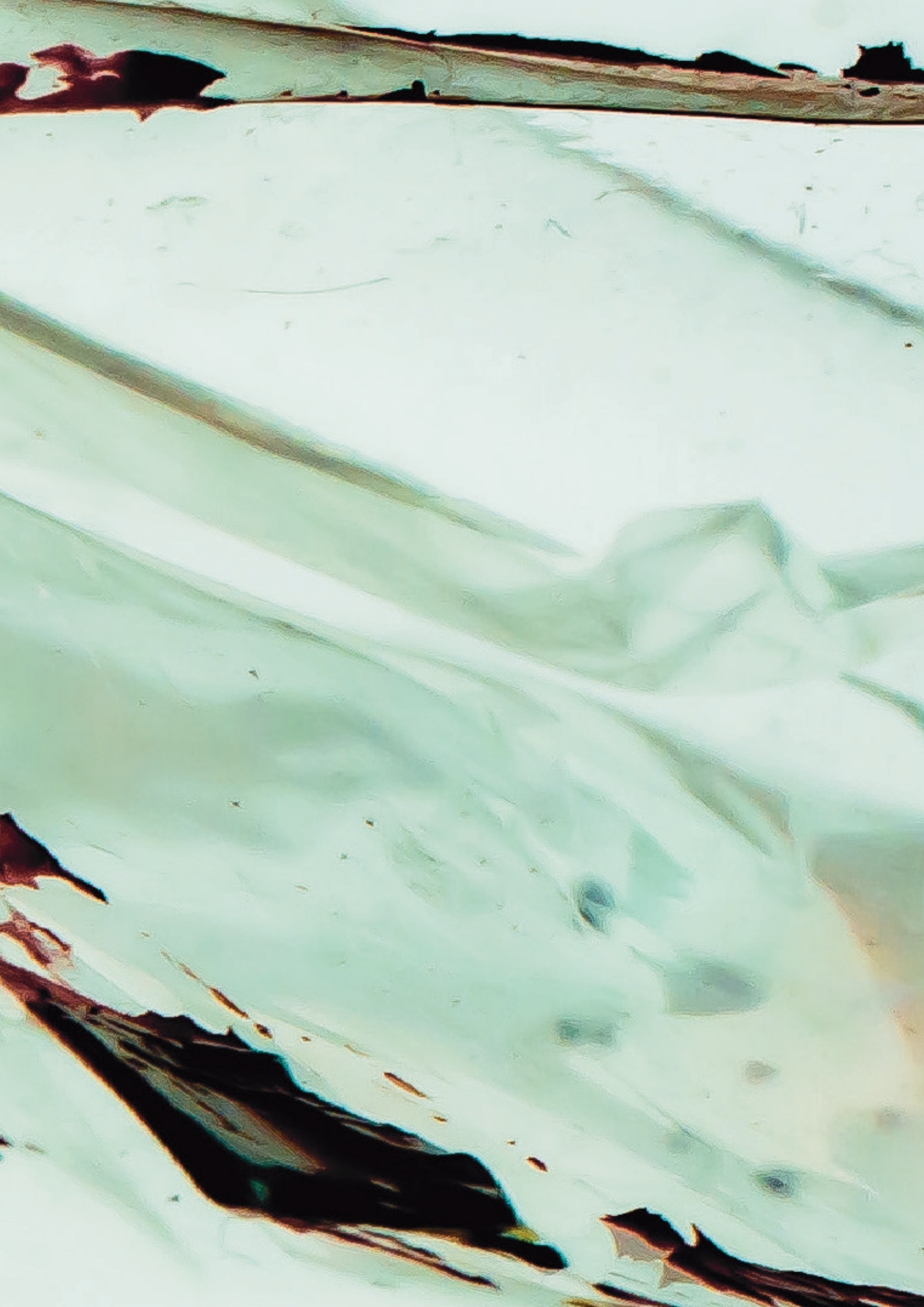# Other Voices
Creative Education Kit

Tristan Coelho – Daybreak

education.nsw.gov.au

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 eResource

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 Coehlo'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 **Daybreak resources** web page:

- a score of each work to download
- a video of each 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 in-structional 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).

Tristan Coelho

Daybreak

Contents

Daybreak resources: score, audio, video, downloads

Introduction to the composer

Tristan Coelho is an award-winning, Sydney-based musician who composes concert music and film scores.

With an interest in a wide range of music from experimental classical and electronic to jazz and non-western traditions, he strives for a unique balance of elements in his scores, sometimes familiar and at other times less so. This diversity of sound worlds is mirrored by the range of performance venues he has worked in including art galleries in London, 12th-century churches in France, theatres in the Netherlands, shipping containers and pubs as well as traditional concert settings. His music draws inspiration largely from either nature, especially the idea of amplifying otherwise soft and delicate sounds, or conversely our digital, data-driven world.

Project highlights include Read/Write Error, a commission for Ensemble Offspring's 20th year celebrations, Smell of the Earth, commissioned for the Canberra International Music Festival and performed by Tambuco Percussion, and works for the Song Company, the Chronology Arts Ensemble and the Kammer Ensemble. Tristan has written for some of Australia's most outstanding soloists including percussionist Claire Edwardes, pianist Zubin Kanga, flautist Lamorna Nightingale and recorder player Alicia Crossley.

In 2016, Tristan was a finalist in the Instrumental Work of the Year category in the APRA Art Music Awards. In 2012 Tristan was co-commissioned by the Adelaide Symphony Orchestra and the

OzAsia Festival for the ensemble work, As the Dust Rises. His orchestral debut was in 2005 with Glass Canvas performed by the Melbourne Symphony Orchestra, conducted by Martyn Brabbins as part of the Cybec 21st Century Composers' Program. In 2014, Tristan was invited to the Etchings Festival held in Auvillar, France where his work Ripples was premiered. He has appeared at the Young Composers Meeting hosted by Orkest de Ereprijs, the Dartington International Summer School, the NYU/ASCAP Film Scoring Workshop and the Internationale Ferienkurse für Neue Musik, Darmstadt.

Tristan's experience in music for film and multimedia is diverse including a recently completed score for Australian feature film The Marshes (2017) and numerous other short films and advertising campaigns. Recently, his score for the King Candy Crush Saga Sweet TVC campaign was aired internationally and his work with McCann Health won him a Gold Lion at Cannes and two Gold Spikes at the 2014 Spikes Asia Festival of Creativity. His orchestration and arrangement credits include work for Japanese video game composer Hitoshi Sakimoto, Australian composer Matthew Hindson, oud

virtuoso Joseph Tawadros and the Australian Brandenburg Orchestra. Tristan graduated from the Sydney Conservatorium of Music in 2006 and then went on to study at the Royal College of Music from 2007-2008. He has studied composition formally with Michael Smetanin, Damien Ricketson, Mary Finsterer, Trevor Pearce and David Sawer amongst others and piano with Stephanie McCallum.
He is a founding member of Sideband, a composer/performer collective which supports emerging Australian musicians and also celebrates works by established composers. Sideband released their debut CD in 2014 and is currently producing their second album.

Tristan is an active music educator and is currently Head of Composition at MLC School, Sydney. He is also a sessional academic at the Sydney Conservatorium of Music and regularly runs composition workshops for high school students across Sydney.

Visit **Tristan's website** for more information.

Introduction to the music

Australia has a rich and diverse birdlife including a wide variety of songbirds including the lyrebird, satin bowerbird, magpie and pied butcherbird. In addition to singing their own songs, such birds display the ability to perform highly sophisticated and seemingly organised fragments of other species' tunes which are often transformed in unique ways.

This piece, Daybreak, for flute and live electronics is based on this idea of birdsong mimicry and draws from experiences I've had exploring and appreciating the sounds of nature. Transcribed birdsong is weaved into the piece as well as additional song-like musical ideas inspired directly from the lines conjured up by birds. The electronics takes snapshots of the live flute sounds and manipulates them in real-time to create an evolving and immersive sound world. What emerges is a dialogue between the flute and electronics as the sounds work in imitation and swirl around the listener; the parts effectively mimic each other. The music begins with a sense of peace and quiet focusing on a spaciousness of sound with occasional soft utterances. This gradually gives rise to joyous, dance-like sections evoking the busy dawn chorus.

I intend the work to be accessible for high school and undergraduate-level flautists but also suitable for professional performers. Through this work, I hope to create an interest in our natural world, encouraging young students to listen deeply to the sounds around them and continue developing a respect for our precious wildlife.

Tristan Coelho

Creativity and collaboration

In the following interview, Tristan explains the process of composing Daybreak.

What is the inspiration behind your composition?

Tristan: My fascination with birdsong and the idea of mimicry is the main inspiration behind the work with the music consisting of a small number of birdsong transcriptions as well as composed material directly inspired by them. I've also tried to capture a sense of the joy of anticipation of hearing birdsong amidst the sonic spaciousness and quiet of the natural environment.

The title, Daybreak, refers to the time of day where depending on where you live you can hear the most amazing chorus of intermingled birdsong. 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?

Tristan: I like the mix of acoustic and electronic sounds because they offer up different opportunities as a composer. The flute has a breadth of tone colours and effects with a wide spectrum between noise and pure sonorities. The electronic part uses a granular

delay effect which involves taking snapshots of the live flute sound and then playing back variations of these fragments at different times. In the same way that you might hear a bird call in nature and not quite know when the response will occur, in this piece the way the electronics respond to the flute part can never truly be predicted. This in turn means the flautist responds to what they hear and so each performance of the work will vary to a degree. The main challenge in combining the acoustic and electronic elements involved making sure both worlds complemented each other in making an immersive listening experience. This was overcome to a large degree by allowing plenty of space in the notated part as well as involving improvisation in order to give the music a chance to breathe and allowing the electronics to respond without the texture becoming overly cluttered.

What was your compositional process?

Tristan: About two years ago I began notating short bird song transcriptions of recordings that I'd made over the years. I wrote them down in a little notebook and I had no plans then to use them for anything specifically; I just thought it would be interesting to see how I could interpret these bird-songs using traditional notation. A year or so later I was chatting to Lamorna Nightingale, the flautist for whom Daybreak was written, and was telling her about this notebook and we put two and two together and the piece was on its way! The composition process involved me creating the electronics 'patch' (application) as I composed the flute part. I felt it was important to get a sense of how it would sound as I was composing as opposed to creating a piece and then thinking about adding on the electronics. Often I experimented with my voice (in lieu of the flute) when composing and this was useful to get a sense of the use of sound and silence in the piece. I ended up with a range of musical ideas that I then rearranged to make an effective structure and then created linking material. Of course, through this process I had to discard material that didn't quite work with the rest of the music. As always this was difficult to do but important in streamlining the work and making the structure as 'tight' as possible.

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

Tristan: I have used technology in a number of previous pieces and I always find I feel the same way in regards to its positives and negatives. The thing about technology and creating electronic music is that the options are endless – literally! You can start working on something in the morning and by the end of the day you've added all these extra features or sounds and you've forgotten where you've come from. For me this is a negative when it comes to music technology – the temptation to keep adding features and making things more complex. I found myself faced with this situation a few times on this project! There are however numerous ways electronics have enhanced this piece. For one, the work heavily relies on the spontaneous and unpredictable nature of sounds occurring and the performer's reactions to them. This brings about a certain energy in performance that is different to fixed compositions where the piece is more or less the same every time it's heard. Another way that electronics have enhanced the piece is simply the quality of the sounds it can produce. We hear transformations of the flute tone that do not occur naturally and this creates a halo around the acoustic sounds.

How did you develop your musical material throughout the piece?

Tristan: The musical material was primarily developed by taking what were originally small musical motifs and exploring ways to join them together to form longer phrases. In this way it's the opposite to the traditional form of fragmentation where you have a long theme and then break it into smaller chunks. The main form of development then is reordering the motivic cells, sometimes abruptly and at other times with more subtlety. In any case I wanted to create the sense of being out in nature with different types of birds in the surrounds. Other basic techniques of development include direct repetition, variation, transposition and inversion. The piece begins with and occasionally settles into a slow-moving soundscape but this material is injected with more movement and energy before it breaks into frenetic dance-like music. In this faster style, the birdsong fragments are highly compressed and create a continuum of activity.

How would you describe the process of collaboration?

Tristan: Collaboration has been an important part of the process. Initially I had very simple sketches that I brought to Lamorna and we experimented with them. If I wasn't sure about a particular moment I'd just use text to describe what I was after and then we'd talk about the best way to notate the idea.

What are some special considerations you need to take into consideration when performing Daybreak?

Lamorna: The interesting thing about playing Daybreak is that even though it is a flute solo it feels more like an ensemble piece because of the way my own sound becomes part of the electronics track. I'm never quite sure what sounds I will hear because the electronics respond a bit differently in different spaces. It really feels like I'm out in the bush with lots of birds flying around me copying my sounds!

Activities and resources

Daybreak

Stage 4

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

Musicology: Sound vs. music

Soundwalk and group activity

1. Discussion question: What's the difference between sound and music?

2. In silence, walk through and explore a natural or urban environment, taking in the sounds around you.

3. Record a 30 second sample on your phone.

4. Reflection: Back in the classroom, write down the sounds that you remember hearing and/or recorded and describe them using a selection of musical concepts.

sound	pitch	duration	tone colour	dynamics and expressive techniques
wind	low then high			crescendo and decrescendo
birds	high, many leaps	repeated rhythms	bright	
car horn				loud

Listening

Daybreak by Tristan Coelho (0:00-0:55)

1. What sounds can you hear?

2. Describe the tone colour of the sounds you can hear by circling up to five words from the box below:

bright   nasal   muffled   clear   sparkling   shimmering   majestic

silvery   reedy   breathy   airy   resonant   coarse   dark

glittering   pure piercing   electronic   blazing   synthetic   dry

hollow   warm   distorted

Extension: Using a piece of music that you are familiar with, identify at least three of the above tone colour descriptions that are present in the excerpt. For each point, write a sentence to argue a link as to how this sound is created.

Piece: _____ Composer: _____
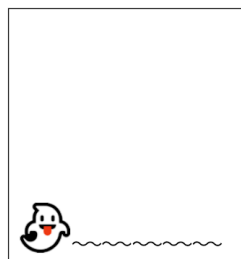
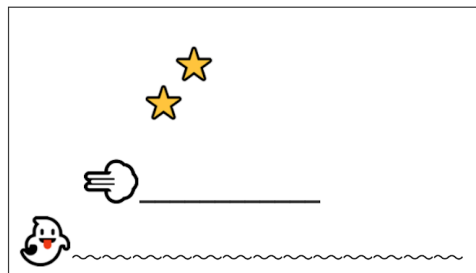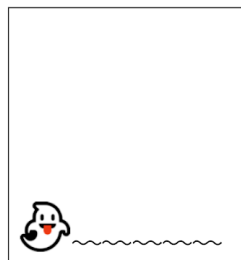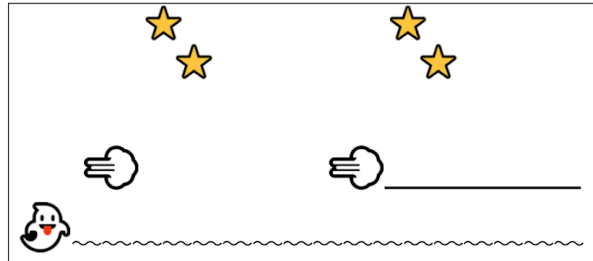Tone colour 1: _____

_____

_____

Tone colour 2: _____

_____

_____

Tone colour 3: _____

_____

_____

3. Put the following graphic emojis in the order that you hear them. Label them from 1 (the first layer you can hear) to 5 (the last layer that enters) (0:00-0:33)
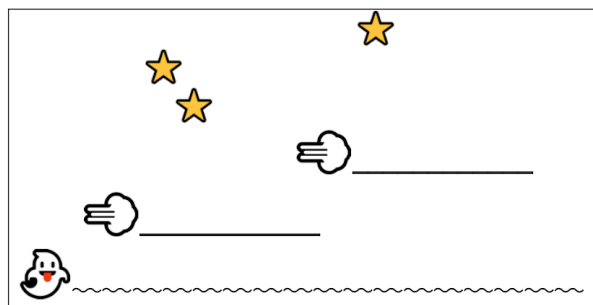
Composition

1. Imagine a make-believe place and create the sound of that place using samples taken from the **BBC Sound Effects** library.

2. Download a maximum of 8 different sounds and drop them into a sequence like **GarageBand** or **Soundtrap**.

3. Arrange the sounds to make a soundscape of your imaginary place.

Extension
Using emojis, graphically notate your above composition.

Performance

Using classroom instruments, improvise musical ideas that respond to the sound-scape you have created. Perform to the class.
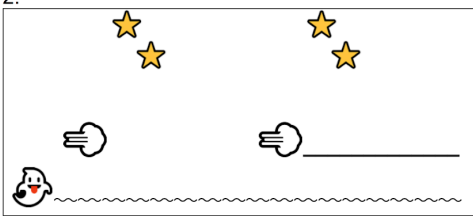
Stage 4 – Answers

Listening: Daybreak by Tristan Coelho (0:00-0:55)

1. What instruments or sounds can you hear? Flute and electronic sound sources. Student suggestions may include words such as echoes, sparkly, electric, ghostly, eerie.

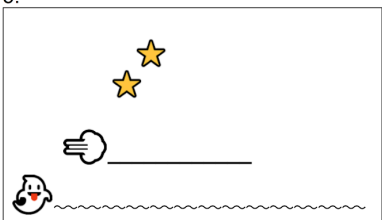2. Put the following graphic emojis in the order that you hear them.
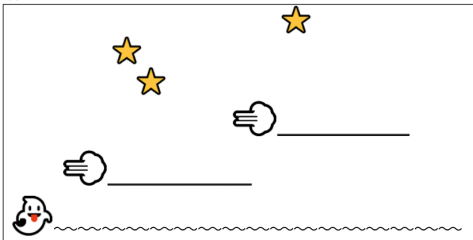
Stage 4 – Reference list and resources

Tristan Coelho website, date accessed 26/4/19
Daybreak by Tristan Coelho – resources, audio, video and score, date accessed 26/02/2020
Music 7-10 Syllabus, date accessed 07/04/19

BBC Sound Effects, date accessed 26/04/19
Sound Trap, date accessed 26/04/19
GarageBand, date accessed 27/4/19

Stage 5

Syllabus outcomes

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

5.7   demonstrates an understanding of musical concepts through the analysis, comparison, and critical discussion of music from different stylistic, social, cultural and historical contexts

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

Performance

Quiet space

1. In pairs or small groups, perform the graphic score below using instruments or sound sources that you think best captures the idea of music for a quiet space.

2. Discussion: How did each group interpret the score according to the concepts of music such as pitch and duration?

    Do you think this is an effective way to notate a piece of music? Why/why not?

Composition and research

Exploring birdsong

1. In pairs, visit **Cornell University Macaulay Library** and search for Australian birds using the and explore the photos, videos, sound recordings of Australian birds.

2. Find a sound recording of a particular bird that you both like.

3. Listen to the recording a few times and then create a short graphic score to represent the birdsong.

4. Try to imitate the sound by improvising on the instrument that you study or classroom instruments. Pay particular attention to bird-like sounds such as trills, staccato, repeated notes and grace notes.

5. Turn your improvisations into a short composition based on the birdsong. Avoid playing together at the same time; parts should work in imitation or question and answer fashion.

6. Perform to the class.

Further listening

- **Kate Bush: Sky of Honey (YouTube)**
- **Vaughan Williams: The Lark Ascending (YouTube)**
- **Messiaen: La merle noir (The Blackbird) (YouTube)**
- **Pink Floyd: Grantchester Meadows (YouTube)**
- **Hollis Taylor: Green Lake, Victoria & Owen Springs Reserve, 2014 (SoundCloud)** from Absolute Bird (CD excerpts)
- **Respighi: The Birds**

Listening

Looping

In electroacoustic music, a loop is a repeating section of sound material. A loop can be created using a wide range of music technologies including turntables, digital samplers, synthesizers, sequencers, drum machines, tape machines, delay units, or they can be programmed using computer music software.

Here are some listening examples of how looping works:

- **Radiohead Meets The Police – Live Looping Mashup by Elise Trouw (YouTube)**
- **Fkj and June Marieezy – Amsterjam (YouTube)**
- **Tash Sultana: Jungle (YouTube)**

Comparative listening

Listen to **Daybreak by Tristan Coelho** (3:46-4:16) and **C'mon Talk by Bernhoft (YouTube)** (0:00-1:25) and answer the questions below.

1. How has looping been used in each example? Consider the layers of sound and how they interact with the duration elements.

2. Describe the texture or layers of sound in each piece. Be sure to include how many layers of sound there are, whether the texture is thick or thin, and whether it is monophonic, homophonic or polyphonic.

3. Discuss the use of duration in each piece.

Musicology and score reading

Listen to **Daybreak by Tristan Coelho** (3:46-4:16) again and follow along with the score below.

1. What is the time signature of this piece? _____

2. The excerpt starts in 4/4 but in what bar does it change to a different time signature and what does it mean? _____

3. This piece is mainly made up of short rhythmic values called _____

4. Circle the three different types of rest found in this excerpt. Name them and describe their length:

a. _____

b. _____

c. _____

5. Circle and name the three different types of articulation found in this excerpt:

a. _____

b. _____

c. _____

6. What is the name of the symbol found in the second half of bar 49 and 50?

_____

7. Listening to the excerpt, sound can still be heard during the rests in bars 49 and 50. Why is this the case? _____

_____

8. Highlight and colour code any repeated motifs that you can see. (Hint: they may not be presented quite the same in successive appearances).

9. Circle and label examples of the following intervals: major 2nd, minor 3rd, major 3rd, perfect 4th, perfect 5th, major 6th, major 7th. Bonus find: diminished 5th (tritone).

Stage 5 – Answers

Comparative Listening

Listen to Daybreak by Tristan Coelho (3:46-4:16) and C'mon Talk by Bernhoft (0:00-1:25) and answer the following questions:

1. How has looping been used in each example? Consider the layers of sound and how they interact with the duration elements contained within the piece.

Daybreak

Delay has been used to create a looping effect of the flute part and the sound is further manipulated by the electronics through occasional reversing of the sounds and subtly changing start and end points of the loop. The looping is not programmed to be 'in time' with the original statement of the motif, resulting in polyphony with many textural layers created.

C'mon Talk

Looping has been used to build the individual instrumental/vocal layers as a cohesive ensemble, providing harmonic and rhythmic accompaniment to the vocal melody. The loops are designed to be 'in time' and successive loops are in sync with the other layers.

2. Describe the texture or layers of sound in each piece. Be sure to include how many layers of sound there are, whether the texture is thick or thin, and whether it is monophonic, homophonic or polyphonic.

Daybreak
- There are two main layers in the excerpt. The first layer is the live flute sound and the second layer is the delay created by the electronics.
- The texture is entirely polyphonic. It begins quite thin but gradually thickens as more textural layers are added due to the delays of the looping effect created by the electronics.
- The excerpt begins with the flute playing the first 3 note motif which is then delayed by the electronics.
- There is a high, sustained resonance from the electronics initially which gradually fades over time.
- The second 4 note motif is then played by the flute and delayed, before the motifs continue to be looped over the top of one another creating complex rhythmic interactions, resulting in a thick, highly polyphonic texture.

C'mon Talk
- The vocals begin the piece by singing a repeated 2 bar ostinato using a thin, homophonic texture with the finger clicks providing rhythmic accompaniment.
- Looping is then used to double the melodic line sung by the vocals resulting in a slightly thicker texture.
- A looped bass line and drum beat is then added using vocal percussion and thickening the texture further, although it still remains homophonic.
- A looped counter melody is then played on the acoustic guitar resulting in a polyphonic, thick texture.
- A 2-bar looped repeated bass line is then added further thickening the texture.
- Many textural layers are omitted at the beginning of the verse with just the drums, bass line and vocal melody remaining resulting in a much thinner, homophonic texture.

3. Discuss the use of duration in each piece.

Daybreak

- No time signature can be clearly identified. A moderato pulse is identified at the beginning of the excerpt, but this becomes indefinite as additional layers are added resulting in an absence of clear beat.
- The rhythmic units of the flute are mainly short using predominantly quavers and semiquavers.
- The electronics create many overlaid and repeated rhythms due to the looping effect.
- The figure in bar 49 becomes a rhythmic motif appearing in different guises in bars 51, 54 and 55.
- The flute is manipulated through delay which creates a tight canonic effect.
- Lower pitched electronic sounds can be heard behind the flute parts playing a slower tempoed, 'chugging' rhythm which contrasts to the rhythmic flourishes found in the flute line.
- Polyrhythms are created by virtue of the irregular delay effect resulting in perceivable polyrhythms and a cacophony of sound.

C'mon Talk

- The time signature is 4/4, the tempo is moderato, the bar lengths are regular and the piece has a strong beat indicated by the finger clicking at the beginning of the excerpt.
- The phrase lengths are 4 bars long but primarily based on 2 bar ostinatos from each looped instrument.
- Note values used are mainly short with mainly semiquavers in the vocal part and bass line. Crotchets on beats 2 and 4, providing a back beat dominate the finger clicking part which then leads into the doubling of this groove using the vocal percussion part imitating a drum beat. The guitar part uses similar note values to the vocal part.
- All parts utilise syncopation.
- Repeated rhythms are apparent throughout the whole excerpt due to the looping of each instrumental part creating repetition.

Musicology and score reading

1. What is the time signature of this piece?
   4 crotchet beats per bar.

2. The excerpt starts in 4/4 but in what bar does it change to a different time signature and what does it mean?
   Bar 54. 5/4 = 5 crotchet beats per bar.

3. This piece is mainly made up of short rhythmic values called semiquavers.

4. Circle the three different types of rests found in this excerpt. Name them and describe their length.
   Crotchet rest = 1, minim rest = 2, semiquaver rest = 1/4

5. Circle and name the three different types of articulation found in this excerpt.
   Staccato, accent and slur.

6. What is the name of the symbol found in the second half of bar 49 and 50?
   A long pause or fermata.

7. Listening to the excerpt, sound can still be heard during the rests in bars 49 and 50. Why is this the case?
   The rests and fermata is used in the flute part to allow for space for the electronics and looping to be sounded.

Stage 5 – Reference list and resources

Tristan Coelho website, date accessed 26/4/19

Daybreak by Tristan Coelho – resources, audio and score, date accessed 26/02/2020

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

Cornell University Macaulay Library, date accessed 07/04/19

Kate Bush: Sky of Honey (YouTube), date accessed 27/4/19

Vaughan Williams: The Lark Ascending (YouTube), date accessed 27/4/19

Messiaen: La merle noir (The Blackbird) (YouTube), date accessed 27/4/19

Pink Floyd: Grantchester Meadows (YouTube), date accessed 27/4/19

Hollis Taylor: Green Lake, Victoria & Owen Springs Reserve, 2014 (SoundCloud), from Absolute Bird (CD excerpts), date accessed 27/4/19

Respighi: The Birds, date accessed 27/4/19

Radiohead Meets The Police – Live Looping Mashup by Elise Trouw (YouTube), date accessed 27/4/19

Fkj and June Marieezy – Amsterjam (YouTube), date accessed 27/4/19

Tash Sultana: Jungle (YouTube), date accessed 27/4/19

C'mon Talk by Bernhoft (YouTube), date accessed 27/4/19

Music 1 Stage 6

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

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

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

Performance

Preparatory listening/discussion

Daybreak has several sections which involve cell notation in free time. This is a form of notation that invites performers to be flexible and spontaneous in the way they play the music.

Listen to **Daybreak by Tristan Coelho** (6:09-6:45) and look at the score excerpt below. Note that the solo flute sound is manipulated by the live electronic delay/granulation effect at this point.

1. How does the performer interpret the cell notation?

2. How does the cell notation have a bearing on the musical concepts? Provide an example.

3. Why do you think the composer has chosen this method of notation?

Performance

The music below is another example of cell notation. In small groups, choose either classroom instruments or instruments that you study and perform the music by choosing one of the following options:

- Everyone starts together at letter a. Repeat each cell a minimum of 8 times. Independently move to the next cell; avoid all shifting at the same time. Everyone stays in time regardless of how the cells align.
- Everyone starts with whichever cell they like. Repeat cells as much or as little as desired while staying in time. Independently move to any other cell at any time.
- Everyone starts with whichever cell they like. Leave plenty of silence between cells and their repetitions; there should be more silence than sound in each part. Everyone should play in their own time, not necessarily in sync with the others.

Whichever option you choose, it's essential for each member of the group to listen carefully to others. Always consider the best time to shift musical cells or when to leave silences.

Reflection

- What did your group find challenging about using this type of notation for performance?
- What did you like about the process of performing using cell notation?
- Are you happy with the musical outcome that you produced during performance? Why? Why not?

Extension

Explore **Terry Riley's 'In C'**, a groundbreaking work that uses cell notation. Read about the work and then perform your own version (score available on the website).

Composition

The Daybreak app, patch and videos referenced in the steps below are available from the **Daybreak resources** web page.

Option 1a

1. Compose 4 cells of musical material inspired by birdsong. Keep each cell relatively short in duration.

2. Add dynamics and articulation and label each cell A through to D.

3. Watch the **Additional resources video** for information about how to set up the electronic equipment that you will need for the next part of the task. If you don't have this equipment you can use your computer or laptop microphone. Just be sure to use headphones in this instance to avoid feedback.

4. On your computer, download the **Daybreak app**, created by Tristan Coelho. Watch the screencast **How to use the Daybreak MaxMSP patch** to get started. Perform your cells in any order over the span of around 2 minutes. Cells can be directly repeated if desired. The space between cells should not be fixed and you can vary the music through changes in dynamics, register and colour effects. Try to build a conversation with the effects.

5. Adjust levels and use the record feature in the app to save your performance.

6. Name your piece after a bird that you think best matches the sound of your music and present to the class.

Option 1b

1. As a class, create a number of musical cells inspired by birdsong and perform a soundscape using the **Daybreak MaxMSP patch**.

2. Use an external mic and set the patch to scene 3. Watch the screencast **How to use the Daybreak MaxMSP patch** to get started.

3. Leave plenty of space in the musical soundscape that emerges. Listen to each other and the unfolding imitations in the electronics.

4. Adjust levels and use the record feature to save the performance.

5. Listen back as a class and reflect.

Discussion: Options 1a and 1b

1. What were the benefits of using this type of notation in composing your piece?

2. What was your experience in working with the Daybreak MaxMSP patch?

3. Do you think a similar effect could have been achieved using traditional notation? Why/why not?

Option 2

1. Form small groups of 2 or 3 students.

2. Each student is to compose 4 cells of musical material. Keep each cell relatively short in duration and add dynamics and articulation.

3. Each group member is to perform their cells to each other. Together, try to organise everyone's cells into 2 groups: calm and crazy. Label the cells from A through to L with A being the most calm and L being the most crazy.

4. To perform the piece, the overall structure is going to move from calm and peaceful to crazy and frenetic. It will have 3 sections, with each section lasting for 30 seconds. You can use your phone timer as a reference point during performance.

   - section 1: calm and peaceful
   - section 2: development of calm and peaceful, slowly becoming 'crazy and frenetic
   - section 3: crazy and frenetic.

5. Starting with section 1: using the calm cells, perform the cells in whichever order you like, using as many or as few performers as needed to best fit the musical outcome desired. Cells can be directly repeated or imitated. The space between cells should vary. The cells can also be varied by way of dynamics, register and colour effects.

6. Section 2: repeat the same process as above, but start to incorporate a mixture of both calm and crazy cells. This section is to be the transition section between calm and crazy. Think carefully about how you would manipulate the concepts such as dynamics, pitch, duration, texture and tone colour to achieve a sense of tension and building towards a climax.

7. Section 3: repeat the process above but again, consider the interpretation of the cells to create a polyphonic, frenetic and crazy climax to finish your piece using only the 'crazy' cells.

8. Name your piece and perform to the class.

Discussion: Option 2

1. What were the benefits of using the cell notation when composing your piece?

2. What were the challenges of using this type of notation?

3. Do you think a similar effect could be achieved using traditional notation? Why/why not?

4. How did you manipulate the concepts of music to create the different types of moods for each section of the piece?

5. Describe your experience and the process of 'listening' whilst performing the piece.

Aural/musicology

Listen to **Daybreak by Tristan Coelho** (2:42-3:47) bars 32-48, and answer the following questions:

1. Identify the layers of sound and how they are used in this excerpt.

2. Discuss the use of pitch in this excerpt.

3. How are the concepts of music used to create a climax in this excerpt?

Music 1 Stage 6 – Answers

Performance

1. How does the performer interpret the cell notation?

The performer moves freely between the cells in any order and sometimes repeats them directly. Varying amounts of silence is left between the cells often in response to what happens in the electronics part.

2. How does the cell notation have a bearing on the musical concepts? Provide an example.

The cell notation has an effect on many of the musical concepts. One example is structure; from performance to performance, the order of the presentation of the cells will be different. Not only this but the degree of repetition and contrast is not fixed.

3. Why do you think the composer has chosen this method of notation?

The idea behind the piece is to explore the idea of a soundscape and the natural environment. This notation invites a performer to listen and be spontaneous in their interactions with the sounds that are born out of the electronics part. There is also a freedom of expression and playfulness afforded by this form of notation which is in line with the composer's interest in bird song and mimicry.

Aural/musicology

Listen to Daybreak by Tristan Coelho (2:42-3:47) and answer the following questions: (bars 32-48)

1. Identify the layers of sound and how they are used in this excerpt.

    -   The opening motif is played by the flute, with a delay effect creating an additional layer of close echoes. This results in a polyphonic texture due to the overlapping of flute and its electronic imitations.
    -   The delay effect gradually softens and disappears altogether as the solo flute plays short, repeated bird-like motifs using a single layer of sound. Moving from flute plus electronics to flute alone results in a shift towards a monophonic, thin texture.

- The next section sees the development of a new theme with the flute playing an angular melody using large leaps. There is a dense, sustained reverb effect which sustains the flute tones. This layer underpins the music in this section. This is accompanied by the electronics interacting with the flute in an imitative fashion, in addition to a high pitched drone, also provided by the electronics. The pitch range here is incredibly wide across both sound sources, and the texture is moderately thin and homophonic. This section builds in intensity, using short note values and fast ascending, arpeggiated passages in the flute which is encircled by the swirling electronics layer.

2. Discuss the use of pitch in this excerpt.

- The tonality is ambiguous at times with fleeting moments of major and minor. There are however constant returns to what feel like home notes.
- The harmony is ambiguous and shifts between a feeling of major and minor. Chords are formed due to the electronic delays and reverb blending notes together which cover a large pitch range.
- The contour of the flute melody is very angular and moves in a combination of both small and large leaps and repeated notes. Its range is wide, and the excerpt incorporates all registers of the flute.
- The flute starts with a short 3-note motif which is ascending and this is quickly answered by another 3-note motif which is descending. Following this is a 'bird-like' motif which utilises 2 repeated notes descending using large leaps, concluding with a harmonic trill on a high-pitched note.
- The electronic delay of the flute uses the same pitch elements as above.
- Sustained drones can be heard in the electronics which also extend the flute tones.
- The phrases of the flute melody are made up of 2 high-pitch notes, followed by a low-pitched repeated note. This low-pitched note is answered by the electronics each time using a high, 2-note motif which steps down.
- The final section continues with the same interaction: the flute plays a low note which is quickly answered by the 2-note motif in the electronics. This is then followed by a fast, arpeggiated, ascending flourish from the flute's low register into its highest register. This is repeated with the pitch of the flute becoming higher and higher to build to a climax.

3. How are the concepts of music used to create a climax in this excerpt?

- The concept of pitch is used to create a climax through the juxtaposition of low-pitched sustained notes provided by the flute, followed by the ascending arpeggiated passages into its upper register. With each repetition, the flute gets higher and higher resulting in tension, and culminating in a climax.

- The concept of duration is used to create climax through the use of longer note values used in the previous section, which then build to incorporate very fast note values like semiquavers and demisemiquavers at the end of the excerpt. The absence of pulse also contributes to the climax with the motifs being rhythmically extended each time, creating excitement and anticipation.

- The dynamics and expressive techniques are pivotal to the success of the climax of this section. The flute provides repeated low notes using an 'overblown' timbre followed by very-quickly-tongued ascending, arpeggiated passages which are repeated and varied in length. The dynamics and articulation support the energy of these motifs through the harsh accents provided on the low notes, followed by rapid crescendos that increase in intensity as the piece propels itself to the climax.

- The texture at the beginning of the excerpt is thinner and more sparse in comparison to the end of the excerpt which becomes thicker due to the louder dynamics, busier textures and faster note values, contributing to the musical climax.

- Structurally, the excerpt ends with repeated fragments that are developed through rhythmic extension. This repetition contributes to the propulsion of the motif which is propelled forwards and upwards, culminating in the musical climax.

- The concept of tone colour contributes to the climax as the interaction between the flute and electronics becomes more immediate towards the end of the excerpt. The colour of the sound is brighter, more piercing and multifaceted/complex as the electronics trail the flute attacks.

Music 1 Stage 6 – Reference list and resources

Tristan Coelho website, date accessed 26/4/19
Daybreak by Tristan Coelho – resources, audio, score, MaxMSP patch and instructional video, date accessed 26/02/2020
Music 1 Stage 6 Syllabus, date accessed 07/04/19

Terry Riley's 'In C', date accessed 27/4/19

Music 2 Stage 6

Syllabus outcomes

Preliminary

P2 demonstrates an understanding of the concepts of music, by interpreting, analysing, discussing, creating and notating a variety of musical symbols characteristically used in the mandatory and additional topics

P3 composes, improvises and analyses melodies and accompaniments for familiar sound sources in solo and/or small ensembles

P4 creates, improvises and notates music which is representative of the mandatory and additional topics and demonstrates different social, cultural and historical contexts

P7 observes and discusses in detail the concepts of music in works representative of the mandatory and additional topics

P8 understands the capabilities of performing media, explores and uses current technologies as uses current technologies as studied

P9 understands the capabilities of performing media, explores and uses current technologies as uses current technologies as studied

HSC

H1 performs repertoire that reflects the mandatory and additional topics and addresses the stylistic and technical demands of the music as a soloist and as a member of an ensemble

H2 demonstrates an understanding of the relationships between combinations of the concepts of music, by interpreting, notating, analysing, discussing, composing and evaluating combinations of musical symbols reflecting those characteristically used in the mandatory and additional topics

H3 composes works focusing on a range of concepts, for familiar and unfamiliar sound sources, solo, small and large ensembles, or using a variety of musical structures

H7 critically evaluates and discusses in detail the concepts of music in works representative of the mandatory and additional topics

H8 understands the capabilities of performing media, incorporates technologies into compositions and performances as appropriate to the contexts studied

H9 identifies, recognises, experiments with, and discusses the uses and effects of technology in music

Music 2 Stage 6 Syllabus

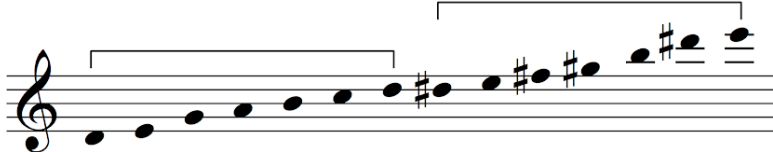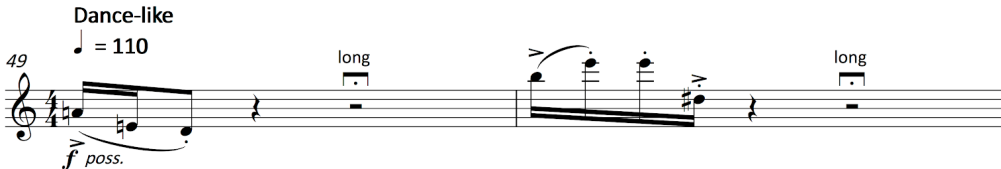# Listening guide

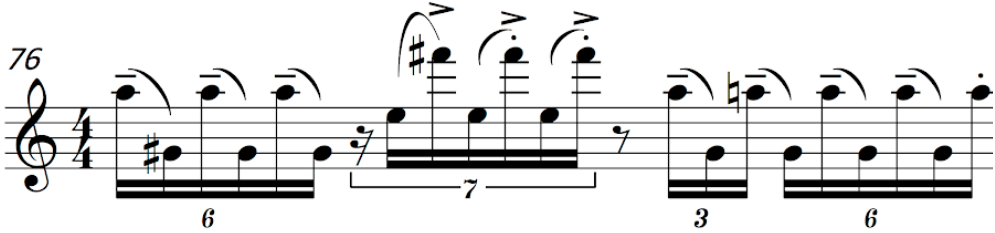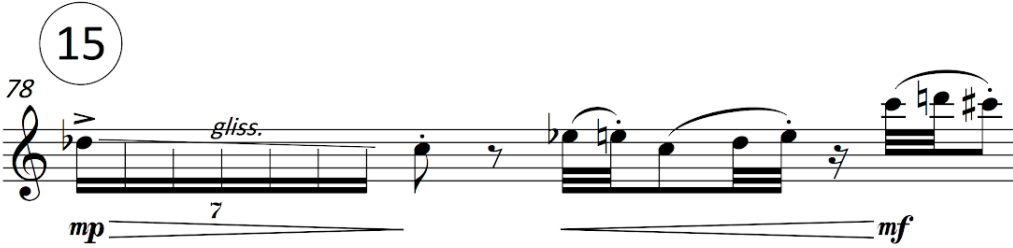| Bars/ section	Musical features
Section A	
1 – 23	Spacious, improvisatory, dreamy (0:00-1:52) ● The electronics begin by using a type of tuned delay effect called 'granular freezing' which creates an E drone as well as high-pitched, bright echoes. ● The flute provides melodic material using extended techniques such as rapid double tonguing, pitch bending, overblowing, flutter tonguing and breathy and slap tongue/pizz. effects. It uses a low register and limited range. ● Pitch material focuses mainly on the E minor pentatonic scale (E,G,A,B,D). The phrase in bar 18-19 touches on A minor. ● Melodic contour uses predominantly perfect 4ths, 5ths and major 2nds. ● The electronics imitate the flute through techniques such as delay, imitation, and variation. ● The main beats of the bar are often obscured through the use of ties and rests. The rhythms are varied and relatively complex resulting in an improvisatory sense. There are changes in time signature between 4/4 and 5/4. Overall,the music is not bound by a strong sense of pulse. ● Texture is thin and dynamics are mainly soft.
24 – 37	Faster, soaring » Improvisation (1:53 – 3:03) ● The flute introduces similar but slightly quicker and more energised melodic material using two fragments: C, D, G#, F# and C#, A, G. These are subsets of the two forms of whole tone scale. ● Bird like motifs using large leaps are introduced in bars 26-30, with ornamentation including acciaccatura and staccato.The range of the flute here is extended and it suggests the tonality of A (natural) minor. ● Electronic material continues with the E drone and effects as before.

Bars/ section	Musical features
	- Bar 31 is a brief hiatus to the flow of Theme 2 presenting the first use of free-time cell notation in the work. A rough timescale is provided and the performer fills the space with a choice of musical motifs that are a mix of fragments from both Theme 1 and 2. - Contrasting material including extended techniques such as breathy, rapid tonguing and whistling are produced in an improvised manner by the flute, and are then electronically manipulated using delay (similar to looping). - There is a clear tonal centre due to the rapid tonguing D bass note produced by the flute which is then octave shifted by the electronics. Because of this, the music suggests the mode of D dorian. - Bar 32 contines Theme 2 material and sees the development of some of the cell motifs in fixed time. A clear bird call is heard in bar 34 with its echo following a bar later. The use of irrational rhythms (septuplets) gives the rhythm an improvised, elastic feel. The electronics drop away enabling the monophonic layer of flute to carry through. - A harmonic trill in bar 36 leads into the next subsection.

Bars/ section	Musical features
38 – 48	Development » transition (3:04 – 3:47) ● The music from Bar 38 is is closely linked to Theme 1 in its use of rhythm but it has been developed by way of an expansion of pitch range and a shift to D tonal centre (originally E). The imitative high-pitched echoes and granular freezing also return in the electronics. The melodic contour is very jagged with large leaps across octaves. A robust, full tone colour emerges. ● From bar 44 the music acts as a transition and sees this material develop with momentum and intensity. It uses overblowing from the flute followed by rapidly ascending flourishes which are jagged as before but have undergone a form of diminution. Each low D is echoed by the electronics in a call and response manner and every successive phrase is elongated by way of melodic extension before the final flourish in bar 48.
Section B	
49 – 70	Dance-like (3:47 – 4:50) ● This section is characterised by dance-like rhythms imitating birdsong played by the flute utilising semiquaver figures and buoyant articulations at an Allegro tempo. ● The pitch material comes across as atonal but can be considered bitonal due to way that the composer uses 'fixed-pitch spaces' comprising two sets of pitches. Below, you can see the fixed-pitch space that is used to control pitch in the opening of this section. Notice how the motifs from bar 49 fit into the two sets of pitches. Each set is consonant within itself but by overlapping between them, the composer creates more atonal lines.

Bars/section	Musical features
	• Over time the pitch space is developed and becomes freer. • The melodic material is based on two fragments which are then developed through rhythmic displacement (bb. 51-52), repetition (bb. 54-56) and extension. The electronic delay continually echoes the motifs creating a quasi ostinato • The flute's entire range is explored coupled with virtuosic, flourishing passages. • The texture here is polyphonic and rhythmically busy due to the delay created by the electronics. This results in many overlapping textural layers creating a cacophony of bird-like sounds and tone clusters. • Hocketting is present between the flute and electronics. • Bars 62-68 culminate in a musical climax point for this section whilst unifying the work through the return of overblowing and rapid double tonguing as seen in Section A. Then, the music fades out before the next section.
Section C	
71 – 86	Spacious, improvisatory, dreamy » Improvisation (4:51 – 6:43) • This section is characterised by a call and answer effect produced by short 1 bar phrases played by the flute, and answered by whistling (also produced by the flautist). • The texture has become sparse, thin and monophonic at times, with the electronics occasionally imitating with granular delay effects.

Bars/ section	Musical features
	- The material is clearly inspired by birdsong motifs character-ised by large leaps and an improvisatory feel by using irrational rhythms. An example is bar 76 which involves descending inter-vals of 9ths played as sextuplets which are then inverted in up-ward leaps of 9ths in the following passage played as septuplets. - The music is littered with birdsong quotations including the pied butcher bird (bb. 78, 80) - The pitch material is atonal without a clear tonal centre al-though bars 71-77 work around a fixed-pitch space. Ambiguity is exploited by the use of pitch bending and glissando (bb. 78, 80, 85). - The electronics at bar 82 capture and delay the flutist's whistle to evoke a brief soundscape of bell birds. - Bar 86 sees the return of free-time cell notation involving bird-song fragments from the previous section and extended tech-niques. Once again, the octave-shifted granular delay effect in the electronics adds textural layers.
87 – 91	Transition (6:44 – 6:58) The same transition material as heard in bars 44-48.

Bars/ section	Musical features
Section B1	
92 – 112	Dance-like (6:58 – 8:10) • The section starts with the music from the initial dance-like section (from bar 49) but transposed down a tone and inverted. The deployment of the material across the octaves is different to the original. • The whole section is characterised by the use of fragments to generate longer phrases of musical material and includes hocketting between the flute and electronics. • The rhythmic interplay between the two motifs continues like the original but other birdsong fragments have been inserted into the mix including bar 98 and a quote from the grey shrike-thrush in bars 105-106. • The excitement and energy transcends the first dance-like section by exploiting further rhythmic variety and complexity. Birdsong fragments are interspersed with frenetic double tongued, semiquaver passages, and accented, flutter tongued low notes. • This builds into the climax of the work which involves repeated rapidly tongued descending and ascending fragments (bb. 108-109). The electronics here create a busy, multi-layered texture through multiple delay effects and octave transpositions. Dissonant tone clusters suddenly emerge in the electronics creating an even greater degree of tension. • Cell notation in free time then appears in bar 110 which invites the performer to deconstruct the boxed material; the music gradually disintegrates and settles on a low E drone which serves as a transition into the next section.

Bars/ section	Musical features
Section A1	
113 – 123	Section A (8:11 – 9:30) ● The A material returns albeit varied and made more compact with slightly different pacing. ● As in the first A section, the texture is spacious and mostly thin with the electronics creating a reverberant aura around the flute through granular freezing. The electronics also take fragments of the flute lines and play them back as delayed echoes. ● Extended techniques include slap tongue/pizz. effect (b. 114), the use of pitch bending (b. 115, 116), overblowing (b. 116), harmonic trill (b. 120, 122) and flutter tonguing (b. 121) ● The work ends with the sounds of the flute's high harmonic trill being sustained and gradually faded out in the electronics.

Summary of the global structure

- A: Spacious, improvisatory, dreamy (bb. 1-48 | 0:00-3:47)
- B: Dance-like (bb. 49-70 | 3:47-4:50)
- C: Spacious, improvisatory, dreamy (bb. 71-91 | 4:51-6:58)
- B1: Dance-like (bb. 92-112 | 6:58-8:10)
- A1: Spacious, improvisatory, dreamy (bb. 113-123 | 8:11-9:30)

Discussion
How could you best describe the global structure?

Aural/musicology

Extended techniques

An extended technique is a way in which sound is created on an instrument by using non-traditional methods of sound production.
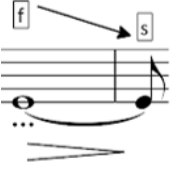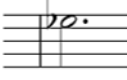
Activity 1

Watch the video of Lamorna Nightingale demonstrating and explaining the **extended flute techniques** on the Daybreak resources web page for Tristan Coelho's piece Daybreak, and fill in the following table. You may use the following tone colour words to complete the table.

Tone colour words

bright
glittering
clear
sparking
shimmering
silvery
pure

mellow
resonant
warm
smooth
sweet

distorted
aggressive
coarse
dark
muddy
abrasive

dry
hollow
percussive
rumbling

nasal
murky
reedy
eerie
thin

majestic
powerful
grand
strong
booming
resonant

piercing
metallic
brassy
blazing
squeaky

breathy
airy
wheezing
muffled
muted

artificial
electronic
buzzing
synthetic
scratchy

Notation	Name	Describe the tone colour	How is the sound produced?
(pizz.)			
whistle			

Activity 2

1. Below is a list of examples which explore extended techniques on a range of instruments. Choose 2 and identify any extended techniques you observed.

   - Cello – **Reclaiming the Spirit by Sarah Hopkins (YouTube)**
   - Harmonica – **Improvisation by Bernie van Tiel (YouTube)**
   - Bass – **Amazing Grace arranged by Victor Wooten (YouTube)**
   - Saxophone – **Beat Me by Barry Cockcroft (YouTube)**
   - Tuba – **Fnugg by Oystein Baadsvik (YouTube)**

2. Explain how the performing media are used in these pieces by providing specific examples.

Activity 3

Listen to **Tristan Coelho's Daybreak with the score** provided and answer the questions below.

1. Analyse the musical features in the piece which make it identifiable as a piece of music written in the last 25 years. Please make specific reference to the score.

2. Discuss the relationship between the flute and electronics in the piece by exploring the concept of 'duo'.

3. Explain how variety is achieved in this piece. In your answer, make specific reference to the score.

Composition and performance – Soundscape and dance

Option 1
Create a short composition (max. two minutes) for your instrument that uses two main ideas:

- a soundscape style of material that is predominantly slow, uses plenty of space without a strong pulse and includes extended techniques
- a dance-like, spirited material that is predominantly fast, energetic, uses rhythms that define a pulse and contains sudden contrasts of dynamics.

The piece should be ABA1 ternary form. When A returns (A1) it should be slightly varied or developed.

Steps

1. Work out the structure of your piece and how you wish to order the soundscape vs. dance-like ideas.

2. Research a handful of extended techniques on your instrument.

3. Try them out and reflect on the tone colour of each sound and whether or not you could incorporate them into your soundscape material.

4. Sketch out the soundscape using a combination of notation, text and graphics. Keep your instrument handy to try out ideas.

5. Create a short 'punchy' musical idea that will serve as the basis for your dance-like section.

6. Use a selection of the following techniques to develop your material further: fragmentation, permutation (reordering), retrograde (backwards), inversion (mirror image), augmentation (expanded), diminution (contracted), extension (adding to the idea/phrase), interpolation (adding elements within the idea), omission (taking elements out of the idea), and/or any other variation techniques you want to use.

7. Notate your dance-like music being sure to include details such as dynamics and expressive techniques.

8. Finalise the structure for the piece aiming to have a musical apex.

9. Perform compositions to the class.

Option 2

Use the same approach and steps as in option 1 above but incorporate electronics by using the Daybreak MaxMSP patch. The app, patch and the videos referenced in the steps are available from the **Daybreak resources** web page.

Steps

1. On your computer, download the **Daybreak app**, created by Tristan Coelho. Watch the screencast **How to use the Daybreak MaxMSP patch**, to get started.

2. Watch the **Additional resources video** to set up your equipment.

3. If you don't have this equipment you can use your computer or laptop microphone. Just be sure to use headphones in this instance to avoid feedback.

4. Work between trying out ideas on your instrument in the app and notating ideas.

5. In your composition allow space for the electronics try to build a 'conversation' with the sounds you here.

6. Adjust levels and use the record feature in the app to save your performance.

7. Name your piece and perform it live to the class or play the recording.

Extension

Explore other scenes in the Daybreak app. Compose material to work with a scene of your choice.

Glossary

Electronic techniques

Name	Definition
Live electronics	
Granulation	
Octave shifting	
Delay	
Amplification	

Flute techniques

Name	Definition
Flutter tonguing	
Pitch bending	
Harmonic trill	
Glissando	
Whistling	
Double tonguing	

Compositional techniques
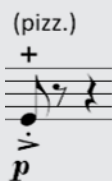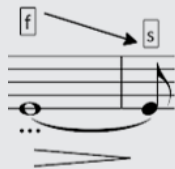
Name	Definition
Cell notation	
Free time	
Irrational rhythms	
Imitation	
Motivic development	
Repetition	
Variation	
Transposition	
Inversion	
Extended techniques	
Rhythmic augmentation	
Fragmentation	
Hocketing	
Melodic extension	
Tone cluster	

Music 2 Stage 6 – Answers
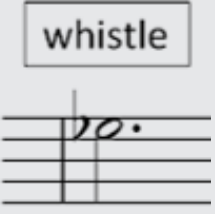
Aural/Musicology

Activity 1

Watch the video of Lamorna Nightingale demonstrate and explain the extended techniques played on the flute for Tristan Coelho's piece Daybreak, and fill in the table below. Tone colour words to select from are suggested on the following page.

Notation	Name	Describe the tone colour	How is the sound produced?
(pizz.)	Slap tongue or pizzicato tongue	Percussive and hollow	Use a really hard tongue like 't' to create a percussive effect.
	Fast repeated tonguing gradually getting slower	Dry and hollow	Use fast repeated tonguing and gradually get slower.
	Repeated tonguing as fast as possible	Dry and hollow	Tongue repeatedly as fast as possible.
	Overblowing	Breathy and airy	Continuing the same tonguing, blow the air faster and then slower to alternate the pitch from high to low.
	Flutter tonguing	Breathy and shrill	Roll the tongue 'r', or use the back of the throat to create a gargling sound whilst playing a note.

Notation	Name	Describe the tone colour	How is the sound produced?
	Harmonic Trill	Transparent and shrill	Alternate between 2 different ways of playing the same pitch and trill between the two fingerings.
	Whistle (without flute)	Clear and sparkling	Simply whistle the note given without the flute.

Activity 2

1. Choose 2 instruments from the list below, and identify any extended techniques you observed in each excerpt.

Cello – Reclaiming the Spirit by Sarah Hopkins
- seagull sounds through harmonic glissandi
- harmonics
- didjeridoo bowing.

Harmonica – Improvisation by Bernie van Tiel
- beat boxing
- vocalisations.

Bass – Amazing Grace arranged by Victor Wooten
- harmonics
- slapping
- slides
- pitch bending.

Saxophone – Beat Me by Barry Cockcroft
- key slapping/key clicks
- slap tongue
- growling
- multiphonics
- squeaking.

Tuba – Fnugg by Oystein Baadsvik
- double tonguing
- vocalisations
- singing/multiphonics/helicopter effect (made by playing a note and singing the same note slightly out of tune)
- beat boxing
- foot tapping/finger tapping (on instrument with ring).

2. Explain how the performing media are used in each excerpt providing specific examples.

Students answers will include the techniques stated above and how they are incorporated into the piece. The focus of the response will be based on tone colour and performing media with relevant concepts of music to support their statements. Specific examples from the excerpt should be provided.

Activity 3

Listen to Tristan Coelho's Daybreak with the score provided and answer the following questions:

1. Analyse the musical features in the excerpt which makes it identifiable as a piece of music written in the last 25 years. Please make specific reference to the score.

Answers may include:
- the use of performing media incorporating both acoustic and electronic sound sources
- a highly intricate and detailed score, providing very specific directions for the performer, including dynamics and expressive techniques and indications for the electronics scene switching, for instance bars 11-16
- irrational rhythms including the use of triplets, quintuplets and sextuplets, for instance bars 32-39
- use of various time signatures (such as 4/4, 5/4, 6/8) as well as free time (for example bar 31)
- bird calls are conveyed through short jagged motifs bars 31-35
- use of modes and atonality resulting in dissonance, for example E minor pentatonic (section A), D dorian (bar 31) and atonality in section B
- utilisation of flute extended techniques such as slap tongue/pizz., overblowing, harmonic trill and flutter tonguing, for example bars 113-122
- highly detailed and extensive range of dynamics: pp-ff
- wide pitch range essentially exploiting the entire range of the flute (C4-C7) for example bars 81-91
- asymmetrical phrase lengths (for example Section A) with material unfolding organically and less constrained by rigid structures
- texturally varied and ever changing due to electronic effects
- highly engaging and varied tone colours used throughout to convey different moods, for example bars 42-44
- various forms of notation are used, both conventional and unconventional, for example Cell/free-time notation in bar 31

2. Discuss the relationship between the flute and electronics in the piece by exploring the concept of 'duo'.

Sample answer below.
The relationship between the two performing media emerges throughout the piece as a musical dialogue as they work together to create an immersive sound world for the listener. They are incredibly imitative of each other, reflecting not only the bird song that occurs in nature, but also fulfilling the traditional role of a 'duo' as the two parts imitate, answer and compliment each other throughout. The success of the work relies completely on the relationship of this duo and how the performer responds to the electronics.

3. Explain how variety is used in this piece. In your answer, make specific reference to the score.

Possible sample answers provided below.
Tone colour
- The contrast between the acoustic flute vs. electronics results in a variety of timbres that are explored throughout. This is further emphasised by the use of extended techniques in the flute part such as flutter tonguing and overblowing, for example, in bars 17-22.
- Exploration of a spectrum of flute tone production from pure to breathy.
- A variety of live electronic techniques are employed including granular freezing, octave shifting and delay which results in a range of timbral effects.

Texture
- Textural variety is apparent throughout and is explored through the use of electronic techniques such as delay. There are moments of all textures both thick and thin, for example: monophonic: bars 78-81, homophonic: bars 1-10, polyphonic: section C.

Pitch

- The entire range of the flute is explored and the electronics extend the flute's natural range, for example in bars 81-91.
- An indefinite sense of pitch is occasionally created in the electronics which blurs and expands the palette of regular and centred pitch production in the flute, for example in section C.
- Pitch bending is juxtaposed against the conventional pitches produced by the flute, for example in bar 15-16.
- Use of grace notes to closely mimic birdsong (bb. 26-29).
- The harmonic language that emerges moves between a sense of tonality and atonality. Section A centres on the pitch centre of E outlined by sustained notes of the E minor pentatonic mode. From bars 38-48 there is a shift to a D pedal. Section B is more dissonant due to a bitonal approach and a move away from any tonal centre.
- The melodic motifs are highly varied with the A section producing a long, sustained ethereal-like melody which is contrasted against the jagged contour of the bird-like motifs as seen in section B.
- A variety of melodic compositional devices are employed to develop motifs to create variety such as repetition (b. 76-77), variation (bb. 26-27 vs. 28-29), transposition (bb. 11-12 vs. 18-19) and inversion (section B vs. B1).

Duration

- Use of various time signatures (such as 4/4, 5/4, 6/8) as well as free time (for example, bar 31).
- Irrational rhythms are a prominent feature of the work and are used to create an improvisatory feel and rhythmic ideas that are more closely aligned with those observed in birdsong. Examples include triplets, quintuplets, sextuplets, septuplets and 10:8 demisemiquavers (for example, bars 32-48).
- A variety of rhythmic devices are employed to develop motifs and create variety such as in bar 32-33 which uses rhythmic fragmentation and diminution, rhythmic displacement (such as bars 51-52 and bar 33), repetition (throughout section B) and written-out expansions and contractions of tempo (b. 39).
- Syncopation and polyrhythmic textures, combined with an indeterminate pulse presents a varied soundscape of rhythmic motifs which can not always be anticipated by the listener (such as section B).

- The work explores three main ways of handling duration from open-ended to highly controlled and areas in between:
    1. free-time, cell material (for example, bar 31)
    2. notated improvisatory material (section A)
    3. tightly organised rhythmic material (section B).

Dynamics and expressive techniques
- Dynamics are varied continuously throughout and demonstrate an extensive range (pp-ff). Dynamics occur in the context of gradual or sudden changes.
- A large variety of articulations are used including slurs, staccato, tenutos and accents. These are used to help capture the essence of birdsong.
- Expressive techniques include a plethora of extended techniques for flute such as slap tongue, over blowing, and flutter tongue.

Structure
- The overall structure is symmetrical which is based on a balance between repetition and contrast: A, B, C, B1, A1.
- Sections are contrasting in both mood, melodic material and phrase length. Section A uses phrases that vary between 4 and 5 bars whereas section B is based on short fragments/motifs which are then joined end to end in building the section as a whole.
- The use of cell notation is a recurring structural device that provides variety both within the section itself (in that no two performances will be the same) and that this method of notation is different to the remainder of the work which uses more conventional notation.

Glossary answers

Electronic techniques

Name	Definition
Live electronics	The use of electronic means to manipulate sounds in a live setting. This occurs in real time and is different to fixed electronics which have been created prior to performance.
Granulation	Small, variously-sized fragments of an audio sample are recorded and played back in different ways. One such effect is granular freezing, where the sample is divided into hundreds of pieces and played back as a sustained 'cloud' of those tiny pieces.
Octave shifting	Transposing a stream of audio up or down an octave.
Delay	A sound that is captured and played back again after a certain period of time. Delays may repeat multiple times and then decay depending on the settings.
Amplification	Increasing the volume of sound through electronic means.

Flute techniques

Name	Definition
Flutter tonguing	Roll the tongue in the mouth whilst playing.
Pitch Bending	Alter the pitch of a note slightly.
Harmonic trill	A trill produced by playing the harmonics of the notes indicated.
Glissando	A slide from the first note to the second note.
Whistling	Whistle the note as would normally without the flute.
Double Tonguing	Quickly tongue each note twice using the syllables 'ta ka' or 'der ger'

Compositional techniques

Name	Definition
Cell notation	Also known as 'box notation'. The box around the group of notes is to be played according to the instructions given on the score.
Free time	The performer is free to play musical ideas in their own time. As a result, there is usually a lack of pulse in the music.
Irrational rhythms	The use of a numbered ratio and bracket to indicate that a certain number of notes is to be played in the time of another number of notes, for example 5:4.
Imitation	The repetition of a musical idea with subtle variation.
Motivic development	When a musical idea is developed throughout a piece.
Repetition	Presenting the same idea again in an unaltered form.
Variation	An altered version of a musical idea.
Transposition	Changing the pitch of an idea but keeping the intervals between consecutive notes the same.
Inversion	Changing the direction of the intervals used in a musical idea.
Extended Techniques	Atypical methods of sound production that often result in unique tone colours.
Rhythmic Augmentation	Increasing the note lengths of a musical idea.

Name	Definition
Fragmentation	Using only parts of a musical idea.
Hocketing	When then the same melodic idea is slightly rhythmically offset between two parts.
Melodic Extension	Adding new material at the start or end of a preexisting musical idea.
Tone cluster	A group of adjacent notes played together often resulting in dissonance.

Music 2 Stage 6 – Reference list and resources

Tristan Coelho website, date accessed 26/4/19

Daybreak by Tristan Coelho – resources, audio, score, MaxMSP patch and instructional videos, date accessed 26/02/2020

Music 2 Stage 6 Syllabus, date accessed 07/04/19

Reclaiming the Spirit by Sarah Hopkins (YouTube), date accessed 27/4/19

Improvisation by Bernie van Tiel (YouTube), date accessed 27/4/19

Amazing Grace arranged by Victor Wooten (YouTube), date accessed 27/4/19

Beat Me by Barry Cockcroft (YouTube), date accessed 27/4/19

Fnugg by Oystein Baadsvik (YouTube), date accessed 27/4/19