**Some of the grains of rock**

If you’d lived in Adelaide 500 million years ago, you could have surfed Pacific swells. Fossils from this ocean can be found today on Kangaroo Island. Some of the grains of rock preserved in the Adelaide Hills and Flinders Ranges came from other continents.

**Did you know?**

- If you’d lived in Adelaide 500 million years ago, you could have surfed Pacific swells.
- Fossils from this ocean can be found today on Kangaroo Island.
- Some of the grains of rock preserved in the Adelaide Hills and Flinders Ranges came from other continents.

**Dramatic:** Wilpena Pound in the Flinders Ranges holds many clues about what Australia looked like millions of years ago.

**How does the Earth work?**

**Have you ever driven up the Princes Highway on your way to the eastern states and wondered how all of those colourful bands of rock got there?**

Well, the rocks that make up the Adelaide Hills and the Flinders Ranges hold many clues about how the Earth works and what South Australia looked like half-a-billion years ago. Back then, Adelaide had wonderful easterly views of the Pacific. Victoria didn’t exist and New South Wales only consisted of the region around Broken Hill – these eastern states formed in the last eighth of Earth’s history.

The rocks that now form the Adelaide Hills and the Flinders Ranges are what remain of the beautiful tropical beaches that the surf of the ancestral Pacific Ocean broke against. There were no fish in this ocean, no dinosaurs or even ammonites. Many creatures did make these waters their home though, including trilobites – those beefed-up submarine woodlice – and a host of strange, now-extinct creatures that are beautifully preserved on Kangaroo Island. Looking east from this beach, you would have seen a volcanic arc beginning, the origin of the Pacific Ring of Fire. Adelaide was just about to become a very active place with earthquakes, tsunamis and volcanoes.

But what about the time before this, what lay over “them there hills” before the Pacific Ocean even formed? To find out, geologists crush rocks from the Adelaide Hills and Flinders Ranges and separate grains that contain a natural radioactive clock. By analysing the ratio of the radioactive isotope to the final non-radioactive product, the clock tells us when the grains formed. Geologists then try to track the path of these grains as they were eroded from mountains and hills, transported along rivers and finally deposited in the sea.

By analysing hundreds of these grains we obtain a fingerprint of the ancient continent where the grains came from. Many of the grains in the Adelaide Hills can be traced back to rocks in Australia, but interestingly, some of these grains didn’t come from Australia at all. They came from continents that were connected to Australia at the time but have since broken off and drifted away, as a result of movement of tectonic plates. There is quite a lot of controversy about what continent did lie east of the Hills a billion years ago, before the Pacific but contenders include North America, south China and Siberia.

Work is currently starting in Adelaide to analyse rocks from all over the planet, to help us put together a map of the ancient world and rebuild Earth’s geography throughout time.

**Questions, go to:** http://ua.edu.au/Sciences at the University of Adelaide to find out more about the **10 Big Questions**

---

**Katie Stokes**

**Andamooka Primary School**

Burnt down four times eight years ago, but that did not deter Angela Turner from the job she started. She had just started as principal at the birth-to-Year 5 school when the tragedies struck.

“It was the fighting spirit of everyone that made us want to stay; even the ladies of the CWA and the guy who runs the pub got it (the school) back and running again,” she said.

It was her resilience and determination that caused the community to nominate her for the inaugural The Advertiser-State Government SA Public Teaching Awards last year.

The 55-year-old won in the category of Inspirational School/Preschool teacher for the Far North and Aboriginal Lands.

“I felt really excited…we’re far away from everyone, but it’s great getting recognition,” she said.

**Recognition:** Lana, 4, with teacher Angela Turner.

---

**Head’s burning desire to fight on**

**The school is run as a daycare centre, pre-school, early youth program and primary school.**

Ms Turner said one of her biggest achievements was implementing an external early years education training program, run through TAFE, for parents at the school.

“We have trained 80 people over the last three years. All of whom who have either got a Certificate III or Diploma of Early Childhood Services,” she said. All of those parents work at the school.

“Parents who learn and are educated, have children who learn.”

Nominations for this year’s awards close on Monday, June 18. Nomination forms are available from www.decd.sa.gov.au/teacherawards, your local preschool, school or regional office.