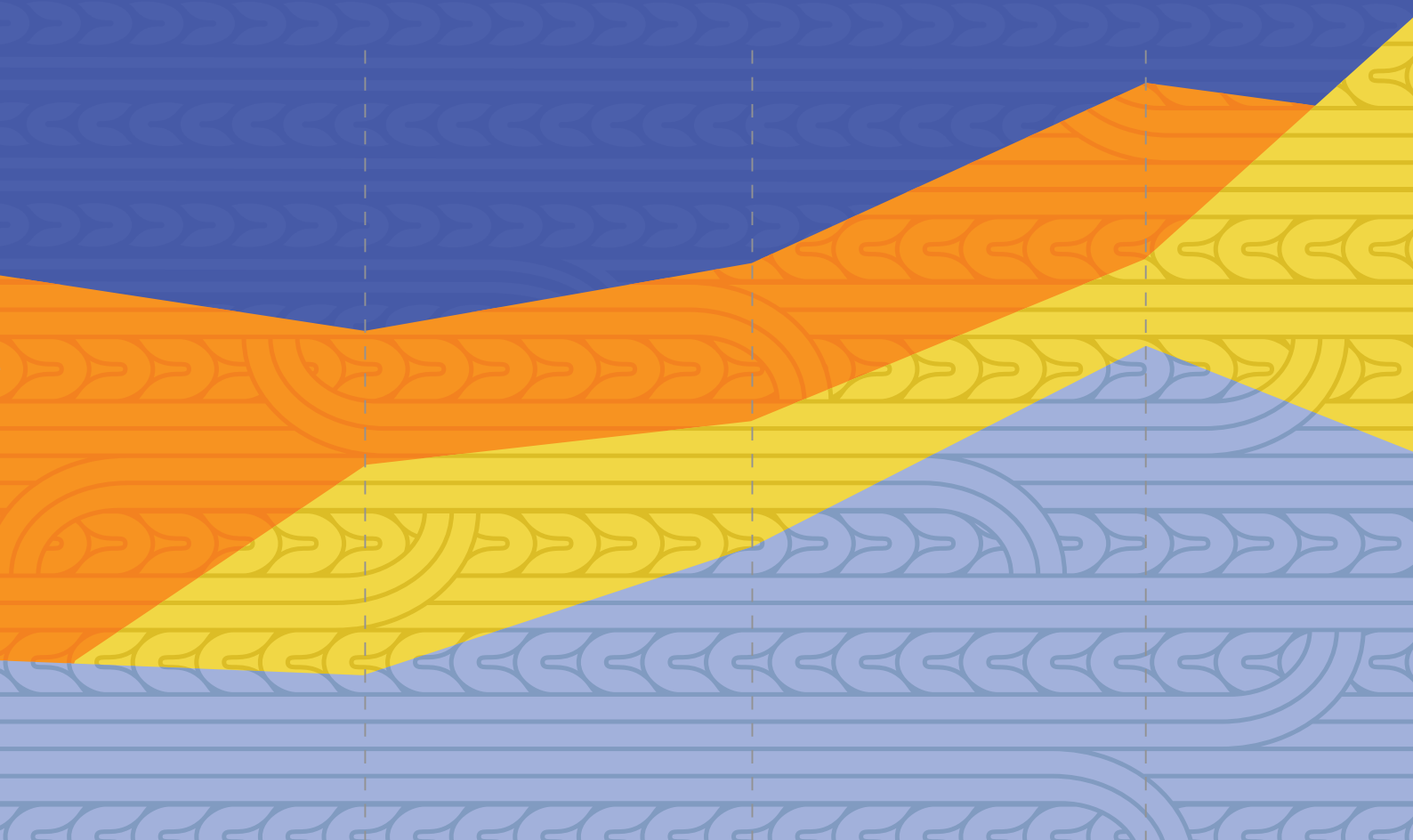


PAT trends in Aotearoa New Zealand

Evidence in mathematics,
reading comprehension,
and reading vocabulary
from 2012 to 2026

Executive summary

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This report draws on 15 years of Progressive Achievement Test (PAT) data to show how achievement in Mathematics, Reading Comprehension, and Reading Vocabulary changed from 2012 to 2026. It covers Term 1 assessments for students in Years 4 to 8 attending English-medium state and state-integrated schools. Together, the analyses include just over 3 million assessment records from 647,213 students in 1,306 schools. These comprise almost 1.3 million Mathematics assessments, almost 1.2 million Reading Comprehension assessments, and more than 550,000 Reading Vocabulary assessments.

PAT makes a valuable contribution to national achievement monitoring because it provides a large body of evidence every year through ordinary school use. National and international studies are based on carefully designed representative samples and provide important estimates of achievement at selected points in time. PAT complements these studies by drawing on much larger numbers of students and schools, providing detailed evidence about how achievement patterns vary across time, groups, and parts of the school system.

Important considerations

Five considerations are important when interpreting the findings in this report.

First, two of the three assessments used in this report were redesigned during the period covered here. As a convenient shorthand, this report refers to the earlier versions as “legacy” and the redesigned versions “refreshed”. Mathematics is divided between the legacy PAT Mathematics series from 2012 to 2023 and the refreshed PAT Pāngarau | PAT Mathematics series from 2024 to 2026. Reading Comprehension is likewise divided between the legacy PAT Reading Comprehension series spanning 2012 to 2024 and the refreshed PAT Pānui | PAT Reading Comprehension series running from 2025 to 2026. Reading Vocabulary was not redesigned and forms one continuous series from 2012 to 2026.

The refreshed assessments use broadly comparable PAT scales to the legacy assessments, but they do not necessarily perfectly align at the transition point. For this reason, the report measures trends only within each assessment series. The Mathematics rise described in this report from 2024 to 2026, for example, compares 3 years of the refreshed assessment but makes no claim about change between 2023 and 2024.

Second, because the assessments were taken in Term 1, each year’s results mainly reflect learning during the previous school year. The 2026 results, for example, mostly reflect learning during 2025. This is important to keep in mind throughout the report.

Third, the PAT data were not collected from a nationally representative sample. The findings therefore describe the large population of students and schools using PAT rather than providing exact national estimates. PAT’s particular strengths are its scale, annual timing, and level of detail. Curriculum Insights provides representative national monitoring, while international studies provide broader comparisons. These sources answer partly different questions and are most informative when considered together.

Fourth, the results are based on statistical modelling that adjusts for changes over time in the mix of students and schools using PAT. Annual results are estimated as though they included the same mix of year levels, genders, ethnic groups, and school socioeconomic contexts. The modelling also accounts for repeated assessments of students and similarities among students attending the same school as well as school socioeconomic context.

Finally, PAT scale-score points are the measurement units used to compare achievement within each subject throughout the report. The Mathematics and two reading assessments have different scales, so their scale points should not be compared directly with one another. To make the size of a change easier to understand, this summary also compares it with the progress students typically make during one school year. These findings describe changes in average achievement across large groups of students. They do not mean that every individual student's achievement changed by the reported amount.

Summary of findings

The clearest overall message of this report is that Mathematics, Reading Comprehension, and Reading Vocabulary changed in different ways over time. The PAT record does not support a single story of general decline or general recovery. Mathematics declined and then improved. Reading Comprehension showed a longer and more sustained decline. Reading Vocabulary followed a more positive course.

Mathematics

PAT Mathematics was broadly stable through most of the 2010s. Scores began to decline in 2019, before COVID-19, and reached their lowest point in the legacy series in 2022, reflecting reduced COVID-19 era learning in 2021. By 2023, most of that decline had been recovered, although average scores remained slightly below their 2012 level. Within the refreshed assessment, Mathematics scores rose in both 2025 and 2026. By 2026, the adjusted average was 1.64 PAT scale points above 2024. This corresponds to about one-third of the progress students typically make during a single year of schooling.

The recent improvement was broad. The positive direction appeared at every assessed year level, in every geographic region included in the analysis, and in every ethnic group. Improvement was also visible through the lower, middle, and upper parts of the score distribution, although lower-scoring Year 8 students shared less fully in the gain. The broad increase was therefore not produced by an isolated region or a small part of the student population.

The most important age pattern is that much of the recent increase in Mathematics scores was already present when students reached Year 4, when most students first take PAT assessments. In 2026, the adjusted Year 4 average was 2.36 PAT scale points above 2024. This is equivalent to almost half of the progress students typically make in a year. The four later transition comparisons were also positive, but smaller, ranging from 0.18 to 0.26 points.

The recent national increase in Mathematics was led by several successively stronger groups of students reaching Year 4, with smaller favourable movements added as students progressed through the later year levels. Those later differences are modest in any single transition, but they could become important if they continue across successive years. Future results will show whether the stronger 2026 Year 4 group retains its advantage as it moves through school and whether later groups also enter Year 4 at a similarly strong level.

Reading Comprehension

Reading Comprehension scores began declining before COVID-19 and continued to fall through 2024, the final legacy year. Scores were already declining before COVID-19 and continued to fall through 2024, the final year of the earlier assessment. By then, the adjusted average was 1.76 PAT scale points below 2012, equivalent to about one-quarter of the progress students typically make in a school year between Years 4 and 8. The decline appeared at every assessed year level, in every region included in the analysis, throughout the score distribution, and in almost every ethnic group. Alternative ways of defining the students and schools included in the analysis changed the estimated size of the decline, but all showed the same downward direction.

Much of this decline was already visible by the time PAT assessments begin in Year 4. From 2015 onward, successive Year 4 groups generally entered the PAT testing window with lower average adjusted scores than their predecessors had in 2012. Between 2020 and 2024, Year 4 scores were about two points lower, equivalent to roughly one-quarter of the progress usually made in a year. The modelled movement from Year 4 to Year 5 became more favourable over time and partly offset that weaker starting position. This partial catch-up, however, was not consistently maintained through Years 5 to 7. At Year 8, the upper part of the score distribution declined more over time than the middle. The longer Reading Comprehension decline therefore began early for many groups of students and was not reliably repaired later.

The refreshed Reading Comprehension assessment showed a rise from 2025 to 2026. The increase of 0.51 scale points was less than one-tenth of typical annual progress. The direction was positive across ethnic groups and regions, but not equally clear at every year level. Year 7 improved most, while Year 8 changed very little. This is an encouraging result, but it does not yet establish that the longer decline has ended. The next results will show whether the improvement continues and whether it reaches older students.

Reading Vocabulary

Reading Vocabulary followed a positive path. The adjusted average in 2026 was 1.34 scale points above 2012, equivalent to about one-fifth of typical annual progress. Every assessed year level, every region, and every ethnic group ended above its own position in 2012. The improvement was nevertheless uneven. Movement from Year 4 to Year 5 was consistently strong, while movement from Year 6 to Year 7 remained weak. Students in the lower part of the score distribution did not decline over time, but they gained less than a quarter as much as those in the rest of the distribution.

Other important findings

The growing separation between Reading Vocabulary and Reading Comprehension is an important finding in this report. Vocabulary scores rose while Comprehension scores declined through the earlier assessment period. The same pattern appeared among students who took both assessments in the same year and at the same year level. For these students, the adjusted Vocabulary score relative to the Comprehension score widened by 2.28 points between 2012 and 2024. The divergence therefore cannot be explained simply by different students taking the two assessments.

Across all three assessments, the difference between boys' and girls' scores moved towards boys, but it did so in different ways. In Mathematics, girls lost more ground during the earlier period and gained less since the pandemic-era disruptions. Overall, the difference moved 2.42 scale points towards

boys between 2012 and 2023, equivalent to about half a year of typical Mathematics progress. It then moved another 0.87 points in the same direction from 2024 to 2026 in the refreshed series.

In Reading Comprehension, girls scored higher than boys throughout the 15 years of this study, but both groups declined overall and girls declined more than boys. For Reading Vocabulary, average score changes over time came mainly from rising scores among boys, while girls' scores changed little. By 2026, average Vocabulary scores for boys and girls were very similar, with boys slightly higher overall.

There are two related ways in which equity among ethnic groups is explored in this report. One is the size of achievement differences between groups at any given point in time. The other is how each group has changed over time, both from its own earlier position and compared with how much other groups changed. These measures can tell different stories. A group can improve while a large achievement gap remains, and a gap can narrow because a higher-scoring group declines rather than because a lower-scoring group improves.

Large, adjusted differences remained between ethnic groups throughout the period covered in this report. In Mathematics in 2026, the full spread was 11.7 scale points, roughly 2 years of typical progress. North Asian (Chinese, Japanese, and Korean) students were about 7.1 points above the next closest group. Corresponding differences were 4.2 points in Reading Comprehension and 4.4 points in Reading Vocabulary, equivalent to a little over half a year of typical progress in each of these subjects. Recent improvement among many groups therefore has coexisted with larger and more stable differences in achievement between groups.

School socioeconomic context was associated with even larger differences. Across the three subjects, students in schools serving communities with greater socioeconomic barriers scored about 10 scale points below students in schools serving communities with fewer barriers after accounting for the other characteristics in the models. In every subject, this was more than 1 year of typical academic progress as measured by PAT assessments.

Some of these differences narrowed over time, but narrowing was not always good news. In the earlier Mathematics assessment, scores fell in the lower barrier context while remaining broadly stable in the higher barrier context. In Reading Comprehension, both contexts declined, but the lower barrier context declined more. Reading Vocabulary followed the more positive pattern, with improvement in the higher barrier context. A smaller gap is not an improvement in equity when it is produced by falling achievement among students who previously scored higher.

The same broad patterns remained across four alternative analyses. Three used narrower samples, focusing on students tested in more than 1 year, schools that used PAT consistently, or schools that used PAT every year from 2020 to 2026. The fourth allowed each school to follow its own trend over time. In all of them, Mathematics still reached its low point in 2022 and rebounded in 2023. Reading Comprehension still ended the earlier assessment period below its starting level, although the estimated decline was smaller when schools were allowed to follow different trends. Reading Vocabulary still ended positively. These checks are intended to strengthen confidence that the main direction and timing are not simply products of changing PAT participation or one set of modelling choices.

Implications for recent policy changes

The Mathematics rebound began in 2023, before the daily hour requirement introduced in 2024 and before the revised Mathematics curriculum became compulsory in 2025. Those changes cannot explain the beginning of the recovery, although they may have helped sustain it. The 2026 Mathematics results are the first to follow a full school year under the revised curriculum, so later results will be more informative about whether improvement continues. For Reading Comprehension, the refreshed assessment began in 2025, leaving less opportunity to separate policy effects from the assessment change. It is important to keep in mind that, while PAT can show when achievement changed, this analysis cannot identify the effect of any single policy or teaching approach.

Overall picture

Aotearoa New Zealand benefits from having several credible sources of achievement evidence. PAT provides annual detail from ordinary school use. Curriculum Insights provides representative national monitoring linked to the New Zealand Curriculum. PISA provides a long-term view of applied reading and mathematics among 15-year-olds, while TIMSS and PIRLS provide international comparisons closer to the primary years. These studies can show whether PAT patterns also appear in independently designed assessments and whether changes in Aotearoa New Zealand resemble those occurring elsewhere. When different sources point in the same direction, confidence in a wider system change increases. When they differ, the difference can reveal that subjects, ages, assessments, or time periods are moving differently.

Taken together, the PAT record shows how achievement differences build up across schooling. Stronger or weaker positions are often already visible by Year 4. The recent Mathematics improvement is broad and encouraging, but much depends on whether the stronger 2026 Year 4 group retains its advantage. Reading Comprehension shows a longer decline beginning early, with only a first small sign of improvement. Reading Vocabulary has risen, but students in the lower part of the score distribution have shared much less in that gain. Future monitoring should follow these groups through later years, pay close attention to the Year 6 to Year 7 transition, and test whether improvement becomes more sustained and more evenly shared.