

QUEENSLANDERS' PERCEPTIONS AND ATTITUDES TO SCIENCE

Summary report 2018



Overview

This document summarises the findings of the 2018 research into Queenslanders' perceptions and attitudes to science. The research was commissioned by the Office of the Queensland Chief Scientist.

Kantar Public conducted the study and data was collected in February and March 2018. The research involved a 10-minute online survey of 1228 residents aged 18 years and over, spread across Queensland.

The full report, by Kantar Public, is now available at chiefscientist.qld.gov.au/publications/other-reports.

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Background and objectives

Queensland scientists are international leaders at the forefront of many breakthroughs and discoveries that have a significant impact on the Queensland community. Despite this, anecdotal evidence has suggested that Queenslanders are largely unaware of the significant, life-changing science and research taking place in their own backyard.

In 2016, research was commissioned to establish a benchmark and to fully understand the current awareness, perceptions and attitudes to science amongst Queensland adults. Over the past two years, the Office of the Queensland Chief Scientist has implemented a number of programs to address some of the issues raised in the 2016 survey such as the shortage of science activities in regional areas and the limited knowledge of the great science happening in Queensland. The results of both research papers will continue to inform the activities and programs under the *Advance Queensland Engaging Queenslanders in Science* and the more recently developed *Queensland Citizen Science strategy* being implemented by the Office of the Queensland Chief Scientist.

Key findings

Between the 2016 survey and the 2018 there are very few significant differences between the results.

- Almost three-quarters of Queenslanders show an interest in science (68% in 2018, slightly down from 74% in 2016).
- The majority of Queenslanders perceive science as having a positive impact on our society (80% up from 76% in 2016).
- In both 2016 and 2018, almost three quarters (72%) see science as being critical for the Queensland economy.
- As in 2016, half of Queenslanders believe there is not enough information or news about science in the media and the same percentage demonstrate an interest in participating in science-based events in the future.
- Consistent with 2016 data, almost four in five (79%) of parents/carers would encourage their children to study science subjects in high school.

Some new questions were added to the 2018 survey.

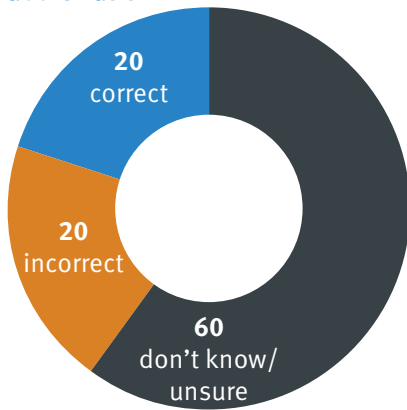
- Only one in five Queenslanders understood that STEM stood for science, technology, engineering and maths.
- Only 3% of Queenslanders had heard of the term ‘citizen science’, however when provided with a description, 18% indicated they knew what it was.

Key actions

- Continue to deliver and enhance:
 - Advance Queensland Engaging Science Grants
 - Signature National Science Week events
 - Flying Scientist program
 - Partner up Queensland program
- Develop and deliver a Queensland Citizen Science Strategy
- Continue to support World Science Festival.

Awareness, interest and understanding

Diagram 1: Awareness of STEM abbreviation



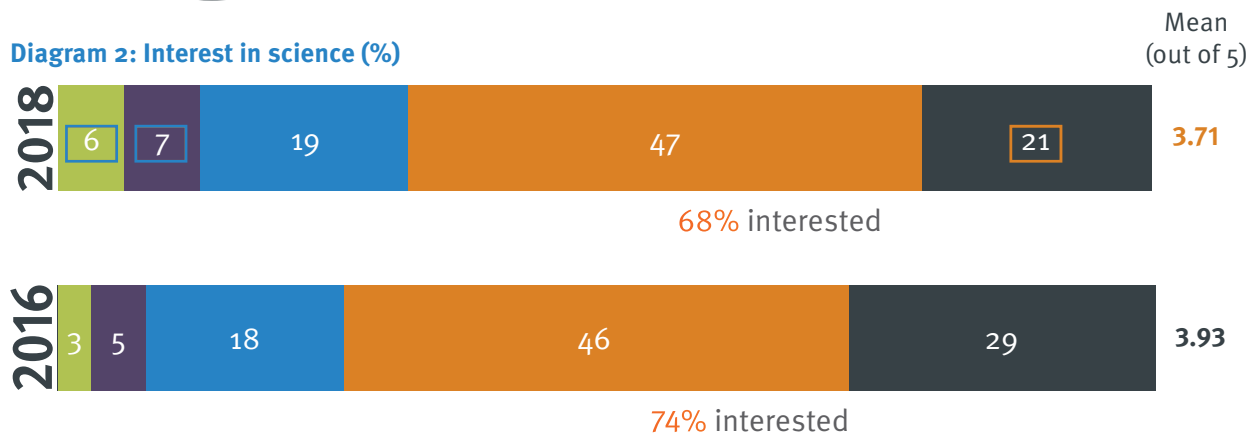
As in 2016, the majority of Queenslanders typically associate science in mainstream or school-related terms such as chemistry, biology, physics and experiments.

One in five Queenslanders understood that STEM stood for science, technology, engineering and maths (diagram 1).

Those aged under 45 years or who have completed a degree from a university are significantly more likely to have provided a correct definition of STEM when compared to the total (23% and 31% respectively).

Almost three-quarters of Queenslanders show an interest in science—68% in 2018, slightly down from 74% in 2016 (diagram 2).

Diagram 2: Interest in science (%)



Significantly higher/lower than 2016 at 95% confidence interval

Very disinterested | Somewhat disinterested | Neither interested or disinterested | Somewhat interested | Very interested

Since the 2016 survey, interest in science has increased among 18-24 year olds from 65% stating they are 'somewhat' or 'very interested', to 78% in 2018.

Overall, science topics of greatest interest to Queenslanders are health and medicine (49%), technology (40%) and biology (35%). The areas of physics (20%) and mathematics (21%) are of least interest.

As in 2016, females are most commonly interested in health and medicine (61%) followed by biology (45%), environmental studies (36%) and astronomy (37%). Male interests have changed slightly from 2016 with the top three interests in the areas of technology (51%), engineering (38%) and computer science (38%)—astronomy dropping from 43% to 31%.

Perceptions and attitudes towards science

As in 2016, the vast majority of Queenslanders (80%) are very positive towards scientific development and its impact on society and 72% believe that science is critical to the Queensland economy. Those who have studied, or have a career in a science, are significantly more likely to perceive scientific development as having a positive impact (94%).

Parents' behaviours and attitudes towards their children studying science

Consistent with 2016 data, almost four in five (78%) parents and carers have or would encourage their children to study science subjects in high school and almost three in five (59%) parents and carers have or would encourage their children to consider a science-based career.

Media and science news and information, activities and events

While there is a high level of interest in science among Queenslanders across the state, half (51%) believe there is currently not enough science news and information available in the media or online.

Queenslanders have noticed a wide range of activities and events in their local area in the past 1–2 years.

As in 2016, those in more regional locations are more likely to have participated in science-based activities outside their own local area – suggesting the issue of accessibility remains.

It is encouraging that more than one in two Queenslanders (51%) demonstrate an interest in participating in science-based events in the future.

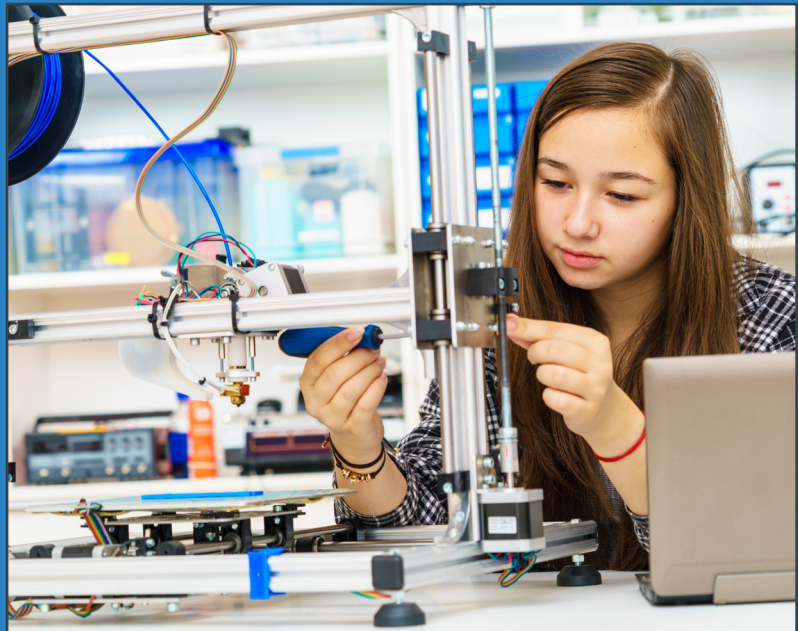
Only one in four are able to accurately recall a Queensland scientific discovery or a Queensland scientist.

What science events and activities, if any, have you noticed in your local area in the past 1–2 years?



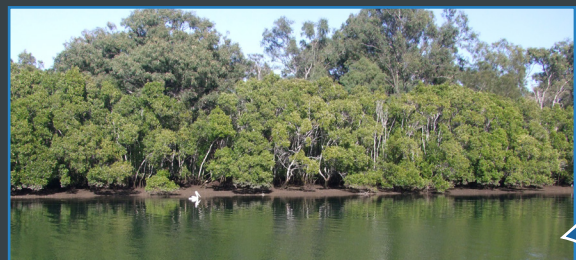
The local Department of Environment and Science runs 6-week programs for school-aged kids based around the environment and issues that affect our local area.

Developments in agriculture—breeding new varieties of plants to produce specific benefits, i.e. fatty acid profile in peanuts.



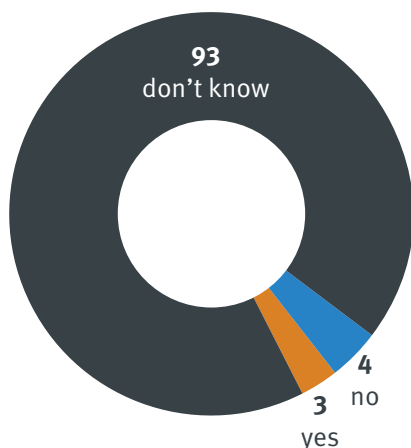
- *Robot inventions, technology science museum for kids.*
- *Computer and app conventions for kids learning.*
- *Kids garden and nature exploration groups.*

- *University of the Sunshine Coast Science Research Awards*
- *Science Week activities*
- *frog counts*
- *mangrove protection programs*



Citizen science

Diagram 3: Unprompted awareness



Only 3% of Queenslanders had heard of the term ‘citizen science’, however when provided with a description, 18% indicated they knew what it was.

Those who have completed a post graduate degree from a university (36% vs. 18%), and those who completed post-schooling studies in a science-related course (35% vs. 18%) are significantly more likely to have be aware of citizen science when compared to the total.

Of those aware of citizen science, around one in four (27%) Queenslanders believe they have participated in citizen science either in their local area (14%) or elsewhere in Queensland (13%).

Where to from here

It is clear and encouraging from this research and the previous survey that the vast majority of Queenslanders are interested in science. However, there is still scope for improvement across many areas.

The research suggests we do not need to persuade Queenslanders about the benefits of science to society. Instead, the focus should be on increasing and enhancing dissemination of science information and events and activities, particularly in regional Queensland.

While Queensland scientists are international leaders at the forefront of many breakthroughs and discoveries, this research indicates that Queenslanders are largely unaware of the significant, life-changing science and research taking place in their own backyard. Communication that promotes Queensland scientists and discoveries should be able to leverage the high levels of interest in science across the state and help to expand Queenslanders’ understanding of science.

As a result of the original research in 2016, the Office of the Queensland Chief Scientist developed *Engaging Queenslanders in Science*—a strategy that has been driving the science engagement agenda forward in Queensland over past two years. We will re-visit the programs outlined in the strategy and complete a formal evaluation of their impact.

In addition, we have an opportunity in encouraging people to be aware of and get involved in citizen science. As such, the Office of the Queensland Chief Scientist has developed the *Queensland Citizen Science strategy* which will shape the direction and outcomes of citizen science across Queensland.

What citizen science activities have you participated in?



Counted koala population in Karrawatha environmental park lands in Logan.

We go to Mon Repos where we observe and take notes on the hatchlings of the turtles on the beach. We keep records of the turtles, including weight, length, numbers.



Online protein folding, seti@home, planet hunters, etc.*

* A scientific experiment based at UC Berkeley, that uses the internet in the search for extraterrestrial intelligence (SETI).

Frog ID—We record frog sounds via an app which are then identified by scientists for species distribution purposes.



About us

Office of the Queensland Chief Scientist

The Office of the Queensland Chief Scientist is responsible for leading the development of science strategy across government as well as engaging with and promoting Queensland science.

The Office of the Queensland Chief Scientist works to improve community engagement around science to build better understanding of and support for the role of science, research and innovation in the state's future economic, social and environmental wellbeing. The Office of the Queensland Chief Scientist leads the *Advance Queensland Engaging Queenslanders in Science*—a strategy which aims to create a Queensland population that engages in and recognises, supports and advocates for science.

The Office of the Queensland Chief Scientist also developed the *Queensland Citizen Science strategy* which aims to encourage Queenslanders to participate in citizen science projects and ensure scientists seek ways to involve the local community in their research projects.

The Office of the Queensland Chief Scientist also works to profile Queensland as a knowledge-based economy characterised by world-class research and investment opportunities therefore attracting world class talent, investment, collaboration and cooperation.

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