CLICK THROUGHOUT

Koorie Seasons and Astral Calendars

Victorian Curriculum

Content Description:

Weather and seasons and the ways in which different cultural groups, including Aboriginal and Torres Strait Islander peoples, describe them (VCGGK067)

Elaborations:

Describing the daily and seasonal weather of their place by its rainfall, temperature, sunshine and wind, and comparing it with the weather of other places that they know or are aware of.

Comparing the Aboriginal or Torres Strait Islander People's seasonal calendar for the local area with one students are familiar with, such as the four-seasons calendar derived from Europe.

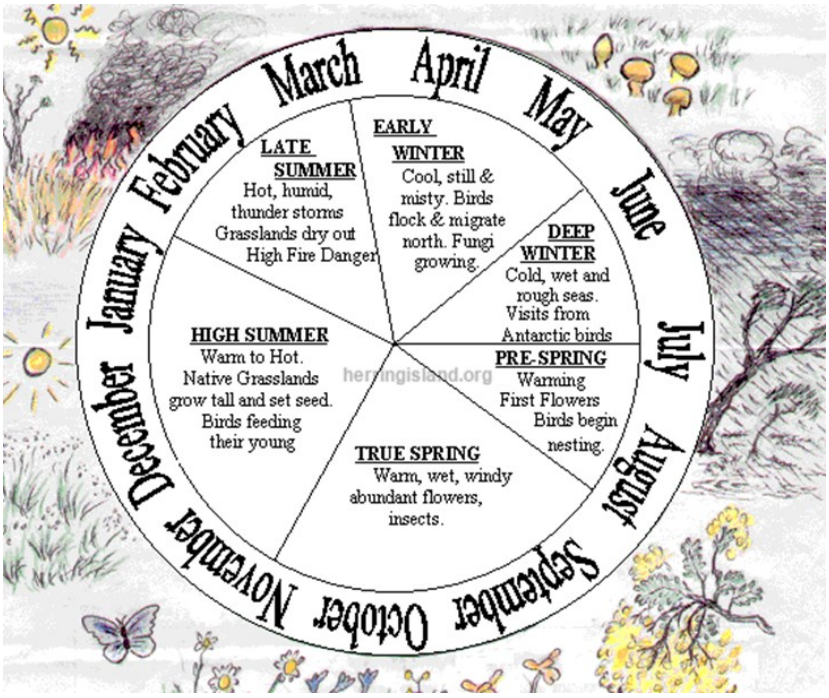
Geography / Foundation to Level 2 / Geographical Knowledge / Places and our connections to them .

See a more comprehensive list of links on the final page.

The four seasons we are all familiar with, spring, summer, autumn, winter might well apply half way across the world, but almost wherever you go on this continent, you know there's something different going on, whether you're in Melbourne or Alice Springs, cyclone prone Port Headland or Darwin in the wet season. In fact anyone who's spent time in Melbourne knows why they say it has 'four seasons in one day'! However, there's nothing crazy about Melbourne's weather, no matter how often people cry out, "It's supposed to be summer!" In fact Melbourne experiences up to 8 periodic seasons in any given year.

Seasons can be looked at in a number of ways. They can indicate weather patterns such as winter, or the wet season, seasonal events and activities that happen at particular times of the year like holiday seasons, hunting seasons or emu-egg time, and seasonal change is signalled through plants, animals and other signs such as the night sky.

Passed on through generations, knowledge about when to collect or hunt for food, when to prepare for the cold or rain, to trap eels for food and trade, or to collect emu eggs before the chicks are formed, is intricately tied to knowing about and feeling, country, place and ultimately connection to it.



ACTIVITIES

⇒ Explore Koorie seasons particular to your region, such as the 6-8 seasons in Wurundjeri Country.

⇒ Create seasonal displays like murals or charts, featuring for example seasonal activities, plants, animals, and signs such as those found in the night sky.

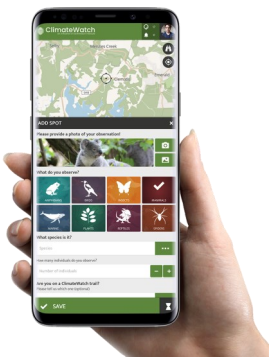
⇒ Redesign a Koorie seasonal calendar based on what you've learnt, highlighting key changes in the natural environment.

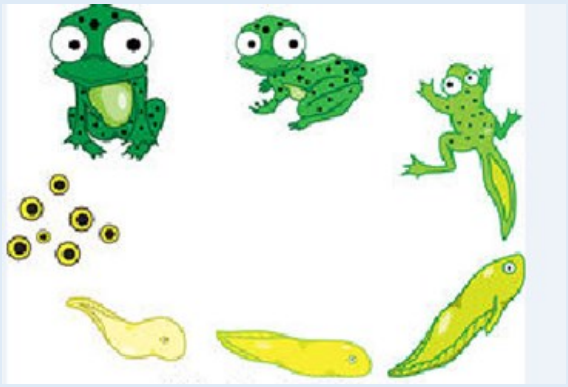
⇒ Compare the seasons you're familiar with, with others in other parts of Australia. How different are they?

The Bureau of Meteorology's **Indigenous Weather Knowledge** website is a great starting point. Including the **Gariwerd seasonal cycle**, Grampians region

Phenology is the science of the timing of natural cycles. Discuss how rising temperatures and shifting weather patterns due to climate change might cause these cycles to move.

Record changes in wildlife or plants on Climate Watch, a resource where you can help scientists understand what's happening with the behaviours of common species of birds, insects and plants. Play QuestaBird (android phone) which takes you outside and into the bush to photograph birds, butterflies and moths. The game involves competing with others to collect the most species and the greatest number of animals in your area.





If your school environment allows, consider raising some frogs from tadpoles in the classroom and document their lifecycle.

When it's time to return them to their original water source do so with care and ceremony.

Go nature spotting using the Koorie seasons calendar as a guide for the wildlife and plants you might see. Museum Victoria has a number of field guide app for Victoria fauna including descriptions of birds, mammals, fishes, reptiles, frogs and invertebrates from terrestrial, freshwater and marine environments. the **Kulin Nation**.

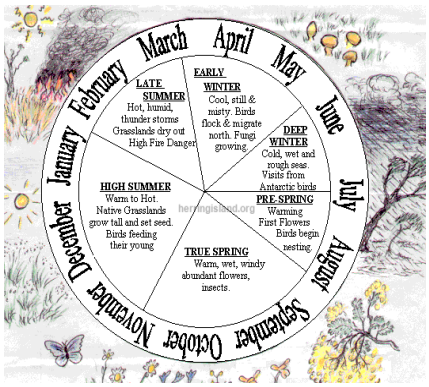
Watch the video with **Boon Wurrung** Elder Aunty Carolyn Briggs as she discusses how to gather and hunt for food with respect to seasons and ongoing life, and discuss traditional sustainable practices with your students.

Learn about significant foods and plants for Koories in Victoria, and their growing and harvesting seasons such as the staple murrnong (yam daisy) for the Kulin, eel farming practices of the **Gunditjmara,** and possum skin cloaks for warmth, comfort and much more .

Koorie Seasons

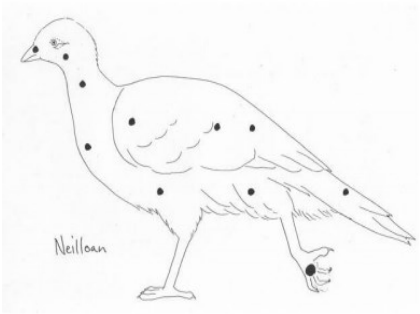
Eatern Kulin Seasonal Calendar

Six seasons of Gariwerd: the Grampians region of the Jardwadjali and Djab Wurrung People



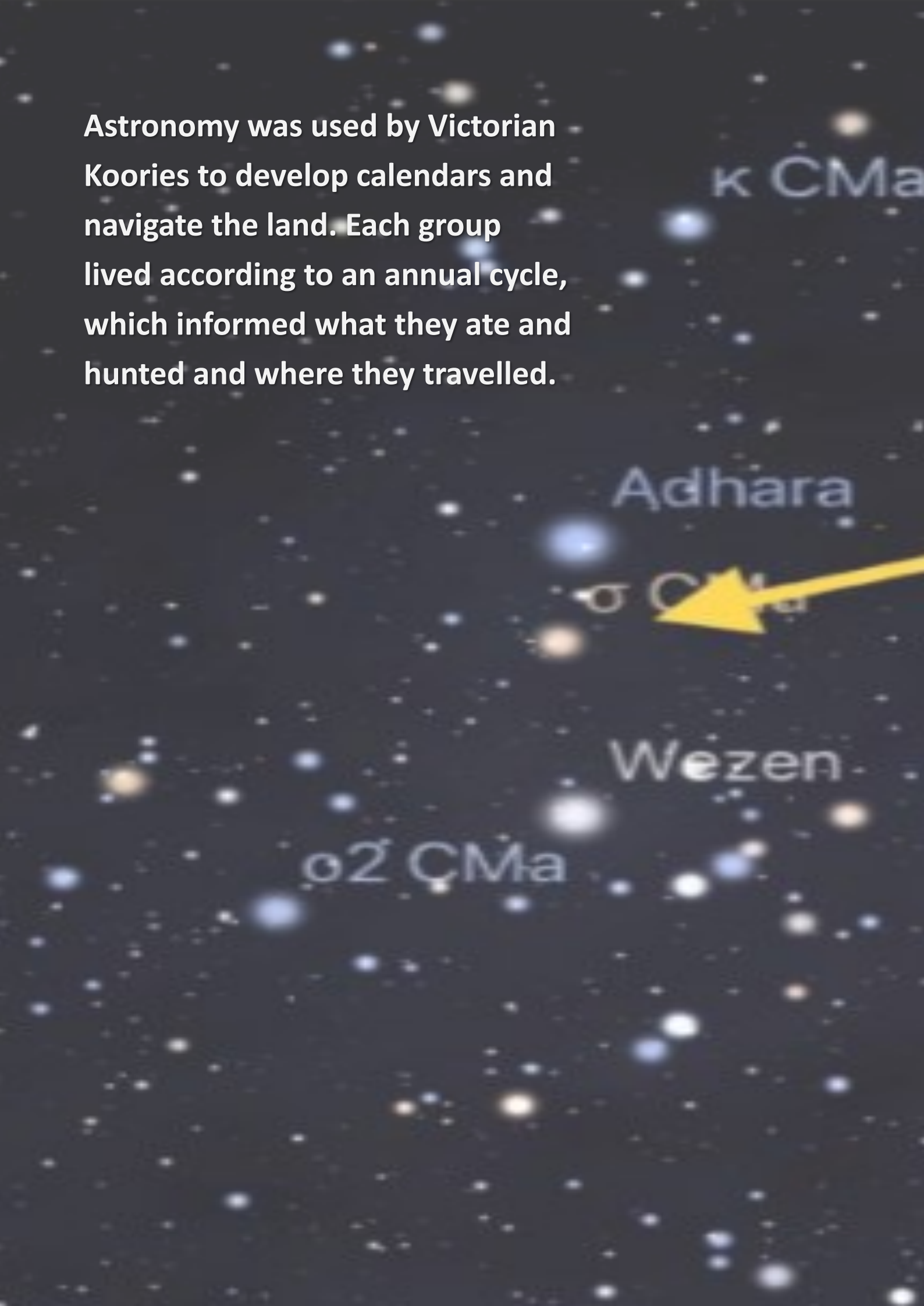
Seasonal Calendar for the Melbourne Area

Possum skin cloaks, Boon Wurrung seasons, customs and land maps



Stories in the Stars – the night sky of the Boorong clan of the Wergaia people

EXPLORE


Astronomy was used by Victorian Koories to develop calendars and navigate the land. Each group lived according to an annual cycle, which informed what they ate and hunted and where they travelled.
κ CMa
Adhara
σ CMa
Wezen
o2 CMa

"Aboriginal ancestral narratives aren't just about the land – they're also about the Sun, the Moon and the stars. Indigenous people have a very holistic understanding of the universe. It doesn't just stop at the horizon."

Stephen Gilchrist, Indigenous art curator at Melbourne's National Gallery of Victoria.

Did you know that in late 2017, the International Astronomical Union (IAU) approved 86 new names for stars drawn from those used by other cultures, namely Australian Aboriginal, Chinese, Coptic, Hindu, Mayan, Polynesian, and South African?

Four Aboriginal Australian star names were added to the IAU stellar name catalogue, including the Wardaman names Larawag, Ginan, and Wurren for the stars designated ε (Epsilon) Scorpii, ε (Epsilon) Crucis, and ζ (Zeta) Phoenicis, respectively, and significantly from Victoria, the Boorong name Unurgunite for the star (Sigma) Canis Majoris (an ancestral figure who fights the Moon), representing some of the most ancient star names in the IAU catalogue.

Focus some learnings around the night sky. The sky was and remains a stellar calendar indicating when the seasons are shifting and when certain foods are available. For example within the spread of the Milky Way an emu is visible – not a constellation as such but a clear emu shape formed in the blend of star and black matter. At different times of the year this Emu in the Sky is oriented so it appears to be either running or sitting down. When the emu is 'sitting', it's time to collect their eggs.

Lyra

In recent years, Australian researchers have realised that the eruption of a huge star 150 years ago was recorded and incorporated into the oral traditions of the Boorong People living near Lake Tyrell in north-western Victoria. For more details read the Australian Geographic article.

The Boorong people in north western Victoria looked to the Mallee Fowl constellation, *Neilloan* (Lyra), to tell them when they should harvest the bird's eggs. When Neilloan appeared

in the north-west sky around April, they knew the birds would be preparing their mound-like nests. Lyra appears in the southern hemisphere only between March and October, The disappearance of Neilloan in late September or early October, this time of year, meant it was time to start gathering.

Read this article for more details about *Neilloan*, including the annual meteor showers occurring from April 16 to 25, and especially on the morning of 23 April, when a series of streaks radiate out from Neilloan, reportedly reminding us of the bits of sand, twigs and other matter flying through the air as the Malleefowl kicks material on or away from the mound.

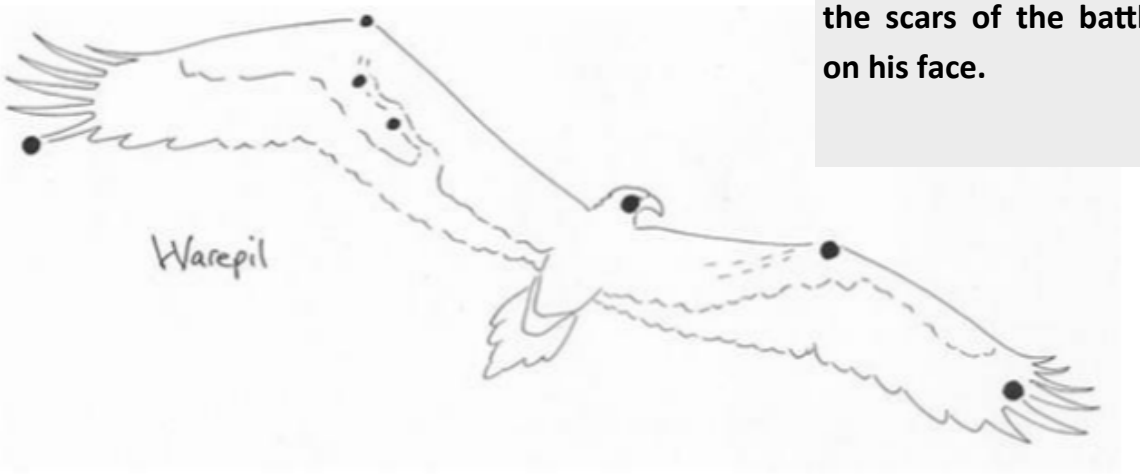
Check out and follow the Aboriginal Astronomy Project on for more.

Baraparapa artist, the late Esther Kirby's impression of the story of constellation Canis Major.

In Boorong astronomy, Unurgunite is an ancestral figure with two wives. The Moon is called Mityan, the quoll. Mityan fell in love with one of the wives of Unurgunite and tried to lure her away.

Unurgunite discovered Mityan's trickery and attacked him, leading to a great fight in which Mityan was defeated. The Moon has been wandering the heavens ever since, the scars of the battle still visible on his face.

Warepil (Wah-re-pil)



The brightest star in the night sky is the centre of one of the most important Boorong constellations. That is Warepil, the male wedge-tailed eagle, chief of the Nuh-rum-bung-goo-tyas ('oo' as in book), the elders who created the land.

The wings of Warepil spread to either side of Sirius across less bright stars. The wedge-tailed eagle is an important figure right across Victoria. In Melbourne he was called Bunjil.

Watch When Giant Fish Leaves the Sky it is Time to Travel, a brilliant animated cultural reconstruction of the night sky totems and stories from the Boorong clan, of North-Western Victoria, Australia. The narrator takes us through a visual journey mapping the sky and telling the stories and seasonal activities connected. ***By John Morieson and Alex Cherney for SEAC 2011.***

When Giant Fish Leaves the Sky it is Time to Travel

In 2010, astronomers Duane Hamacher and David Frew from Macquarie University in Sydney showed that the Boorong Aboriginal people of NW Victoria, witnessed the outburst of Eta Carinae in the 1840s and incorporated it into their oral traditions as *Collowgulloric Waa*, the wife of *Waa* (Canopus, the Crow). This is the only definitive indigenous record of Eta Carinae's outburst identified in the literature to date. Eta Carinae became the second-brightest star in the sky between 11 and 14 March 1843 before fading well below naked eye visibility after 1856.

Astronomers reported extremely volatile behaviour from Eta Carinae in the 19th century, when it became very bright for two decades, outshining nearly every star in the entire sky. This event became known as the "Great Eruption." Data from modern telescopes reveal that Eta Carinae threw off about ten times the sun's mass during that time. Surprisingly, the star survived this tumultuous expulsion of material, adding "extremely hardy" to its list of attributes.

It has been suggested that some of the stone arrangements on Wathawurrung (Wathaurong) country near Little River, Victoria such as **Wurdi Youang** may have been used to track the equinoxes and/ or solstices. The arrangement is aligned with the setting sun at the solstices and equinox, and possibly more than 11,000 years old. Scientists believe the arrangement of stones was able to map out the movements of the sun throughout the year.

http://www.abc.net.au/news/2016-10-12/aboriginal-astronomy-provides-clues-to-ancient-life/7925024

http://www.news.com.au/technology/science/ancient-aboriginal-eyes-were-on-the-skies/news-story/f9781af027af9b3fa1ac7f3ab6d47f9c

Among the creation stories from from south-eastern Australia, the Karatgurk were seven sisters who represented the Pleiades star cluster. According to the Wurundjeri people of the Kulin nation, in the Dreaming, the Karatgurk alone possessed the secret of fire. Each one carried a live coal on the end of her digging stick, allowing them to cook the yams which they dug out of the ground.

The sisters refused to share their coals with anybody, however they were ultimately tricked into giving up their secret by Waa, the Crow. After burying a number of snakes in an ant mound Crow called the Karatgurk women over, telling them that he had discovered ant larvae which were tastier than yams. The women began digging, angering the snakes, which attacked. Shrieking, the sisters struck the snakes with their digging sticks,

hitting them with such force that the live coals flew off. Waa, who had been waiting for this, gathered the coals up and hid them in a kangaroo skin bag. The women soon discovered the theft and chased him, but the bird simply flew out of their reach, and this fire was brought to mankind, the Kulin. Afterwards, the Karatgurk sisters were swept into the sky. Their glowing fire sticks became the Pleiades.

star cluster.

https://en.wikipedia.org/wiki/Karatgurk

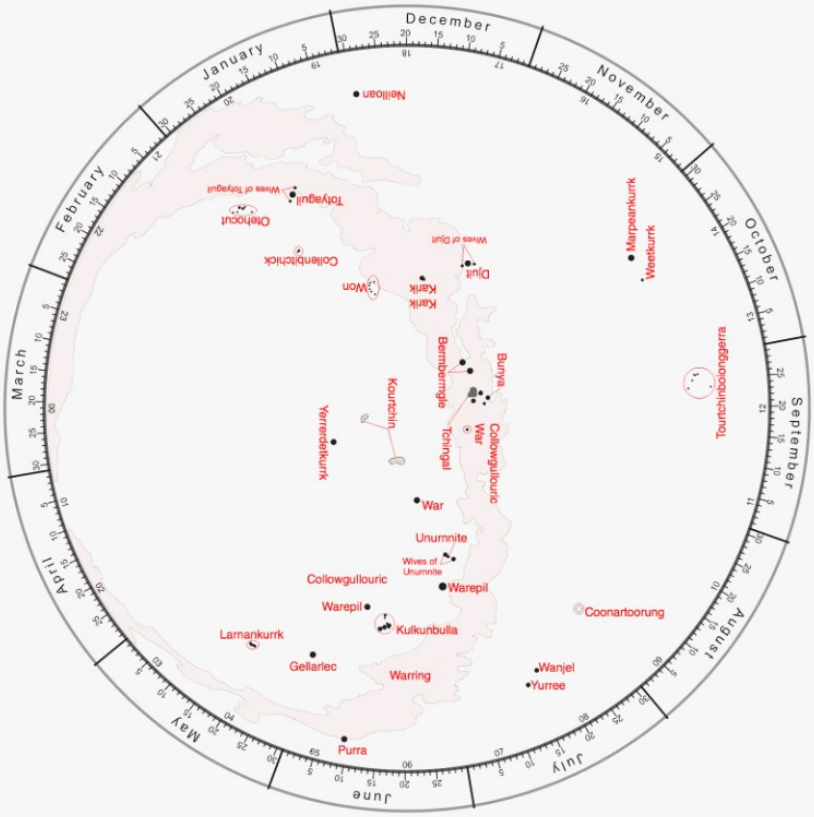
A planisphere (sometimes called a

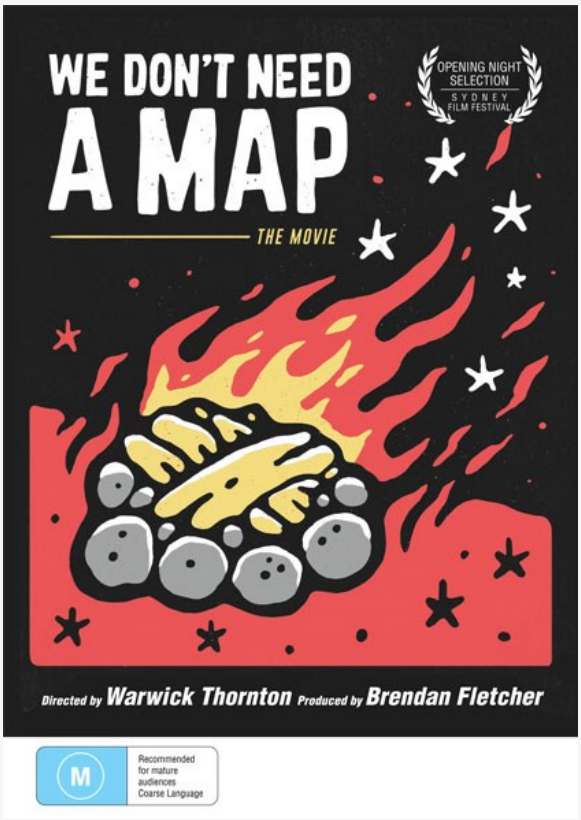
Star Wheel) is a device used for telling the user what will be in the sky on any given day and time from a particular latitude. Most are divided between Southern and Northern Hemispheres and work for most populated areas. While they do not tell the user what planets or solar system objects will be in the sky, as they change over time, the "fixed" stars will not change (unless you're observing for thousands of years!).

Here, astronomer and researcher Duane Hamacher provides an Indigenous version of a planisphere, based on the astronomical traditions of the Boorong, a clan of the Wergaia language group in north-western Victoria, as given in the paper "On the astronomy and mythology of the Aborigines of Victoria" by William Edward Stanbridge presented to the Victoria Philosophical Society in 1858 (Click here for a digital version).

He states that the traditions of the other Wergaia clans are almost identical and claims that his information came from two individuals who prided themselves on knowing more about astronomy than any other Aboriginal group.

This planisphere will tell you more than simply what is in the sky. By using the descriptions in Stanbridge's paper, you can learn what the rising or setting of particular stars at certain times of the year tell us about the natural world in addition to their role in the stories of the Boorong people. Click on the planisphere for more information.





The Southern Cross is the most famous constellation in the southern hemisphere.

Ever since colonisation it's been claimed, appropriated and hotly-contested for ownership by a radical range of Australian groups. But for Aboriginal people the meaning of this heavenly body is deeply spiritual. And just about completely unknown. For a start, the Southern Cross isn't even a cross - it's a totem that's deeply woven into the spiritual and practical lives of Aboriginal people.

One of Australia's leading film-makers, Warwick Thornton, tackles this fiery subject head-on in this bold, poetic essay-film. **We Don't Need a Map** asks questions about where the Southern Cross sits in the Australian psyche.

This is a fun and thought-provoking ride through Australia's cultural and political landscape, available in cinemas from January 2018. Click on the movie flyer to view the movie on SBS ON Demand. For copies of the full film, contact educational distributor Ronin Films.

This Australian Curriculum aligned SBS Learn resource **Reflecting On the Southern Cross** is shaped around six short clips from the **We Don't Need a Map** documentary film. While the stand-alone clips have been selected to serve as meaningful stimuli for classroom learning, teachers and students are also encouraged to consider them in the context of viewing the full-length documentary. Content in this resource has been created by Reconciliation Australia's Narragunnawali team.

Songlines
TRACKING THE Seven Sisters

Tracking the Seven Sisters is an exhibition held at the Australian National Museum in Canberra from the 15th September to the 25th February, 2018. Click on the dome for more information and a continuing interactive digital experience focused on Walinynga, also known as Cave Hill, a significant Seven Sisters Tjukurpa (Dreaming) site in the Aṉangu, Pitjantjatjara and Yankunytjatjara (APY) lands of remote northwest South Australia. Here the exploits of the Seven Sisters and their pursuer, the shape-shifter Wati Nyiru, are revealed in rich layers of rock art, and in the features of the cave and its surrounds.

Until recently, the rock art of Walinynga has only been seen by a few visitors, in the company of the traditional owners. This interactive allows you to explore Walinynga and engage with the Seven Sisters at this special place.

One keen 3rd year physics student – Kirsten Banks - a young Wiradjuri Aboriginal woman from NSW has taken her passion for the sky further. The 20-year-old tour guide and astronomy educator at the Sydney Observatory is currently working towards a future in the field of science communication and archeo-astronomy — the study of the astronomical knowledge of ancient cultures. Once she graduates, Ms Kirsten Banks plans to pursue a PhD in physics and do research with elders all across Australia to learn about their use of astronomy. Click this ABC news article to read more.

And Krystal De Napoli is a Kamilaroi woman undertaking an undergraduate degree in astrophysics at Monash University. In 2018 she will be commencing a cadetship with the CSIRO's Data61 team, and is working closely with Astronomer Dr Duane Hamacher and Indigenous Elders in their research into Indigenous astronomical traditions.

Go girls! The sky's the limit … or NOT in the case of these two deadly young women!

Victorian Curriculum:

VCHHK064 The significance today of an historical site of cultural or spiritual importance: History F-2

VCHHK060 How the present, past and future are signified by terms indicating and describing time: History F-2

VCMMG118 Name and order months and seasons: Maths Level 2

VCGGK066 Aboriginal and Torres Strait Islander Country/Place on which the school is located and why Country/Place is important to Aboriginal and Torres Strait Islander peoples, and the ways in which they maintain special connections to particular Country/ Place: Geography F-2

VCGGK067 Weather and seasons and the ways in which different cultural groups, including Aboriginal and Torres Strait Islander peoples, describe them: Geography F-2

VCSSU046 Observable changes occur in the sky and landscape; daily and seasonal changes affect everyday life: Science F-2

VCHHK078 The diversity and longevity of Australia's first peoples and the significant ways Aboriginal and Torres Strait Islander peoples are connected to Country and Place (land, sea, waterways and skies) and the effects on their daily lives: History 3-4

VCSSU099 Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the Sun, Earth and the Moon: Science 7-8

VCLVC179 Interpret and respond to texts by sharing personal reactions, comparing themes, describing and explaining aspects of artistic expression and how these relate to land, sky, sea, water, people, plants, animals and social and ecological relationships: Victorian Aboriginal Languages 7-10

VCHHK105 How physical or geographical features influenced the development of Aboriginal and Torres Strait Islander peoples' communities, foundational stories and land management practices: History 7-8

VCGGK120 Spiritual, cultural and aesthetic value of landscapes and landforms for people, including Aboriginal and Torres Strait Islander peoples, that influence the significance of places, and ways of protecting significant landscapes: Geography 7-8

And a final word …

We are always seeking to improve our resources and to make them useful, relevant and highly readable. We invite you to email through suggestions including how you as educators incorporate Aboriginal perspectives, especially Victorian ones in your teaching and curriculum.

This and previous *Koorie Curriculum Briefs* are available on the VAEAI website.

Produced by the Victorian Aboriginal Education Association Incorporated (VAEAI), June 2018, updated July 2024.

Any enquiries, feedback and suggestions are welcomed, by contacting VAEAI on (03) 94810800 or emailing vaso@vaeai.org.au.

For more Koorie Perspectives, see the VAEAI Koorie Education Calendar.