Teacher Resource

Episode 29
25th October 2016

Aboriginal Astronomy

FOCUS QUESTIONS

1. Briefly summarise the *Aboriginal Astronomy* story.
2. Most people think that Stonehenge was a prehistoric planetarium used to observe and map the stars. True or false?
3. About how old do they think Stonehenge is?
4. In which state is the Wurdi Youang stone arrangement and how old do scientists think the site may be?
5. What is a constellation?
6. The Yolngu people know the saucepan as…
7. What does it tell the story of?
8. Describe the Emu in the Sky constellation.
9. How did Indigenous people use the sky as a calendar?
10. What constellations do you know? Share what you know with another student.

KEY LEARNING

Students will develop a deeper understanding of Aboriginal astronomy and Dreaming stories about them.

AUSTRALIAN CURRICULUM

Science – Year 3

Science involves making predictions and describing patterns and relationships (ACSHE050)

Science – Year 7

Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available (ACSHE119)

Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon (ACSSU115)

ACTIVITY

After watching the BtN story, respond to the following questions:

- What did you SEE in this video?
- What do you THINK about what you saw in this video?
- What does this video make your WONDER?
- What did you LEARN from this story?
- How did this story make you FEEL?
- What was SURPRISING about this story?

Class discussion

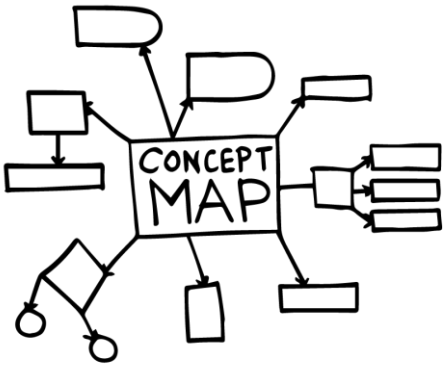
Begin with a discussion about what students know about astronomy. Clarify their understanding or terms such as astronomy, astronomer and constellation.

Have they seen or heard about any constellations?

Students discuss in pairs or as a class what they know about Aboriginal astronomy. Record their responses on a concept map.

The following questions may be helpful in guiding the discussion:

- Why are Aboriginal people called the first astronomers?
- How did Aboriginal people use the sky as a calendar?
- How did the stars help Aboriginal people understand their universe?
- It is important to learn about the Aboriginal night sky?



ACTIVITY

Aboriginal Astronomy

Students will look at examples of Aboriginal astronomy and the Dreaming stories about them.

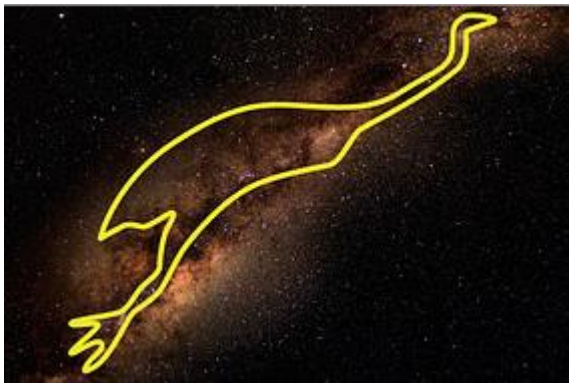
Emu in the Sky

Ask students to look at the photographs below showing the Aboriginal Emu in the Sky constellation. Draw their attention to the dark dust clouds, not the stars. The first image has the emu engraving at the Elvina engraving site near Sydney.

Questions for students:

- What can you see in the picture?
- Where in the night sky can the Emu in the Sky be found? Students can have a go at looking for it.
- Emu in the Sky has featured in Aboriginal storytelling for thousands of years with many different language groups have their own interpretation of the Emu. Research and retell one or more of the stories.

Source: ABC Science (link to image)

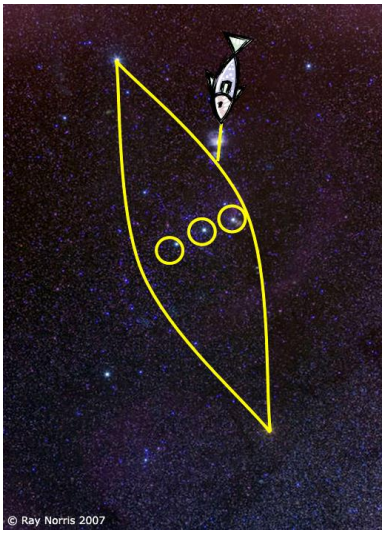


Source: ABC Science (link to image)

The Canoe in Orion

Ask students to look at the constellation Orion and answer the following questions:

- What can you see in the picture?
- What is the constellation known as in Australia?
- Where in the night sky can the Canoe in Orion be found? Students can have a go at looking for it.
- What do the Yolngu people in Northern Territory know it as?
- Retell the traditional Yolngu story about the three brothers in a canoe.



Source: ABC Science (link to image)

ACTIVITY

Become an Amatuer Astronomer

Students will become familiar with the finding constellations in the night sky. Begin by explaining to them that the stars move across the sky as one. Stars rise in the east and set in the west, just like the sun and moon do. The following animation shows stars moving through the night sky over a 24 hour period. The area of sky we see at night is determined by how far north or south of the equator we are.
Ask students to brainstorm a list of constellations that they know. Do they know how to find them?

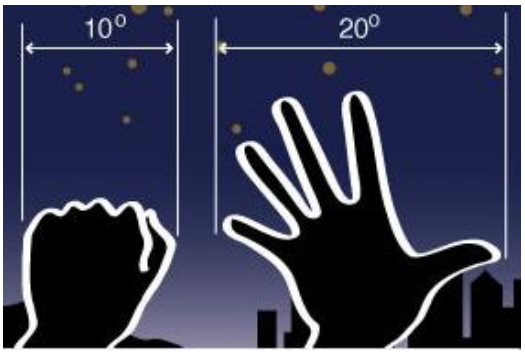
Stargazing tips:

- Check local weather conditions on the Bureau of Meteorology website
- Choose a location away from street lights
- Take 10-15 minutes to let your eyes adjust to the dark
- Use a red light to preserve your vision (make one by covering a torch with red cellophane)

Stargazing Activities

Learn how to find your way around the night sky, spotting stars, planet and galaxies. The ABC Science Sky Tour has winter and summer tours or take a virtual tour.

Learn how to Measure the sky with your hands. Astronomers measure distances in the sky in degrees. Students follow the step-by-step instructions to learn how to use their hands to measure the sky in degrees.



Explore the night sky using interactive software. The Stellarium is a free planetarium for your computer. It shows a realistic sky in 3D.

Google Sky allows students to explore planets. Turn the `Sky' button on in Google Earth to change to sky view.

Further Investigations

- Explore in more detail how Aboriginal people used the sky as a calendar.
- Find out more about the Wurdi Youang stone arrangement in Victoria.

USEFUL WEBSITES

ABC Science - Beginners guide to the night sky
http://www.abc.net.au/science/starhunt/

ABC Science – Australia's First Astronomers
http://www.abc.net.au/science/articles/2009/07/27/2632463.htm?site=starhunt&topic=space

Emu Dreaming - Australian Aboriginal Astronomy
http://www.emudreaming.com/Examples/WurdiYouang.htm

ABC News – The world's oldest observatory? How Aboriginal astronomy provides clues to ancient life
http://www.abc.net.au/news/2016-10-12/aboriginal-astronomy-provides-clues-to-ancient-life/7925024