

Autumn/Winter April to July 2014



# xplorer

experiment discover create

## liftout for young scientists



### ACTIVITIES

make a boomerang  
see the stars



### INTERVIEW

les bursill



### COLLECTOR'S CARD

murray cod



### INFO

seven sisters  
bush calendar

# INDIGENOUS SCIENCE



## CARLA'S BLOG

Hi, I'm Carla the Echidna!

When I'm not working in the Museum, I love to spend time in the Australian bush. It's so peaceful after being in the big city. At night, you can see millions of stars, even when the moon is out. It's much harder to see stars in the city because the street lights are too bright.

My favourite stars are the Southern Cross because the 'tail' of the cross always points towards the south, so I can always find my way home. Can you find the Southern Cross in the night sky?

I hope you enjoy my page!

On the cover Indigenous science is based on 60,000 years of observation and sustainable living. Styling by Trudi Fletcher. Photo by Stuart Humphreys.



## MAKE YOUR OWN BOOMERANG



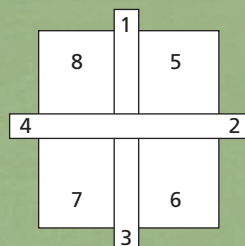
The boomerang is a very effective hunting weapon used by Aboriginal people. It comes in many shapes and sizes. In this activity, you can make your own cross boomerang.

**You will need:** a blank sheet of paper, two pieces of thin cardboard, each about 20 cm long and 1 cm wide, a pencil and coloured pencils.

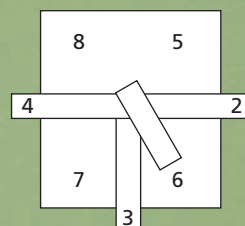
- 1 Place the cardboard strips on the paper to form a cross, with the horizontal strip on in front of the vertical strip (step 1). Number each end of the cardboard strips as shown from 1 to 4. Start from the top and go clockwise, then number the corners of the sheet from 5 to 8.
- 2 Diagonally fold the strip so that number 1 meets 6.
- 3 Diagonally fold the other strips so that number 2 meets 7, and 3 meets 8.
- 4 Add the numbers 9 and 10 as shown.
- 5 Fold number 4 over number 9 and under number 10.
- 6 Pull all the strips tight to form its shape and decorate your boomerang.

Now practise throwing your boomerang. Can you make it hover or return to your hand?

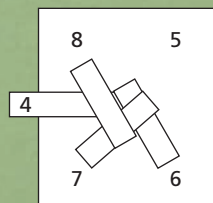
Discover more about boomerangs at [australianmuseum.net.au/Boomerang](http://australianmuseum.net.au/Boomerang)



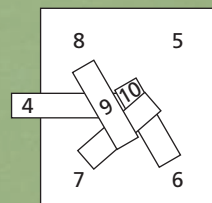
step 1



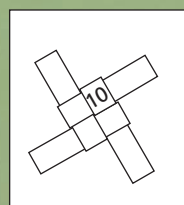
step 2



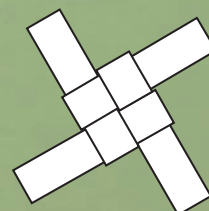
step 3



step 4



step 5



step 6

## SEVEN SISTERS



The Pleiades (pronounced 'ply-ard-ees'), or Seven Sisters, is a cluster of more than 1000 stars of which we can see only six or seven with the unaided eye.

This distinctive cluster has captured the imagination of peoples from ancient cultures the world over, and it features in many traditional Aboriginal cultures and stories.

In some cultures, the stars represent a group of young women fleeing from a man or group of men (often Orion, another constellation that follows the path of Pleiades across the night sky). In others, they represent a group of kangaroos fleeing from dingos. For Aboriginal people, the arrival of these stars in the night sky marked the change of seasons, signifying that certain foods were now available.

### SEE THE STARS



In New South Wales, Pleiades can be seen in the evening sky in early April. 'Look for it low in the northwest, just above the horizon', advises Geoff Wyatt, Education Officer at the Sydney Observatory. 'Otherwise, you can always find it on the badge of a certain brand of Japanese car!'

Find out what's happening in the night sky this month at [sydneyobservatory.com.au](http://sydneyobservatory.com.au)

## JULY HOLIDAYS SAVE THE DATE!



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Each issue of Xplorer includes a collector's card for you to cut out and keep!

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collector's card

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Murray Cod



## ANCIENT TIMES

**Les Bursill OAM is a Dharawal (Aboriginal Australian) historian, archaeologist, anthropologist and author. He was interviewed by Catherine (Cat) Beehag, Manager of Science Communication and the Australian Museum Science Festival.**

**CAT: You've discovered over 300 archaeological sites in the Sutherland Shire in Sydney. What is your favourite site and why?**

LES: I guess the discovery of the Wagilag Sisters Dreaming is my favourite engraving site, followed by the Hooked Boomer and Kangaroo Dreaming. I also truly love the Red Fish cave site with its Fish Dreaming and the child's hand stencils.



Photo courtesy  
Les Bursill.

THIS EDITION OF XPLORER COMPILED BY DEREK WALKER,  
CHARLOTTE GALLEGUILLLOS, SHENALI BOANGE & TIM MALL

### Murray Cod

Australia's largest freshwater fish, the Murray Cod, *Maccullochella peelii*, is known as *ponde* or *mewuruk* to Aboriginal peoples. It lives in the Murray-Darling River system where it preys on fishes, molluscs, turtles and other animals. The largest specimen recorded was 1.8 metres long and weighed over 110 kilograms, but they are usually less than 70 centimetres and under 10 kilograms.

Its deep body is patterned olive, grey and green above with a creamy white belly. It has a large mouth, small eyes and curved head shape. Once common, the Murray Cod is now threatened because of overfishing and environmental changes to our rivers.



Photo by Mark McGrouther

I like them because these sites are part of my dream line. I am Dharawal, as were all my forebears. These sites are my people's history.

**CAT: Where did you study hunter-gatherer and Dharawal culture and language?**

LES: I only work on Dharawal sites in southern Sydney. I did a degree majoring in Prehistory at the University of New England. My second major was Ancient History. Then I completed a Masters degree on Dharawal living sites – it was original research.

**CAT: You have had many careers in your life so what advice would you give to a young student just leaving school?**

LES: Set up a good portable superannuation scheme, keep up to date with technology, and don't let yourself become too narrow in any one field. Don't ever work at a job you don't enjoy. Don't sit around – get out and find an active hobby that you can turn into a career if the need arises.

### FUN FACT

Aboriginal people used the bark of the paperbark tree, *Melaleuca*, to cook fish and keep it moist. They would prepare and soften the bark by soaking it in water for 2 or 3 days, then wrap the fish in the wet paperbark, place it in a ground oven and cover it with earth. When the paperbark was dry, the fish was ready for eating.

## BUSH CALENDAR

For Aboriginal people, the Sydney Golden Wattle, *Acacia longifolia*, was both a bush calendar and a fishing aid. It is said that when the wattle blooms (June to October), it's time to go fishing for mullet. The fisher would drop flowers onto the water surface and the fish would swim up and eat them. The flowers would bloat the fish, causing them to float so they could be readily scooped up.



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