

SUMMARY

NMSSA

Wānangatia te Putanga Taurira
National Monitoring Study
of Student Achievement

The 2022 study

In 2022, NMSSA explored contextual factors associated with the learning and teaching of mathematics and statistics¹ at Year 4 and Year 8. About 2000 students, 200 teachers, and 100 principals from 100 English-medium state and state-integrated schools responded to questionnaires at each year level. This summary provides some key findings from the study. More detailed information can be found in the 2022 NMSSA Contextual report for mathematics and on the NMSSA mathematics data window (see www.nmssa.org.nz).

¹ For brevity, this summary uses the term 'mathematics' to refer to the mathematics and statistics learning area.

Contextual Factors Associated with Learning and Teaching in Mathematics at Year 4 and 8

Findings from the 2022 National Monitoring Study of Student Achievement (NMSSA)

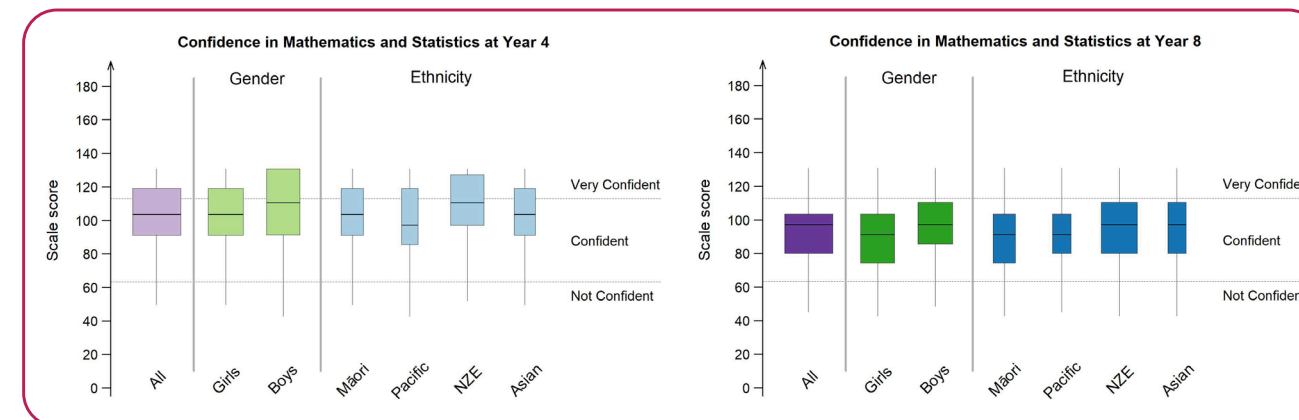
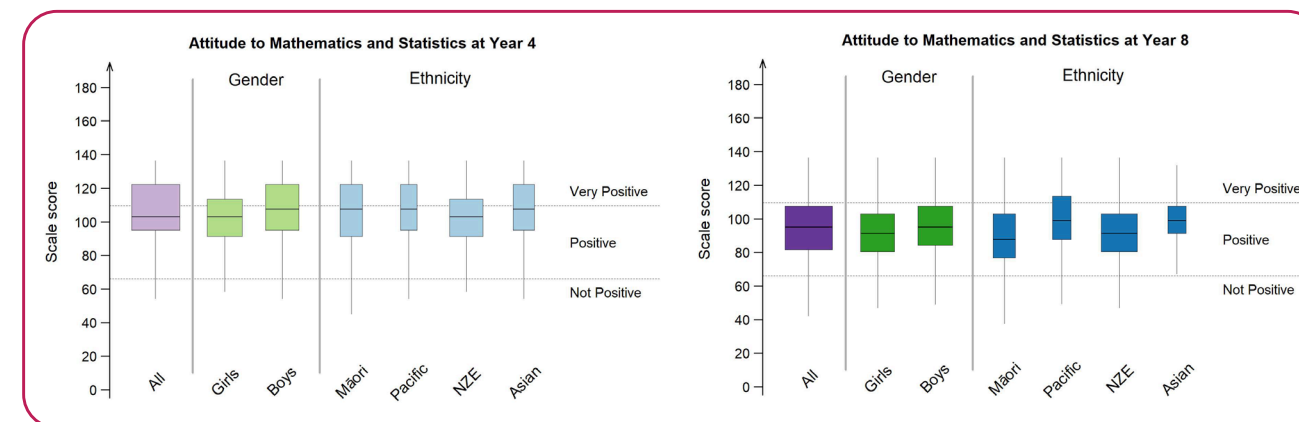
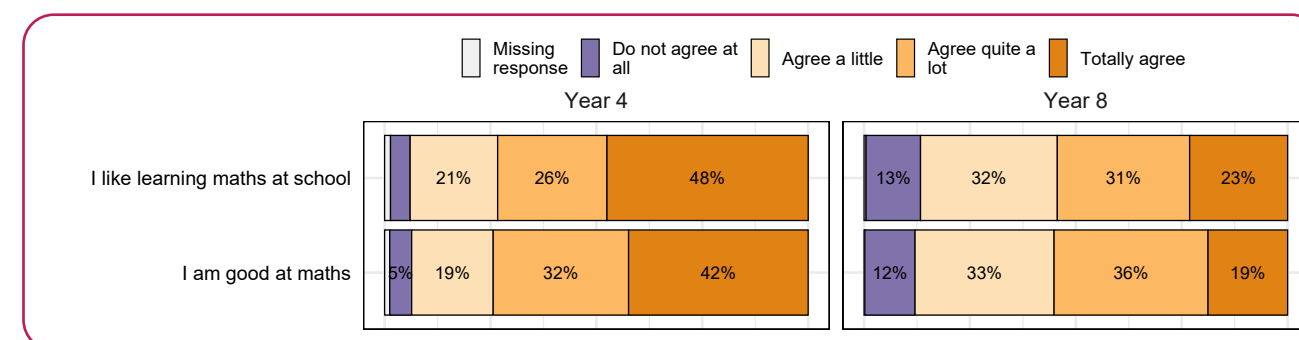
Attitudes to and confidence in mathematics

Students

- Students' responses to questions about their attitude and confidence were **positively correlated with their achievement**. The correlation between confidence and achievement was stronger than between attitude and achievement.
- Overall, most students agreed that they **like learning maths at school** and **are good at maths**.
- In general, Year 4 students were **more positive and confident** about learning mathematics than Year 8 students.
- Overall, boys indicated higher levels of positivity and confidence than girls.
- Year 8 students were **less likely** to 'agree quite a lot' or 'totally agree' with two **attitude statements** in 2022, compared with 2018:
 - I like learning maths at school (54% compared with 64%).
 - I want to know about maths so I can do something about important things (48% compared with 60%).
- At both year levels, non-New Zealand European students indicated **more positive attitudes** towards learning mathematics than New Zealand European students. At Year 8, Pacific students were more positive, overall, than non-Pacific students.
- At Year 4 and Year 8, Māori and Pacific students indicated **lower confidence** in mathematics than non-Māori and non-Pacific students, respectively.

Teachers

- All teachers agreed that **teaching mathematics is important**. At both Year 4 and Year 8, about 10 percent of teachers indicated that they **do not personally enjoy mathematics** and were **not confident** teaching this learning area. Fifteen percent of Year 8 teachers indicated that they were not confident about responding to difficult questions from their students in maths.



Learning and teaching opportunities in mathematics

Organisational activities and resources

- Ability group-based activities** were regularly used as an organisational strategy for teaching mathematics. Forty nine percent of teachers at Year 4 and 40 percent at Year 8 reported that they used ability group activities 'every day or almost every day'. At both year levels, the reported use of ability group-based activities was lowest among teachers at low decile schools and highest among teachers at mid-decile schools.
- At both year levels teachers indicated that they predominantly drew on **New Zealand based resources**. For example, nzmaths or Figure It Out.

Using technology to support mathematics learning

- Almost one third of both Year 4 and Year 8 students indicated that they 'never or almost never' learn or **practise maths on the internet or using an app**.
- Sixty five percent of Year 4 students reported that they 'never or almost never' use a **calculator** to solve problems, compared with 29 percent of Year 8 students.

