

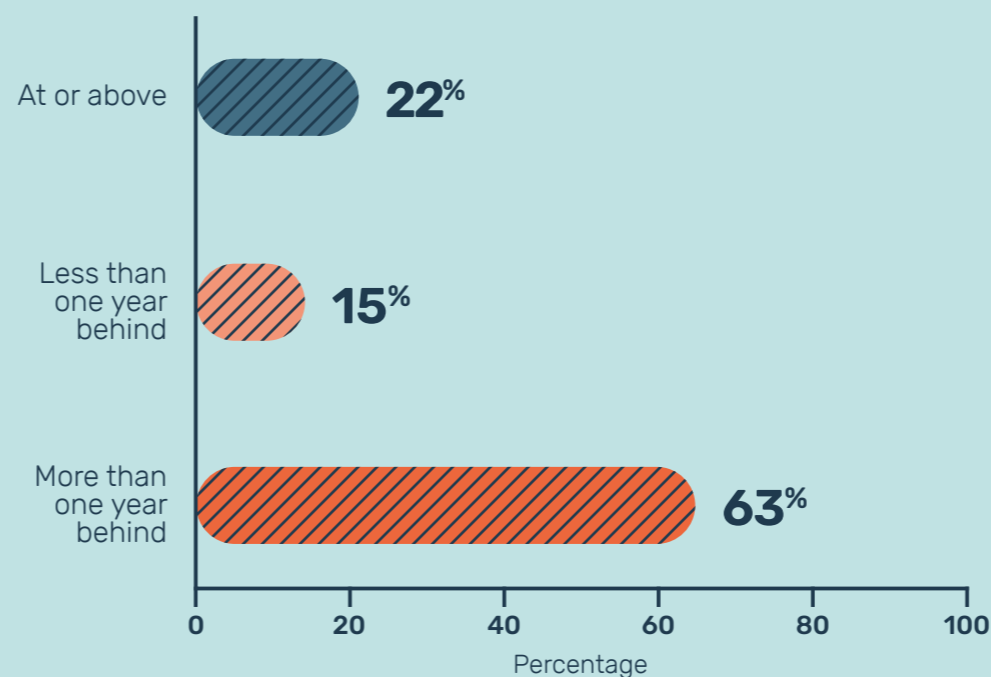
# Curriculum Insights and Progress Study

## Mathematics Achievement at Year 8, 2023

Results from the national mathematics assessment for the Curriculum Insights and Progress Study.

This dashboard provides a succinct overview of achievement at Year 8 on the 2023 national mathematics assessment. Year 8 coincides with the end of Phase 3 (Years 7 to 8) from the 2023 draft version of Te Mātaiaho, the refreshed New Zealand Curriculum.

### How many students achieved the curriculum benchmark for Year 8?



### What did Year 8 students show they understood, knew and could do?

**More than two-thirds of Year 8 students were:**

- able to find a common percentage of a whole, e.g. 25%.
- add two-digit numbers.
- read scales to halves and tenths.

**Students had less success when:**

- ordering fractions with different denominators.
- subtracting decimal numbers with renaming.
- calculating the volume of a shape.



### What is the national mathematics assessment?

The new Curriculum Insights and Progress Study carries out an annual mathematics assessment involving nationally representative samples of students from English-medium, state and state-integrated schools. The assessment focusses on Years 3, 6 and 8 which correspond to the end of the first three phases of the refreshed curriculum. The purpose of the assessment is to provide regular and reliable information about mathematics achievement, nationally.

The results at each year level are reported using the same scale.

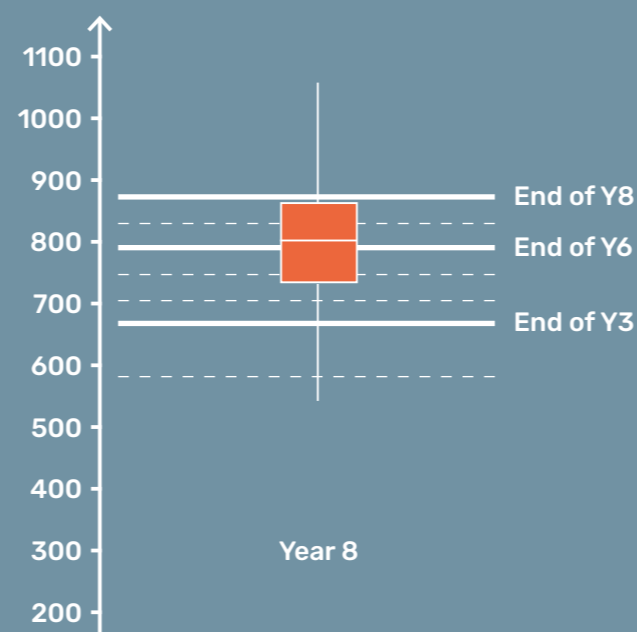
A benchmarking exercise was used to align scores on the scale with the 2023 draft of Te Mātaiaho, the refreshed New Zealand Curriculum. The results of the exercise are provisional; a further benchmarking exercise will be carried out when the curriculum is finalised.



### How did students achieve at Year 8?

In 2023, 22 percent of Year 8 students scored at or above the provisional curriculum benchmark set for Phase 3 (the end of Year 8). A further 15 percent scored at or above the estimated expected score for the end of Year 7 but did not reach the Phase 3 benchmark.

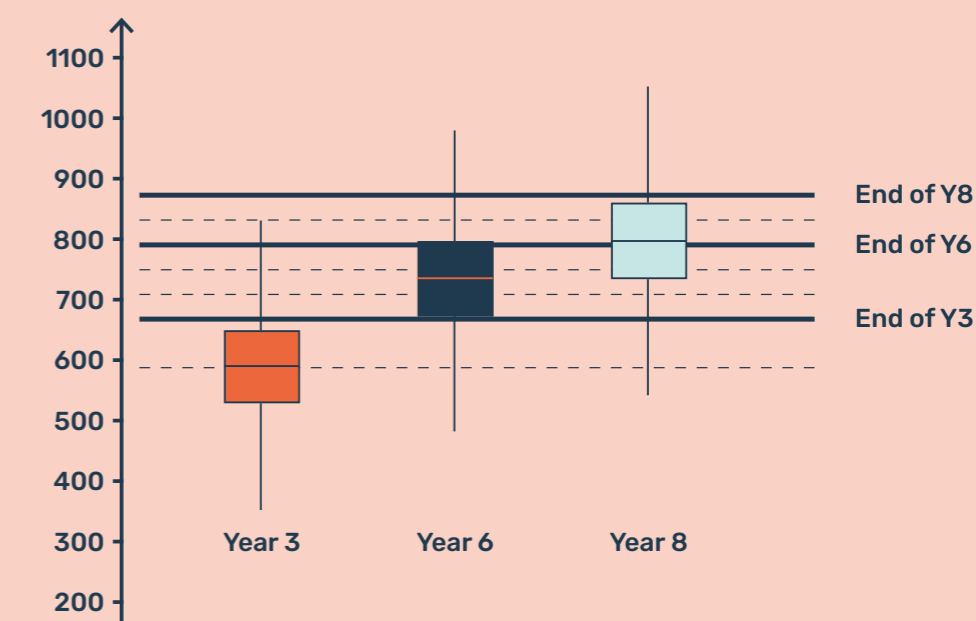
In 2023, the average score at Year 8 was  $798 \pm 7$  scale units.



*Note: The dashed lines, from bottom to top, indicate expected achievement at the beginning of Year 3, and end of Year 4, Year 5, and Year 7, respectively. They are estimated using the curriculum benchmarks established for Years 3, 6 and 8.*

### What does progress look like?

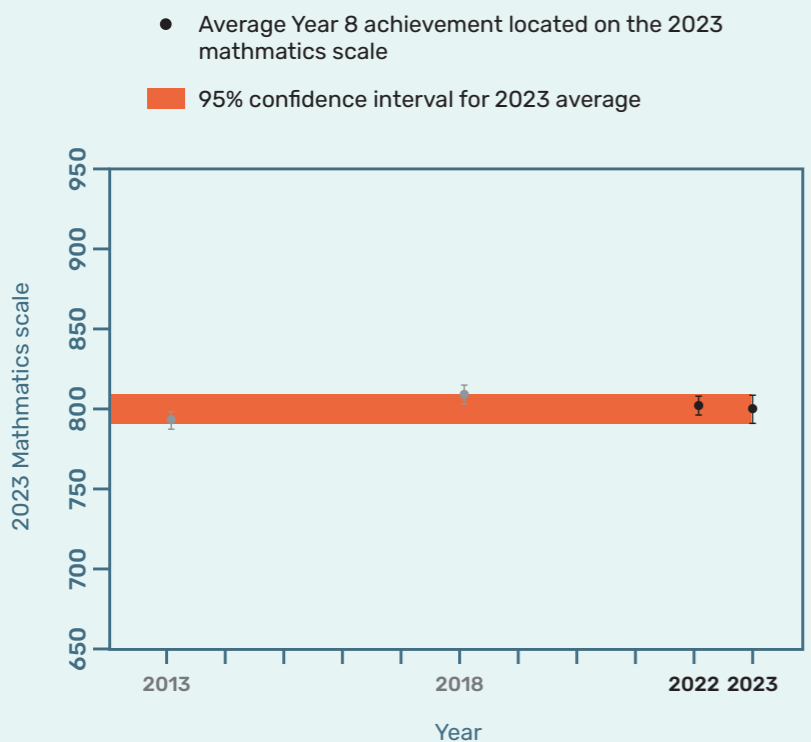
Student achievement increases across the year levels. However, a minority of students achieved at or above the relevant curriculum benchmark set for each of the three year levels.



# Has mathematics achievement changed at Year 8?

Students in Year 8 who took part in the 2023 national mathematics assessment achieved at a similar level, on average, to Year 8 students involved in mathematics assessments carried out by the National Monitoring Study of Student Achievement (NMSSA). Note, that the NMSSA assessments were completed as paper-and-pencil assessments.

The 2022 NMSSA study indicated that about 42 percent of Year 8s were meeting curriculum expectations. This compares with the 22 percent reported in this study for 2023. It is important to note that NMSSA was reporting against curriculum benchmarks established in relation to the 2007 version of the New Zealand Curriculum. This study has established provisional benchmarks in relation to the 2023 draft version of Te Mātaiaho.



# What did the assessment involve?

The 2023 national mathematics assessment provided a snapshot of students' knowledge and application of mathematical ideas. The online, adaptive test was based on a bank of selected response and short-answer questions related to number, algebra, space, statistics, and probability. All questions were aligned to the progress outcomes from the draft Te Mātaiaho. Students answered around 30 questions.

Teachers in the sampled schools administered the assessments using school devices.

# What did the curriculum expect at Year 8?

Key curriculum outcomes in mathematics at the end of Phase 3 (Years 7 to 8) are summarised below. The full progress outcome statement can be found in the draft version of Te Mātaiaho.

## Knowing how to:

- recognise, read, write, represent, compare, order, and convert between fractions, decimals, and percentages, and add and subtract decimals to three places.
- add and subtract fractions with related denominators and represent fractions in their simplest form.
- solve linear equations by trial and improvement and by applying inverse operations and use variables to represent a rule about a linear pattern, and use the rule to make predictions.
- visualise, estimate, and find the perimeter and area of shapes composed of triangles and rectangles and visualise and draw nets for prisms that have a fixed cross section.
- analyse data and communicate findings in context and use data visualisations to describe the distribution of observed outcomes.
- use data visualisations to describe the distribution of observed outcomes from probability experiments and possible outcomes for theoretical probability models.

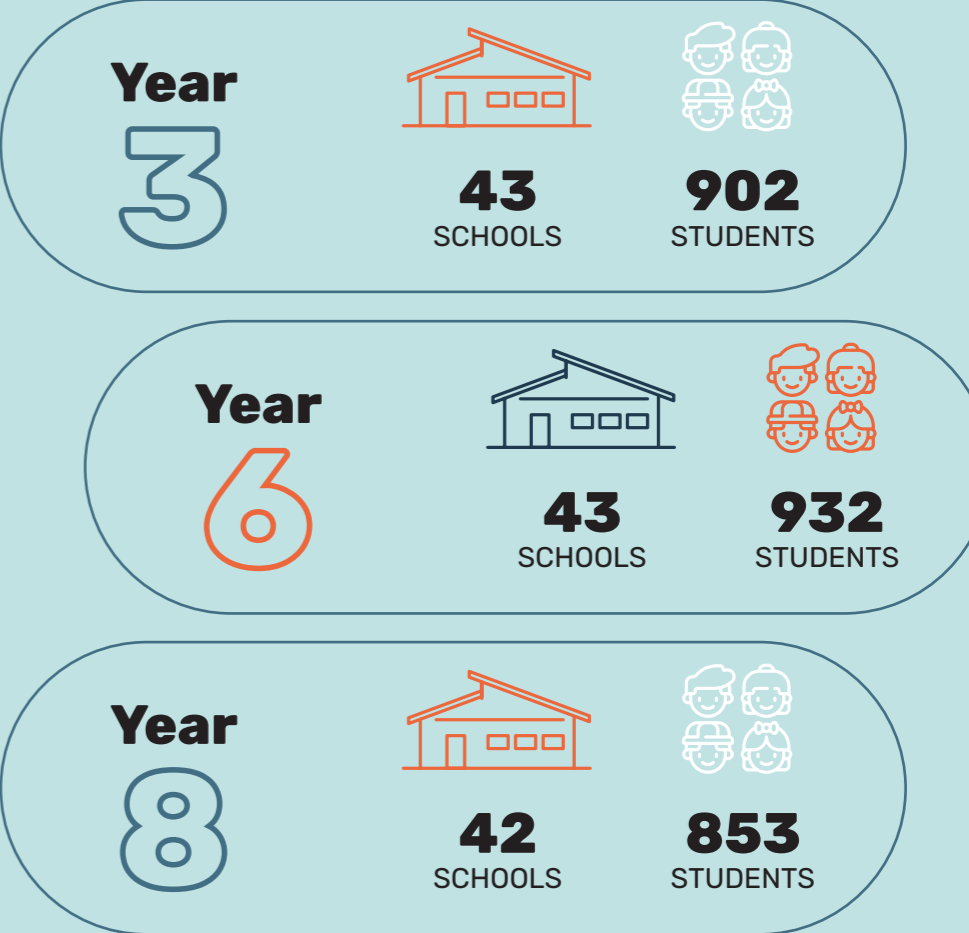
## Being able to (do):

- pose questions, plan and adjust investigations, use various representations to explore and explain ideas, and connect new concepts to prior knowledge and different contexts.
- recognize and explore patterns, make and test conjectures, and use appropriate symbols to express generalizations.
- make inductive and deductive statements, critically reflect on others' thinking, and present coherent explanations and arguments using evidence and reasoning.

# Who took part in 2023?

The national mathematics assessment was carried out for the first time in Term 4, 2023 alongside a reading assessment. Around 40 schools were involved at each year level. This number will be increased to 80 schools in future years. The mathematics assessment will be conducted annually. An annual national writing assessment will take place from 2024.

## Schools and students participating, by year level



\* Note, that the same sample of schools was involved at Year 3 and Year 6.

# Where can I find out more?



A data window with detailed results by year level



The study's website with information about this and previous studies

