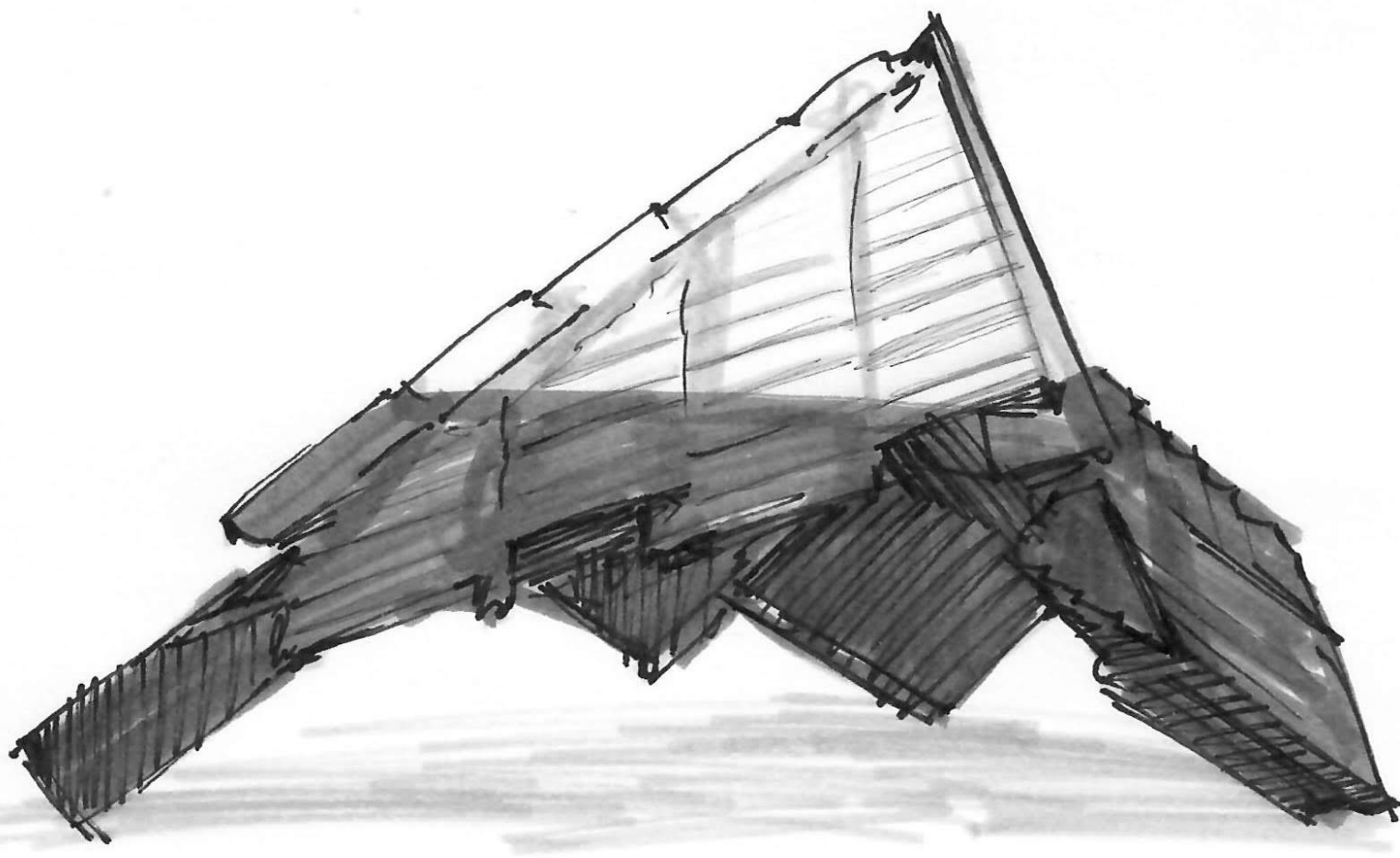


EDUCATIONAL PACKAGE
SOUTH MELBOURNE PRIMARY SCHOOL, CITY OF PORT PHILLIP

WATERLINES

IAN STRANGE

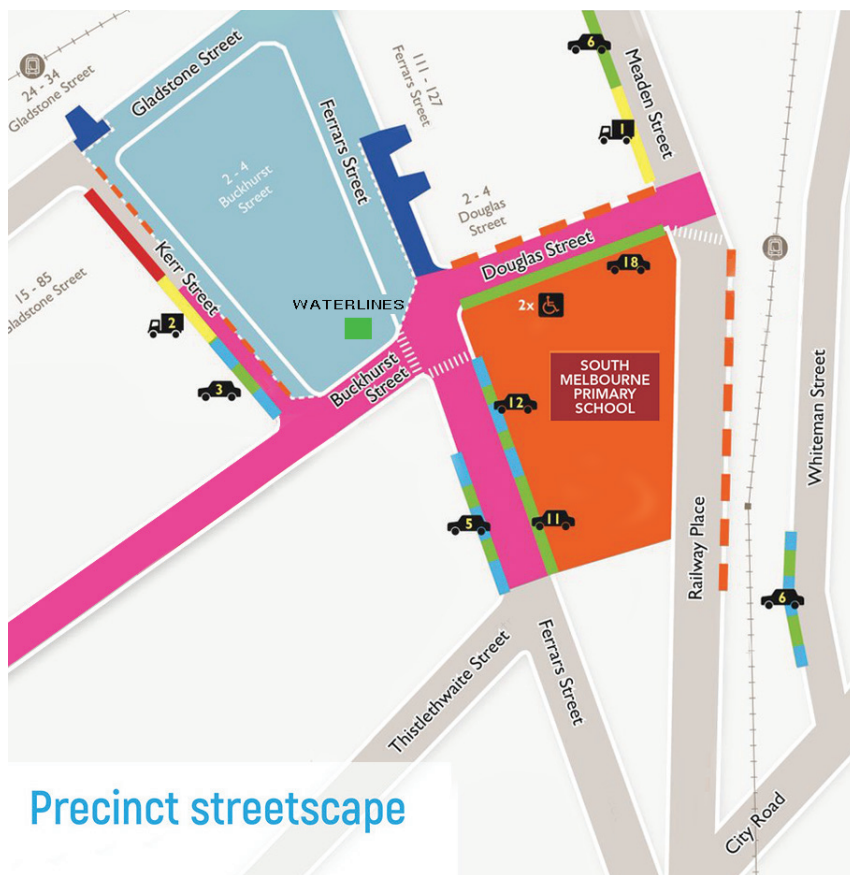


This document is designed to support students engaging with and learning about the sculpture by Ian Strange called WATERLINES that now sits in Kirrip Park. The project was funded by Wonderment Walk.

We respectfully acknowledge the Yaluk-ut Weelam clan of the Boon Wurrung.

We pay our respects to their Elders, both past, present and emerging.

We acknowledge and uphold their continuing relationship to this land.



**IAN
STRANGE
STUDIO.**

CONFIDENTIAL DOCUMENT Commercial in Confidence © Ian Strange 2019 All rights reserved. © Ian Strange 2019

This work is copyright. Apart from any use as permitted under the Copyright Act 1968, no part may be reproduced without prior written permission of the copyright owners. Requests and inquiries concerning reproduction and rights should be addressed to the artist.

Copyright for texts in this publication is held by Ian Strange.

The use of this material is for educational purposes only. Please note that every attempt has been made to ensure this document is appropriate for the use of your students. Information contained in this booklet was correct at the time of writing.

This resource also includes material for which copyright is owned by the Australian Curriculum, Assessment and Reporting Authority (ACARA) and the Victorian Curriculum and Assessment Authority. Materials were accessed in 2019. Please attribute ownership, where relevant.

CONTENTS

ABOUT THIS RESOURCE	4
USE OF THIS RESOURCE	4
INTRODUCTION	5
ABOUT THE SCULPTURE	6
SCULPTURAL PROCESS	7
ABOUT THE ARTIST	8
RELEVANT ARTWORK BY THE ARTIST	9
THE AUSTRALIAN CURRICULUM CROSS-CURRICULUM PRIORITIES	11
ABORIGINAL AND TORRES STRAIT ISLANDER HISTORIES AND CULTURES	
ASIA AND AUSTRALIA'S ENGAGEMENT WITH ASIA	
SUSTAINABILITY	
CRITICAL THINKING	13
MAKING CURRICULUM CONNECTIONS	
VISUAL ARTS	15
SCIENCE	17
THE HUMANITIES	20
TECHNOLOGIES	23
MATHEMATICS	25
ADDITIONAL RESOURCES	28
ACKNOWLEDGMENTS	29

ABOUT THIS RESOURCE

This resource presents an insight into the artwork of Ian Strange and the sculptural installation called WATERLINES that sits adjacent to South Melbourne Primary School.

In this document are the artist's concept drawings, photographic reference material, research into the history of flooding in the area, an explanation of the water lines used for the sculpture's marking, as well as ideas for educational learning activities. This package also provides examples of previous works by Strange that will support students' understanding about the artist's progression.

Responding to and making artworks are an important part of a student's visual arts education. We know that your students enjoy exploring, problem solving, questioning, applying critical thinking and engaging with WATERLINES. This resource provides a start for practical application and rich learning experiences for your students.



South Melbourne Floods,
Ferrars Street, Montague.
Port Phillip City Collection.

USE OF THIS RESOURCE

As a starting point, it is recommended that you and your class visit WATERLINES and during this time engage in discussion about the sculpture. Students may wish to take photographs or sketch the artwork, before returning to the classroom to consider the themes and ideas behind the artwork. The learning experiences and ideas presented are a start to supporting your planning and delivery of area specific content, based on WATERLINES.

It is envisioned that you will adapt the ideas presented for your own group of students.

This material is designed to be used in conjunction with current curriculum materials and pedagogy.

Students are encouraged to use critical thinking, imagination and research to respond to WATERLINES.

INTRODUCTION

WATERLINES is an artwork based on the history of flooding in the Fishermans Bend area.

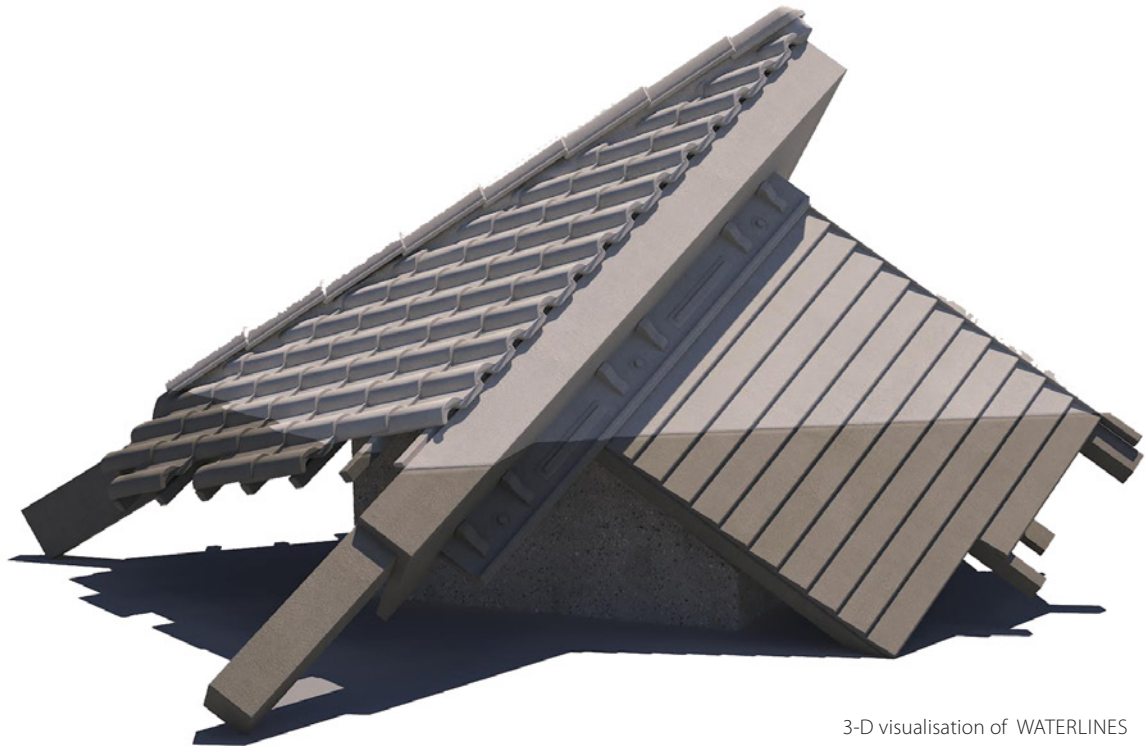
Flooding is not a new issue in this area. Over the last million years the sea level around our coast has been subject to a huge variation in levels due to natural forces such as glacial periods.

It is hard to imagine that the area surrounding Port Phillip was once a vast wetlands with open grasslands. It was the hunting ground of Aboriginal people with lagoons, billabongs and lakes. Using the seasons to guide them and farming with techniques such as fire sticks and fish traps, the Boon Wurrung speaking people would have had an abundance of fish, eels, crayfish, shellfish, birdlife and animals to eat all year around. The Yarra River has always been a meeting place for the area's different language groups. Today the Ferrars Street Education and Community precinct including Kirrip Park is a place where people meet, to share time together.

The Melbourne area has always been subject to flooding. In recent history there have been serious flooding in 1863, 1891, 1934, and again in 1972.



Floods in Crockford Street, Port Melbourne, 1919. Port Phillip City Collection.




3-D visualisation of WATERLINES

ABOUT THE SCULPTURE

‘The symbol of the home, both real and imagined, is very important,’ said the artist, ‘I like the idea that it is our first metaphor for how you understand inside and out, of lightness and darkness, the extension of yourself, it becomes a way of understanding of the world.’

Excerpt from Art Almanac. March 2017.
Article written by Chris Malyon – The Aesthetics of Ruination.

USEFUL RESOURCE:

 (Link to the video here to be supplied)

WATERLINES allows the viewer to uncover the history of flooding of the City of Port Phillip and to ask questions in order to form a deeper connection with the history of this remarkable area.

WATERLINES features a large pyramid shaped section, based on an amalgam of architectural features from of houses in the Montague area.

The sculpture features a line through it to represent water levels in the local area. This mark refers to the history of flooding in the local area, and indicates the current 1-in-100 year flood levels used by town planners to ensure adequate drainage during heavy rains. This scientific examination of the impact of flooding considers themes such as the impact on the environment, water tables, water management, global warming and urban flooding. The bottom section of the sculpture is darkened. This is to represent the historic significance of the exploration of coal and the role that coal hulks played in settlement in the area.

The sculpture was designed after interviews with community leaders, local historians, and scientists. Excerpts from these interviews, along with footage of the making of the sculpture can be used in conjunction with this resource.

SCULPTURAL PROCESS

Think about your own creative process. Do you go through a similar process to the one presented below? Is this something that can assist you in planning a rich learning experience for your students? The following is based on Graham Wallas' model. For more information: Wallas, G (1926) *The art of thought*. New York: Harvard Brace.

PREPARATION

WATERLINES began with an artist (Ian Strange), partners (Wonderment Walk Victoria and City of Port Phillip) and a site (Kirrip Park). In order to produce a unique, site-specific sculpture, Strange required both historical and contemporary information to inspire his new artwork. Strange engaged the local community to inform his sculpture concept. He spoke to as many people as possible including experts in council, residents, the historical society and researchers in the areas of science and architecture. Strange collected anecdotal histories, historical photographs and consulted newspaper archives.

INCUBATION

Many ideas emerged in the preparation stage and new information was uncovered. Strange spent time thinking about his findings, connecting what different people or resources had offered him and attempted to formulate his own unique perspective. The first artwork designs were created and Strange started to resolve how he would create the final artwork. He started to test his ideas with his collaborators and seek those that might be able to help him in the coming stages.

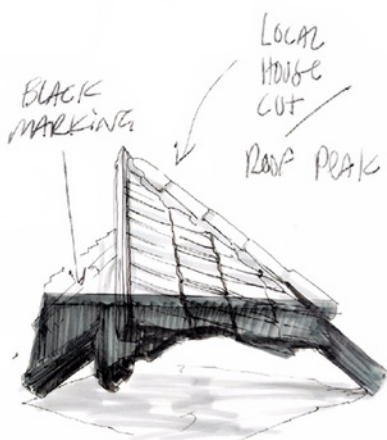
ILLUMINATION

After many collaborative conversations, and several draft artwork designs, WATERLINES started to come together as a resolved idea. Strange was able to more accurately map how his designs on paper would become a reality as a three-dimensional object. Engineers were consulted to assure that the artwork would be robust in an outdoor environment and final artwork placement on site was confirmed.

VERIFICATION

In this stage, the sculpture is complete. It is visible to the public and they are able to engage with it. In observing audience reactions and interactions, the artist is able to consider how successful the project has been. This critiquing of the artwork is important for an artist. Here, they reflect on how they might develop future projects and grow creatively.

While the height of the marking on the sculpture represents the accurate waterline and flood-lines of a 1-in-100 year flood, the colour is a reference to the history of coal being shipped down the Yarra River and stored on it's banks. The colour is also a reference to the tyres locally produced in the Dunlop factory.



Artist's charcoal process sketch of the sculpture.



SHADOW photographic works in the artist's studio




The artist's artwork sits in private and public collections including: the National Gallery of Victoria, Art Gallery of South Australia, Art Gallery of Western Australia and the Canterbury Museum, New Zealand.

.....

USEFUL RESOURCES


Artist website: IanStrange.com
6-part documentary series
2017 ABCTV 'Home: The Art of Ian Strange. Available on
iview:

 iview.abc.net.au/show/art-bites-home-the-art-of-ian-strange

NOWNESS - 'Private View' series
on Ian Strange's artwork:

 vimeo.com/242031661

The home, art and place | Ian Strange | TEDxSydney:

 tedxsydney.com/talk/the-home-art-and-place-ian-strange/

ABOUT THE ARTIST

Ian Strange currently lives and works between Melbourne and New York. Strange's artwork is considered multidisciplinary because he uses multiple mediums such as photography, sculpture, film, drawing and painting.

Strange is best known for his work based on ideas of home, identity and suburban architecture. Many of these include interventions that are site-specific.

Strange has used a number of techniques to make his artworks on these themes including spray-painting images directly onto house facades and repainting entire houses in monochromatic colour schemes. These processes transform ordinary homes into sculptural objects.

The most dramatic of all his approaches involved working with a fire department and training college in Ohio, USA to set a house on fire and burning it to the ground. This was documented through film and photography. Please note these works were all meticulously planned and executed with strict safety considerations.

RELEVANT ARTWORK BY THE ARTIST

Educators are encouraged to explore these artworks on Ian Strange's website (ianstrange.com) before visiting WATERLINES. This will provide context to the artist's practice.



FINAL ACT, 2013

Number Twelve [detail]

Ian Strange, 2013

Archival digital print

Selected photographic artwork
from 'FINAL ACT'

.....

USEFUL RESOURCES:



ianstrange.com/works/final-act-2013/text/



ianstrange.com/works/final-act-2013/text-2/

FINAL ACT is a film, photography and installation project.

Strange collaborated with cinematographer Alun 'Albol' Bollinger (Lord of the Rings) creating artworks incorporating four suburban homes in Christchurch, New Zealand.

These homes were located in Christchurch's residential 'Red Zone', an area containing over 16,000 houses slated for demolition after the devastating 2011 earthquake. Working in an active disaster zone involved a large level of community consultation and collaboration.

FINAL ACT is an emotive archive of these Christchurch homes and a continuation of the artist's ongoing exploration of the social and emotional icon of the home.

Ian Strange: FINAL ACT was a film and sound installation at the Canterbury Museum, Christchurch, New Zealand, as a part of RISE Festival 2014. The exhibition comprised six photographic works, the film and sound installation alongside reconstructed cross-sections taken from the demolished earthquake affected homes.

LANDED, 2014



LANDED Installation view, 2014 Biennial of Australian Art, Art Gallery of South Australia.

USEFUL RESOURCE:



[ianstrange.com/works/
landed-2014/text](http://ianstrange.com/works/landed-2014/text)

Positioned on the forecourt of the Art Gallery of South Australia, LANDED was a site specific sculptural artwork commissioned for the 2014 Biennial of Australian Art at the Art Gallery of South Australia.

The Biennial took the theme 'Dark Heart', exploring personal, political and psychological dimensions of Australia's cultural identity through the lens of 25 of the country's leading contemporary artists.

SUBURBAN, 2011–13

SUBURBAN premiered in 2013, as a solo exhibition at the National Gallery of Victoria, Australia and subsequently shown with New York based arts organisation Standard Practice in 2016. The exhibition comprised eleven final photographic works, three 'house deconstruction' works and a 3-channel film.



Harvard Street – 2012, SUBURBAN, archival digital print, documentation of site-specific intervention.

USEFUL RESOURCES



[ianstrange.com/works/
suburban-2011-13/text](http://ianstrange.com/works/suburban-2011-13/text)



[ianstrange.com/works/
suburban-2011-13/text-2](http://ianstrange.com/works/suburban-2011-13/text-2)

IAN STRANGE: SUBURBAN is a multifaceted photography, film and installation exhibition. Between 2011 and 2013, Strange worked with a film crew and volunteers in Ohio, Detroit, Alabama, New Jersey, New York and New Hampshire to create, photograph and film seven site-specific interventions incorporating suburban homes. The recording of these interventions through film and photographic documentation forms the basis of this artwork.

THE AUSTRALIAN CURRICULUM CROSS-CURRICULUM PRIORITIES



Montague State School, 1905, Jubilee History of the City of South Melbourne.. Port Phillip City Collection.

The cross-curriculum priorities are embedded in all learning areas.

ABORIGINAL AND TORRES STRAIT ISLANDER HISTORIES AND CULTURES

It is believed that Aboriginal Australians have been living in Australia for at least 65,000 years.

The local Wathaurong people sheltered the escaped convict William Buckley from 1803 to 1835.

Many important cultural sites of Aboriginal art have been lost due to the clearing of land, construction natural disasters, and desecration such as graffiti.

Working with and learning from local Aboriginal leaders about Country/place, people and culture will connect your students to the local area.

Research into the local environment before European settlement will support students' learning about the First Nation Peoples. Themes to explore might include traditional and contemporary art practices and the significance of preserving cultural sites.

Students can investigate the history of settlement, national identity, civil rights, reconciliation and the strong and vibrant Aboriginal arts culture. The Yarra River was tidal and had a basalt ledge and this ledge acted as a natural barrier between the fresh water and the salty tidal flow (Boyce, 2013). This provided a good source of fresh water upstream that made it a natural sight for colonisation and to become the capital and most populated city in Victoria.

.....
Boyce, J. (2013). *1835: The Founding of Melbourne & The Conquest of Australia*. Melbourne, Australia: Black Inc.

ASIA AND AUSTRALIA'S ENGAGEMENT WITH ASIA

Today South Melbourne is a culturally rich area with many growing multicultural communities. The diverse Asian community contributes strongly to the area's social, cultural, political and economic vibrancy. Learning about Asian beliefs, cultural practices and languages will support your students to develop important global skills and to cultivate a respect for diversity. The Asian community has made both economic and financial contributions that have helped shape our neighborhood.

It should be acknowledged that history has not always been kind to some Asian communities. During the gold rush in the 1850's there was an influx of immigrants, including Chinese and Japanese people. The goldfields were tough for the Chinese and many experienced racism and were treated poorly. Due to a financial downturn in 1854 and rising social tensions the Chinese were taxed heavily on arrival in Australia and had restrictions placed on their mining. By the 1880s the Chinese miners turned to factory work including working in Montague. By 1888 the government passed laws banning Chinese immigration.

Themes that could be explored with your students are immigration, the White Australian policy, trading partners, community festivals and celebrations, cultural diversity, cultural heritage and citizenship.

SUSTAINABILITY

Studying sustainability will provide students with the knowledge, skills, values and global thinking to become active citizens in protecting the environment.

Strange's work has explored the ideas of social and economic interdependents and the systems that can make us vulnerable, such as the housing market and environmental disasters. The work considers housing needs and aspirations. It also examines ways to conserve resources and live more sustainably, which needs to be considered to prevent the destruction of the environment.

Themes to explore: the importance of cultural sites and the impact of land clearing, development and construction; deterioration due to pollution, natural disasters and desecration; the use of recycled material, land art and the impact of graffiti.

Sustainable water systems are of primary importance. The role and effect of water cycles, the creation of sustainable recycling processes and the reduction of waste is fundamental to the long term continuance of any habitation.

GETTING STARTED

CRITICAL THINKING

The following questions provoke critical thinking around the sculpture WATERLINES.

These are big inquiry questions and are designed to get creative and critical thinking flowing.

Choose one or two to use in conjunction with the curriculum subject areas. Strategies to support both critical and creative thinking could include brainstorming, role-playing and group or pair discussions.



- Is it important to have a home?
- What is the difference between a house and a home?
- What might happen if we didn't have a home?
- What do homes provide us with?
- How might this house be different to houses in other countries?
- Who might have built the WATERLINES house?
- What questions would you like to ask the people who might have originally lived in this house?
- What are houses built from? Why do we use these materials to build our houses?



- In science it is important that the experiment can be replicated exactly to produce the same outcome. Do you think that in an art piece it is important that it cannot be duplicated exactly? Why does creativity have to be unique?
- If an artwork is made by a team of people who work from a strict plan coming from an artist, is it any less special than the spontaneous action of a single artist?
- In WATERLINES the artist has isolated a fragment of a building. When a piece is isolated from the whole, why does this allow the 'object' to be considered differently than when it was part of the whole? Why would an artist do this?

GETTING STARTED**CRITICAL THINKING**

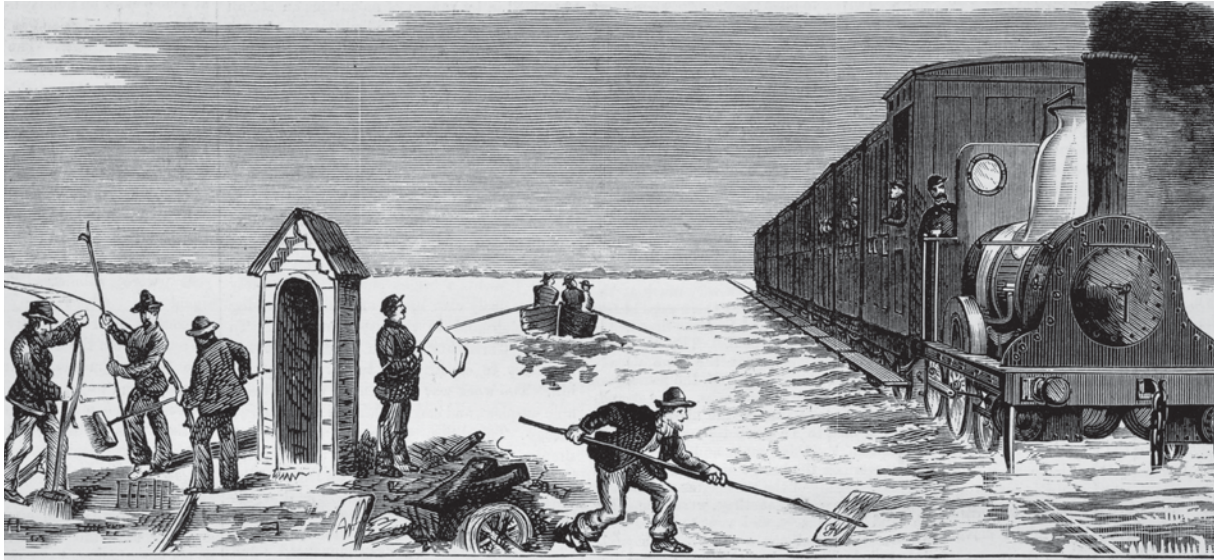
- When you create a drawing of a house, is it a real house, or a symbol? What is the role of symbols in your daily life? Review your day and reflect on the first, second and third symbol that you saw. Does the communication value change because they were not real?
- WATERLINES is a 'narrative' rather than an abstract artwork. What do you think is meant by this? How often does your own artwork have to carry a story?



- WATERLINES is an object, but it is also about a time past. Although no words are used, how can the sculpture be describing a history? Look around and choose five things that also communicate the passage of time.
- Why is it important that we remember our history? How else could you tell another generation what has happened? Choose one thing that is important to you and think about how you could pass this 'information' on without using words. How can you reduce an experience into a simple and concise artwork?
- What is left after a natural disaster, for example fire, flood, or earthquake? Have you or someone you know experienced any natural disasters? What would be some of the things you would try to save? Can you create a visual symbol that incorporates just one of these? Now take one of the following processes to re-interpret your symbol: zoom in, expand out, rotate, reflect, multiply or dissect.
- Can you take two natural disaster relationships or physical elements and create a new understanding or new realisation? For example, if you combine 'earthquake' and the idea that there is shaking you might come up with the Elvis Presley song, 'Whole Lotta Shakin' Goin' On'. Another example might be that you take 'flooding' and 'waves' and come up with the artwork Hokusai's 'Great Wave'. Combining two things together can create ideas for original works.

MAKING CURRICULUM CONNECTIONS

VISUAL ARTS



'The Floods' print one, wood engraving, September 25, 1880. The Sandridge train, keeping the line clear, a scene in North Sandridge. Engraved in image I.I: J.R.A wood engraving, published in the Illustrated Australian News, State Library of Victoria.

INQUIRY QUESTIONS

Use the following questions to support learning about WATERLINES.

- What do you notice when you first look at WATERLINES?
- What are the main features of this artwork?
- Does it remind you of anything?
- What do you think the title means?
- What is it made from and why are these materials used?
- What visual elements are used in WATERLINES and can you describe how they are used in the sculpture?
- What do you think this sculpture is about?
- What ideas do you think the artist is trying to communicate?
- What mood do you feel when you are looking at WATERLINES?
- Why might this artist use home as a metaphor?
- How does this artwork compare with other works by the artist?
- Why do we paint houses and how has the colour palette changed over history?

ACTIONS FOR LEARNING

VISUAL ARTS

EXPLORE AND EXPRESS IDEAS

Using WATERLINES as stimulus:

- Explore ideas by other artists from different cultures and times on the theme of home and/or flooding and use these as inspiration to create visual artworks.
- Explore the theme of this artwork as inspiration to create artworks that express different ideas and beliefs about what home and/or natural disasters might mean to people.

RESPOND AND INTERPRET

Responding to WATERLINES, consider why this artist made the choices that they did for this artwork.

- Respond to other local artworks, including both traditional and contemporary artworks by local Aboriginal and Torres Strait Islander peoples, describing the themes and ideas behind them.
- Discuss how the ideas that Strange has expressed are relevant to the place, time and culture.
- Discuss Strange's quote on [page 6](#) about "inside and out, of lightness and darkness".

PRESENT AND PERFORM

Create artworks based on WATERLINES, such as drawing and sculptures, and display these around the school and the community.

- Think up different places and ways that work based on WATERLINES can be displayed to capture a different audience. This might include mini sculptural works or site-specific works.
- Create and display artwork that can be shared with a wide audience (employ technologies), to express the themes of WATERLINES.

COMPARE AND CONTRAST

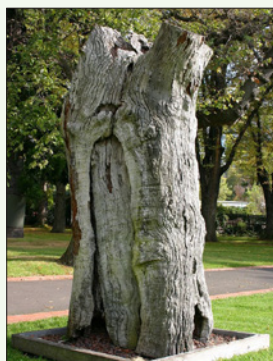


1974 Flood level marker at City Botanic Gardens, Brisbane.

Kalinga Park, Brisbane City Council
Photograph by KGBO, Kgbo [CC BY-SA 4.0 (<https://creativecommons.org/licenses/by-sa/4.0/>)]



VIEW ORIGINAL IMAGE



Scarred tree in the Fitzroy Gardens, Melbourne. The scar on this tree was created when Aboriginal people removed bark to make canoes.

Photograph by Takver and released under GNU GFDL



VIEW ORIGINAL IMAGE

VISUAL ARTS PRACTICES

Use different materials and techniques to make artworks based on the theme of home.

- Materials that can be used might include building blocks, construction materials, tarpaulins, blankets, tents etc.
- Experiment with a wide range of Visual Art materials to explore the theme of WATERLINES to create both 2D and 3D works.
- Use a rich variety of techniques, elements and technologies. Such as painting, drawing, construction, clay, design principles, digital storybooks and elements of Visual Arts (see curriculum documents).

MAKING CURRICULUM CONNECTIONS

SCIENCE



"The Great Flood of 1891", Jubilee History of the City of South Melbourne, 1905. Port Phillip City Collection.

INQUIRY QUESTIONS

After a visit to the artwork the following questions can be used to start a conversation about WATERLINES and the themes of the science of water tables, water management, global warming, and urban flooding.

- Why does water flow in certain directions at different rates?
- How do animals, plants and people adapt to changing water level conditions?
- What conditions will change a river level?
- What problems do floods create? How would you get food and clean water if your street was flooded for a day, a week or a month?
- What can scientists do to prevent disastrous results from floods?
- How are floods measured and recorded and why is this important?
- What is La Nina/El Nino and what does it have to do with the weather?
- What can reduce the risk of flooding?
- If your house was flooding, what are some new features you could design to minimise damage?
- What can we do to decrease the risk of flooding?
- How does mapping floods help us in the future?
- What floods have been recorded in our local area and how have they affected our neighbourhood?

ACTIONS FOR LEARNING SCIENCE

SCIENCE AS A HUMAN ENDEAVOUR

Here we seek a greater understanding of the natural world.

- Roleplay scientists searching for animal homes. Can you find nests, ponds, webs, etc in the environment?
- Record how we dispose of our wastewater and how we treat the water. Make a flow chart to support your findings.
- Learn about man-made infrastructure that was made in response to local floods, such as the removal of the Yarra Falls, the Queens Bridge and the building of Coode Canal.
- Consider what might happen to people, plants and animals if there are more changes to the climate such as more rainfall, heavier rainfall or less rainfall.
- Research the effect of rising ocean levels on the people that live by the ocean, for example Venice and flooding, Pacific and Caribbean islands and the rising sea levels.



www.floodmap.net

PHYSICAL SCIENCES

Using the WATERLINES sculpture as a starting point, observe how houses provide shelter and warmth.

- How does water change non living things. This might include investigations into sinking and floating, altering riverbeds, erosion, oxygenation and bacteria, sunlight, temperature, precipitation, weather and soil and water chemistry.
- Discuss the physical properties of different building materials for housing such as mud, cow dung, straw, sand, bricks, cement concrete, tiles, steel, iron and wood and explore how different surfaces have different capacities for retaining water.
- Compare modern technology and building materials such as metal, cement prefabrication, to the strength of constructions built by animals such as ants and termites.
- Look at the Bureau of Meteorology (BOM) recent rainfall records for South Melbourne. Are these above or below average?



Flooded street scene, 1916. Port Phillip City Collection.

ACTIONS FOR LEARNING SCIENCE

EARTH AND SPACE

Earth and space sciences are concerned with Earth's dynamic nature, its place in our universe, how as humans we use resources and the influence these have on the environment.

- Using the WATERLINES sculpture as a starting point, observe how houses provide shelter and warmth.
- Research seasons, rainfall and flooding including evaporation.
- Using the BOM website and newspaper articles, compare information about floods from 1891, 1934, and 2011. Categorise as major, moderate and minor flooding.
- Review geological ice age maps when Victoria and Tasmania were one. How has the shape of Victoria changed and why?
- Gather historical, geological, and meteorological information about the City of Port Phillip and flooding.
- Review the global drivers for climate change and rising sea levels. Include research on urbanisation, power consumption, hardening of the earth surfaces, global trade and consumerism.
- Identify the reasons for locating industries such as shipyards, tanneries and coal yards at Fishermans Bend. Learn about the effect these had on the landscape and environment.

BIOLOGICAL SCIENCES

This is the understanding of living things such as animals, plants, and micro-organisms, within ecosystems.

- What plants and animals need a river system to survive?
- Living things have basic needs such as shelter, warmth, food, migration pathways and water. Use the surrounding park to find evidence of these.
- Learn about the different ways that water is used by plants, animals and humans. For example photosynthesis and regulation of temperature.
- Learn about the types of species that used to inhabit Melbourne's wetlands, such as trees, water birds and frogs. Identify the features that help them to survive in a wetland environment.

CHEMICAL SCIENCES

Chemical sciences are concerned with understanding the composition and behaviour of substances.

- Explore the local history of manufacturing and the use of chemical compositions and why factories were located next to the river.
- What is the manufacturing process of coal and how might this have impacted the environment? Why was it so important to the factories in the past? What happened when there was a shortage of coal?

MAKING CURRICULUM CONNECTIONS

THE HUMANITIES



'The Floods' print two, wood engraving, September 25, 1880. The Sandridge train, keeping the line clear, a scene in North Sandridge. Engraved in image I.I: J.R.A wood engraving, published in the Illustrated Australian News, State Library of Victoria.

INQUIRY QUESTIONS

After a visit to the artwork the following questions can be used to start a conversation about WATERLINES and the how the sculpture represents the community and addresses the Humanities curriculum.

- Who might have lived in the houses of Montague in the past?
- What would you do if your house flooded?
- What would you need to survive a flood?
- How does the geography of the area contribute to flooding?
- How is our community housing changing?
- What people have made a significant contribution to the Port Phillip area?
This might include artists, sport players, scientists, adventurers, humanitarians, entrepreneurs, inventors, and politicians.
- What role has migration played in shaping our population?
- How can we be advocates for developing a vibrant and livable community?
- Compare housing today to homes of the past using WATERLINES and descriptions or photos or Montague worker cottages.

ACTIONS FOR LEARNING

THE HUMANITIES

CIVICS AND CITIZENSHIP

Civics and Citizenship helps us to be active, and inform citizens who participate in society.

- Who lives in our neighbourhood and what social and cultural groups make up our community? Has this changed over the years?
- Create some safe guidelines to help our community meeting places be good places for all people.
- How can we help new students to our school learn about our community and the history of our local area?
- What rules should we develop to protect our local art works and community parks?
- Design a care package to help flood victim families.
- Consider the support that a community would need to recover from a flood and how we might help in the recovery.
- Redesign a new form of sandbag to be cost effective and stop floodwater.

ECONOMICS AND BUSINESS

Economics and Business is how we make decisions on how we as a community allocate resources, and supports understanding economics and business decision-making.

- Discover the impact of the Industrial Revolution on Australian manufacturing and the benefits to the economy and the social impacts.
- Review the population expansion in the local area and how this drove technologies in machinery and industries in factories.
- In the Victorian era one of the main fuel energy sources was black coal. This powered the factories, engineering works and foundries in South Melbourne. What is the current main fuel source and is this sustainable?
- Examine the role of protective tariffs, government bonuses and subsidies in relationship to the rise of manufacturing in South Melbourne.
- Research the strike of 1917 and how miners stopped the supply of coal. How did workforces join the movement? For example, workers at the local Dunlop factory.

GEOGRAPHY

Geography helps us explore, analyse and understand places, space, the environment, and how things are connected.

- Identify the reasons for locating industries such as shipyards, tanneries and coal yards at Fishermans Bend. Learn about the effect these have had on the landscape and environment.
- Study the urban water cycle and see where storm water from Kirrip Park travels. Has this changed over the years?
- Investigate uses for stormwater run-off from the park. What pollutants might it contain, and how can these be eliminated?
- Learn about China's 'sponge city' and other urban wetlands. Combine this with inspiration from Kirrip Park to design a water sensitive community.
- Learn about how South Melbourne's stormwater system mitigates floods and improves the health of Port Phillip Bay.
- Investigate solutions used by other cities to mitigate flooding, such as: Chicago's green alleys, Tokyo's super levees and the Dutch Delta Programme.

ACTIONS FOR LEARNING THE HUMANITIES

HISTORY OF FLOODING IN PORT PHILLIP AND MONTAGUE

In 1863 the largest recorded flooding of the Yarra River occurred. It was larger than a 1-in-100 year flood.

In 1891 the Yarra flooded again. It was named 'The Great Flood'. Due to improvements (including widening the Yarra River, creating the Coode Canal, building the Prince's Bridge and Queen's Bridge and removing the Yarra Falls) the effects of the flood were mitigated.

Until street levels were raised during the 1930s there was frequent flooding that inconvenienced adults and delighted kids. The South Melbourne Council eventually raised street levels and improved drainage, although this wasn't without issues.

Gippsland Times, 15 July 1891

The rainfall between 1 a.m. on Saturday and 9 a.m. on Monday was 5.40 in., a downpour which is almost unprecedented. The flood waters inundated the low-lying land at South Melbourne between the St. Kilda road and the railway line, flooding out many families.

Herald, 23 October 1924

We cannot raise the level of the streets until the property owners raise the level of the houses. Many of them refuse to do this.

Record, 08 Oct 1927

Amphibious individuals residing at Montague held their periodic aquatic gala. Flood waters were all that could be desired for the occasion. Adults did not seem pleased, but the kiddies were delighted.

Record, 28 Jan 1928

Children at the spot are so accustomed to the visitations of floodwater that they make a hobby of it, and extemporised aquatic sports are carried out as long as any appreciable quantity of surface water remains. Most of the young people can use stilts, and always have them handy.

HISTORY

- Investigate how Aboriginal and Torres Strait Islander peoples used water for survival. Compare this to today.
- Discover which plants and animals provided food, shelter and clothing for indigenous Aboriginal people.
- Research newspaper articles, like the examples opposite, to investigate locals' reactions and interactions with the flood water.
- Review how the river was used for transport and trade. What role did the coal industry have in this?
- Learn about the features that made Montague a close-knit community in the past, such as its factories, football team, church, school, and shops. Compare this with your current neighbourhood to explore how belonging to a community can shape identity.



Children wading knee deep in water. South Melbourne Floods, Ferrars Street, Montague. Port Phillip City Collection

MAKING CURRICULUM CONNECTIONS

TECHNOLOGIES



"River Improvements since the Great Flood", Jubilee History of the City of South Melbourne, 1905. Port Phillip City Collection.

INQUIRY QUESTIONS

- What technology do you think the artist used to create this artwork?
- Can technology help us engineer a better future in housing?
- Do artists that use new technologies create better works?
- When did technology start to be used in creating artworks?
- What is digital art?
- Is digital art as important as traditional art?
- Can a computer generate artwork?
- What is the difference between digital assisted artworks and digital art?
- Does technology help an artist to expand ideas or can it hinder them?
- Is an idea or concept as important as a finished product or a design?

ACTIONS FOR LEARNING TECHNOLOGIES

DESIGN AND TECHNOLOGIES

- Using a range of natural materials and found objects, design and create a class sculpture that is based on the theme of home.
- Using digital technologies draw and design houses for different purposes such as for a mouse, a community of endangered animals or a class pet.
- Identify the design features of Kirrip Park that make it suitable for a community space. For example, consider flood levels, drains, and gardens.
- Design your own sculpture to represent aspects of the City of Port Phillip's history.
- Design a bridge to help people get across a flooded river.
- Using 3-D programs, design a 3-D eco-friendly house. Things to consider include sunlight rather than electric lights, fresh air ventilation flow and wastewater for recycling.
- Using the WATERLINES sculpture as a reference, design a house suitable for a floodplain. Consider roof shape, materials, floor height and gardens.

DIGITAL TECHNOLOGIES.

- Create a word puzzle using technology based on the theme of different names that we use for homes such as: apartments, caravan, castle, cottage, duplex, farmhouse, hotel, houseboat, hut, igloo, lighthouse, lodge, log cabin, manor, mansion, motel, palace, semi detached house, shack, family home, skyscraper, teepee, humpy, tent terrace house, townhouse, treehouse, etc.
- Create a short movie that informs the viewer about WATERLINES.
- Use technology to create interactive stories based on research about the history of flooding. Use roleplay and drama to bring this to life.
- Create a presentation on the history of flooding in the Montague area using digital technology such as PowerPoint or Prezi.
- Use Google Earth to locate WATERLINES and plot it on a grid with latitude, longitude and consider where it is in relationship to the Equator, Tropic of Cancer, Antarctic, Prime Meriden, International Dateline etc.
- Using digital technology locate historic maps, records and first-hand accounts. Organise and record the history of flooding in the Montague area. Consider the best way to record and present your data, using the software available to you.

MAKING CURRICULUM CONNECTIONS

MATHEMATICS



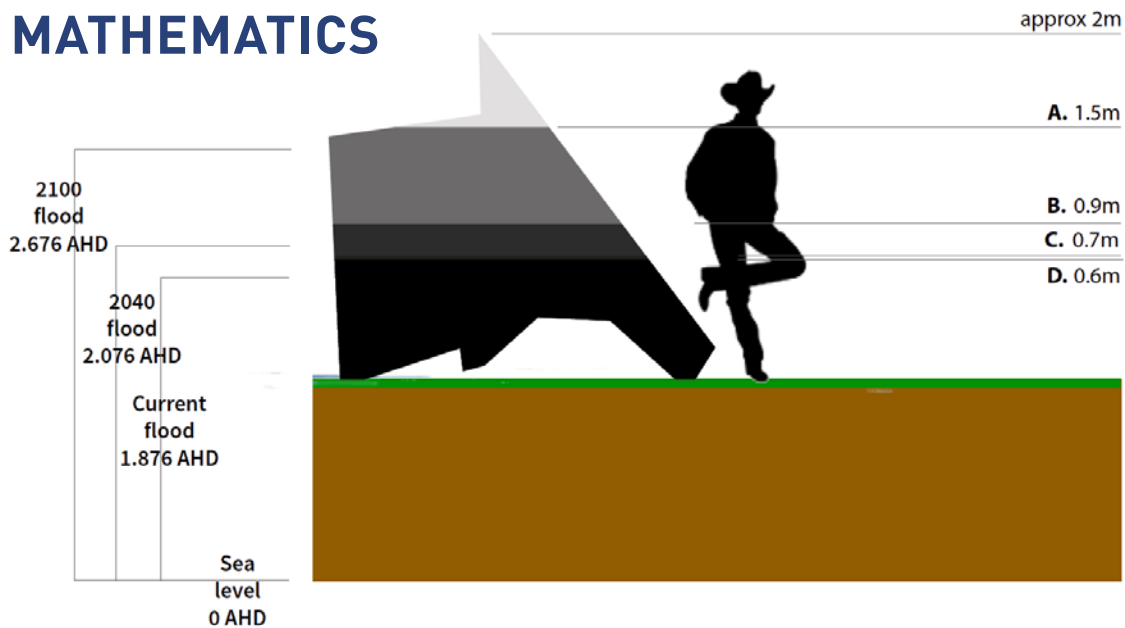
Comparative flood levels against WATERLINES. *AHD = meters above sea level. Sculpture is approx 1.2m AHD.

INQUIRY QUESTIONS

Before or during the visit to the artwork the following questions can be used to start a conversation about WATERLINES in relationship to the Mathematics ideas, knowledge and skills.

- What shapes can you see in WATERLINES?
- What do art and maths share in common?
- How has the artist used geometry in WATERLINES? (shapes, symmetry, proportion, and measurement)
- What is the golden ratio in art and why is it important?
- How does the scale of this artwork impact the viewer?
- What other artists have used mathematic ideas in their work?
- Why is geometry so important in architecture and engineering?
- Can you find different examples of perspective in the making and construction of WATERLINES? For example, aerial, one-point, two-point, three-point perspective.
- If the sculpture had a floor how might you go about calculating this?

ACTIONS FOR LEARNING MATHEMATICS



Comparative flood levels against WATERLINES AHD = meters above sea level.

A. Future sea levels in the year 2100

In 2100, sea levels are predicted to rise by approximately 0.8 metres. In addition, heavy rainfall is predicted to occur more frequently and this will increase the likelihood of floods.

B. Future sea levels in the year 2040

For Port Phillip Bay, the prediction for 2040 is a 0.2 metres sea level rise.

C. Current 1-in-100 year flood

This is based on the 1-in-100 year flood levels, which means that there is a 1% chance of it occurring in any given year. This is the level used by town planners. They raise floor levels and ensure adequate drainage to reduce flooding based on these figures.

D. The '2ft' flood of Montague

Montague frequently flooded 'in places up to 2 ft', according to newspaper articles. From the 1910s to 1930s. See articles, page 22. Eventually, the streets and roads were raised above the level of flooding.

(Planning for Sea Level Rise, Melbourne Water, February 2017 retrieved from <https://www.melbournewater.com.au/sites/default/files/Planning-for-sea-levels.pdf>)

STATISTICS AND PROBABILITY

Students will explore statistics and probability to draw inferences, recognise and analyse data and then use the data to provide a summary to represent the findings.

- Identify outcomes of events and describe them using language such as 'will happen', 'won't happen' or 'might happen'. Use examples such as, 'it will rain', 'it will flood' or the chances of this happening or not happening.
- Identify other possible events that may impact the sculpture, and then discuss the probability of these happening. Students can list outcomes of chances with equally likely outcomes and assign probabilities as a number from 0 to 1.
- Plot and present a graph depicting the predicted 100 year flood sea levels up until 2150.
- The probability that a 1-100 year flood is likely to occur is much more frequent. There is a 63.4% chance of more than one 100 year flood in any given period. Discuss why this might be.

ACTIONS FOR LEARNING

MATHEMATICS

MEASUREMENT AND GEOMETRY

Students will work towards an understanding of measurements of quantities, shape, size, position and geometric patterns.

- Review units of measurements and discover what 2ft is in metric measurement.
- Use geometric shapes to create a house, or for geometric patterns.
An example of this is, 'The Flower of Life' at the Temple of Osiris, Abydos, Egypt.
- Identify symmetry in the sculpture.
- Name and count the different shapes in WATERLINES such as the rectangles, prisms and squares.
- Compare the flood line on the WATERLINES sculpture to different object heights within the park and school.
- Identify units used to measure floods and rainfall, such as length and capacity.
- Students can create number questions for peers based on the measurements of WATERLINES such as the length, area, mass, and perimeter.
- Students can explore using a grid reference system to map and locate landmarks in Kirrip Park and describe how to get to WATERLINES from your classroom.
- Estimate the angles on WATERLINES, and then use digital technology to measure the angles.
- Explore the lines of WATERLINES and use rotational symmetry to create new images.
- Use the Cartesian coordinates to plot your friends' houses from a central position in the school.
- Use origami to explore shapes, divisions and forms.
- Discuss and then employ one-point, two-point, three-point perspective to create drawings of WATERLINES.
- Based on the information on the previous page, calculate how much of the sculpture would be under water in 2040?

NUMBER AND ALGEBRA

- Devise a scenario around a mathematician and an artist discussing WATERLINES.
- Mix colours of paint or ink to explore ratios and chart the shades produced.
- Have the class imagine a new sculpture. List the logistics and components. Create a budget and timeline sequence to realise this project.
- Review the Fibonacci number sequence and the place it has in plants, seeds and shells.
- Review Leonardo da Vinci's 'The Vitruvian Man' and the proportions of the human body. Discuss who Vitruvius was.
- Compare a list of local and/or international floods and rainfall events. Organise these into categories of 1-in-100, 1-in-20, 1-in-5 year events.

ADDITIONAL RESOURCES

Boon Wurrung Foundation

www.boonwurrung.org

City of Port Phillip

www.portphillip.vic.gov.au

heritage.portphillip.vic.gov.au

City of Yarra Council

www.yarracity.vic.gov.au/the-area/aboriginal-yarra

Connecting with Aboriginal History of Yarra. A Teachers' Resource

<https://aboriginalhistoryofyarra.com.au/teachersresource.pdf>

Craig Malyon, The Aesthetics of Ruination

www.art-almanac.com.au/the-aesthetics-of-ruination

Fuse -State of Victoria (Department of Education and Training STEM resources)

<http://fuse.education.vic.gov.au/VC/Teacher?science>

Ian Strange Website and Articles

<http://ianstrange.com>

Melbourne Museum Schools Programs and resources

<https://museumsvictoria.com.au/melbournemuseum/learning/school-programs-and-resources>

The Port Phillip City Collection

https://artheritagecollection.portphillip.vic.gov.au/Presto/home/home.aspx?ssid=heritage_

Victorian Curriculum Visual

<https://victoriancurriculum.vcaa.vic.edu.au/the-arts/visual-arts/introduction/rationale-and-aims>

Wonderment Walk Victoria

www.wondermentwalk.org.au

Yarra Valley Water

www.yvw.com.au/about-us/teaching-resources

ACKNOWLEDGEMENTS

WONDERMENT WALK VICTORIA

CITY OF PORT PHILLIP

ORPHIC CREATIVE

SOUTH MELBOURNE PRIMARY SCHOOL

IAN STRANGE STUDIO

PORT PHILLIP HERITAGE CENTRE

SARAH BARROW, EDUCATION RESEARCHER AND WRITER

CAM SMITH, SOUTH MELBOURNE PRIMARY SCHOOL

JULIA MIHAI, PROJECT MANAGER, WONDERMENT WALK VICTORIA

JANET BOLITHO, PORT MELBOURNE HISTORICAL AND PRESERVATION SOCIETY

TAMEKA CARTER, EDUCATION ADVISER

EDUCATIONAL PACKAGE
SOUTH MELBOURNE PRIMARY SCHOOL, CITY OF PORT PHILLIP

WATERLINES



IAN
STRANGE
STUDIO.