

Space Science

Which other planet in the Solar System has a surface gravity closest to that of the Earth.

Saturn, with surface gravity of 10.4 metres per second squared compared to 9.8m/s² on Earth

According to stories from many Indigenous Australian groups, what animal can be seen in the dark patches of the Milky Way, stretching across a large area of the sky?

Emu

The International Space Station orbits the Earth at a speed of nearly:

30 000 kilometres per hour (27 724 kilometres per hour, or 16 orbits every 24 hours)

What year did Alan Shepard hit a golf ball on the Moon?

1971 Alan Shepard, 1971, Apollo 14 commander

Extreme Science

What is the strongest known material.

Graphene – a form of carbon.

What is the largest known organism on Earth?

A fungus, known as 'honey fungus', Armillaria solidipes, measuring 3.8 km across.

Which Australian state or territory has recorded the highest maximum daily temperature?

Western Australia. Mardie Station, 50.5 degrees Celsius, on 19 February 1998.

What racquet sport has the fastest recorded hit? The world record is 426 kilometres per hour.

Badminton. The world record is 426 kilometres per hour.

Living Science

Which of the following might you find communicating by doing a 'waggle dance'?

Bee. They dance in a pattern to communicate information about the direction to food sources.

True or false? The male platypus is venomous.

True. They have a venomous spur on each hind leg.

In addition to the senses of sight, smell, taste, touch and hearing, sharks have another sense.

What can they detect?

Electricity, electrical potential, or electric fields. Electroreception has also been found in fish, dolphins and the platypus

The world's largest species of earthworm, the giant Gippsland earthworm (*Megascolides australis*), is native to a small area of Victoria. To the nearest metre, how long can these worms grow?

3 metres. The species is listed as being vulnerable due to habitat loss.

Medical Science

Which of the following structures is NOT part of the human body?

Ampullae of Lorenzini – these are electroreceptors in fish. The Islets of Langerhans are in the pancreas, the Canals of Schlemm are in the eyes, and Bowman's capsules are in the kidneys.

If there are 270 bones in the body of a human at birth, how many bones are in the body of an average adult human.?

206. Some bones fuse together between birth and adulthood.

Allergic reactions are a response by what body system?

Immune system

How many weeks does a human taste bud typically live?

Two weeks. As a person ages, not all of their taste buds are replenished and an older person can have half as many taste buds as a child.

Tiny Science

What is the average total weight of bacteria living inside and on the surface of a 70 kg person?

200 grams

The scanning tunnelling microscope kick started which field of tiny science?

Nanoscience or nanotechnology. The scanning tunnelling microscope allows for imaging of individual atoms.

What is smaller: a virus particle or a bacterial cell?

Virus particle, or virion. Most viruses are between 20 and 400 nanometres (billionths of a metre) in size.

Bacteria range in size from 0.2 to 10 microns (millionths of a metre).

Bacteria have been discovered surviving on air, producing energy from hydrogen, carbondioxide and carbon monoxide gases. On what continent was this discovered?

Antarctica. The discovery has raised the question of whether life on other planets could possibly be supported by atmospheric gases.

Earth Science

Which of the following is NOT a renewable source of energy?

Oil. It is a fossil fuel like coal and natural gas, formed over millions of years, and with a limited total supply on Earth.

The 2017 discovery of a rock shelter near Kakadu National Park provided evidence that humans reached Australia at least how long ago?

65 000 years (18 000 years earlier than previously thought)

What type of rock is formed from molten rock that has cooled?

Igneous. The other main types of rock are sedimentary and metamorphic.

True or false: Uluru was once at the bottom of the ocean.

True. Uluru began forming about 550 million years ago. Sand that eventually became Uluru was covered by sea for about 100 million years and the pressure of the water turned the sand into the hard sandstone of Uluru.

Chemical Science

True or false: A snowflake is a crystal

True. It is an ice crystal.

Compared to fresh water, the melting point of salt water is:

Lower (for example, seawater freezes at -2 °C)

Which three metals are in an Australian one dollar coin? (Select three)

Copper (92%), Aluminium (6%), Nickel (2%)

Prehistoric Science

In which states or territories of Australia have dinosaur fossils NOT been found?

The Northern Territory and Tasmania

Which of the following is NOT a type of dinosaur?

Pteranodon. This is a flying reptile that lived during the Cretaceous period.

The word 'dinosaur' is made up of two Ancient Greek words that mean what?

Terrible lizard

True or False: There is evidence that Tyrannosaurus Rex lived in South America and Europe.

False: T. Rex fossils have been found in North America and Asia

Cutting Edge Science

To colonise Mars, which of the following issues will people need to deal with:

All of them

The first hamburger made from lab-grown meat was launched in 2013. The process has been refined to cost less than \$20 per burger, but how much did the burger cost to make in 2013?

A\$380 000

Scientists are working on techniques for de-extinction to bring back what ancient beast that roamed the arctic?

Woolly mammoth. They plan to make an elephant-mammoth hybrid.

In 2018, Elon Musk sent into space on the Falcon Heavy rocket, his Tesla Roadster with what song playing on the stereo?

He sent his car, a Tesla Roadster, with a mannequin strapped in and the stereo playing David Bowie's Space Oddity.