FROM CLASSROOM TO INDUSTRY

EDUCATION NEEDS TO CHOOSE MATHS

Shortage of qualified maths teachers in secondary schools, especially in regional areas

At least 26% of Years 7–10 maths teachers are **not** fully qualified. (pages 24 & 25)

Inequality in the maths performance of school students is **worsening**

Most students who receive low numeracy achievement scores in Year 3 never catch up with their peers, falling even further behind by Year 9 (pages 19 & 20)

Maths achievement is closely aligned to socioeconomic status

And students who start off behind their peers due to socioeconomic factors **never catch up**, falling further behind each year (Figures 1.7 & 1.22)

Half of Australia's students in Year 8 dislike maths, significantly more than the international average

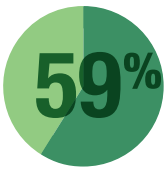
It's also significantly more than those who dislike science (Figure 1.20)

Australia's international position in school maths performance has **declined sharply**

The proportion of students choosing Year 12 advanced maths has declined by 20% from 2000 to 2015, and by 32% from 1995 to 2016 (pages 21 & 22)

HIGHER ED A FORGOTTEN PATH TO SUCCESS

The number of universities **requiring at least intermediate maths** for entry into science and commerce degrees remains low (page 24)



Only 59% of engineering degrees **include maths as a prerequisite** (page 24)

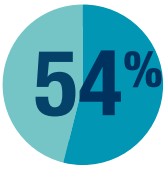
Small universities often **lack the capability** to offer a major in the mathematical sciences (page 34)

Despite Australia's ageing mathematics workforce, the number of students pursuing a maths degree is not increasing. This points to a **shortage in the future workforce** (Figure 2.17)

AT RISK:
THE PROSPECTS OF CREATING A SCIENTIFICALLY LITERATE POPULATION

THE ECONOMICS OF MATHS & STATS

The direct impact of advanced physical and mathematical research is estimated at **$145 billion or 11.2% of the Australian economy annually** (page 51)



54% of Australian adults have only **basic numeracy skills**, only just over the current OECD average (page 43)

The ageing of the mathematical workforce is **worse than in the other STEM workforce sectors** (page 47)

24% of Mathematical Sciences graduates end up working in the **education and training sector**, as teachers and lecturers

This is closely followed by those employed in professional, scientific and technical services (20%), including research and ICT (Figures 3.11 & 3.12)

RESEARCHING OUR WAY TO THE TOP

The mathematical sciences have on average had **a higher success rate** for research grants from the Australian Research Council than other disciplines since 2011 (page 53)

Citation rates of Australian mathematical research in statistics and applied mathematics **outperforming 15 countries** within the European Union

While the mathematical sciences are amongst the smallest areas of research in Australia, internationally they hold their own (pages 57 & 58)

AMSI AUSTRALIAN MATHEMATICAL SCIENCES INSTITUTE