

The Moon — STEAM trail

A Geelong Gallery exhibition
15 June – 01 Sept 2019
Victorian Curriculum Levels 5 to 8



MAN ON THE MOON

A photograph of an astronaut in a white space suit standing on the moon's surface. The astronaut's helmet is in the foreground, reflecting the lunar landscape. The moon's surface is covered in craters and rocks, with a blue and white horizon of Earth visible in the background.

The Moon exhibition

Explore five key interconnecting themes of *The Moon* exhibition: Journeys to the Moon; The light of the Moon; Phases of the Moon; Paper Moon; and Evocations and imaginings.

The Moon - STEAM trail directly links to learning outcomes in the Victorian Curriculum and promotes opportunities for STEM, STEAM and Project Based learning in the Gallery or classroom, as part of the Australian Government 2019 National Science Week theme *Destination Moon: more missions, more science*.

This resource is designed in collaboration with the Victorian Space Science Education Centre.

Learn program partners



national science week



An Inspiring Australia initiative supported by the Australian Government as part of National Science Week



Engage in STEAM thinking by asking questions, predicting outcomes, observation, discussion and experimenting.

Curriculum links

Visual Arts / Levels 5 and 6 /
Explore and Express Ideas (VCAVAE029)

Visual Arts / Levels 7 and 8 /
Explore and Express Ideas (VCAVAE033)

Visual Arts / Levels 5 and 6 /
Visual Arts Practices (VCAVAV030)

Visual Arts / Levels 5 and 6 /
Present and Perform (VCAVAP031)

Visual Arts / Levels 5 and 6 /
Respond and Interpret (VCAVAR032)

Journeys to the Moon

Space travel, the Moon's surface, and populating the Moon.



Discuss

There are a number of moving image and installation works included in *The Moon*.

Describe how some of these artworks have used or explored elements of space, time, light, motion, colour and sound?

Make

Be inspired by American artist Michael Light's sequence of collaged photographic stills from NASA's extensive image archive of the Apollo Missions—create a moving image using a series of sequenced images that represent a recent scientific discovery or event.

Research the technology of optical illusion device, the Zoetrope, to create your own moving image.

Visit:

www.questacon.edu.au/resources/teacher-resources/3d-zoetrope



Cover:
The Moon (installation view,
Geelong Gallery 2019)
Photographer: Andrew Curtis

Above:
Michael Light
Drift: 29 days, 18 hours, 2 minutes
(stills) 1999
black and white and colour; silent
duration: 6:53 minutes
Australian Centre for the Moving
Image, Melbourne

NASA Goddard Space Flight Centre
Apollo 11 Lunar Module ascent stage
photographed from Command Module 1969
Source: NASA digital archive

Phases of the Moon



Discuss

Identify and describe how artists in this gallery space have represented the changing 'shape' and concept of 'phases' or 'time' in their work. Compare artworks from different contemporary, historical and cultural contexts, including artworks by Aboriginal and Torres Strait Islander peoples. For example, how has the artist, Hector Jandany used different symbols and meaning in his work *Garnkeny (Moon man)* 1993?

STEM activity

Keep a diary of your observations of the moon for a minimum of 30 days and then use this information to help you understand the phases of the Moon.

Sketch the shape of the Moon (its 'phase'). If you have binoculars, add some details to your drawing.

Find out and record what time the Moon rose and set.

Activity designed by Stephen Edberg, a planetary scientist at the Jet Propulsion Laboratory in California, USA.

Make

What is your own personal connection to the concept of 'phases' or 'time' in relation to the Moon? Create a visual diary over a lunar cycle and document your thoughts and feelings in connection to these ideas.

Science inquiry

Why does the shape of the Moon change?

What is Earthshine? What causes it? When can you see it?

What makes the Moon shine?

Does the Moon rotate as it moves around the Earth? If it does, how long does it take to rotate once? (i.e. what is its period of **rotation**?)

How long does the Moon take to go around the Earth once? (i.e. what is its period of **revolution**?)

Hector Jandany
Garnkeny (Moon man) 1993
earth pigments and natural binder on canvas
Geelong Gallery
Gift of Jim Cousins AO and Libby Cousins, 2018

Paper Moon

Discuss

Discuss how artists have applied different visual conventions to represent the various 'types' of the Moon. For example, how have they used line, shape, colour and texture to develop an individual approach to a theme or subject matter?

Make

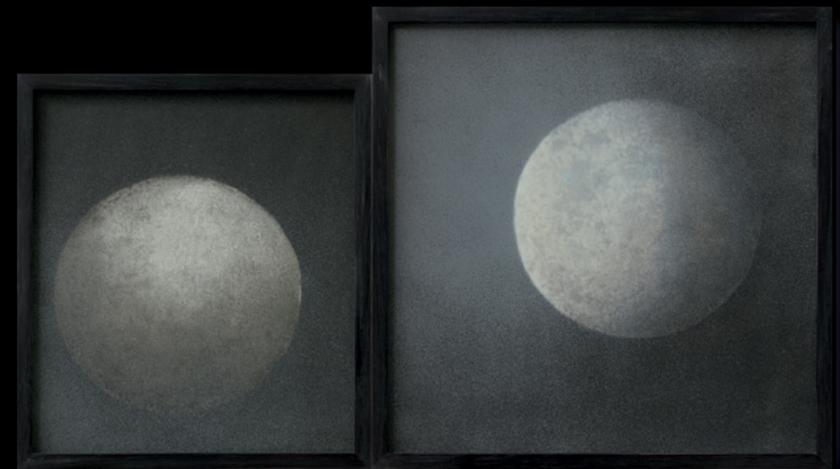
Research Galileo Galilei's first telescopic drawings of the Moon published in 1609 and compare to images from NASA's archives. Draw a series of two-dimensional observational drawings of the Moon using a graphite pencil, ink pen, charcoal or a combination. Explore different drawing techniques, such as rendering, tone and cross-hatching.

Science inquiry

Why can't you see objects that are very far away with your naked eyes?

How do telescopes make distant objects seem closer?

Investigate the history of the telescope and its role in enabling us to look into space.



Clare Humphries
A fraction of a small distance 2017
hand-burnished linocut with sand-blasted glass;
edition 4/10, varied state
Geelong Gallery
Ursula Hoff Institute award, 2017

The light of the Moon



Discuss

How has artist Louise Weaver applied different visual arts techniques to express themes, concepts and ideas in her work? Analyse the materials used by the artist and how it has developed the meaning in her work? Consider how you could use these techniques and ideas in your own work.

Make

Create your own three-dimensional creature that you believe should be part of this Moonlight environment. Think about what materials you could use to create your artwork. Discuss how your choice of materials can enhance the audience's understanding of your ideas/intentions? How is your creature affected by Moonlight?

Science inquiry

Stories about the Moon are hundreds or thousands of years old. One common story is that some people act strangely at the time of a Full Moon.

Can you find some of these stories?

Have you heard any of them before?

What do the words "lunatic" and "moonstruck" mean? And where do these words come from?

Can you find any scientific evidence that supports them or disproves them?

Louise Weaver
Moonlight becomes you
(Installation view, Geelong Gallery 2019)
Photographer: Andrew Curtis

Discuss

As a class or with your companions discuss how Katie Paterson's *Light bulb to simulate Moonlight 2008* creates a sensory experience for the viewer?

How does the work reflect the artist's intentions or ideas?

How do you personally respond to this work?

How might science and art benefit from each other more generally?

Discover

Explore paintings by the 19th century English artist JMW Turner (1775–1851) and observe how Turner represents the effects of light and colour in his paintings. Discuss how his paintings might draw on scientific theories of his day.

Research the work of astronomer Frederick William Herschel (1738–1822), writer Johann Wolfgang von Goethe (1749–1832), and scientist and mathematician Mary Somerville (1780–1872). Consider how their work might have influenced Turner's approach to painting.

STEM activity

In 1666, Isaac Newton an English mathematician, physicist, astronomer, theologian and author discovered (with prisms) that light is made of colours. White light is comprised of all the colours of the visible spectrum.

Experiment colour mixing with light

Find four small flashlights and cover with different coloured sheets of cellophane - use red, yellow, green and blue. Find a dark room and shine the lights onto a white wall.

What happens when you mix lights? Try red and blue, red and yellow and red and green light?

See what happens when you try multiple combinations of mixing the coloured lights?



Katie Paterson
Light bulb to simulate Moonlight 2008
289 light bulbs, log book; edition 6/9
Art Gallery of New South Wales, Sydney
Gift of Geoff Ainsworth AM 2014.
Donated through the Australian Government's
Cultural Gifts Program
Photographer: Andrew Curtis