



AF
ADELAIDE FESTIVAL
4 – 20 MAR 2022

INSTALLATION / AUSTRALIA

Groundswell

Matthias Schack-Arnott

WHEELCHAIR FRIENDLY

Limit on number of students allowed on at one time

EDUCATION RESOURCE

Resource developed by Julie Orchard 2022

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Overview

SYNOPSIS

Groundswell is a large-scale, participatory installation that uses innovative technology and the laws of physics to create a fully immersive, experiential art installation.

Students are able to move across the surface of a massive drum, forming an immersive world of sound and motion. As they cross the platform, it will tilt under their collective weight. The shifting weight across the drum's expansive six-metre diameter surface causes the drum's axis to slowly tilt and shift.

As the angle of the drum shifts, this sets in motion a teeming mass of 40,000 metal balls ricocheting through hundreds of vertical pins. In turn, they create waves of sound and are visible underfoot through the drum's translucent surface.

As the students move and the weight distribution changes, the balls beneath them make visceral washes of sound. The drum begins seismically vibrating, swelling in intensity, until all the bearings are rhythmically quivering. The students will feel the vibrations through their bodies.

THEMES

- Art and science innovation (STEAM)
- Environmental impact

PRODUCTION

- Music
- Technology

Style and Conventions:

- Visual Art
- Interactive

Sound, Set and Costume

The design approach has been collaborative and holistic for sound, set and costume. The function of the design is to be another character in the work, supporting the story telling. The design creates an environment for Emma to tell her stories and sets up a shared space between her and the audience.

The set and props, along with some moving images are there provide a warm, domestic environment integral to Emma's story.

NEWTON'S THREE LAWS OF MOTION

The three laws proposed by Sir Isaac Newton concern relations between **force, motion, acceleration, mass, and inertia**.

In the first law, **an object will not change its motion unless a force acts on it**. This law is also called the law of inertia.

Newton's second law states that a force acting on a body is equal to the acceleration of that body times its mass.

In the third law, when two objects interact, they apply forces to each other of equal magnitude and opposite direction.

PHYSICS

Physics can, at base, be defined as **the science of matter, motion, and energy**.

In the structure of *Groundswell*, drum and ball bearings (objects) will remain at rest unless they are acted on by an external force, such as someone walking on it. By exerting force on the platform, gravity acts upon it and pulls it on a downward slope, making the ball bearing to move downward.

Australian Curriculum Links

Groundswell demonstrates the creative link between the curriculum areas of Visual Art, Design and Technology and the Sciences.

This education resource has been developed with links to the Australian Curriculum and The International Baccalaureate. The resource aims to provide teachers with information to help prepare students before attending the installation, as well as structured learning activities for the classroom after the experience.

Supporting each learning area, opportunities to deepen student knowledge, skills, behaviours, and dispositions are offered through a set of general capabilities. Linked to Visual Art, Design and Technology and Science the following add value for exploring *Groundswell*:



Numeracy



Critical & Creative Thinking



Information & Communication Technology Capability

DESIGN AND TECHNOLOGY

In an increasingly technological and complex world, it is important to develop knowledge and confidence to critically analyse and creatively respond to design challenges. Knowledge, understanding, and skills involved in the design, development and use of technologies are influenced by and can play a role in enriching and transforming societies and our natural, managed, and constructed environments.

The Australian Curriculum: Design and Technologies enables students to become creative and responsive designers. When they consider ethical, legal, aesthetic, and functional factors and the economic, environmental, and social impacts of technological change, and how the choice and use of technologies contributes to a sustainable future, they are developing the knowledge, understanding and skills to become discerning decision-makers.

Students actively engage in creating quality designed solutions for identified needs and opportunities across a range of technologies contexts. They apply design and systems thinking and design processes to investigate ideas, generate and refine ideas, plan, produce and evaluate designed solutions.

THE ARTS – VISUAL ART

Visual art knowledge, understanding and skills ensure that, individually and collaboratively students develop:

- Critical and creative thinking, using visual arts language, theories, and practices to apply aesthetic judgment.
- Conceptual and perceptual ideas and representations through design and inquiry processes.
- A personal aesthetic through engagement with visual art making and ways of representing and communicating.

Australian Curriculum Links

SCIENCE

Science provides an empirical way of answering interesting and important questions about the biological, physical, and technological world. The knowledge it produces has proved to be a reliable basis for action in our personal, social, and economic lives. Science is a dynamic, collaborative, and creative human endeavour arising from our desire to make sense of our world through exploring the unknown, investigating universal mysteries, making predictions, and solving problems. Science aims to understand many observations in terms of a much smaller number of broad principles. Science knowledge is contestable and is revised, refined, and extended as new evidence arises.

It provides opportunities for students to develop an understanding of important science concepts and processes, the practices used

to develop scientific knowledge, of science's contribution to our culture and society, and its applications in our lives. The curriculum supports students to develop the scientific knowledge, understandings, and skills to make informed decisions about local, national, and global issues.

Students can experience the joy of scientific discovery and nurture their natural curiosity about the world around them. In doing this, they develop critical and creative thinking skills and challenge themselves to identify questions and draw evidence-based conclusions using scientific methods. The wider benefits of this 'scientific literacy' are well established, including giving students the capability to investigate the natural world and changes made to it through human activity.

Groundswell is an exciting demonstration of STEAM: visual aesthetics and music sitting within a structure that has

mass and the movement of that matter through space and time as individuals and groups move across it.

CROSS-CURRICULUM PRIORITY:

Sustainability

Key concept:

- Independent and dynamic nature of systems that support all life on Earth and our collective wellbeing.

Groundswell explores our precious relationship to the environment we inhabit. The structure reacts to the audience's movement and this movement has an immediate physical impact on the landscape – both individually and collectively.

Before the Visit

Depending on the age level, either teacher-led or in groups, students research examples of interactive public art.

As a class/ group, they select one example and consider the following questions:

- What do they think is the intent of the artists?
- Can you tell what materials have been used?
- Is it multi-modal? For example, does it include sound and lighting?

- What is the form of the interaction between the installation and the audience?
- What skills and knowledge would be needed to create this installation?
- Is it fun? Is it educational? Is it telling a story?
- Is it to be permanent or temporary?
- What other learning areas would be needed to create the installation?

If the class split into groups, each shares their collective observations and considerations.

An example of installations based on sound and light were seen at the 2021 Illuminate Festival in Adelaide (16 July – 1 August 2021). Students who attended Illuminate can share their experiences.

Interview with the Artist

Having primarily worked as a musician, Matthias Schack-Arnott was approached by the Melbourne Fringe in 2020 to create a large-scale installation. To manifest it in a Public Art context his challenges were to:

- locate it as an outdoor installation
- be inclusive
- be immersive
- work in response to participants/an audience
- be enjoyed by all ages

Matthias's classical training in percussion and performing in orchestras introduced him to a sound effect instrument called the Ocean Drum.

Using the physical principals of the Ocean Drum, Matthias set about researching how to create a massive version of the instrument - one that is so big that people can walk across it. He wanted the tilting motion to be controlled by people's shifting weight as they walked across the surface, causing 50,000 ball bearings to move beneath them. The aim was to create an instrument that people can collaborate to play together, by moving their bodies in different configurations in relation to each other. This proved to be a complicated task, as a structure that large is very heavy, so there were many issues that needed to be resolved during the creative process.

The project was realised through a series of conversations over a period of two years between Matthias and the project's Technical Director, Keith Tucker.

Matthias had been asked by Melbourne Fringe Festival to make an installation work to be presented in the middle of Melbourne for the general public, which was something he had never done before. They began by drawing about all the possible directions the project could take, starting by making drawings on paper, followed by digital designs on the computer, and then small-scale models. When they finally had a clear sense of what it would look like and what all the parts would be, they began making the large-scale version of the work. To do this, they hired eight technicians who carefully constructed the work in a large warehouse over a period of months. The work was made as a series of smaller parts that come together (like pizza slices) to form a whole.

The main creative idea driving the project was to create a work that explores the way as humans our bodies are inextricably linked. Each action that we take effects the others around us and has an impact on the environments that we inhabit. Because of this, it was very important that every step that the audience takes has an effect on the sound and behaviour of the work. In order to achieve this, they had to work very hard to make the tilting mechanism fluid, responsive and extremely strong.

As they were making the work, they decided to add an element of surprise: waves of vibration that make the 50,000 balls quiver and shake beneath the participants feet. This was a very challenging aspect of the work to

create, as getting that many steel balls to vibrate requires a lot of power. After exploding more than a few amplifiers during the testing process (and at various points thinking they'd have to abandon the use of vibration) they finally worked out how to do it: having two alternating groups of vibrating devices taking turns to vibrate the structure, while the other group rests. This was one of the many technical problems that arose during the making of the work. Now that it's being presented for thousands of people in different cities around Australia, Matthias and Keith feel like the years of painstaking work were totally worth it.

OCEAN DRUM

This instrument is used in the film industry to emulate the sound of waves. It contains small ball bearings/pellets and is rotated from side to side. https://www.youtube.com/watch?v=Ds_3kyh0Zfg

Going to an Exhibition of Public Art

WHOLE CLASS DISCUSSION:

Why does it matter?

- Talk about sharing the space and respecting other people viewing/experiencing the work.
- Discuss the shared role of viewer and art maker. Each is dependent on the other to 'read' the narrative.
- As a class exercise, compile a list of all the roles and tasks it takes to create an artwork that can be placed in a public space.

What makes engaging in a Public Art installation different to going to the theatre?

In the theatre, the audience operates as a collective, all viewing the action on stage. At an exhibition of Public Art, it is often a singular relationship/experience between the viewer and the artwork.

PUBLIC ART PROTOCOLS TO SHARE WITH STUDENTS

When you engage with the art installation:

There is no right or wrong response to how you engage with the interactive installation. Take time to respond to the movement of the installation and listen to the sounds/music.

However, the installation is a shared experience. Please remember that:

- Your movements across the installation will impact on others
- Quiet, considered movement across the installation will ensure all participants have a safe and enjoyable experience.

Photography and filming are permitted.

Incorporate the *Groundswell* experience with with a tour of the City of Adelaide public art trail – choose either the Adelaide Street Art Trail or Bike Art Trail. Find out more:

<https://www.experienceadelaide.com.au/blog/adelaide-fringe-street-art-explosion/>

CITY OF ADELAIDE PUBLIC ART ACTION PLAN 2019-22

- Public Art is for everyone.
- Public Art shapes the experience of our city – where curiosity and culture collide.
- Public Art tells the story of Adelaide – it reflects our creativity and cultural richness.
- Public Art makes us stop, open our eyes, feel, and imagine.
- Public Art connects people with places and spaces.
- Public Art can be many things – playful, reflective, unexpected, whimsical, challenging and fun.
- Public Art enables us to see the world a little differently.

After the Visit

Public Art activates the imagination and encourages people to pay attention and perceive more deeply the environment they occupy. Public Art stimulates learning and thought about art and society, about our interconnected lives, and about the social sphere.

Groundswell explores our individual and collective impact on the spaces we inhabit. As we move across the surface of the work, we are reminded how our actions are inextricably linked.

VISUAL ART

F – Yr 2: Content description: Respond to visual artwork and consider why people make visual artworks.

Yrs 3-4: Content description: Identify intended purposes and meanings of artworks using visual arts terminology to compare artworks.

ACTIVITY: Students to compile a list of visual arts terms that best describe *Groundswell*.

Yrs 5-6: Content description: Explain how visual arts conventions communicate meaning by comparing artworks from different social, cultural and historical contexts.

ACTIVITY: Using *Groundswell* as a guide, look at the collection of interactive installations compiled prior to the visit for exploration of intended purposes and meanings.

Yrs 6-7: Content description: Identify and connect specific features and purposes of visual artworks to explore viewpoints and enrich their artmaking.

Yrs 9-10: Content description: Analyse a range of visual

artworks to explore differing viewpoints.

ACTIVITY: Using *Groundswell* as a guide, look at the collection of interactive installations compiled prior to the visit and consider the intent of the artist/s.

Individually, students write responses to the following questions:

- How did they feel at the end of viewing and experiencing the installation?
- What had the most impact on them and why?
- How does the installation connect to visual art, design and technology, and science?

Currently, there are schools in South Australia that are described as STEM (Science, Technology, Engineering and Mathematics) specialist schools. Following the class experience of *Groundswell*, set up a debate/discussion to consider how the installation incorporates all the concepts of STEM while still being primarily an art installation.

Question for the students:

- *What are the similarities and difference between STEM and STEAM?*
- *One side to argue for STEM and the other for STEAM.*
- *Guiding question: Could Groundswell have been created if it was only based on STEM?*

Suggested Activities (depending on year level):



1. In small groups, design and create a model for an interactive installation.
2. As a class, create an installation in the school grounds using found objects. Make it interactive if this can be done safely.
3. In small groups or as individuals, consider this statement:

One step to the left or right means the entire thing shifts, so you can almost enter into this choreography of movement with strangers ... It explores how we can collectively make decisions and change the course of the big issues of our time. – Matthias Schack-Arnott, artist

Think about how *Groundswell* explores the precarious relationship between humans and the environment. Consider how the installation demonstrates cause and effect – the audience moves, the structure moves in response, thereby changing the landscape.

What examples can students think of where the landscape has changed in response to human movement/intervention?

MOISTURE, HUMAN ACTIVITY, AND TEMPERATURE are all factors that will affect how a landscape changes or is formed. Regularly being beaten down by the wind, water, the hot sun, frigid temperatures, and human construction will change the landscape.

Visual Literacy

Visual literacy is the ability to make meaning from the information presented in the form of still or moving 'texts'. This is based on the idea that images can be 'read' and that meaning can be made through this process of reading.

Text types can include:

- Paintings and drawings
- Art installations and sculptures
- Posters
- Film
- Picture books
- Graphic novels and comics
- Animations
- Web pages

Students can be supported to build knowledge and understanding around visual literacy by being asked to:

- Explain their response to an image/installation and why they responded.
- Give evidence from the image/installation experience to justify their reason.

The following questions will assist in developing their visual literacy vocabulary in relation to images, films or installations.

- How does it make you feel and why?
- What is it about?
- Who is it for?

- What is the purpose?
- What does it make you wonder?
- How was it made? Where did it come from? Does it stand alone or is it part of a sequence?
- Have you seen anything like it before? Think about connections to other works.
- Would you add anything else to tell the story?
- How do you think the artist wanted the audience to see and experience the artwork?
- Why do you think the artist made the artwork? What are they trying to say?

By engaging in conversation and discussions, different interpretations of the artwork may emerge. These discussions can form the basis for different and alternative interpretations for students.

ACTIVITY

Ask students to create a chart of appropriate exhibition etiquette and discuss the difference between an exhibition on the wall of a gallery and one that invites participation.

John Debes, founder of the International Visual Literacy Association coined the term 'Visual Literacy' in 1969.

Visual Literacy refers to a group of vision-competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences. The development of these competencies is fundamental to normal human learning. When developed, they enable a visually literate person to discriminate and interpret the visible actions, objects, symbols, natural or man-made, that she/he encounters in the environment. Through the creative use of these competencies, she/he is able to communicate with others. Through the appreciative use of these competencies, she/he is able to comprehend and enjoy the masterworks of visual communication.

ADDITIONAL RESOURCES

Search for "Images of Interactive Installations" on your preferred search engine to find images and links to examples of other works. Add any of the following words to your search for more specific results: Art, Urban, Design, Light, Public, Digital.

Meet the Artists

Concept, Sound & Visual Design
Matthias Schack-Arnott

Technical Design & Management,
Lighting Design **Keith Tucker**
(Megafun)

Sound Design **Tilman Robinson**

Producer **Michaela Coventry** –
Sage Arts

Matthias Schack-Arnott is a Melbourne-based percussive artist working across live performance and installation.

Described by *The Guardian* as “sonically and visually exquisite”, Matthias’ work explores unique approaches to percussion, often involving developed in collaboration with architects, engineers and technicians.

From 2010-2018, Matthias was the Artistic Associate of Australia’s leading percussive arts organisation, Speak Percussion

He was recently awarded Work of Year: Electro-Acoustic/ Sound Art at the 2020 Art Music Awards for *Everywhen*, and has previously been awarded the 2016 Melbourne Prize for Music Development Award, Outstanding Work by an Emerging Artist for *Fluvial* at the 2014 Green Room Awards, and four Australian Art Music Awards for his work with Speak Percussion.

As a collaborator, interpreter and improviser, Matthias has worked with many leading musicians including Steve Reich, Claire Chase, Unsub Chin, Valerio Tricoli, John Zorn, Liza Lim, Claire Chase, and Steven Schick.

Performance highlights include Berliner Festspiele (Germany), GAIDA Festival (Lithuania), ARENA Festival (Latvia), Roullette (New York), CONNECT Festival (Sweden), Batteries IV Festival (Geneva), Taiwan National Concert Hall, Salihara Festival

(Indonesia), Adelaide Festival, Perth International Arts Festival, Melbourne Festival, MONA FOMA and Dark Mofo.

Keith Tucker was Resident Lighting Designer with the Australian Dance Theatre for seven years. He then worked as Production Manager at TANDANYA, The National Aboriginal Cultural Institute, and later as Production Manager at the Adelaide Fringe Festival, in addition to working freelance in theatrical lighting design. Keith has lit shows for choreographers such as Graeme Watson, Leigh Warren, David Atkins, Jonathon Taylor, Ariette Taylor and Nanette Hassall. He also lit theatrical productions for the State Theatre Company South Australia and Sydney Theatre Company, working with directors such as Robyn Nevin and Simon Phillips. Since creating production company Megafun, he has designed the lighting for companies The Moscow Circus, English National Ballet, Edgley International, Melbourne City Council (Federation Square), Melbourne Museum, Crown Casino and Lucy Guerin Inc. His most recent project was as Creative Producer of the Commonwealth Games Opening Ceremony River Event (*The Fish*).

Michaela Coventry has been working as a producer in the arts for the past 20 years. She is currently the Creative Director of Sage Arts and Executive Producer of The Substation. She was the Executive Producer of Speak Percussion (2015-2017), prior to which she was the Producer of Megafun and the Executive Producer of Lucy Guerin Inc (2006-2012). With Sage Arts, she currently works with dance and music artists including Genevieve Lacey, Jo Lloyd, Matthias Schack-Arnott, Aura Go, Lee Serle and Gail Priest.

Tilman Robinson is an Australian composer, producer and sound designer based in Melbourne. He creates electro-acoustic music across a range of genres, including classical minimalist, improvised, experimental, electronic and ambient music. Academy-trained in both classical and jazz composition, Tilman’s diverse output focusses on the psychological impact of sound using acousmatic and psychoacoustic principles.

Tilman has received major work commissions from broad sources including Arts Centre Melbourne, Perth International Arts Festival, PBSFM/Melbourne International Jazz Festival, Australian Art Orchestra and APRA. He has been nominated for APRA/AMC Work of the Year, two Australian Bell Awards, a Music Victoria Genre Award, and was a finalist for the Melbourne Prize in 2016 & 2019. In May 2019, he was announced as the Artistic Associate of Speak Percussion, an Australian experimental music group.

Tilman’s second full-length album, *Deer Heart*, was released in 2016 through Hobbledehoy Record Co to critical acclaim and it was included in a number of 2016 Album of the Year lists. Tilman’s third full length album, *CULTURECIDE*, was released in April 2020 on Icelandic label Bedroom Community and explores dystopic visions of humanity’s future.

Tilman has also worked with luminaries across the world including Nico Muhly, Valgeir Sigurðsson and Ben Frost in Iceland; The Bang On a Can All Stars, Speak Percussion, Sinead O’Connor, and Martha Wainwright in Australia; John Hollenbeck in Berlin; and Dave Douglas, Theo Bleckmann, Kneebody and Myra Melford in Canada.