



Dance and Architecture

Creative Learning
Teacher Resource



Resource Overview

This learning resource has been developed for Primary and Secondary students and supports multidisciplinary learning across Dance, PDHPE, and Science and Technology, HSIE.

This resource includes discussion questions and activities designed for the classroom but can be adapted to suit the needs of your students and teaching context.

Workshop Overview

General capabilities and cross-curriculum priorities

Creative and Critical Thinking

Students interpret the geometry, engineering, and elements of the Opera House by creating movement and choreography with their bodies.

Intercultural Understanding

Students consider how designers and architects across cultures look to their environments and experiences to create meaning.

Personal and Social Capability

Students explore their own anatomy through movement and create short choreography both individually and with peers.

Workshop Overview

What students can expect – sensory elements

Touch

- Physically engaging with peers through movement or during choreography sequences

Sight

- Visual exploration of the building
- Bright, well-lit workshop space
- Visual demonstrations by facilitator before making begins

Sound

- Facilitated group discussions
- Acoustics across different spaces in the building
- Sound from the public
- Music played in the enclosed indoor space at the Centre for Creativity
- Short performances

Movement

- Kinaesthetic expression through dance and spatial navigation
- Walking around the Opera House
- 90-minute session – no break built in



A (very) brief history of the Sydney Opera House

Tubowgule

Now known as Bennelong Point

The Gadigal people in Warrang/Warrane (Sydney Cove) call the place around the Opera House 'Tubowgule' – meaning the knowledge water.

Tubowgule was a point located at the end of a long, wide ridge and surrounded by rocky shoals that mostly covered at high tide.

The Gadigal believe that the coming together of the saltwater (from the Pacific Ocean) and freshwater (from the Parramatta River) creates a surge of energy and nutrients – making the Sydney Harbour an ideal spot for fishing, eating, meeting and sharing stories.



Tubowgule

Now known as Bennelong Point

Being close to the harbour, cove, freshwater creek and mud flats, the area was rich in resources. This included oysters, mussels, fish, possums, wallabies, kangaroos and many edible plants.

Aboriginal people gathered and ate these foods over thousands of years, leaving behind shells and animal bones that formed 'middens' around Sydney Harbour



Whispers, 2023, Megan Cope, Sydney Opera House.

This was an art installation of a midden made of 85,000 repurposed oyster shell waste and other natural and recycled materials.

The Sydney Opera House

A building nobody thought was possible

In 1956, the NSW government held an international competition for a new performing arts centre on Tubowgule, now known as Bennelong Point.

Over 220 entries arrived from 32 countries, and the winner was a Danish architect named Jørn Utzon.

Today, the Opera House is a World Heritage-listed building and the country's number one tourist destination.

It welcomes more than 10.9 million visitors a year and hosts more than 1,800 performances attended by more than 1.4 million people.



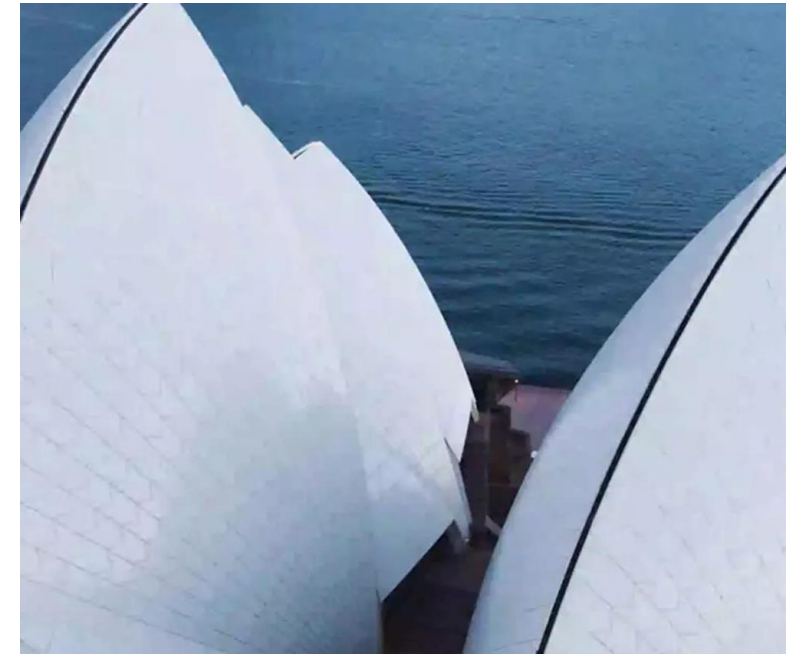
Jørn Utzon

The vision: shells, sails and nature

When designing the Opera House, Jørn Utzon was inspired by nature. The way an orange peels apart, the curve of a nautilus shell, the wings of a bird, the colours of the sunrise, and the sunset.

Utzon was also interested in how designs inspired by nature can shape the visitor experience.

He wanted the building to bring joy, transport people to another world, offer a sense of detachment from the city, and create moments of rest.



Jørn Utzon

The engineering problem

Utzon's iconic 'shell' roof forms grew from a single geometric principle – a striking idea on paper, but nobody knew how to actually build them.

To work out how to build the shells, the engineers at Arup & Partners needed to express the shapes mathematically.

In 1958, when they asked Utzon to define the curves of the roof, he took a plastic ruler, bent it against a table, and simply traced the curves



This drawing by Jørn Utzon shows the thinking behind the design's development, and how the natural world and organic forms can inspire a building.

Jørn Utzon

The Spherical Solution

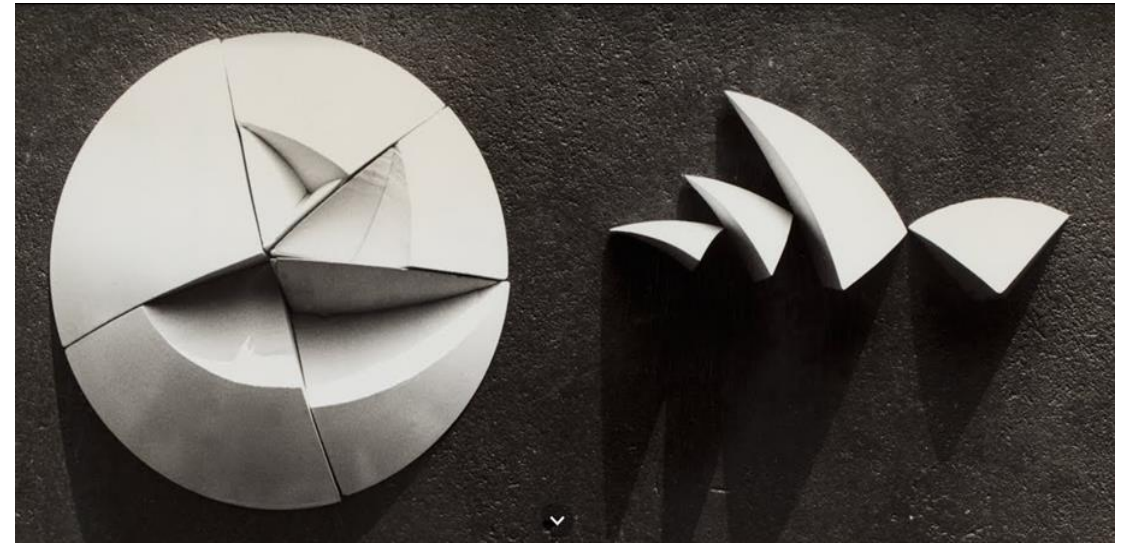
In 1961, Utzon had a breakthrough idea: what if every shell roof was cut from the same sphere?

No matter where you slice a sphere, the curve is the same shape.

That meant Utzon didn't need to design a different curve for each shell. He could cut them all from one sphere, like cutting different-sized wedges from one orange.

The shells could be different sizes, but they'd all share the same curve, which made them possible to build and made the whole roof feel like one connected family of shapes.

With help from designers, engineers and computer experts, Utzon and the team finally worked out how to turn this idea into a real building.



Jørn Utzon

Prototypes and prefabrication

Building the Opera House was incredibly difficult. Through a long process of trial and error, Utzon and his team worked through the design with sketches, models and prototypes.

Construction actually began before the working drawings were finished. Once builders and engineers were happy with a prototype, they could make a mould, or blueprint, of the final sections.

From there, all the pieces needed could be produced quickly and easily – a process called prefabrication.

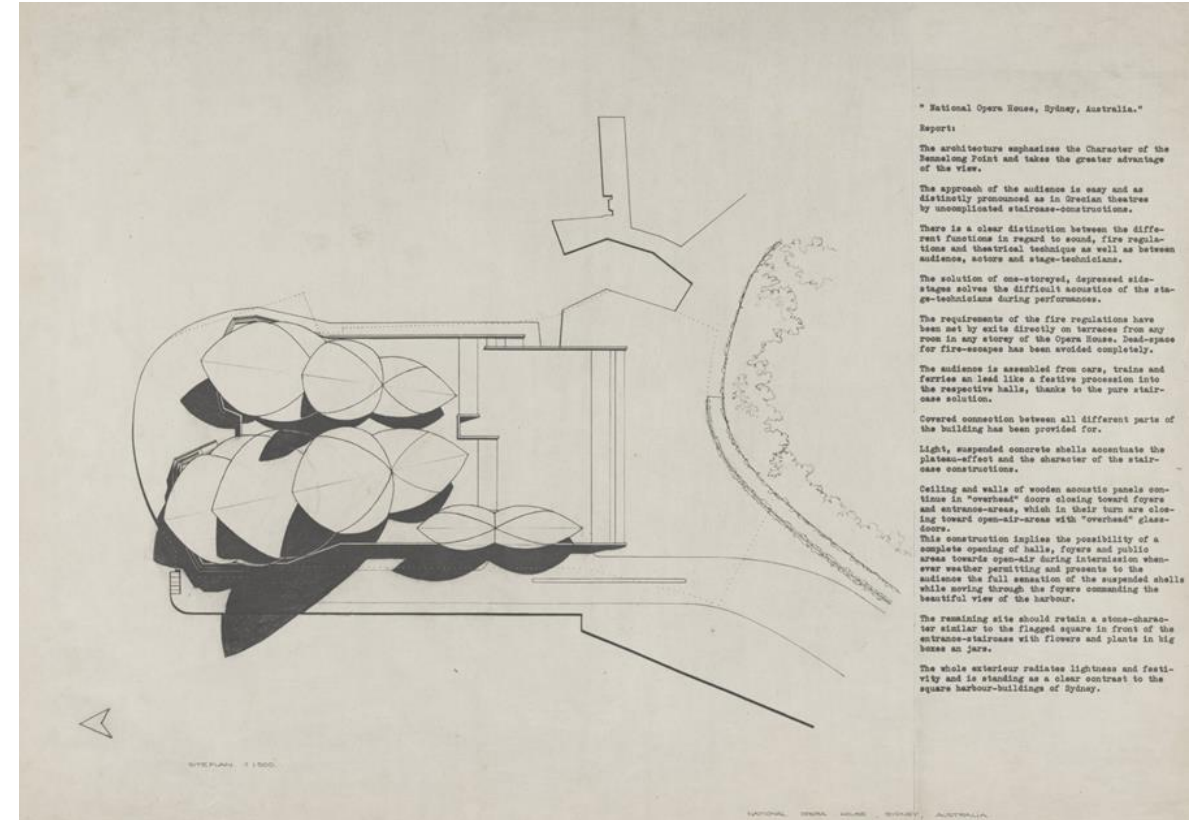


Jørn Utzon

The Utzon Design Principles

The Utzon Design Principles are a document prepared by architects Jørn Utzon and Richard Johnson.

They outline Utzon's vision for the Sydney Opera House, its setting, and his thoughts on its future.





**In the
classroom**

What inspires dancers and choreographers?

Dancers and choreographers find inspiration for movement and dance by looking around the spaces they are in. Sometimes in their homes, a shop or café, by the ocean or in a park, and even from a building as remarkable as the Sydney Opera House.

Dancers look for interesting shapes, materials, textures or windows that give them clues, ideas or instructions that help to make their bodies move in a particular way.

They draw connection and establish relationships with the space to inform the way they create or perform their dances.





Activities

Discussion Questions

What do you think architecture and dance have in common?

How does your body move differently in different spaces – a classroom, outside?

If you were going to design a building, what would inspire you?

How does it feel to visit a special building or place?

If you were to choreograph a piece inspired by a building in your neighbourhood, what would it look like?

Activity 1

Introduction

Ask students to explore the spaces and places around the school or local community.

Examine maps, including [Google Earth](#) or do a [gallery walk](#) of the classroom, noting any features of the architecture that perhaps had gone unnoticed before.

Create a list of key points of interest.

Consider asking [local Aboriginal Elders](#) for advice and connecting with other learning such as in HSIE for a broader experience as well.



Activity 1

Place and Space

Now ask students to look at the space they are in and consider the following points:

- Are you inside or outside?
- Is it warm, or cold, or just right?
- What features and objects can you see?
- Is the space big or small, low or high?
- Do you notice any small hidden details?

Choose a detail to focus on and carefully examine the way it looks, the structure, lines, shapes, and connections, and how they move:

- Trace that shape in the air with eyes, then with fingers, then with arms only, then legs only, then the entire body.
- Reflect on what those movements looked and felt like.
- Imagine and perform these movements as tiny, small gestures, then as big, grand motions.
- Find some space around to practice these shapes with any or all of these parts of the body.



Activity 2

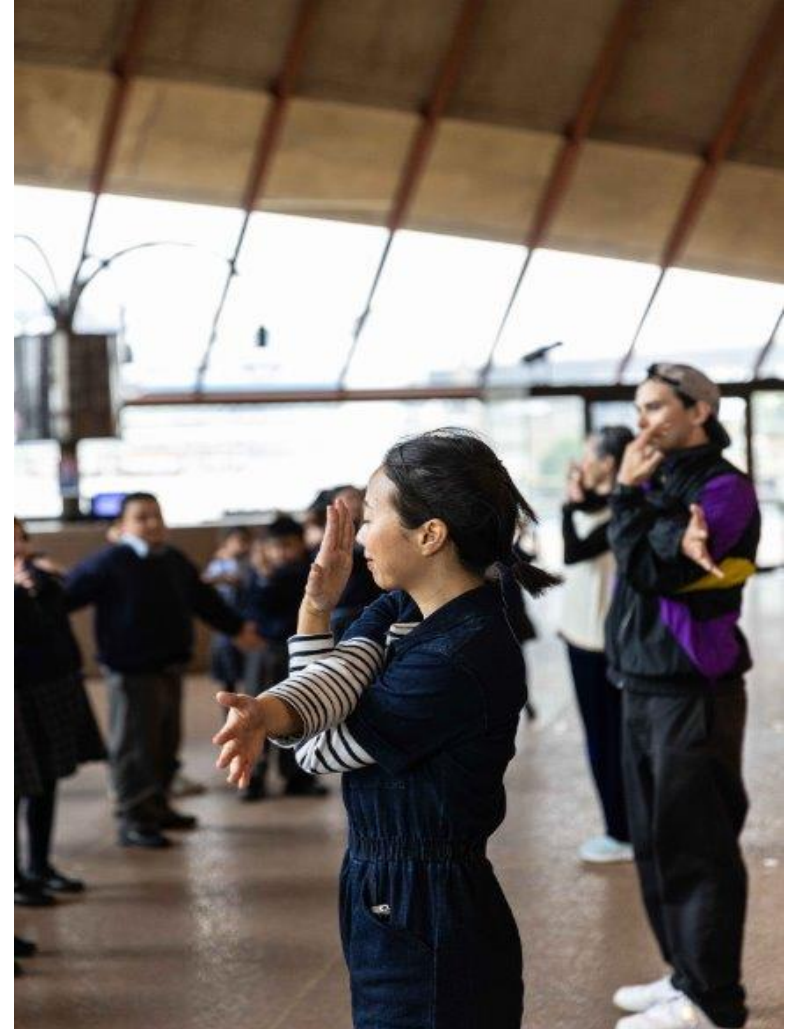
Introduction

Composing or choreographing in dance is a way of using creative ideas and adapting them to create a piece or work.

Composing or choreographing is a way of connecting individual or smaller dance movements in a row or sequence that makes a connection or flow.

Little movements can be connected, repeated several times, or combined with music to create a performance piece, a work, a series of movements, or a routine or a sequence.

When we join our movements with others, we can work together or collaborate to make a new dance.



Activity 2

Composing a dance

Share the objects and the movement you created – with a partner, a group, or the whole class. Talk about how the objects and movements are similar or different. Think about what you noticed.

Look for ways your movements could connect with others. Start by each person sharing two movements, then work together to build them into one sequence.

Start small: one person teaches another. Then pairs teach other pairs, growing into small groups, and eventually a whole class composition. Classes could even teach each other to create a whole-school composition.



Activity 2

Composing a dance

Explore these ways to change your movements, then connect them into a full composition:

- repetition – do it exactly the same way again
- retrograde – do it backwards
- inversion – do it upside down
- size – make it bigger or smaller
- tempo – make it faster or slower
- rhythm – change the timing or number of movements
- quality – change how it feels, like light or heavy
- body parts – use a different body part
- levels – try it high, low, or in between
- reduction – use just part of the movement
- combination – mix a few of these together
- music – try it with different music, or none at all, and see how it changes

Reflection



Exit Questions

What did you learn?

What is one thing about the Opera House that surprised you today?

What is one similarity between the way the Sydney Opera House is engineered and the way your own body moves?

How did working with a partner or group change or improve your original movement idea?

Can you think of another building or structure that might inspire a different kind of movement? What would it look like?

Key Learning Areas Curriculum Map – NSW Syllabus Outcomes

Dance and Architecture – Stage 3 – 5

Creative Arts (Dance) Stage 3 – 5 (Yr 5 – 10)	PDHPE Stage 3 – 5 (Yr 5 – 10)	Science and Technology Stage 4 – 5 (Yr 5 – 10)	HSIE Stage 3 (Yr 5 – 6)
CA3-DAN-01 Composes and performs dance to communicate ideas and intent using the elements of dance, and explains how ideas are conveyed to audiences and ways contexts influence dance	PH3-MSP-01 Refines and applies movement skills, strategies and collaboration in physical activities	ST3-DDT-01 Uses design processes to create, evaluate and modify designed solutions	HS3-GEO-01 Examines global citizenship and how people organise, protect and sustainably use the environment, using geographical information
DA4-PER-01 Performs dance works, demonstrating safe dance practice, dance technique and performance quality	PH4-MSS-01 Transfers movement skills and concepts for use in a range of dynamic movement environments	SC4-FOR-01 Describes the effects of forces in everyday contexts	
DA4-COM-01 Creates movements using the elements of dance to communicate an idea and intent	PH4-MSS-02 Demonstrates how strategies and actions can be transferred to solve movement challenges	SC5-WAM-02 Explains the motion of objects using Newton’s laws of motion	
DA5-PER-02 Manipulates the elements of dance to demonstrate performance quality and interpretation in context	PH5-MSS-01 Refines and transfers movement skills and concepts for adaptation in a range of dynamic movement environments		
DA5-COM-02 creates movements using the elements of dance and structures movement to communicate a specific idea and intent	PH5-MSS-01 Refines and transfers movement skills and concepts for adaptation in a range of dynamic movement environments		
DA5-APP-01 Investigates and explains how social, cultural and historical factors shape the development of dance			