

MEDIA RELEASE

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NATIONAL SCIENCE RESULTS SHOW SIGNS OF IMPROVEMENT

The latest science results in the National Assessment Program (NAP) show that although the change has not been significant, there are signs Australian students' understanding of scientific concepts is on the up, with Year 6 students achieving their best results since the sample assessments began in 2003.

The NAP – Science Literacy assessments, held in October and November 2018, show that at the national level, 58 per cent of Year 6 students attained the proficient standard. This is the highest percentage of students to achieve the proficient standard since the assessments were introduced. (In 2015, 55 per cent of students reached the standard; in 2012, it was 51 per cent.)

The percentage of Year 6 Indigenous students attaining the proficient standard (35 per cent) was significantly higher than in 2015, 2012 and 2009.

“These results indicate that something appears to be working well in primary schools and teaching Year 6 science literacy. These improving Year 6 results bode well for our future performance in PISA,” said ACARA CEO, David de Carvalho.

Science literacy results are reported on a single scale, with two ‘proficiency standards’: one for Year 6 and one for Year 10. The proficiency standards are the points on that scale, which represent a ‘challenging but reasonable’ expectation of student achievement for Years 6 and 10.

“Proficiency standards are meant to represent a challenge, and the bar is set quite high for students to achieve these. It is better to strive for high expectations than set proficiency levels lower and pat ourselves on the back because more students might achieve that lower standard,” said Mr de Carvalho.

At the national level in 2018, 50 per cent of Year 10 students attained the proficient standard, but as this is the first time that Year 10 students have been tested, comparisons with previous years cannot be made.

Other findings include:

Achievement by gender

- Male and female students in Year 6 and Year 10 scored results that were not significantly different.
- Since 2012, results show some evidence for a positive trend in science literacy achievement for both male and female students.

Achievement by Indigenous status

- The 2018 average score for Year 6 Indigenous students was higher than the average scores of Indigenous students in the 2012 and 2009 assessments.
- The percentage of Year 6 Indigenous students attaining the proficient standard (35 per cent) was significantly higher than in 2015, 2012 and 2009 (23 per cent, 20 per cent and 20 per cent respectively).

Achievement by language background

- For the first time, at the national level, Year 6 students who speak English at home had a significantly higher average scale score (411) than students who speak a language other than English at home (398). In previous cycles, the differences between the average scale scores were not statistically significant.

Achievement by geographic location

- The pattern of results indicates that Year 6 students attending schools located in major cities perform significantly better than students attending schools in all other geographic locations. Year 10 students from major cities also perform significantly better than students from both remote and very remote areas.

Since 2009, students have also been required to complete a survey along with the science assessment. The survey canvassed students' perceptions of, and attitudes to, science. It also asked students about their science-learning experiences at school. Some interesting findings are that:

- Over 85 per cent of Year 6 students responded that they would like to learn more science at school, and 65 per cent of Year 6 students indicated that they believe it would be interesting to be a scientist, indicating that a positive attitude towards this subject area exists.
- More than 80 per cent of Year 6 and 10 students acknowledged that science is important for many jobs and for helping people to make informed decisions.

The report also includes a chapter specifically written for teachers. Results are further explored at the individual item level, with a view to providing support to both teachers and curriculum specialists about how the Australian Curriculum: Science can be used to support teaching and learning of the knowledge, understanding and skills that underpin science literacy. The chapter has been written as a stand-alone support for educators, but it offers more context when it is viewed as a part of the full report.

See the full report on the www.nap.edu.au website.

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Background

What are the NAP sample assessments?

The NAP sample assessments test students' skills and understanding in: Science, Civics and Citizenship, and ICT on a cycle.

NAP sample assessments began in 2003 and are held on a rolling three-yearly basis (i.e. one subject is tested every three years).

- Not every student in Australia is tested – for this assessment, 5,551 Year 6 students in 343 schools and 3,032 Year 10 students in 202 schools – student groups were randomly selected.
- The NAP – Science Literacy assessment measures the ability of students to: “use scientific knowledge, understanding, and inquiry skills to identify questions, acquire new knowledge, explain science phenomena, solve problems and draw evidence-based conclusions in making sense of the world, and to recognise how understandings of the nature, development, use and influence of science help us make responsible decisions and shape our interpretations of information.”
- Between 2003 and 2015 the assessments were conducted with samples of Year 6 students only. In 2018, the assessment program was broadened to include Year 10 students.
- A standards-setting exercise was undertaken in 2019 to determine the new Year 10 proficient standard. This process involved experienced teachers examining the items in the tests and in relation to the expectation in the Australian Curriculum.
- Survey questions are also included to measure students' interest in science, their engagement in science-related activities, and their understanding of how science is relevant in their lives.