QUEENSLAND MUSEUM NETWORK PRESENTS World Science Festival Brisbane

IT'S LIVE! in Queensland

TEACHER RESOURCE
YEAR 11
OBSERVING SPECIES

FEATURING

CIRCITY BRISBANE | brisbane ECONOMIC DEVELOPMENT AGENCY BRISBANE CITY COUNCIL

QUEENSLAND MUSEUM NETWORK | Queensland Government

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Cover: *When A Tree Falls* exhibition by Donna Davis, Northsite Contemporary Art Space, Cairns. [Installation view]. *DE-CAY-DENCE*, mixed media installation, 3 channel video installation, acrylic frames and television screens. Photo credit: Donna Davis.

ART VS. SCIENCE

STEM-literacy is fundamental in a world increasingly saturated with advertising and mixed messages from the media. Having basic scientific literacy helps us to navigate some very practical questions, like: how can we trust vaccines, should we use energy-saving lightbulbs, and why is it important to be healthy?

Science should be shared with everyone, in an accessible and clear manner. Why is this important? Well, it gives us a sense of wonder and curiosity, encourages us to find better ways of doing things, and it help us look after ourselves and our planet.

One way of making science accessible, is by presenting it in creative ways, like the artists who participated in Curiocity Brisbane 2022. As you engage with these public artworks, what will you discover about science, about yourself, or about the state of the planet?

OBSERVING SPECIES

Our natural environment has inspired countless works of art, from the classical compositions of Beethoven and Vivaldi to the spectacular masterpieces of Claude Monet and Vincent Van Gogh. And just like artists, scientists, including Australia's First Scientists, continue to solve problems by finding new ways of looking.

Sometimes, we just need a shift in perspective. Or a creative new twist. We might discover things that are too small to see with the naked eye, or brilliant things that have existed for aeons before humans dug them up or cut them open.

Can you make new connections between scientific inquiry, storytelling, and art? We can't wait to see the results.

FEATURED ARTWORKS

Donna Davis. *DE-CAY-dence*

Panagiotis (Panos) Couros. *AmphiSonic*

Kirsten Bade. *Illuminated Embroidery*

CURRICULUM LINKS

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1 ***Acknowledging Place***
Carol McGregor

2 ***Soft-body Adapters***
Kellie O'Dempsey

3 ***CURIOCITY EcosysSTEAMs***
Dalby South State School

4 ***TIMEE22***
Isis District State High School

5 ***Luminous Threads***
Kirsten Baade

6 ***CurioCreatures***
Alinta Krauth and Jason Nelson (EphemerLab)

TRAIL Collect all 15 across South Bank, the Goodwill Bridge and Queen Street Mall

7 ***City Symphony***
QMF and Textile Audio

TRAIL Visit all four sites across South Bank and Brisbane CBD

8 ***Self-talk is our superpower!***
Blackall Range Independent School

9 ***Cooyinnirra in Flames***
Boonah State High School

10 ***93% Human / Breathwork***
Helen Pynor

11 ***Baidam Tithuyil***
Brian Robinson

12 ***In the Air***
Priscilla Bracks & Gavin Sade
(Music: Greg Jenkins and Gavin Sade)

13 ***AmphiSonic***
Panos Couros

14 ***The Wandering Birds Have Returned to the River (Even Bernice)***
Seth Ellis and Michelle Vine
Guest creators Lota State High School

15 ***The Origins of Art I and II***
Maria-Fernanda Cardoso

15 ***DE-CAY-dence***
Donna Davis

15 ***Communing With Robots***
Peter Thiedeke

16 ***Sounding Tides***
Erik Griswold and Rebecca Cunningham

17 ***OHCE/ECHO***
Georgie Pinn
Guest creators MacGregor State High School

18 ***MIRAGE PROJECT [iceberg]***
David Burrows and Australian Antarctic Program

TRAIL Visit all 10 locations throughout Streets Beach

Wednesday 9 – Sunday 13 March

19 **Dinosaur Discovery**
Presented with Brisbane Urban Environmental Education Centre

19 **Reef Creature Coding Challenge**
Presented with Great Barrier Reef Marine Park Authority

20 **Protect Our Coral Reefs**
Presented with CoralWatch

21 **Stellar STEM**
Presented with PFi Aerospace

21 **Coding with CodeMonkey**
Presented with Junior Engineers

21 **Energy in Motion – STELR Program**
Presented with Australian Academy of Technological Sciences and Engineering

Saturday 12 – Sunday 13 March

24 **It's Rocket Science**
Presented with It's Rocket Science

24 **Stargazing**
Presented with Brisbane Astronomical Society

25 **Marble Run Madness**
Presented with Make & Meld

26 **ImmunoKru: A Cancer Art Gallery Exclusive**
Presented with Excite Science

26 **Butterflies, Bees and Other Insects**
Presented with Butterfly & Other Invertebrates Club Inc.

26 **Fungi Count**
Presented with FungiMap and QuestaGame

26 **Addiction Neuroscience and Obesity**
Presented with Translational Research Institute

26 **Science for Citizens**
Presented with Australian Citizen Science Association

26 **Radiation Exploration**
Presented with Queensland branch of the Australasian Radiation Protection Society

26 **Beneath the Streets**
Presented with Urban Utilities

27 **Race to Escape**
Presented with Robogals Brisbane

27 **The Young Entrepreneurs Hub**
Presented with BOP Industries

21 **Science of Tunnelling and Future Brisbane**
Presented with Cross River Rail Delivery Authority

22 **Design and Fly a Virtual Aircraft**
Presented with Cool Aeronautics Australia

22 **Professor Tech's Awesome Introduction to Extended Reality**
Presented with The Create Lab by Professor Tech

23 **Micromelon Robotics Automation Challenge**
Presented with Micromelon Robotics

23 **Innovation in Science Ideation**
Presented with Australian School of Entrepreneurship

23 **Become a Young Scientist**
Presented with The University of Queensland

27 **Achieving a Circular Economy**
Presented with Steam Powered Kids

27 **Augmented Reality Games**
Presented with Ardacious

27 **Robotics**
Presented with Young Engineers Brisbane North

27 **Catchment Curiosities**
Presented with Brisbane Catchments Network

27 **The Science of Movement**
Presented with Australian Catholic University

27 **Finding Ink the Famous Octopus!**
Presented with Plastic Oceans Australasia

27 **The Future of Health**
Presented with QIMR Berghofer

28 **Get Buried!**
Presented with LUSY

28 **Soil: Life's Foundation**
Presented with Soil Science Australia, Queensland Branch

28 **Understanding Earth Science**
Presented with Geological Society of Australia

28 **Building Sustainable and Biodiverse Gardens**
Presented with Natura Pacific Pty Ltd

i1 **Information Tent**

i2 **Information Tent**

i3 **Information Tent**

KEY INQUIRY QUESTIONS

- Developing — how do artists generate solutions to visual problems?
- Researching — how do artists react to stimulus?
- Reflecting — how do artists consider ideas and information, media techniques and processes?
- Resolving — how do artists communicate individual ideas as visual, written or spoken responses?

SYLLABUS OBJECTIVES

1.	implement ideas and representations to decode artworks and communicate in visual forms
2.	apply literacy skills to communicate understanding of visual language, expression and meaning in the work of self and others
3.	analyse and interpret art practices through the formal and cultural contexts
4.	evaluate art practices, traditions, cultures, and theories to examine how diverse symbol systems are used by artists to communicate meaning
5.	justify viewpoints using evidence of communication in artworks
6.	experiment in response to symbol systems used by artists to communicate meaning
7.	create multiple meaning and representations through knowledge and understanding of materials, techniques, technologies and art processes
8.	realise responses to demonstrate how meaning is communicated through art forms.

LEARNING OBJECTIVES

Students are learning to:

- generate ideas for visual responses that explore scientific ways of looking at and representing subject matter
- experiment with approaches to represent subject matter in a non-figurative way, by emphasising or distorting features using visual language and expression to convey ideas
- reflect on the impact of scientific observations to generate visual solutions and create meaning
- realise ideas in making and responding tasks through the personal and contemporary contexts to communicate innovative representations of subject matter.

SUCCESS CRITERIA

Students will be successful when they can:

- analyse and interpret the work of self and others through the personal and contemporary contexts
- work with a scientific lens to create visual responses
- apply literacy skills to evaluate the effectiveness of techniques and processes to communicate scientific ideas
- realise a response which communicates and justifies their ideas and viewpoints.

TEACHING NOTES

TIMING

5 hours

MATERIALS

- a variety of subject matter from the natural environment to use as stimulus (these could be provided, students could collect their own, or Queensland Museum loan kits or objects could be used)
- student choice of 2-dimensional media and surfaces, digital editing software, 3-dimensional media
- Optional: magnifying glasses, digital scanners and cameras

HOW TO USE

Students view featured artworks in situ, prior to completing these activities. Activities can be modified for remote learning.

To enrich this experience, Queensland Museum collection items may be accessed. Creating a free account means you can save, sort, manage and share your favourite collection items (audio and video, collection items, events, fact sheets, images, learning resources, loan kits, etc.).

Possible items to use as subject matter:

- Observable Features Loan Kit
- Beachcombing Loan Kit
- Reptiles Loan Kit

LEARNING ACTIVITIES

REFLECTING

- Students consider their experience engaging with the three feature artworks in situ and read the artists' statements below.

My work is inspired by art/science residencies wherein I am embedded as an artist within environmental research projects, exploring science through a creative lens; interpreting data and discussions from field and lab research into works that imagine futures and construct new ways of "seeing" complex ecological systems and human roles within them.

Donna Davis (DE-CAY-dence)

The themes of my work are environmental awareness from multiple perspectives. I aim to provoke and educate audiences on how to listen to the natural world, to hear its music, to be aware of both the ancient wisdoms that can be learned from our First Nations people as well as the data and discoveries that our scientists uncover through their research.

I like to focus on both the beauty and mystery of the environmental world and also alert people to how it is now being threatened, and how this threat also endangers us as a species. The work is also about the music of nature and the intersection of art and science through the technically challenging medium of electronic music.

Panos Couros (AmphiSonic)

This artwork blends modern fibre optic technology with the traditional craft of embroidery. It takes embroidered art, which is traditionally displayed in the home, and transports it to a different space (the Whale Mall).

I am interested in what people experience when they look at art that uses technology.

Kirsten Baade (Illuminated Embroidery)

- Participate in a class discussion, using the following questions as prompts:
  - What subject matter is represented in these works?
  - How have these artists worked within the personal context to communicate ideas?
  - How have external influences impacted on artists' representations?
  - What art-making lenses or viewpoints are evident in these works and how have these lenses extended representations?
  - How have the works moved from simple realism?
  - How have these artists worked with the contemporary context to represent subject matter?

LEARNING ACTIVITIES

RESEARCHING & DEVELOPING

Scientific observation leads to scientific questions, theories or methods. Artists can use processes of scientific observation to form ideas and to communicate these in their artmaking.

- Students observe and represent stimulus objects (natural environment objects supplied or student-sourced) through a scientific lens. To make scientific observations, students should:
  - o photograph and make sketches, which represent the subject matter figuratively (in a realistic way).
  - o observe and record observations made using the five senses. If the features observed can be measured (e.g., the peony has 85 stamens), this is a quantitative observation. If the features observed cannot be measured (e.g., the dried eucalypt leaf smells like insect repellent), this is a qualitative observation.
  - o observe and record features, considering the purpose or function of these features.
  - o comment on the environment or circumstance in which the subject matter was found, thrived and/or perished.
  - o highlight any features or observations that are interesting, unexpected or challenging. Why do these draw your attention?
- Students prepare a brief, written response which answers the following context guiding questions:
  - o In what way did your observations meet or challenge your expectations?
  - o What connections have you made to any personal stories or experiences, thoughts, feelings, philosophies or ideas?
- Students present their observations and written responses to the class, gathering opinions and perspectives including shared discoveries, surprises or ideas.

DEVELOPING & MAKING

- Students respond to their scientific observations to develop a contemporary artwork that extends the representation of subject matter, from figurative to non-figurative. Their artwork should demonstrate a new way of looking and representing the subject matter by stylising, distorting and/or emphasising features that were observed. Students should also consider the way their artwork is constructed and displayed within a contemporary context, for example:
  - o In what ways does their artwork challenge social/traditional norms or common ideas or beliefs?
  - o How does their artwork use art approaches or technologies which will impact upon audience experience or interpretation of the work?

REFLECTING

- Students write a reflective statement, which:
  - o reflects on the value and impact of a scientific lens to guide representation of subject matter
  - o evaluates their representation of subject matter, and their approach to highlighting or emphasising things of personal significance
  - o justifies their choice of visual language, processes and intentions.

ENDNOTES

[i] Queensland Curriculum & Assessment Authority (QCAA) (2019). Visual art general senior syllabus 2019. Available at: https://www.qcaa.qld.edu.au/senior/senior-subjects/the-arts/visual-art/syllabus