



Q&A

AUSTRALIA



Q1: There's hardly a thing here that isn't being measured, monitored or mapped! Surveyors collect data on boundaries, buildings and physical features - man-made or natural! Can you spot three examples of each?

A: Some examples of man-made structures are the world-famous Sydney Harbour Bridge and the Sydney Opera House, as well as the Sydney Tower. There are also roads, bridges and skyscrapers. One interesting man-made feature that is masquerading as natural is the narrow stream that branches off from the main waterway in (F,2). This is an eel trap - created by indigenous people over 6,000 years ago. These features are of such cultural importance

that a network of eel traps created by the Gunditjmara people (and known as Budj Bim) was declared a UNESCO site on 6 July 2019. Gunditjmara elder Uncle Dennis Rose has stated that a world heritage listing will help with the long-term protection of the site. Examples of natural features in the scene include the caves, hills, rock formations, waterways and plant life growing all around!



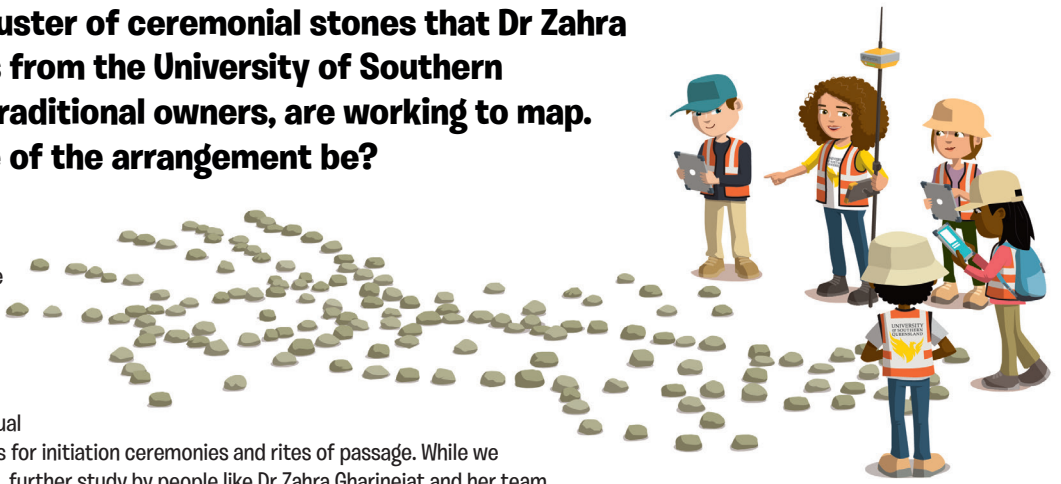
Q2: Leroy the Heritage Officer has spotted someone struggling with a super slippery customer! These traps are purposely narrowed waterways, Leroy is monitoring the trap with his drone. Can you work out how the man-made eel traps work?

A: Gunditjmara people controlled the water levels by manipulating the shape and depth of the waterways, which channelled eels towards holding ponds. They would use funnel-shaped baskets, like the ones you can see in (F,2), to harvest the larger eels, which had been fattened up after having been transferred from other ponds.

This was an important development for the Gunditjmara people. It provided them with a reliable source of food. This meant the people could settle in one place. Other Aboriginal people live a nomadic lifestyle. This moving moving from place to place the to find their food sources.

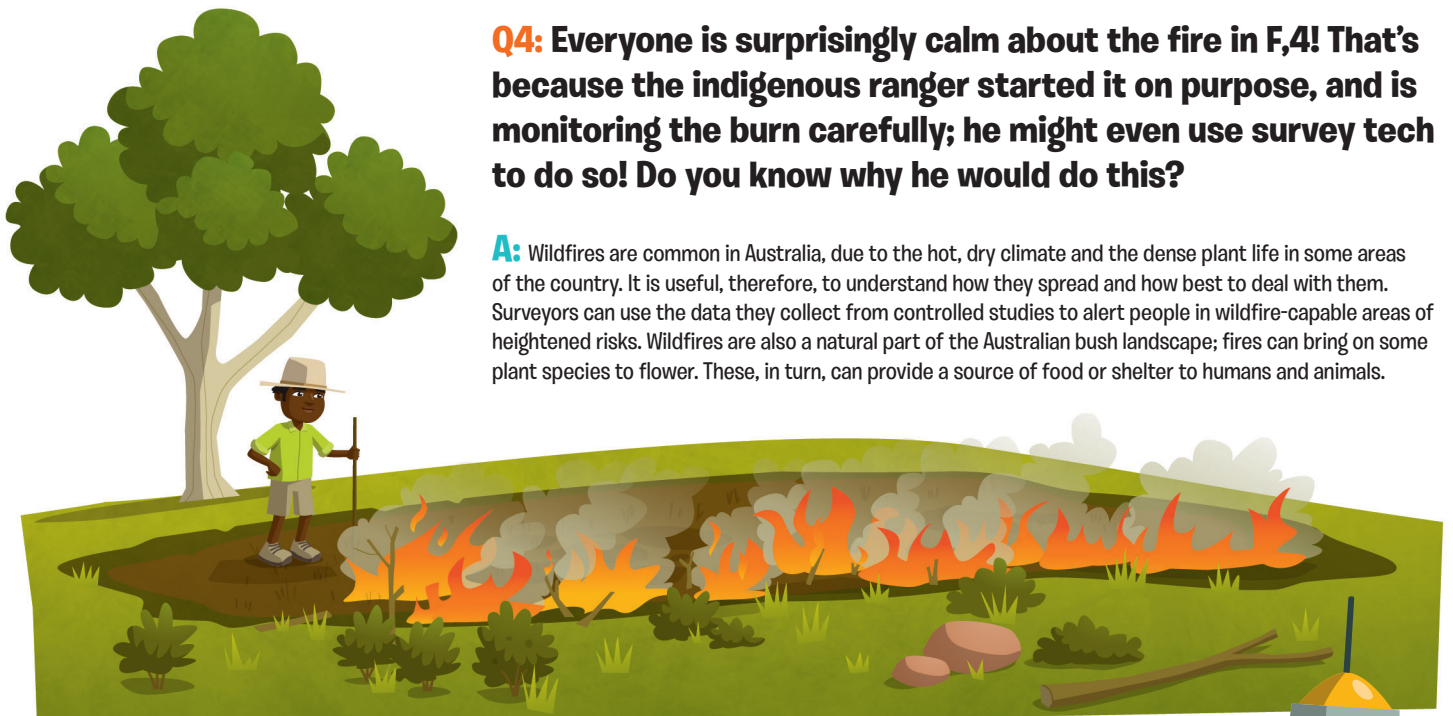
Q3: Take a look at the cluster of ceremonial stones that Dr Zahra Gharineiat and students from the University of Southern Queensland, alongside traditional owners, are working to map. What might the purpose of the arrangement be?

A: Whilst historians and anthropologists have many theories about the purpose of these rock formations, the truth is, no-one knows for sure! Like the megalithic stone circles found in England (eg. Stonehenge), some theorise that their purpose was to do with astronomical use, while others think they might have been used for spiritual ceremonies. Another possible purpose was for initiation ceremonies and rites of passage. While we can't be sure of the purpose of the stones, further study by people like Dr Zahra Gharineiat and her team, working with traditional owners, can only bring us closer to a possible truth!



Q4: Everyone is surprisingly calm about the fire in F,4! That's because the indigenous ranger started it on purpose, and is monitoring the burn carefully; he might even use survey tech to do so! Do you know why he would do this?

A: Wildfires are common in Australia, due to the hot, dry climate and the dense plant life in some areas of the country. It is useful, therefore, to understand how they spread and how best to deal with them. Surveyors can use the data they collect from controlled studies to alert people in wildfire-capable areas of heightened risks. Wildfires are also a natural part of the Australian bush landscape; fires can bring on some plant species to flower. These, in turn, can provide a source of food or shelter to humans and animals.



Q5: The traditional owner in D,3 is performing a cultural heritage assessment using a GNSS tracker - a nifty piece of survey tech that lets him know his exact location! He's discovered an axe head, but the handle is gone. Do you know why?

A: Man's early tools were made from stone, often attached to wooden handles with leather straps, or even animal tendons! While the stone survived, the wood and animal parts would rot away. The challenge for archaeologists is to work out what object the stones were part of - a challenge that they have thankfully gotten very good at! During the Roman, Greek and Middle Ages, objects like this were known as 'thunderstones', and people believed that they fell from the sky during storms - cast offs from a great war taking place in the heavens!



Q6: One of the characters in E,3 is looking a little blue! Thankfully, it's not because she's sad - it's because she's a digital twin! She stands in for her real-world partner for mapping and data collection purposes. Why and where might this be useful?

A: Real-time digital models are used across smart cities, in industry, and in geospatial work. One interesting use is in cars, in driver assistance systems. This works by creating a digital world based on the received data from scanning tech on the car. This digital stand-in is then processed and sent back to the connected vehicle in the real world, with improvements for the driving experience.



Q7: A surveyor and an indigenous guide are performing a 'Culture Protection Survey' using a GNSS receiver. They have discovered ancient paintings on a cave wall. Can you guess how old the earliest cave paintings found in Australia are?

A: Australian scientists discovered a 17,300-year-old painting of an animal in Western Australia's Kimberley region, which is famed for its Aboriginal rock paintings. The picture was found on the ceiling of a rock shelter. It measured 2 metres long and was painted in red ochre. Dr Damien Finch, a geochronologist from the University of Melbourne, determined its age by radiocarbon-dating ancient mud wasp nests. The results suggest that it is the oldest known intact painting in Australia.

And what was the animal? A kangaroo, of course!

