



ABC
COMMERCIAL

CATALYST SEASON 23

A DOCUMENTARY
SERIES EXPLORING
THE FOREFRONT
OF SCIENCE AND
TECHNOLOGY

HD 10 x 60'
Australian Broadcasting Corporation

CATALYST

THE SECRET LIVES OF OUR URBAN BIRDS

Our feathery friends are closer than you think



The world's most liveable city is not just home to over five million people, but more than 130 species of birds. From deadly raptors to powerful owls and cute little penguins, the concrete jungle hosts a world filled with drama and intrigue, and even a glimpse of one of the rarest birds in the country.

On top of buildings stretching up above the city, raptors known as Peregrine Falcons build their nests. With a wingspan of over a metre, they're the fastest animal on the planet, reaching speeds of up to 300 kilometres an hour. The metropolis attracts them due to the amount of food and prey species on offer, allowing them to raise a family. Tall buildings act like cliff faces, and with eyesight eight times better than ours, they can see prey from over three kilometres away.

While some thrive, others barely survive. For the Powerful Owl, city life is more of a necessity than a choice as increasing urbanisation destroys their habitat. To successfully nest and breed, Powerful Owls need hollows of old growth trees that can take up to 300 years to develop. But a solution may be at hand as a university trials 3D printed nests to try and replace what has been lost. The 3D printers make Lego-like bricks out of a wood filament which are then assembled into a nest box and used as test breeding hollows on a tree on campus.

The cutest avian neighbours can be found in the bayside suburbs, where a colony of about 1,400 Little Penguins has taken up residence. Their proximity to a good food source means these penguins have a much longer breeding season than many other penguin colonies.

Perhaps the most surprising city slicker, however, is the Orange-Bellied Parrot. There are less than 200 of them in the wild, making them rarer than pandas and tigers. Orange Bellied Parrots have suffered severely from habitat loss and introduced predators. But conservation efforts are starting to work, showing that wild birds can not only live close to our cities, but even benefit from them.

Nature cannot be separated from our urban landscape; they are one and the same. We are witnessing our cities become an accidental safe haven for critically endangered travellers. It turns out there is a whole secret world right on our doorstep.

HD 1 x 60'

THE BIG BREW CHALLENGE

From craft beer enthusiasts to novice brewers, who can create the ultimate brew?

Beer is the most popular beverage on the planet after tea and water. But at the heart of brewing is science – a mix of biology, chemistry, and a touch of evolution – that we know of as fermentation. Australia is at the forefront of exploring its possibilities, creating new medicines, cleaner fuels, and even future foods.

This program celebrates the science behind brewing by inviting three teams of novice brewers to create a beer good enough to impress a panel of expert judges.

As the teams navigate the complex world of modern brewing, we learn about why malt is so important to the brewing process, and meet scientists who are harnessing the power of yeast to ferment natural products to create biofuels. We also explore a brewery that's reducing its carbon footprint using microalgae.

At the end of the competition the judges taste test the teams' final brews. They're impressed with all of them – but there can only be one winner.

HD 1 x 60'



MIRACLE BABIES: OPERATION HOPE

An intimate look at the awe-inspiring world of fetal surgery

Most babies arrive safely without complications, however some do have a more difficult journey into this world. At the Mater Mother's Hospital, there is an expert medical team that specialises in caring for high-risk pregnancies and some of the most delicate types of surgery. Parents from across the southern hemisphere travel here to be treated by the multi-disciplinary team which includes foetal surgeons, sonographers, neonatologists, nurses, and midwives.

This film follows the pregnancies of three couples as they put their faith in the team's hands. This unit is one of a small number globally, trained to operate inside the womb to repair the likes of a spina bifida defect. It's a challenging surgery carried out on a foetus just one third of the size of a newborn. Husband and wife, Mikayla and Peter, take this opportunity to hopefully improve the life of their baby who is growing with this defect.

Surgery inside the womb is only possible for a handful of conditions – other babies must wait until they're born. For Melanie and Nathan, their unborn baby girl will die unless she receives open heart surgery within days of her birth. The couple have uprooted their lives to be near the hospital. The daughter they're expecting has Hyperplastic left heart syndrome which is a life-threatening defect and one of the most complex congenital heart conditions.

First time parents Jasvir and Yadvinder have been referred to the Mater and scheduled for urgent surgery. At just 23 weeks their identical twins are showing drastically different growth rates as one of the babies has less access to the placenta. The brothers' circulations are connected via small blood vessels on the placenta and that puts the lives of both babies at risk. If they lose the smaller twin, the sudden loss in pressure could cause an outflow of blood from the healthy twin leading to its own death or permanent brain injury. The team will have to operate inside the womb in the hope of saving these babies.

Surgery on unborn babies has only become common practice in the last three decades and now, every year, around 300 high risk pregnancies are referred to the Mater Mother's Hospital. This astonishing world of foetal surgery is a story of hope and incredible medicine as the team helps parents face agonising decisions about their baby's future, all before their first breath.

HD 1 x 60'



FOREVER YOUNG: THE RISE OF INJECTIBLES

Explore the rise of injectables in the ongoing pursuit of youth and perfection

We spend billions of dollars on injectable treatments annually and clients seeking "tweakments" are getting younger. What is the psychology behind this trend and the consequences of pursuing perfection? Being attractive has been important throughout history but we've never altered our looks on this scale before. What is driving our seemingly insatiable desire for youth and beauty? From fillers in lips, jawlines, chins, and cheek bones, these procedures are becoming completely normalised, but what impact is this having on us?

Over the last decade, there has been around a 30% increase in the number of people under 30 getting Botox and fillers, and many of them are on social media selling aspirational picture-perfect images of themselves. There has also been a 30% increase in men getting injectables over the past 10 years, branded "Bro'tox". It has become evermore accessible and fast becoming part of the regular beauty regime, like having your nails done or getting a haircut.

Faces are incredibly important to us; they tell us who is friend and foe. We can read people's intentions whether they are aggressive or peaceful. We can even tell if they are healthy or ill. The brain is just permanently alert to faces. Over 600 million photos and videos are shared on Instagram every day. They seem to show us a world where the more beautiful we are the happier and more successful we can be.

Millennials will reportedly take over 25,000 "selfies" of themselves in their lifetime. Every day around the world nearly 600 million people meet up on video conference platforms, and it's reported that about 40% of us stare at ourselves during video calls. This is a lot of time to be looking at a digital reflection and plenty of opportunity to find fault with our features.

Some patients complain of filler causing puffiness under the eyes or mysterious lumps. While filler is supposed to only last for 6-18 months, when we put these patients through an MRI scanner, we discover it's lasting much longer. A treatment that is permanent or semi-permanent is more lethal than something that is temporary and some of these fillers are staying in the body for 10-12 years. Nonetheless, with a long menu of treatments, discounts and pay later schemes, these clinics make injectables very tempting.

HD 1 x 60'



THE SCIENCE OF RELATIONSHIPS

The secret to a longer and happier life

Whether it's your family, friends or romantic partners, relationships come in all shapes and sizes. With nearly 8 billion people on the planet, the need to cooperate with each other is critical to our success and survival. While you might think it's best to have as many social connections as possible, the science says we're better off with a finite few. This documentary explores the importance of these friendships and how chronic loneliness is as dangerous to our health as smoking 15 cigarettes per day.

Science reveals the perfect number of friends to have is 150, representing the size of the average society of hunter-gatherers. There are all sorts of levels of organisation in contemporary human society that are also based around that 150-person number. The theory, known as Dunbar's number, is that 150 is the limit of both our capacity to remember the details of the friendship, and the amount of time we have to spend with people.

We are also 30 times more likely to laugh around other people and just half an hour of laughing can reduce our stress levels. Through a session of "laughter yoga" we see people achieve a decrease in cortisol levels, the body's stress hormone.

When we feel excluded, on the other hand, our brain enters a hyper vigilant state, preparing us for fight or flight. Our blood pressure and heart rate elevate, and when the situation is severe, chronic loneliness can even increase the risk of death by 26%.

Research has shown that couples live longer and in better health than their single counterparts. Through observing 20 singletons in a dating experiment, we decode intimacy and attraction, and how to trigger love chemicals like oxytocin, the 'cuddle hormone'. Science suggests that similarities in appearance can mean we also share our values, beliefs, and attitudes. This is known as the similarity attraction theory and may explain why you have friends who look like you or determine which stranger you choose to sit next to on a bus.

It's thought that humans evolved larger brains comparative to their body size because it helped them to be more social. It is clear there are astonishing benefits of relationships to our health and wellbeing and how important it is that we treasure these bonds.

HD 1 x 60'

AUSTRALIA'S FAVOURITE TREE

Travel across Australia's vast and varied landscape to discover more about the extraordinary lives of its oldest, largest and most iconic trees

The country is home to over 7,000 species of native tree. They're ancient, incredibly diverse, and endlessly fascinating. With the help of scientists, custodians, and passionate tree lovers, this two-part documentary investigates the clever and complex lives of some of the most iconic trees.

This extraordinary tree hunt will lead to crowning one leafy specimen 'Australia's Favourite Tree'. From high up in the tree-top canopy of Tasmania's Huon Pine, one of the oldest living organisms on Earth, to Strangler Figs with 40-metre girths that thrive in North Queensland rainforests, this special uncovers the role trees play in their environment, their historical importance, and their incredible resilience through climate change and deforestation.

At the end of the series, a panel of expert judges crown the winner; running alongside is the popular vote, as audiences back their personal favourites via a radio and socially driven poll. Will the outcome be the same?

HD 2 x 60'
Format Available



KEEP ON DANCING

Can dance can be a shortcut to better health?



This unique experiment sees a group of over 65's attempt to slow the effects of ageing through dance. Under the stewardship of a leading choreographer, *Keep On Dancing* follows their remarkable transformation across 12 intensive weeks, culminating in a one-of-a-kind performance for friends and family. Along the way, we discover the emerging science that says dancing can improve fitness, balance, memory, mood and cognition.

Most of the volunteers have no dance experience, however they are in excellent hands with choreographer Kelley Abbey (*Dancing with the Stars*, *Happy Feet*). Our dancers are living with many of the health conditions we face as we age – Parkinson's, Alzheimers, cancer, peripheral neuropathy and poor balance that leads to falls.

A biomechanical scientist monitors their progress through physical and cognitive tests.

The effects of music on the brain are well documented but what exactly does dancing do to it? As it uses the 'whole brain', it actually engages areas often badly affected by age.

What makes this experiment a first-of-its-kind is the focus of putting on a final performance, which gives the sessions purpose and brings the group closer together.

By the end of the 12 weeks, they're fitter, stronger and in many cases, better at cognitive tasks. All that's left to do now is to show friends and family what they've been working on. There's not a dry eye in the house when they take the stage, and their performance is executed with professional ease and greeted with a rapturous standing ovation.

HD 2 x 60'
Format Available



SECRETS OF THE AUSTRALIAN MUSEUM

Go behind the scenes of a world-renowned museum as it prepares for a blockbuster exhibit

The Australian Museum is home to over 22 million specimens yet less than five percent have ever been seen by the public. Until now.

In this program, award-winning comedian, physics and maths graduate Tom Gleeson takes cameras behind the scenes of the institution as the team counts down to a blockbuster exhibit three years in the making – 'Sharks!'

With unprecedented exclusive access to labs, experts and secret locations, Tom uncovers rare treasures and gets thrown in the deep end as he helps the team prepare specimens and artefacts for display.

From dissecting and stuffing a spotted-tail quoll and sewing up a Goblin Shark specimen, Tom experiences the magic of working at the Australian Museum and the ground-breaking scientific discoveries made every day.

HD 1 x 60'

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