creating sound: What are they?

- _____
- _____
- _____
- _____
- _____

3. Which ways of creating sound do you think are being used in this excerpt?
4. Now listen to a second excerpt (0:36-1:05): Can you hear any additional sounds in this excerpt?
5. Which method of creating sound might be used for the new sound?
6. Close your eyes while listening to the whole excerpt (0:00-1:05) and imagine you were in a different place to the classroom.
 - Where would you be?
 - How does the music help create that place for you?
 - Do the sounds create any feelings of emotion?
 - How do the sounds do that?

Extension: The sound in these excerpts is created by the performer blowing across the head joint of the flute whilst sticking her finger into the head joint to manipulate pitch. Discuss how the length of tubing changes the pitch in relation to the flute and other instruments.

Task: Create an instrument using materials found in the home that has 3 varying pitches.

Research and composition

Creating graphic notation

For this activity you will need a computer room (alternatively you may choose to use your own device.) Visit

[Chrome Music Lab](#)
- [Kandinsky](#).



Kandinsky Wassily was a Russian artist who used colour to engage the senses and believed that colour can create experiences that could engage, sound and emotions. This software turns anything you draw into sound.

Research: Spend some time creating sound – try many different types of shapes, squiggles, lines and in varying places across the page.

Discuss the following questions:

- How do you create differences in pitch?
- How do you change timbre?
- How do you change the instrument?

Composition: Create a composition using Kandinsky that has varying pitch and timbre. At the end of the lesson play your compositions for one another.

Discuss the following ideas:

- How are the compositions similar?
- How do they vary?

Extension: How do you create chords?

Performance

Creating a scene using sounds

1. Break into groups and select one of the following options for a scene. Keep your decision secret from the rest of the groups.
 - thunderstorm
 - car chase
 - lost in a creepy forest
 - a festival.
2. In your groups, consider the following:
 - what sounds might be required for the scene you have chosen
 - which instrument or object around the room could create that sound
 - how are you using that object/instrument to create that sound.
3. Once you have established the answers above take some time to create the scene using the sounds you have chosen.
4. Once the scene is created – perform the scene to the class and see if the class can guess which scene your group chose.
5. Discuss each performance together with the class considering the questions below.
 - how the other students could guess which scene it was
 - how your group used the instruments to create effective sounds.

Stage 4 – Answers

Musicology: what is music?

The purpose of these activities is to encourage the students to consider music beyond the realm of popular culture and get them thinking and creating outside the box.

1. Ask the class to discuss 'What is music?'. You may like to prompt them with the following questions:
 - Does all music require musical instruments? No.
 - When does 'sound' become 'music'? When it is organised.
 - What are some ways we can organise sound? Standard notation, graphic notation, improvisation
2. Watch Thunderstorm
 - Draw in the symbols in the boxes below that you feel represent the following sounds from the clip.
 - Discuss as a class how you determined which symbols belonged with which sound.

Some suggested answers:

Rain Blue triangles or Red Circles
Lightning Yellow ovals
Thunder Green rectangles or spirals
Wind Black swirls
Scream Face

Listening

Listen to Cat Hope's Her Pockets Full of Inertia (0:00-0:36)

1. Can you describe the different sounds that you can hear? Students may say things like: breathing, blowing, static, squeaky.
2. There are 5 ways of creating sound: What are they?
 - blowing
 - scraping
 - plucking
 - hitting
 - electronic
3. Which ways of creating sound do you think are being used in this excerpt?
Blowing – flute sound, electronic – radio static
4. Now listen to a second excerpt (0:36 – 1:05): Can you hear any additional sounds in this excerpt?
5. Which method of creating sound might be used for the new sound?
 - Hitting – key clicks in flute
6. Close your eyes while listening to the whole excerpt (0:00 – 1:05) and imagine you were in a different place to the classroom.
 - Where would you be?
 - How does the music help create that place for you?
 - Do the sounds create any feelings of emotion?
 - How do the sounds do that?

Research and composition task

This site creates composition based on colour shape and placement on the page. When looking at the score of Cat Hope's piece later, students may notice similarities between the shapes that can be created in this software and the graphic notation in Cat's piece.

Research: Spend some time creating sound. Try many different types of shapes, squiggles, lines and in varying places across the page.

Discuss the following questions:

1. How do you create differences in pitch? The pitch is determined by the placement of the shape on the page
2. How do you change timbre? The timbre is changed by changing the colours available to you and also by the different shapes that you use. Encourage the students to use lines, and shapes as this will ensure varied sounds.
3. How do you change the instrument? Changing the colour and changing the shapes will create varying instruments.

Composition: Create a composition using Kandinsky that has varying pitch and timbre. At the end of the lesson play your compositions for one another.

Discuss the following ideas:

1. How are the compositions similar?
2. How do they vary?

Extension: How do you create chords? To create chords you can draw circles directly underneath one another for triads and/or overlap for 2nds and 4ths.

Stage 4 – Reference list and resources

Cat Hope's website, date accessed 9/3/2019

Her Pockets Full of Inertia by Cat Hope – resources, audio, videos and score, date accessed 26/02/2020

Music 7-10 Syllabus, date accessed 07/04/19

Thunderstorm (YouTube), date accessed 20/2/2019

Chrome Music Lab – Kandinsky, date accessed 20/2/2019

Stage 5

Aural and musicology

Composition: using poetry as inspiration

Performance

Answers

Reference list and resources



Syllabus outcomes

- 5.1 performs repertoire with increasing levels of complexity in a range of musical styles demonstrating an understanding of the musical concepts
- 5.2 performs repertoire in a range of styles and genres demonstrating interpretation of musical notation and the application of different types of technology
- 5.4 demonstrates an understanding of the musical concepts through improvising, arranging and composing in the styles or genres of music selected for study
- 5.5 notates own compositions, applying forms of notation appropriate to the music selected for study
- 5.6 uses different forms of technology in the composition process
- 5.8 demonstrates an understanding of musical concepts through aural identification, discrimination, memorisation and notation in the music selected for study
- 5.9 demonstrates an understanding of musical literacy through the appropriate application of notation, terminology, and the interpretation and analysis of scores used in the music selected for study
- 5.10 demonstrates an understanding of the influence and impact of technology on music

Music 7-10 Syllabus

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Aural and musicology

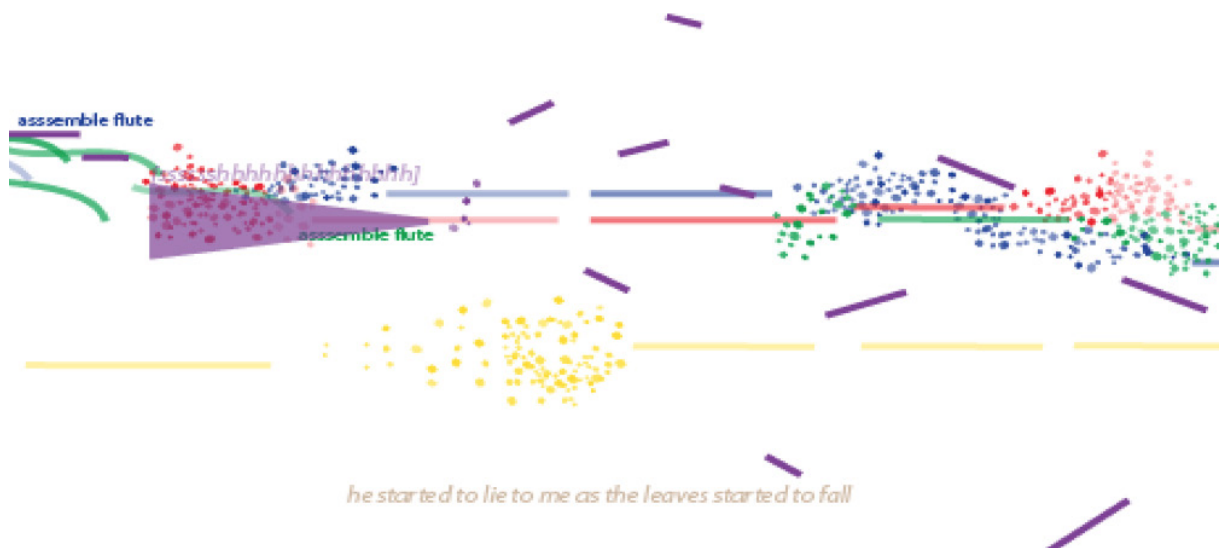
Listening to excerpts from **Cat Hope's Her Pockets Full of Inertia** and creating a musical representation of the visual score. The piece is written for solo bass flute, flute choir, sub contra flute (or very low keyboard) and AM transistor radios.

Excerpt 1: (2:00 – 2:28)

1. Listen to this excerpt and list the sounds you can hear.

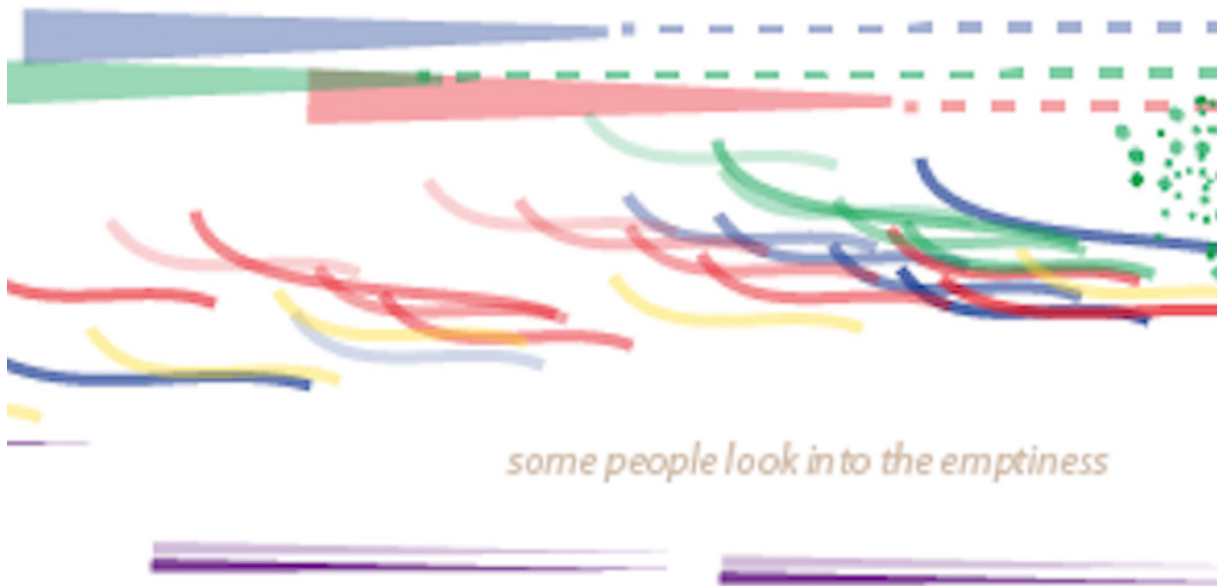
Sound	Time
Short Breathy Sounds	2:00
Long Breathy Sound	2:02
	2.06
	2.10
	2.14
	2.18
	2.20

2. Pick 3 contrasting sounds and describe them using the concepts of pitch, timbre, duration and expressive techniques specifically.



Excerpt 2: (4:30 – 4:50)

1. Listen to this excerpt. How does this contrast from the first excerpt listened to in this activity? Consider the following concepts of music specifically in your answer: duration, pitch, timbre.
2. Now have a look at a screen shot of the score below for both excerpts. How does the graphic notation demonstrate the differences heard in the excerpts?



Composition: using poetry as inspiration

Her Pockets Full of Inertia is named after a poem of the same name by Melbourne poet Claire Gaskin. The mood of the poem itself is the inspiration for the piece and treats the poem as a whole, rather than a descriptor of each line.

Below are 2 different poems by Australian poet Judith Wright.

Magpies by Judith Wright

Along the road the magpies walk
with hands in pockets, left and right.
They tilt their heads, and stroll and talk.
In their well-fitted black and white.

They look like certain gentlemen
who seem most nonchalant and wise
until their meal is served – and then
what clashing beaks, what greedy eyes!

But not one man that I have heard
throws back his head in such a song
of grace and praise – no man nor bird.
Their greed is brief; their joy is long.
For each is born with such a throat
as thanks his God with every note.

Five Senses by Judith Wright

Now my five senses
gather into a meaning
all acts, all presences;
and as a lily gathers
the elements together,
in me this dark and shining,
that stillness and that moving,
these shapes that spring from nothing,
become a rhythm that dances,
a pure design.

While I'm in my five senses
they send me spinning
all sounds and silences,
all shape and colour
as thread for that weaver,
whose web within me growing
follows beyond my knowing
some pattern sprung from nothing-
a rhythm that dances
and is not mine.

Your task is to create a short composition (no longer than 30 seconds) and graphic score for your instrument and 1 other contrasting instrument or electronic sound that represents the themes/mood of the poem.

Option 1: acoustic version

1. Select the verse from the poem you would like to use and determine the mood/theme the poem evokes for you.
2. Using your instrument and 1 contrasting instrument, create a short composition that depicts the mood of the poem you wish to evoke. Remember to use the concepts to help you manipulate and create your sounds: timbre, pitch, expressive techniques and dynamics specifically.
3. Once you have completed your composition consider how you might represent the different sounds you have created graphically. You could:
 - create a graphic for each different sound you have created (such as longer notes, staccato) or
 - create a digital graphic for your sound source and manipulate that graphic to represent how the sounds change.
4. Perform your piece.



Sections of score from Cat Hope's Her Pockets Full of Inertia

Option 2: all digital

You may choose a live instrument/sound to compliment your own – or you may choose to use software to incorporate electronic sounds or to manipulate your live sounds. Follow the steps from option 1 but experiment using software.

- Appropriate software could be: **GarageBand** or **Audacity**.
- You can learn more about ways to electronically manipulate sounds in Electronic Sandbox, available from the **Her Pockets Full of Inertia resources** web page.
- Explore the use of electronic sounds, snippets of recordings and sound effects which you can make yourself or take from a resource such as the **BBC Sound Effect** library.
- Experiment with using **Audacity effects** to alter your own sounds. Find out more about how to amplify your instrument by watching the **Additional resources video** on the Her Pockets Full of Inertia resources web page.



Thunderstorm: a graphic notation composition by Alex Chorley, age 12

Further listening and research

Graphic scores and music inspired by poetry

- [Thunderstorm \(YouTube\)](#)
- [Year 7 graphic notation with ostinatos \(YouTube\)](#)
- [Iannis Xenakis - Pithoprakta \(YouTube\)](#)
- [Chopin, Fantasie-Impromptu, opus 66 \(YouTube\)](#)
- [Goldfish Through Summer Rain \(YouTube\)](#) by Australian composer Anne Boyd, based on a Japanese haiku

Performance

Using the extract of Cat Hope's graphic score used in the listening component of this activity, break into groups of 4 each using your own instrument.

Decibel ScorePlayer

The graphic score was designed to be viewed on [Decibel ScorePlayer](#) – a software application for iPad, downloadable from the Apple App Store. The score will already be available in the app. Refer to the section [Introduction to Decibel ScorePlayer](#) in this eBook for more information about the app and its usage.

Alternative options

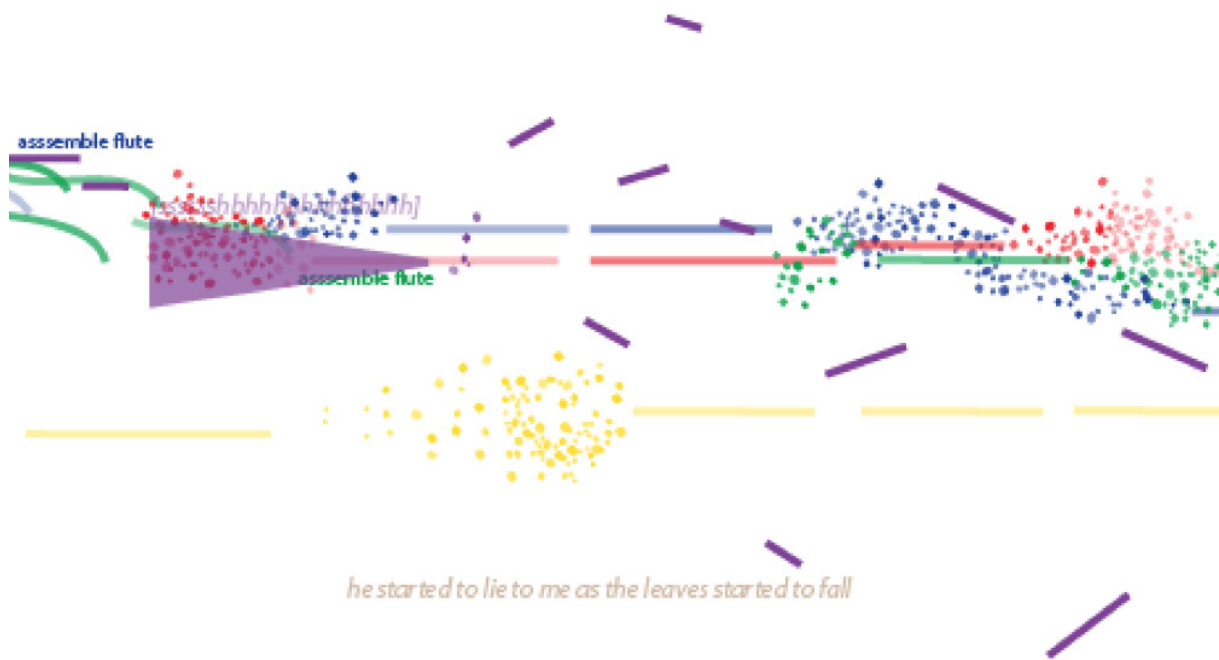
If you do not have iPads with Decibel ScorePlayer then you can view videos of the score. There are two versions:

- with the flute choir audible, which you can use as a 'backing track'
- with audio of the choir and bass flute solo for your reference.

These videos, along with various PDFs of the score, are available from the [Her Pockets Full of Inertia resources](#) web page.

Steps

1. Assign an instrument to a line and colour.
2. Create the sounds you would like on the instrument that you feel accurately represents the graphic.
3. As a group create a performance based on your own interpretation of this score extract.



Score interpretation

- The opacity describes the volume of the note – there are three shades: p, pp, ppp.
- Some lines head upward or downward and this indicates a shift in pitch.
- Radio parts are represented by a straight opaque dashed line which becomes solid when becoming louder.
- Wedges indicate increasing or decreasing volume.
- When the words are in brackets in the solo flute line, the player is to speak the words into the flute.
- The words without brackets reveal the poetry that was the impetus for the composition. These words should not be spoken.
- Solo flute (purple line): Solid plus opaque combination means 2 pitches at the same time.

Stage 5 – Answers

Aural and musicology

Listening to excerpts from Cat Hope’s Her Pockets Full of Inertia and creating a musical representation of the visual score. The piece is written for solo bass flute, flute choir, sub contra flute (or very low keyboard) and AM transistor radios.

Excerpt 1: (2:00 – 2:28)

1. Listen to this excerpt and list the sounds you can hear.

Here are some examples of what students may write:

Sound	Time
Short breathy sounds	2:00
Long breathy sound	2:02
Short breathy sounds	2.06
Whoosh sound	2.10
Clear tones as a chord	2.14
Low drooping sounds	2.18
Explosive attacks based on different consonants. ('t', 'ch', 'k', 'p')	2.20

2. Pick 3 contrasting sounds and describe them using the following concepts of pitch, timbre, duration and expressive techniques specifically.

Sounds have been listed here from the full piece according to the instruments in the composition – students may or may not be able to do this. However, most important is their ability to hear and describe contrasting sounds using the concepts of music.

a. **Flute choir:**

- breathy tones: gentle breathy timbre, very soft, drooping pitch
- faster breathy tones: a feeling of semiquavers, harsh timbre, unpitched
- extremely breathy tones: harsher quality, more distorted pitch
- whistle tones: very high pitches, short with a shiny quality
- staccato notes: random pitches, regular tone production, very soft
- percussive extended techniques: short, indeterminate pitches, very little pitch; explosive attacks based on different consonants. ('t', 'ch', 'k', 'p')

- key clicking: indeterminate pitch; however, key combinations create pitch, very short duration, staccato, harsh sound contrasting to breathy timbre
- low, long clusters of sounds

b. **Contra flute:**

- longer breathy sounds, indeterminate pitch
- deep, low pitched long notes, hollow timbre, fading out towards the end, pitch drooping

c. **Solo bass flute sounds:** sounds from the flute choirs plus

- regular tones: low drooping pitch, shorter duration
- singing and playing simultaneously: distorted sounding chords
- 'shh' sounds: long and without specific pitch
- slow vibrato: slow bending of the pitch up and down
- words spoken into the instrument: hollow and indistinct

d. **AM Radio**

- buzzing static sound, longer duration, white noise
- buzzing static sound staccato effect

Excerpt 2: (4:30 – 4:50)

1. Listen to this excerpt.
2. How does this contrast from the first excerpt listened to in this activity? Consider the following concepts of music specifically in your answer: duration, pitch, timbre.

Duration: each of the parts play long notes throughout the excerpt. There are no short staccato sections as per the first excerpt.

Pitch: each of the parts have a pitch that starts at a certain point and then slowly descends and drops off towards the end of the note. Pitch is indeterminate in some notes as the extended techniques used cloud the pitch. In the first excerpt because the notes are much shorter they don't have the pitch shift of the original ghost like tones.

Timbre: breathy full timbre. The contra flute has a rich breathy timbre whilst the other flute parts have a thinner and more piercing timbre. All parts use breath sounds significantly. The extended techniques of pitch manipulation and whistle tone contribute to the distinct timbre of this excerpt. In the first excerpt because there are short sharp staccato notes that are accented the timbre is much harsher and clearer. The key slaps and 'ch' sounds create a slap sound that contrasts to the mellow and hollow sound of the first excerpt.

3. Now have a look at a screen shot of the score below for both excerpts. How does the graphic notation demonstrate the differences heard in the excerpts?

The clusters of dots in the first excerpt reflect the staccato and accented nature of the short sharp notes whereas the longer lines with the bending contour reflect the longer ghost like notes of the second excerpt. The first excerpt sounds busy, that effect is created by the duration and timbre of the notes – in the score the busyness is demonstrated by the clusters of colours and dots. The second excerpt has more lines in it; however, as they are all long and flowing it gives the impression of less busy and clustered tones.

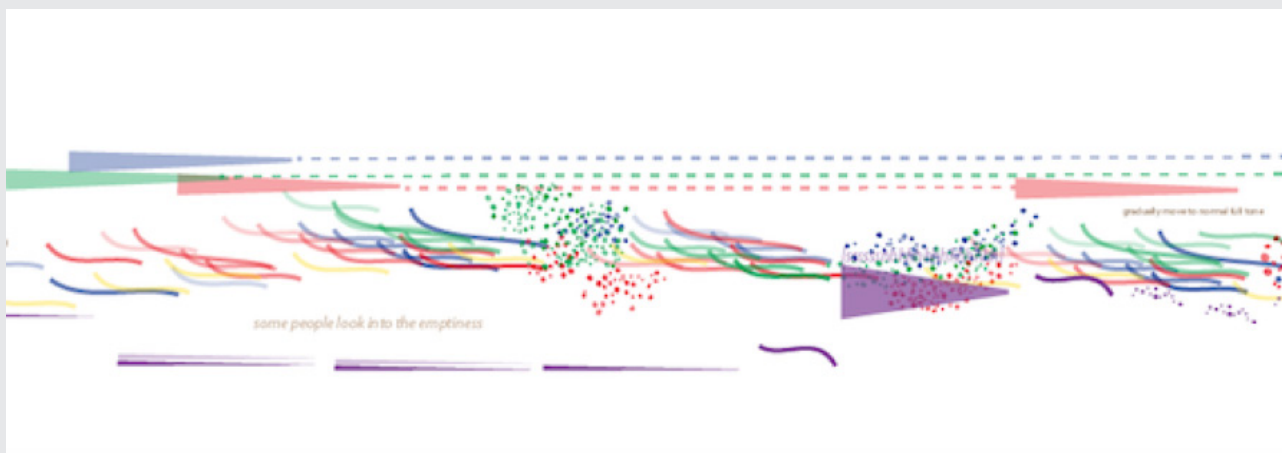
Composition

This links in with the Stage 5 syllabus where students will study poetry. The idea for this composition, whilst developing composition skills is also to link into the literacy requirements and cross-curricular opportunities.

Performance

Students are to:

1. **Assign an instrument to a line and colour.** The instruments assigned are irrelevant: most important is the activity of assigning instruments and the decisions of 'why' they chose that instrument.
2. **Create the sounds they would like on the instrument that they feel accurately represents the graphic.** This is a good discussion point: what is it about that instrument that can be represented accurately in the score.
3. **As a group create a performance based on their own interpretation of this score extract.** Each group will be different: after the performance encourage them to discuss why they made the choices they did throughout the piece and how the changes in the score affected their performances



Stage 5 – Reference list and resources

[Cat Hope's website](#), date accessed 9/3/2019

[Her Pockets Full of Inertia by Cat Hope – resources](#), audio, videos and score, date accessed 26/02/2020

[Music 7-10 Syllabus](#), date accessed 07/04/2019

[Magpies – Poem by Judith Wright](#), accessed 10/3/2019

[Five Senses – Poem by Judith Wright](#), accessed 10/3/2019

[Claire Gaskin – About](#), accessed 8/2/2019

[Thunderstorm \(YouTube\)](#), accessed 20/2/19

[Year 7 Graphic Notation with ostinatos \(YouTube\)](#), accessed 16/2/19

[Iannis Xenakis – Pithoprakta \(YouTube\)](#), accessed 20/2/19

[Chopin, Fantasie-Impromptu, opus 66 \(YouTube\)](#), accessed 20/2/19

[Goldfish Through Summer Rain – Anne Boyd \(YouTube\)](#), accessed 4/8/19

[Audacity](#), accessed 20/08/2019

[Audacity effects](#), accessed 20/08/2019

[BBC Sound Effect](#), accessed 20/08/2019

[GarageBand](#), accessed 20/08/2019

Music 1 Stage 6

Aural/musicology

Performance

Composition

Answers

Reference list and resources



Syllabus outcomes

Preliminary:

- P1 performs music that is characteristic of the topics studied
- P2 observes, reads, interprets and discusses simple musical scores characteristic of topics studied
- P3 improvises and creates melodies, harmonies and rhythmic accompaniments for familiar sound sources reflecting the cultural and historical contexts studied
- P4 recognises and identifies the concepts of music and discusses their use in a variety of musical styles
- P5 comments on and constructively discusses performances and compositions
- P6 observes and discusses concepts of music in works representative of the topics studied
- P7 understands the capabilities of performing media, explores and uses current technologies as appropriate to the topics studied
- P8 identifies, recognises, experiments with and discusses the use of technology in music
- P9 performs as a means of self expression and communication

HSC:

- H1 performs stylistically, music that is characteristic of topics studied, both as a soloist and as a member of an ensemble
- H2 reads, interprets, discusses and analyses simple musical scores that are characteristic of the topics studied
- H3 improvises and composes music using the range of concepts for familiar sound sources reflecting the cultural and historical contexts studied
- H4 articulates an aural understanding of musical concepts and their relationships in a wide variety of musical styles
- H5 critically evaluates and discusses performances and compositions
- H7 understands the capabilities of performing media, incorporates technologies into composition and performance as appropriate to the topics studied
- H8 identifies, recognises, experiments with, and discusses the use and effects of technology in music
- H9 performs as a means of self expression and communication

Music 1 Stage 6 Syllabus

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Aural/musicology

1. In groups listen to this excerpt of Her Pockets Full of Inertia by Cat Hope (3:45-4:15) and, in relation to the concepts of pitch, timbre and duration discuss the composer's use of contrast.
2. Watch the video from performer Lamorna Nightingale outlining the extended techniques used within Her Pockets Full of Inertia.

Complete the following table while watching the video below outlining the playing techniques:

Extended technique	Timbre	How is the sound produced?
Percussive articulations		
Key clicks		
Lip glissando		

3. **Score reading:** This piece is written for bass flute solo, low flute choir and AM transistor radios. Watch the [video of the score with audio](#).

Having a detailed score with which one can analyse all aspects of the composition is not the purpose of this score – nor is it the sole purpose of the composition. The composer Cat Hope explains:

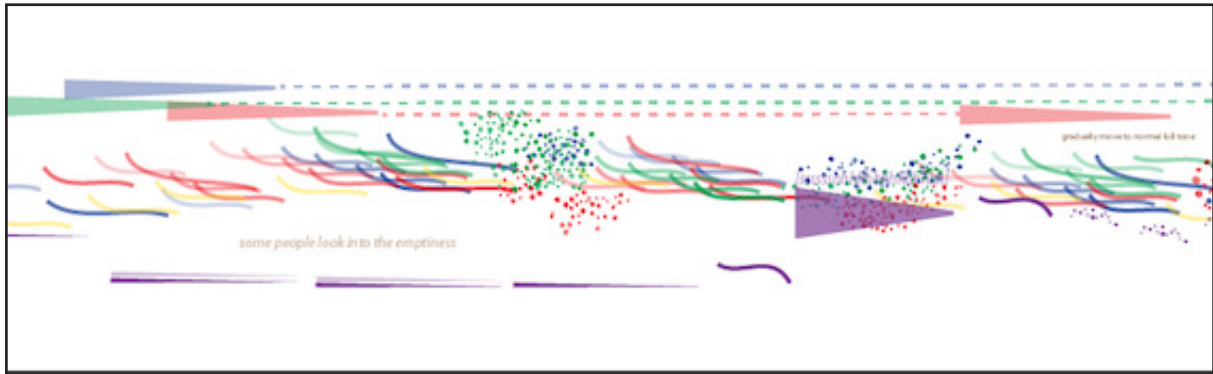
I use graphic notation for my compositions. This is because the information that traditional music notation is good for (exact pitches of notes, harmony, rhythms and beats) is not what is important to me as a composer. I don't want beats in my music. But I like my notation to be exact in other ways. I want players to start and stop at exact spots. And I am interested in the shapes of sounds, and how people read shape and colour as music. So using them works well for the music I like to make, and the sounds I am looking for. I like performers to have more choice and control in my music, I don't want to decide everything for them. When I started making this graphic notation, drawing long lines that go in different directions, to indicate pitch, and different widths or opacity to describe volume, I had to work out how to coordinate all the players so they could be in one place at the same time. Traditional music notation is very good at this! So I developed a way to read my notation on the iPad.

– Cat Hope

- a. In groups or as a class start by looking at the full score and the breakdown of the parts in the individual score extracts.
- b. Listen to the whole piece, this time, while watching the score.
- c. As a class discuss how pitch and duration are outlined in the score
- d. Discuss how the moving score makes it possible to track time and stay together as an ensemble.

Performance

Looking at the score, select an excerpt from the score to interpret and perform. An example might be as per below where there are different colours, lines, cloud patterns and voice parts.



Work in an ensemble with at least 4 players.

Decibel ScorePlayer

The graphic score was designed to be viewed on [Decibel ScorePlayer](#) – a software application for iPad, downloadable from the Apple App Store. The score will already be available in the app. Refer to the section [Introduction to Decibel ScorePlayer](#) in this eBook for more information about the app and its usage.

Alternative options

If you do not have iPads with Decibel ScorePlayer then you can view videos of the score. There are two versions:

- with the flute choir audible, which you can use as a 'backing track'
- with audio of the choir and bass flute solo for your reference.

These videos, along with various PDFs of the score, are available from the [Her Pockets Full of Inertia resources](#) web page.

Steps

1. Allocate 1 colour each to a member of your ensemble.
2. One member of your ensemble must use an AM transistor radio or some form of static.
3. Try to include a part of the score that has the longer notes as well as the clouds of notes.
4. Select a pitch for each member of the ensemble to base their interpretation on ensuring that no person has the same pitch.
5. Select 1 extended technique for each instrument to incorporate in your performance.
6. Discuss with your ensemble how you will demonstrate dynamics, pitch and timbre in your performance.
7. Perform your excerpt to the class. In your performance explain how you made your decisions regarding dynamics, pitch and timbre.

Here are some links to places where you can download static to use in your performance:

- [Radio static sound effect \(YouTube\)](#)
- [Radio static noise sound effect \(YouTube\)](#)
- [Radio Static Short Wave very quiet.wav](#)
- [BBC sound effects](#)

Transistor radios can be purchased at minimal cost from many cheaper department stores.

Interpreting the score

For teachers: Sometimes, lines overlap, here you should split the group into parts, but don't worry if all performers play the same lines by accident. Pitch choice is free, but proportions within the group (after you have chosen your starting pitch) are important. Where there are straight lines amongst dots, a group leader should be nominated to play this part.

Composition

1. Form groups of 3 or 4 students
2. Each person selects their instrument (voice is included as an instrument). One person should be responsible for a static sound.
3. You are going to be creating two varying groups of sounds: **long sounds** and **short sounds**. Refer to the steps on the next page for each of these types of sounds on the following page.
4. **Static sounds:** You may use a.m. radios, walky talky, or download static to use in your performance from these web pages:
 - [Radio static sound effect \(YouTube\)](#)
 - [Radio static noise sound effect \(YouTube\)](#)
 - [Radio Static Short Wave very quiet.wav](#)
 - [BBC sound effects](#)
5. Once you have decided upon your sounds bring them together and as a group discuss how you would like to arrange your sounds. Aim at having a 2 minute arrangement of your sounds. Ensure that you are not 'notating' everything – leave some room for improvisation.
6. Create a graphic score for your group that follows the arrangement of your sounds. You could use a device to draw this score on, or you could use pencil and paper.
7. Rehearse and then perform your composition to the class.

Long sounds

1. Each instrument should be able to create a long sound that changes in pitch and dynamics. These sounds are reflective of the longer tones in Her Pockets Full of Inertia.
2. Select a starting pitch for your instrument. Each person should have a different pitch.
3. Decide whether you would like your instrument's pitch to move upwards or downwards and decide how you would like the dynamics of each long sound to progress.
4. Use some extended techniques to create these sounds. As a suggestion you could scrape along strings, sing whilst playing, use only certain parts of your instrument, such as the head joint.
5. Create a graphic that represents your long sound.

Short sounds

1. Each instrument should be able to create a short sound that changes in Timbre and, if you like, pitch. These sounds are reflective of the shorter tones in Her Pockets Full of Inertia.
2. Use some extended techniques to help create these sounds. As a suggestion you could speak into your instrument, tap your instrument, use only certain parts of your instrument, such as the head joint.
3. Create a graphic that represents your short sound.

Extension activity

1. Record your performance by using online software such as **GarageBand** or **Audacity**.
2. Record your instruments in as separate tracks (including your AM transistor radio). Either use the inbuilt microphone in your device, or for a more professional sound plug a mic or your instrument into an audio interface connected to a computer. For help with this, watch the **Additional resources video** on the Her Pockets Full of Inertia resources webpage.
3. If you have downloaded a sound from YouTube you can import that into the software.
4. Then manipulate the sounds on the tracks using reverb, distortion and any other effects you find in the software. You can learn more about this in Electronic Sandbox, available in the **Her Pockets Full of Inertia resources** web page.

Answers

Aural/musicology

1. In groups listen to this excerpt (3:45-4:15) from the recording of Cat Hope's Her Pockets Full of Inertia and, in relation to the concepts of pitch, timbre and duration discuss the composer's use of contrast.

Teachers – students may need a scaffold for how to set out their answer. Here it has been scaffolded to answer each concept individually; however, students may also choose to answer all concepts together but list the time frame as their point of reference. In Music 1, there is no correct or incorrect way of scaffolding as long as students are addressing the criteria.

Pitch: The composer uses a mix of pitched and unpitched sounds throughout this excerpt. The higher pitched flutes begin their longer notes on a certain pitch, which then descends gradually as the note lengthens. The lower flute sounds bend in pitch at times towards the centre of the notes then descending again to the original note pitch. These two variations on pitch create contrast within themselves. In addition to this, after 4.00 there are some short sharp high pitched staccato notes creating a further sense of contrast as the excerpt progresses. As there is no tonal centre or fixed pitch in this piece there is no specific relationship between the pitches which harmonically creates contrast.

Timbre: (Timbre can be a difficult concept for students to answer as they have trouble with adjectives that describe the sound of the instrument without using other concept terminology. Below is just a suggestion.)

Timbre is quite varied throughout this excerpt which creates contrast. There is the clear timbre of the pitched flute sounds which maintains its clarity through the whole excerpt. These are contrasted against the breathy hollow sounds as the performer is speaking and breathing into the instrument. Creating yet further contrast are short sharp raspy breathy sounds that create a harsh attacking timbre, which plays below the clear flute sounds throughout the excerpt. Interspersed with these sounds are 'tss' and harsher clear sounds. The many varying timbres of the instruments creates significant contrast in this excerpt. There is also the rough electronics sounds of the radio static which are similar to the breathy sounds of the flutes.

Duration: There are two types of duration within this excerpt – longer and shorter sounds. The longer, legato sounds are of different lengths; however create a flow through this excerpt. They are held by the clear pitch of the higher and lower flute parts. The shorter staccato sounds create contrast to the longer legato sounds as they create almost a rhythm amongst the legato flow of the pitched instruments. Within these shorter sounds there are some that are longer due to the nature of their timbre whilst others have short sharp tones.

2. Watch the video from performer Lamorna Nightingale outlining the **extended techniques used within Her Pockets Full of Inertia.**

Complete the following table while watching the video below outlining the playing techniques:

Extended technique	Timbre	How is the sound produced?
Percussive Articulations	Harsh timbre, full textured sound	Use percussive consonant sounds such as 'tcha' 'tcho' 'tche' to create a pizzicato effect. Very little pitch.
Key clicks	Hollow percussive timbre	The sound of the flute keys being hit quite strongly
Lip Glissando	Airy, slightly hollow but rich timbre	Bend the pitch using lips and air

Music 1 Stage 6 – Reference list and resources

Cat Hope's website, date accessed 9/3/2019

Her Pockets Full of Inertia by Cat Hope – resources, audio, videos and score, date accessed 26/02/2020

Music 1 Stage 6 Syllabus

Radio static sound effect (YouTube), accessed 24/3/19

Radio static noise sound effect (YouTube), accessed 24/3/19

Radio static short wave very quiet.wav, accessed 24/3/19

BBC Sound Effects, accessed 24/3/19

Audacity

Audacity effects

Decibel ScorePlayer, accessed 24/3/19

GarageBand, accessed 16/3/2020

Music 2 Stage 6

Musicology and score reading

Annotating the score

Extended techniques

Performance

Composition

Glossary

Answers

Glossary answers

Reference list and resources

Syllabus outcomes

Preliminary:

- P1 performs music that is characteristic of the topics studied
- P2 observes, reads, interprets and discusses simple musical scores characteristic of topics studied
- P3 improvises and creates melodies, harmonies and rhythmic accompaniments for familiar sound sources reflecting the cultural and historical contexts studied
- P4 recognises and identifies the concepts of music and discusses their use in a variety of musical styles
- P5 comments on and constructively discusses performances and compositions
- P6 observes and discusses concepts of music in works representative of the topics studied
- P7 understands the capabilities of performing media, explores and uses current technologies as appropriate to the topics studied
- P8 identifies, recognises, experiments with and discusses the use of technology in music
- P9 performs as a means of self expression and communication

HSC:

- H1 performs stylistically, music that is characteristic of topics studied, both as a soloist and as a member of an ensemble
- H2 reads, interprets, discusses and analyses simple musical scores that are characteristic of the topics studied
- H3 improvises and composes music using the range of concepts for familiar sound sources reflecting the cultural and historical contexts studied
- H4 articulates an aural understanding of musical concepts and their relationships in a wide variety of musical styles
- H5 critically evaluates and discusses performances and compositions
- H7 understands the capabilities of performing media, incorporates technologies into composition and performance as appropriate to the topics studied
- H8 identifies, recognises, experiments with, and discusses the use and effects of technology in music
- H9 performs as a means of self expression and communication

Music 2 Stage 6 Syllabus

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Musicology and score reading

Whilst score reading is an important part of study in Music 2 having a detailed score with which one can analyse all aspects of the composition is not the purpose of this score – nor is it the sole purpose of the composition. The composer Cat Hope explains:

I use graphic notation for my compositions. This is because the information that traditional music notation is good for (exact pitches of notes, harmony, rhythms and beats) is not what is important to me as a composer. I don't want beats in my music. But I like my notation to be exact in other ways. I want players to start and stop at exact spots. And I am interested in the shapes of sounds, and how people read shape and colour as music. So using them works well for the music I like to make, and the sounds I am looking for. I like performers to have more choice and control in my music, I don't want to decide everything for them. When I started making this graphic notation, drawing long lines that go in different directions, to indicate pitch, and different widths or opacity to describe volume, I had to work out how to coordinate all the players so they could be in one place at the same time. Traditional music notation is very good at this! So I developed a way to read my notation on the iPad.

Discussion questions

Listen to the composition and then discuss the following questions:

- What was your experience listening to the music? What feelings did it evoke?
- How could you notate this composition?
- With reference to the concepts of music discuss what elements of this piece you found engaging?

Decibel ScorePlayer

The graphic score was designed to be viewed on [Decibel ScorePlayer](#) – a software application for iPad, downloadable from the Apple App Store. The score will already be available in the app. Refer to the section [Introduction to Decibel ScorePlayer](#) in this eBook for more information about the app and its usage.

Alternative options

If you do not have iPads with Decibel ScorePlayer then you can view videos of the score. There are two versions:

- with the flute choir audible, which you can use as a 'backing track'
- with audio of the choir and bass flute solo for your reference.

These videos, along with various PDFs of the score, are available from the [Her Pockets Full of Inertia resources](#) web page.

Score analysis

This piece is written for bass flute solo, low flute choir and AM transistor radios.

1. Start by looking at the full score either on PDF or in Decibel ScorePlayer and the breakdown of the parts in the individual score extracts.
2. Label the parts on the full score from the information provided to you in the instructions below. You can also annotate on the score in Decibel ScorePlayer.
3. Listen to the piece again, this time, while watching the [score with the audio](#).

Score reading instructions

In this score each colour represents a different part.

- The yellow is for a sub contra bass flute.
- Red, green and blue are the flute choir lines (these should ideally be low flutes and definitely not piccolo.)
- The purple part is the solo flute.
- Paler parts at the bottom are AM transistor radio.

Dots and lines

- When many dots are grouped together, play a 'cloud'.
- When dots are sparse, play exactly as possible.
- Lines are a simple note – to be played without vibrato.
- In the glissandi/lip slides, some lines head upward or downward, and this indicates a shift in pitch in that direction.

Volume

The volume is indicated by:

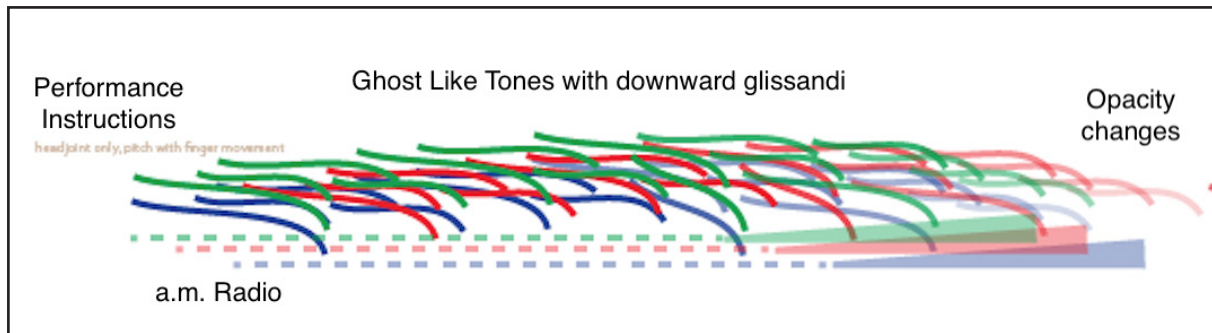
- The opacity describes the volume of the note – there are three shades: p, pp, ppp.
- In the radio parts (represented by a straight opaque dashed line which becomes solid when in flux). The volume here is described in the thickness of the line. The dotted lines means to keep the same, quiet volume running 'in the background'.
- In the solo part the wedges indicate increasing or decreasing volume. In the key slaps, the different sizes of dots in the score loosely reflects the level of accent required.

Motives

There are several contrasting motifs:

- ghost-like tones ending with a downward glissandi are the principle motif of the piece
- staccato tones and in 'clouds' of different constructions
- solo flute: speaking words into flute. It provides a more literal use of the poem – it is spoken through the flute. The solo part draws thematic material from the choir. The radio static sounds like raspy breath,

See score extract below for examples of opacity and ghost like tones with glissandi.



Pitch

There is no pitch specifically discussed for this piece. The composer's preference is that performers not to play the same pitch as the person next to them. The piece needs to work in clusters and blend in tone and pitch. If you look at the score as a whole, you will note the whole structure is a slow, downward glissando.

Duration

In performance, the performers don't need to play every dot or line - it's more about the overall effect. They do; however, need to ensure that they are following the timing of the piece in relation to the Decibel ScorePlayer. Performers need to start and stop at specific times - these are indicated by the gaps in the score, and, when using the Decibel ScorePlayer in performance, the timeline that runs across the score indicates where all players should be up to.

Annotating the score

Looking at the [PDF of the score](#) whilst listening to it, highlight or label the following motifs in the score where you hear and see them. Look specifically for any contrast in motifs between the staccato and the longer notes. They are indicated by colour and texture.

- Ghost like tones with downward glissandi
- Staccato tones in cloud like form
- Solo Flute – speaking words into the flute
- Radio static

Further listening:

- [Cat Hope: Juanita Nelson \(YouTube\)](#)
- [Cat Hope's compositions](#)
- [Ted Talk with Cat Hope \(YouTube\)](#)
- [Karlheinz Stockhausen: Telemusik \(YouTube\)](#) and [Telemusik analysis](#)

Extension question

The performer Lamorna Nightingale has said:

The notion of required 'progress' within a score, and being able to 'understand and develop' a score is a western construct. Working with a composition such as Cat Hope's Her Pockets Full of Inertia – the music forces you to throw all notions of constructed progress out.

Discuss this statement with reference to the concepts of music, and a piece from the mandatory topic.

Extended techniques

Watch this video from performer Lamorna Nightingale outlining the **extended techniques used within Her Pockets Full of Inertia**.

Below is a list of the extended techniques used in the piece. Complete the following table while watching the video:

Extended technique	Timber	How is the sound produced?
Headjoint		
Whistle Tone		
Key clicks		
Airy tone		
Lip glissando		
Pizzicato effect/percussive tonguing		
Multiphonics		
'Shh' sound		
Tongue ram		

If your instrument is the flute, spend some time learning the above extended techniques. If your instrument is not the flute – research extended techniques appropriate to your instrument and spend some time learning them.

Examples;

- [All Contemporary Violin Techniques based on how Interesting they are \(YouTube\)](#)
- [How to Prepare a Piano with Stephen Drury \(YouTube\)](#)

Further listening

Listen to, and watch the following pieces of music that include extended techniques.

- [Hornheads - Fat Lip \(YouTube\)](#)
- [Liza Lim - Invisibility \(YouTube\)](#)
- [Peggy Polias - Little Secret \(YouTube\)](#)

- a. Identify any extended techniques that are used within the pieces.
- b. Discuss the role of these techniques in the compositions.

Performance

Use the backing track using the Decibel ScorePlayer app or the video to perform to.

1. Select a 3 minute excerpt from the score to interpret and perform.
2. Select 3 extended techniques to incorporate into your performance. If your instrument is not the flute, manipulate the extended techniques as practiced in the above exercise to use in your performance. In your performance ensure that you blend with the backing track. Spend time matching timbre and work towards creating airy tones that blend.
3. Create a performance logbook outlining the details below
 - the extract of the score that you have chosen to perform, detailing why you have selected this particular extract
 - the extended techniques that you have chosen and why
 - if your instrument is not flute – outline how you have manipulated the extended techniques for your instrument including any changes you needed to make to suit your instrument
 - the pitches you have chosen to use
 - how you interpreted the score to create your performance. In this section be sure to incorporate your use of pitch, timbre, duration and dynamics and expressive techniques
 - what issues arose using the technology including working with a backing track.

Composition

Create a two minute composition for your instrument and small ensemble (instruments of your choosing) and a digital element such as; static, white noise, pink noise, a manipulated live recording, AM radio or walky talky.

- Create a graphic score of your composition.
- Be sure to leave room for improvisatory element in your composition.
- Structure your composition loosely in Ternary Form (ABA).
- Include at least 2 extended techniques on your instrument.

Steps:

1. Create 4 sound motifs - one of which must be a digital element
2. Create a graphic to represent each of your 4 sound motifs
3. Using the research you conducted earlier in the musicology section, select 2 extended techniques to use for your instrument in this composition.
4. Make this decision based on the timbre of each sound.
5. Consider how you would like to order your 4 different sound motifs and organise them into the A section of your composition
6. In the B section of your composition, manipulate the motifs you have chosen. You could do this by using: fragments (small sections of motif), improvising around the motif, changing the pitch, changing the timbre by adding extended techniques, augmenting or diminishing (expanding or contracting the motif), changing the dynamics or any other ideas you have
7. Ensure that your composition has structure; but that you have left room for improvisation.
8. Perform the composition.

Further reading

Read the following article by Cat Hope:

The future of music notation in a digital world.

With reference to the concepts of Pitch (Melody and Harmony), Texture and Dynamics and Expressive Techniques, discuss the following statement from the article above using a selected piece from the Mandatory Topic and Cat Hope's Her Pockets Full of Inertia:

Building on the practice of graphic notation – a way of notating music that uses imagery not related to traditional music notation – animated notation provides a dynamic form full of possibilities for musical exploration. It can shift the emphasis of music composition towards texture and dynamics over harmony and melody, and provide a wider range of choices for performers, leading to performance practices that can incorporate improvisation and new sound worlds.

Glossary

Term	Definition
Electronic terms	
Decibel ScorePlayer	
Delay	
Envelop	
Radio static	
Reverb	
Extended techniques	
Key clicking and slaps	
Head joint	
Whistle tones	
Lines/lip glissando	
Glissandi	
Multiphonics	
Pizzicato effect/percussive tonguing	
Tongue rams	
Compositional techniques	
Cloud	
Motifs	

Music 2 Stage 6 – Answers

Musicology and score reading

Discussion questions

Listen to the composition and then discuss the questions below.

- What was your experience in listening to the music – what did it evoke?
- How could you notate this composition?
- With reference to the concepts of music discuss what elements of this piece you found engaging?

When students are answering these questions – encourage them to explain why using musicological terms. For instance: The piece makes me feel relaxed and evokes an eeriness because of the timbre of the flutes, the rushing breathy timbres and deep pitches.

Score analysis

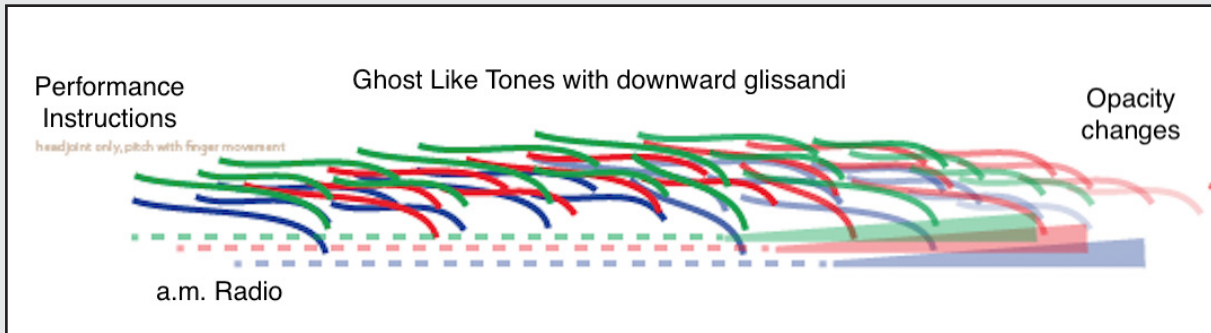
This piece is written for bass flute solo, low flute choir and AM radios. There are multiple score extracts at the end of this booklet.

1. Start by looking at the full score and the breakdown of the parts in the individual score extracts. These are included in the booklet.
2. Label the parts on the full score from the information provided to you in the individual score extracts. Use the individual score parts which are labelled and coloured to help label the full score
3. Listen to the piece again, this time, while watching the score.

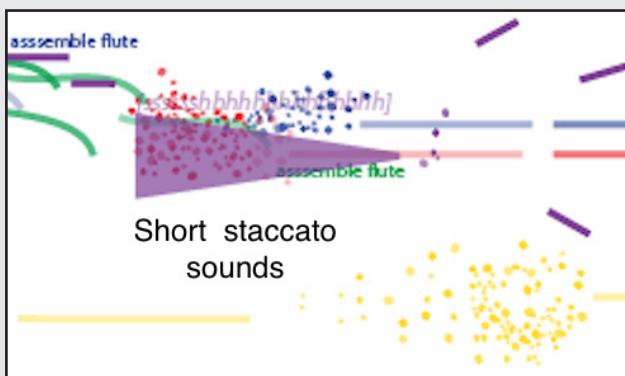
Annotating the score

Looking at the score whilst listening to it - highlight/label the following motifs in the score where you hear and see them. Look specifically for any contrast in motifs between the staccato and the longer notes. They are indicated by colour and texture.

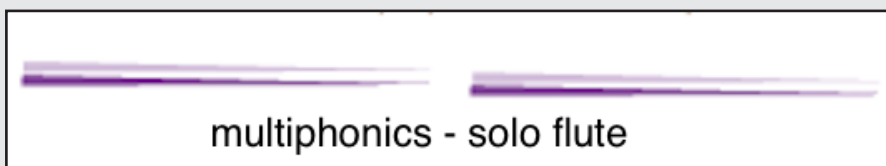
- Ghost like tones with downward glissandi



- Staccato tones in cloud like form



- Multiphonics (in the Solo Flute)



- Radio static



Extension question: The performer Lamorna Nightingale has said ‘The notion of required “progress” within a score, and being able to “understand and develop” a score is a western construct. Working with a composition such as Cat Hope’s Her Pockets Full of Inertia – the music forces you to throw all notions of constructed progress out.’ Discuss this statement with reference to the concepts of music, and a piece from the Mandatory Topic.

Students should answer this question as per Question 4 in the paper. Students should be encouraged to either agree or disagree with the comment; however, to support their responses with notational quotes from both Cat’s piece and the piece of their choosing from the Mandatory Topic. Students must also ensure that the concepts of music are utilised in order to support their argument.

Extended techniques

Watch the attached video from performer Lamorna Nightingale outlining the extended techniques used within Her Pockets Full of Inertia.

Below is a list of extended techniques used in the piece. Complete the following table while watching the video:

Extended technique	Timbre	How is the sound produced?
Headjoint	Clear and clean full sound	Play the headjoint using regular tone. Use the finger inside the tube to adjust the pitch.
Whistle tone	Thin and airy whistle sound	Whistle tones are very soft sounds based on the harmonic series. They sound like a very high and soft whistle.
Key clicks	Hollow percussive timbre	The sound of the flute keys being hit quite strongly.
Airy tone	Like a hollow rushing of wind	Use more air than normal to create an airy sound.
Lip Glissando	Airy, slightly hollow but rich timbre	Bend the pitch using lips and air.

Extended technique	Timbre	How is the sound produced?
Pizzicato effect/percussive tonguing	Harsh timbre, full textured sound	Use percussive consonant sounds such as 'te' 'k' 'tcha' 'tcho' 'tche' to create a pizzicato effect. Very little pitch.
Multiphonics	Buzzing timbre	The practice of sounding more than one note simultaneously - this is done by singing and playing into the flute in this piece.
'Shh' sound	Harsh rushing of air	Whisper this consonant sound while blowing and airy tone.
Tongue ram	Airy, deep and percussive timbre	An explosive percussive sound produced by sealing the embouchure hole completely with the lips and strongly propelling the tongue into the embouchure hole.

If your instrument is the flute, spend some time learning the above extended techniques. If your instrument is not the flute - research extended techniques appropriate to your instrument and spend some time learning them.

Further listening

Listen to, and watch the following pieces of music that include extended techniques.

- a. Identify any extended techniques that are used within the pieces.
- b. Discuss the role of these techniques in the compositions.
Students should engage in musicological discussion in these questions ensuring that they are using the concepts of music along with composition techniques in the discussion.

Hornheads – Fat Lip (YouTube)

- a. Slap tongue
- b. The role is a rhythmic role – as this is a wind ensemble the extended techniques move the rhythm of the piece forward and take the place of a rhythm section in a jazz ensemble

Liza Lim – Invisibility (YouTube)

- a. Guiro Bow (the horse hair is wrapped around the wood of the bow so both are used to bow the strings simultaneously); harmonics
- b. To create the idea of shimmer in Liza Lim’s music – every time the bow is used there are multiple sounds created – with the hair of the bow and with the wood of the bow simultaneously. This creates the effect of peripheral notes and the idea of tones rather than definite tones which in turn produces the ‘shimmer’ effect. Harmonics create a similar effect to ‘shimmer’ as they produce the over-tones of the note rather than the definite pitch of the note.

Peggy Polias – Little Secret (YouTube)

- a. Audible inhalation and exhalation through the instrument, Breathy tone and consonant sounds create an eerie tone colours, Flutter tongue, tongue rams, singing and speaking by the flute player
- b. There is the additional electronic element of the backing track being activated by a gate through Ableton. When the various sounds reach a certain volume the various flute sounds activate this gate effect. Together they create a mysterious and transforming texture. The words spoken and sung by the flute are taken from the song lyrics in the backing track.

Glossary answers

Term	Definition
Electronic terms	
Decibel ScorePlayer	An app for iPad that reads scores in real time
Delay	A recorded sound played back repeatedly
Envelop	Attack and delay of sound
Radio static	The noise from an AM radio when not tuned to a station
Reverb	An effect where the sound produced by the instrument reverberates
Extended techniques	
Key clicking and slaps	These are the dots in the score: short percussive sounds made by the keys
Head joint	This is the mouthpiece of the flute. Play the headjoint using regular tone. Use the finder inside the tube to adjust the pitch.
Whistle tones	Soft sounds based on the harmonic series. They sound like a very high and soft whistle.
Lines/lip glissando	Bend the pitch using lips and air or finder slide on open-holed flutes
Glissandi	A slide from the first note to the second note.
Multiphonics	The practice of sounding more than one note simultaneously. This is done by singing and playing into the flute in this piece.
Pizzicato effect/percussive tonguing	Use percussive consonant sounds such as 'tcha' 'tcho' 'tche' to create a pizzicato effect. Very little pitch.
Tongue rams	Stopping the air going through the instrument with your tongue to create a popping sound.
Compositional techniques	
Cloud	Term used for lots of short notes in a group, creating a cloud of sounds.
Motifs	A musical phrase or idea that is repeated throughout a composition.

Music 2 Stage 6 – Reference list and resources

[Cat Hope's website](#), date accessed 9/3/2019

[Her Pockets Full of Inertia by Cat Hope – resources](#), audio, videos and score, date accessed 26/02/2020

[Stage 6 Music 2 Syllabus](#)

[Cat Hope: Juanita Nelson \(YouTube\)](#), accessed 9/3/19

[Cat Hope's compositions](#), accessed 9/3/19

[Ted Talk with Cat Hope \(YouTube\)](#), accessed 19/7/19

[Karlheinz Stockhausen – Telemusik \(YouTube\)](#), accessed 9/3/19

[Telemusik analysis](#), accessed 9/3/19

[All Contemporary Violin Techniques based on how Interesting they are \(YouTube\)](#), accessed 25/08/19

[How to Prepare a Piano with Stephen Drury \(YouTube\)](#), accessed 25/08/19

[Hornheards – Fat Lip \(YouTube\)](#), accessed 9/3/19

[Liza Lim – Invisibility \(YouTube\)](#), accessed 9/3/19

[Peggy Polias – Little Secret \(YouTube\)](#), accessed 11/8/19

[The future of music notation in a digital world](#), accessed 19/7/19

[Ableton](#), accessed 17/3/2020

[Decibel ScorePlayer](#), accessed 24/3/19

