

Mathematics &  
Statistics

Science



Pūrongo mōhio  
ā-horopaki: Pāngarau  
me te Pūtaiao

# Contextual Insights Report 2024: Mathematics and Science

| Published May 2026



Curriculum Insights  
and Progress Study

2024

# Tō mātou ū ki Te Tiriti o Waitangi

E whakatūturu ana mātou i He Whakaputanga o te Rangatiratanga o Nu Tirenī | The Declaration of Independence of 1835, i whakaū ai i te mana me te rangatiratanga o ngā hapū.

E whakamana ana mātou i Te Tiriti o Waitangi i whakatūngia ai te kāwanatanga me te whakatūturu i te toitūtanga o te tino rangatiratanga. Nā tēnei hononga i here ai mātou ki te mahi ngātahi. Ka whakatauhia e Te Tiriti te manarite mō te iwi Māori me ngā wawata mō te oranga o te iwi whānui i Aotearoa.

E whai ana te kāhui o Curriculum Insights and Progress Study ki te whakamana i Te Tiriti i roto i ā mātou hanganga, mahi, kawenga, me ngā mahi o ia rā.

## Our commitment to Te Tiriti o Waitangi

We acknowledge He Whakaputanga o te Rangatiratanga o Nu Tirenī | The Declaration of Independence of 1835 that asserted mana and sovereignty of hapū.

We uphold Te Tiriti o Waitangi which established kāwanatanga and acknowledges enduring Māori tino rangatiratanga. A duty of partnership flows from this relationship. Te Tiriti establishes equity for Māori and aspirations for the collective wellbeing of all in Aotearoa New Zealand.

The Curriculum Insights and Progress Study team seeks to honour Te Tiriti in our structures, functions, responsibilities, and day-to-day work.

## He Mihi

### Acknowledgements

*Aku tamarahi ki te rangi.*

*Aku whakateitei ki te whenua.*

*Tēnei te oha ki a koutou i whai wāhi ki a mātou, te āta kohikohi raraunga kia pai ai tā mātou waihanga rautaki mātauranga. Kua mana te kaupapa i a koutou, ā, kua mahea, kua wātea te huarahi ki mua i a tātou i tēnei wā. Ngā kupu irirangi kua iria ki ngā pātū o te mātauranga hei oranga mō ngā uri whakaheke, ā haere ake nei.*

*Ka whakataukitia ngā kōrero, e tū i te tū a te uru kahikātea!*

The Curriculum Insights team extends our heartfelt appreciation to the ākonga, kaiako, tumuaki, and school communities who generously contributed their time and expertise in the study. Your koha and dedication are not only vital to this research but also play a critical role in deepening our understanding of the learning of ākonga across Aotearoa me Te Waipounamu. Your contributions are foundational to the ongoing growth and development of ākonga, now and into the future.

## Ā mātou mahi

### Our work

The Curriculum Insights and Progress Study gathers annual information about achievement, teaching, and learning from a representative sample of schools and is designed to generate insights into the implementation and impact of Te Mātaiaho, the New Zealand Curriculum. In its second year in 2024, the new study gathered data from 158 schools and focused on assessing student achievement in science and mathematics and statistics.



# Introduction to the 2024 Contextual Insights Report

## Introduction

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Kia ora. Welcome to the 2024 Contextual Insights Report from the Curriculum Insights and Progress Study (Curriculum Insights). The purpose of this chapter is to set the scene for the report by outlining its aims, scope, and limitations and introducing the conceptual framework and methods used. In doing so, the chapter explains the purpose of the report, comments on its limitations, and provides details about the conceptual framework that underpinned the gathering of contextual data through student, teacher and principal questionnaires. The chapter also describes how the report is organised, summarises the methods used to analyse the data, and explains when differences between subgroups are reported.

## Purpose and Limitations

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The purpose of this report is to provide contextual information to complement and help interpret the study's 2024 achievement data for the mathematics and statistics, and science learning areas. For the most part, this report presents descriptive statistics reflecting the perspectives of students, teachers, and principals in relation to learning in schools. The second report will build upon this initial investigation with more sophisticated and in-depth analysis.

The findings presented in this report are based on questionnaire data from 4728 students, 817 teachers, and 152 principals in 158 participating schools. It is important to highlight that the findings shared in this report are based on self-reported data. While these data provide valuable insights into curriculum implementation, the results reflect perceptions rather than direct observations and may not fully represent all school contexts. This limitation is especially relevant to the teacher questionnaire, where response rates varied across schools.

## Questionnaire Conceptual Framework

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The questionnaires used in the study are based on a comprehensive conceptual framework. In 2023, the Curriculum Insights team reviewed research and past assessment studies to identify theories and data sources that align with the New Zealand Curriculum and help us understand the conditions that support student learning. These insights informed the design of the study's

Conceptual Framework for the Questionnaires (Ministry of Education, 2023).

Building on this foundation, the team continues to engage in ongoing research to improve our collection of contextual information and more effectively incorporate te ao Māori perspectives. In 2024, the framework was refined, resulting in the contextual insights work being organised around three muka (strands) that, when woven together, provide strong, reliable, and meaningful insights.

## Organisation of the report

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This Contextual Insights Report describes findings relating to each of the muka. Each chapter focusses on one muka.

### **Chapter 1: He muka tangata | Demographic and general information**

The first chapter presents demographic and general information describing the characteristics of the schools, principals, teachers, and students who participated in the 2024 study. Understanding and responding to the uniqueness and diversity of our educational communities is essential for meaningful analysis and interpretation. The chapter provides an overview of the participants and the contexts in which the study was conducted.

### **Chapter 2: He muka mātauranga | Curriculum, content, and pedagogy**

The second chapter examines how curriculum, content, and pedagogy work together to shape the quality of student learning. It presents findings on opportunities to learn, barriers to effective teaching, teachers' professional learning and development (PLD), and pedagogical approaches used in classrooms.

### **Chapter 3: He muka hīhiri | Motivational factors**

The final chapter explores motivational factors that are associated with student learning and progress. We report on three key areas: oranga tangata | wellbeing, Te maia me te whakapono | efficacy beliefs (both self and collective), and Whāia te mātauranga | school emphasis on academic success. A brief outline of what each of these areas involves is provided below.

### ***Oranga tangata | Wellbeing***

Wellbeing includes both student wellbeing at school, which is related to students' ability to learn, and the professional work engagement of teachers and principals, which is directly related to the quality of the delivered curriculum. This is important, as the wellbeing of students is inseparable from their progress, and the wellbeing of educational professionals is strongly connected with the quality of teaching.

In Chapter 3, this section describes responses to questions relating to both these aspects of wellbeing.

### ***Te maia me te whakapono | Efficacy beliefs***

Student self-efficacy refers to a student's belief in their ability to successfully complete tasks and achieve learning goals. Similarly, principal and teacher self-efficacy reflects an individual educator's confidence in their ability to plan, organise, and implement actions that support student learning.

Student self-efficacy is closely linked to motivation and perseverance. For principals and teachers, self-efficacy influences their professional capabilities, level of engagement, choice of teaching strategies, and participation in professional learning. Higher self-efficacy among educators is also associated with enhanced wellbeing, including lower levels of stress, burnout, and attrition.

Collective efficacy refers to the shared belief among educators in their collective capacity to positively influence student learning, even if individual levels of confidence may vary. This belief is closely tied to the quality of curriculum delivery and is a strong predictor of school-wide aspiration, engagement, and educator wellbeing, particularly through reduced stress and increased professional engagement and optimism.

This section of Chapter 3 examines students' self-efficacy in mathematics and science, alongside the general professional self-efficacy of teachers and principals. It also presents data on the principals' and teachers' perceptions of the collective efficacy of teachers within their schools, with comparisons across demographic subgroups.

Note that teachers' subject-specific self-efficacy in teaching mathematics and science is discussed in Chapter 2, where it forms a key part of the analysis of how curriculum, content, and pedagogy interact to influence the quality of student learning.

### ***Whāia te mātauranga | School emphasis on academic success***

School emphasis on academic success (SEAS) reflects the extent to which teachers and school leaders perceive that academic success is valued and promoted across the school community, including by students, staff, and parents. For the purposes of this report, students' academic attitudes are presented alongside the perspectives of teachers and principals, recognising the importance of student voice in building a more comprehensive understanding of schools as purposeful learning environments.

Academic attitudes, which include beliefs, values and mindsets about learning and achievement, shape how individuals engage with learning, set goals and respond to challenges. Together, SEAS and academic attitudes play a vital role in shaping the culture of a school and influencing educational outcomes.

This section describes findings relating to students' reported attitudes to mathematics and science, as well as teachers' and principals' perceptions of the general academic attitudes of their school communities.



## Comments on methodology

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### Reporting socioeconomic differences

Curriculum Insights uses the Ministry of Education's Schooling Equity Index (EQI) as a socioeconomic variable at the school level. The EQI is based on a statistical model that estimates the degree to which students face barriers to achievement. Schools are assigned an EQI score between approximately 344 and 569, with higher scores indicating that students in those schools, on average, encounter more socioeconomic challenges compared to students in schools with lower scores.

From the EQI, schools can be categorized into three groups representing those with fewer, moderate, or more socioeconomic barriers to achievement. This report uses these groups when examining how socioeconomic factors are associated with different contextual variables<sup>1</sup>.

### Notable differences

In this report, we describe differences in response proportions as notable when subgroup results differ by ten percentage points or more. This threshold is used in lieu of formal statistical testing, providing a consistent basis for identifying patterns in the data. The report explores how responses to different questionnaire items relate to demographic variables such as gender and socioeconomic status, with notable differences flagged when subgroups show a margin of at least ten percentage points between them.

For broader constructs that reflect teacher and principal factors, such as work engagement, we combined responses from related questions into composite scores using statistical methods. We then applied more advanced analyses to examine whether these scores varied meaningfully between demographic groups or showed associations with other school-level factors.

### Representing percentages

Percentages displayed in figures and tables are rounded to whole numbers. Due to rounding, the totals may not equal 100%. In figures, segments of bars representing less than 4% are not labelled.

## References

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Ministry of Education. (2023, September). *Conceptual framework for the questionnaires* [Internal report].

Ministry of Education. (2025, March). *Tōia Mai Te Waka Conceptual framework for the questionnaires* [Internal report].

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<sup>1</sup> The EQI replaces the decile bands previously used to indicate the socioeconomic status of schools.



# 1. He Muka Tangata | Demographic and General Information

In this chapter we provide an outline of the key demographic data from respondents to the student, teacher and principal questionnaires administered as part of the 2024 Curriculum Insights and Progress Study (Curriculum Insights). We begin by explaining what is meant by 'demographic data' and why it is important to the study. We then provide an overview of the demographic characteristics of the participating students, teachers, and principals.

## Findings at a glance

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**Participating students are representative of students in English-medium schools nationally**

**Participating teachers provide a snapshot of perspectives in New Zealand schools**

**Participating principals have a broad range of ages and experience**

## What is demographic data and why is it important?

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Demographic data refers to information about the characteristics of respondents, such as age, gender, ethnicity, and role. This data helps researchers identify trends, assess sample representativeness, and draw more meaningful conclusions.

In the context of Curriculum Insights, demographic data enables deeper analysis of educational variables across different communities. It supports tailored reporting for diverse groups of students and staff, helping to recognise and respond to the unique makeup of each educational setting. Comparing this sample data to population-level figures also helps determine how representative the sample is of the wider population.

## What did we do?

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Curriculum Insights aims to collect data on nationally representative samples of students in Year 3, Year 6, and Year 8 from English-medium state and state-integrated schools. These samples were constructed through a two-stage process. Firstly, two sets of participating schools were selected using a stratified random sampling approach, allowing for socioeconomic status (based on the school equity index (EQI)<sup>1</sup>), geographic region, and school size. The first sample was of schools with students in Years 3 and 6, and the second was of schools with students in Year 8. A random sample of 24 students from each participating year level within these schools was selected. These students, along with their teachers and principals, were asked to complete contextual questionnaires focused on the three muka listed in the introduction.

Questionnaire data was received from 79 schools with students in Years 3 and 6 and from 79 schools with students in Year 8. A total of 152 principals, 817 teachers and 4728 students responded to questionnaires.

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<sup>1</sup> The Equity Index (EQI) is a statistical model that uses data to estimate the extent to which students face socioeconomic barriers to achievement at school.

## Demographics for students

### Participating students are representative of students in English-medium schools nationally

Table 1.1 shows the percentages of students by EQI group for each year level who completed a student questionnaire. It should be noted that nationally, schools in the “more barriers” group tend to have fewer students than other schools. Since the sampling process allowed an equal chance of selection by student, rather than by school, there were fewer participating students in the “more barriers” group. Percentages of students nationally within the sampling frame are included for comparison.

**Table 1.1: Percentage of students responding to the contextual questionnaire, by school equity index group (EQI) and year level**

Percentage of students						
EQI group	Year 3		Year 6		Year 8	
	Sample n=1579	National	Sample n=1584	National	Sample n=1565	National
<b>More</b>	13%	18%	13%	18%	21%	19%
<b>Moderate</b>	42%	37%	43%	36%	44%	46%
<b>Fewer</b>	45%	45%	43%	45%	34%	35%

The students’ demographic data was provided by the Ministry of Education from their national student database.

Table 1.2 shows a relatively even split of student genders, with slightly more females than males in Years 3 and 8<sup>2</sup>.

**Table 1.2: Percentage of students responding to the contextual questionnaire, by gender and year level**

Percentage of students			
Gender	Year 3 n=1579	Year 6 n=1584	Year 8 n=1565
<b>Male</b>	49%	50%	47%
<b>Female</b>	51%	50%	53%

<sup>2</sup> Gender information provided by the Ministry of Education is binary.

Between 20% and 24% of the students in each year level were identified in the national student database as Māori, and approximately 13% were identified as Pacific students. In the Year 3 and Year 6 samples 51% of students were identified as NZ European and between 22% and 25% Asian, while in the Year 8 sample 60% were identified as NZ European and 13% as Asian. Note that students could be identified as belonging to more than one ethnic group, so percentages sum to more than 100%. As shown in Table 1.3, these percentages are similar to the proportions of ethnicities within our sample frame, nationally.

**Table 1.3: Percentage of students responding to the contextual questionnaire, by ethnicity and year level**

Percentage of students						
Ethnicity	Year 3		Year 6		Year 8	
	Sample n=1579	National	Sample n=1584	National	Sample n=1565	National
<b>NZE</b>	51%	56%	51%	56%	60%	59%
<b>Māori</b>	20%	25%	21%	24%	24%	25%
<b>Pacific</b>	14%	14%	13%	14%	13%	15%
<b>Asian</b>	25%	21%	22%	20%	13%	16%

## Demographics for teachers

### Participating teachers provide a snapshot of perspectives in New Zealand schools

All teachers in the sampled schools who taught students in the participating year levels were invited to complete a teacher questionnaire. All responses were anonymous. Table 1.4 shows the percentages of teachers by school equity index (EQI) group for each year level.

**Table 1.4: Percentage of teachers responding to the contextual questionnaire by EQI group and year level**

Percentage of students			
School Equity Index (EQI) group	Year 3 n=163	Year 6 n=172	Year 8 n=308
<b>More barriers</b>	14%	12%	17%
<b>Moderate barriers</b>	34%	37%	52%
<b>Fewer barriers</b>	51%	51%	31%

Of the participating teachers, 641 (79%) were female, 172 (21%) were male, and two chose not to provide their gender. Teachers were also asked to indicate which ethnic group(s) they belong to. Table 1.5 shows that 76% of teachers identified as NZ European/Pākehā and 17% identified as Māori. Data from 2024 provided on Education Counts<sup>3</sup>, indicates that 71% of teachers nationally identify as European/Pākehā and 12% identify as Māori. Note that, for both data sets, teachers could select multiple options so the percentages sum to more than 100%.

**Table 1.5: Percentage of teachers responding to the contextual questionnaire by ethnicity**

Ethnicity		Percentage of teachers
		<b>Sample n=816</b>
<b>NZ European / Pākehā</b>		76%
<b>Māori</b>		17%
<b>Pacific</b>		7%
<b>Asian</b>		8%
<b>Other</b>		16%

Teachers were asked to rate their ability to speak te reo Māori in day-to-day conversation (Table 1.6). The majority of teachers (77%) indicated that they either speak no more than a few words or phrases or that they can only talk about simple things in Māori. Only twelve teachers (1%) indicated that they can talk about almost anything in te reo.

**Table 1.6: Percentage of teachers responding to the contextual questionnaire by ability to speak te reo Māori**

Ability to speak te reo Māori	Percentage of teachers
No more than a few words or phrases	33%
Not very well (I can only talk about simple things in Māori)	44%
Fairly well (I can talk about some things in Māori)	18%
Well (I can talk about many things in Māori)	3%
Very well (I can talk about almost anything in Māori)	1%
<b>Total</b>	<b>813</b>

Teachers were asked to identify what teaching qualifications they hold. The majority (71%) reported a bachelor's degree as their highest qualification, 18% had a master's degree, while 12% identified a teaching certificate as their highest qualification. Most participating teachers (90%) had at least one New Zealand qualification, with four percent of teachers having qualifications from both New Zealand and overseas.

Table 1.7 shows the decade of birth and number of years of teaching experience of participating teachers. The sample includes teachers with a wide range of ages and levels of experience, with an average age of 44 years and an average of 15 years of teaching experience.

<sup>3</sup> <https://www.educationcounts.govt.nz/statistics/teacher-numbers>

**Table 1.7: Percentage of teachers responding to the contextual questionnaire by age and experience**

Age	Years of teaching experience					Total
	Less than 1 year	1-2 years	3-5 years	6-10 years	More than 10 years	
20-29	6	44	45	22		117
30-39	1	11	31	87	77	207
40-49		9	19	29	167	224
50-59		1	7	11	154	173
60-69			1	2	85	88
70+					6	6
<b>Total</b>	7	65	103	151	489	815

### Limitations of the teacher sample

Because responses were anonymous, individual teacher responses could not be directly linked to participating students. Additionally, due to the self-selecting nature of the sample, the findings may not fully represent the broader teaching population and should not be used to make absolute claims about teachers' perspectives and beliefs. However, the sample does offer valuable insight into the views of teachers in Aotearoa New Zealand.

## Demographics for principals

### Participating principals have a broad range of ages and experience

All principals from participating schools were asked to complete the principal questionnaire. Table 1.8 shows the percentages of principals by school equity index (EQI) group for Years 3 and 6, and Year 8 schools, respectively.

**Table 1.8: Percentage of principals responding to the contextual questionnaire by EQI group and year level**

School Equity Index (EQI) group	Years 3 & 6 n=75	Year 8 n=76
More	16%	22%
Moderate	44%	46%
Fewer	40%	31%

Of the participating principals, 81 (55%) were female, and 68 (45%) were male. One principal chose not to provide their gender. Principals were also asked to indicate which ethnic group(s) they belong to. Table 1.9 shows that 87% identified as NZ European/Pākehā. Note that principals could select multiple options, so the percentages sum to more than 100%.

**Table 1.9: Percentage of teachers responding to the contextual questionnaire by ethnicity**

Ethnicity	Percentage of principals
NZ European / Pākehā	87%
Māori	13%
Samoan	3%
Other	9%

Principals were asked to indicate their level of ability to speak te reo Māori in day-to-day conversation. The majority of principals (77%) indicated that they either speak no more than a few words or phrases or that they can only talk about simple things. Only one principal (1%) indicated that they can talk about almost anything in te reo.

**Table 1.10: Percentage of principals responding to the contextual questionnaire by ability to speak te reo Māori**

Ability to speak te reo Māori	Percentage of principals
No more than a few words or phrases	32%
Not very well (I can only talk about simple things in Māori)	45%
Fairly well (I can talk about some things in Māori)	20%
Well (I can talk about many things in Māori)	3%
Very well (I can talk about almost anything in Māori)	1%
<b>Total</b>	<b>148</b>

Of the participating principals, thirty-eight (25%) had a master’s degree. Ninety-three percent of the principals had at least a bachelor’s degree.

Table 1.11 shows the decade of birth and number of years of experience working as a principal of the participating principals. The sample included 18 first year principals, as well as 61 principals with more than ten years of experience. The average age of participating principals was 54 years.

**Table 1.11: Percentage of principals responding to the contextual questionnaire by age and experience**

Age	Years of experience as a principal					Total
	Less than 1 year	1-2 years	3-5 years	6-10 years	More than 10 years	
<b>30-39</b>	2	0	2	1	1	6
<b>40-49</b>	8	6	14	9	6	43
<b>50-59</b>	7	2	12	13	26	60
<b>60-69</b>	1	1	3	4	23	32
<b>70-79</b>	0	0	0	1	5	6
<b>Total</b>	18	9	31	28	61	147

## 2. He Muka Mātauranga | Curriculum, Content, and Pedagogy

This chapter describes key aspects of curriculum implementation in the schools that participated in the 2024 study. We start by identifying our study objective and then outline our methodology. After that, we present a detailed breakdown of results for students, teachers, and principals. Lastly, we briefly explore the possible implications of these results.

### Findings at a glance

A key objective in 2024 was to provide insights into how the curriculum is delivered and experienced, particularly in mathematics and statistics and in science, across English-medium state and state-integrated schools, and to highlight strengths, challenges, and opportunities for improvement. Our analysis highlights eight notable findings:

**Teachers and principals indicated that a shortage of resources for students who need learning support affects capacity to teach**

- 87% of teachers and 93% of principals identified this as a factor affecting teaching.

**The learning area most commonly included in inquiry teaching is social sciences**

- 88% of teachers include social sciences in their inquiry teaching. More than three-quarters of teachers include English and science.

**PLD is more frequent in mathematics and statistics than in science**

- Seven times as many teachers had completed 16 hours or more in the last two years.

**Older maths resources, developed for New Zealand schools, remain popular**

- Resources from the nzmaths website, and Figure It Out resources, are used by more than 80% of teachers.

**Teachers indicated a high level of self-efficacy as maths teachers**

- More than 90% of teachers agreed with each capability statement.

**Most teachers report that students spend 10 hours or less per term learning science**

- 55% of teachers spend 0-10 hours per term
- 14% spend more than 20 hours per term.

**Half of teachers provide opportunities for science investigations**

- Students participate in investigations in more than half of classes, and develop their own in a third of classes.

**Teachers indicated a high level of self-efficacy as science teachers**

- More than 80% of teachers agreed with each capability statement.

## Study objectives and methodology

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A key objective of the 2024 Curriculum Insights and Progress Study (Curriculum Insights) was to provide valuable insights into the delivery and experience of the New Zealand Curriculum, particularly in mathematics and statistics and in science, in English-medium state and state-integrated schools. The study aimed to understand curriculum implementation across schools and to highlight strengths, challenges, and opportunities for improvement. As such, a sizeable portion of the contextual surveys were dedicated to questions that relate to the delivery and experience of curriculum, particularly within the mathematics and statistics, and science learning areas. This focus included gathering the perceptions of students, teachers, and principals about opportunities to learn, barriers to effective teaching, professional learning and development, and pedagogical approaches.

## What did we do?

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To ensure the surveys did not place an unreasonable burden on students, teachers, and principals, we carefully selected the curriculum, content, instruction, and pedagogical content knowledge items that were included. Items were only added if they met one or more of the following criteria:

- they could generate unique and actionable insights for the Ministry of Education, schools, PLD, and initial teacher education (ITE)
- they were relevant to the current policy climate
- they reflected attributes that can be improved (such as availability of PLD, resources for instruction, etc.)
- they shed light on teachers' pedagogical content knowledge.

To make completion more straightforward, we asked Year 3 students fewer questions than Years 6 and 8 students and reduced the number of response categories for Year 3 students.

The teacher survey included sets of questions on:

- potential barriers to teaching
- implementation of inquiry learning
- opportunities to learn provided in the focus learning areas
- the teacher's classroom programme and self-efficacy (confidence) in teaching each of the focus learning areas
- access to professional learning and development.

The principal survey included questions on:

- potential barriers to teaching
- their school's resources and teachers' pedagogical content knowledge and instructional practices with regard to teaching the focus learning areas
- access to professional learning and development.



## What did we find?

We analysed the survey responses from students, teachers, and principals, examining how their experiences and views relate to a range of demographic factors. In particular, the study sought to understand curriculum implementation across schools, identifying strengths, challenges, and opportunities for improvement.

From this analysis, we identified eight key findings that shed light on critical aspects of curriculum delivery. These findings are grouped thematically in the following sections, focusing on resourcing, inquiry learning, professional learning and development, and the teaching and learning of mathematics and science. Each theme highlights system-level patterns as well as variations across year levels and school contexts.

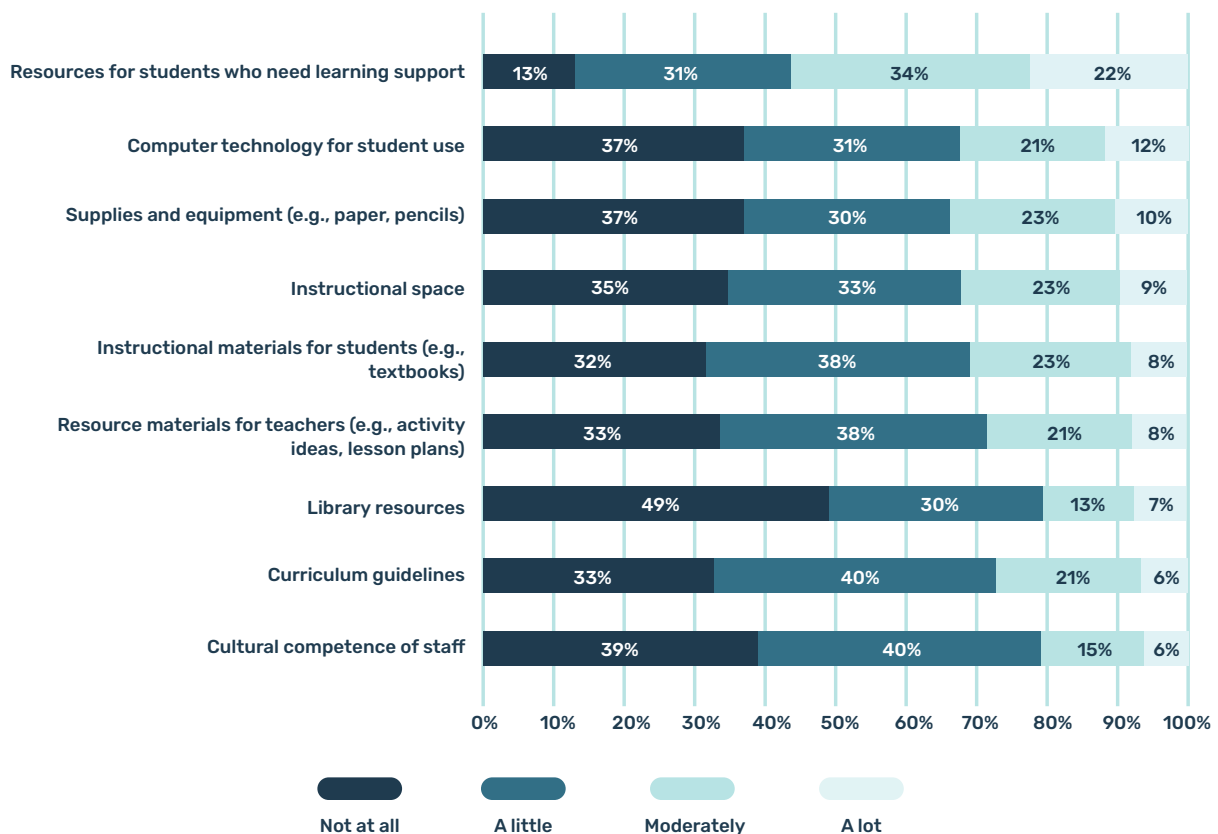
## Findings relating to resourcing

This section describes teachers' and principals' perceptions of how resourcing affects teaching and learning within their schools.

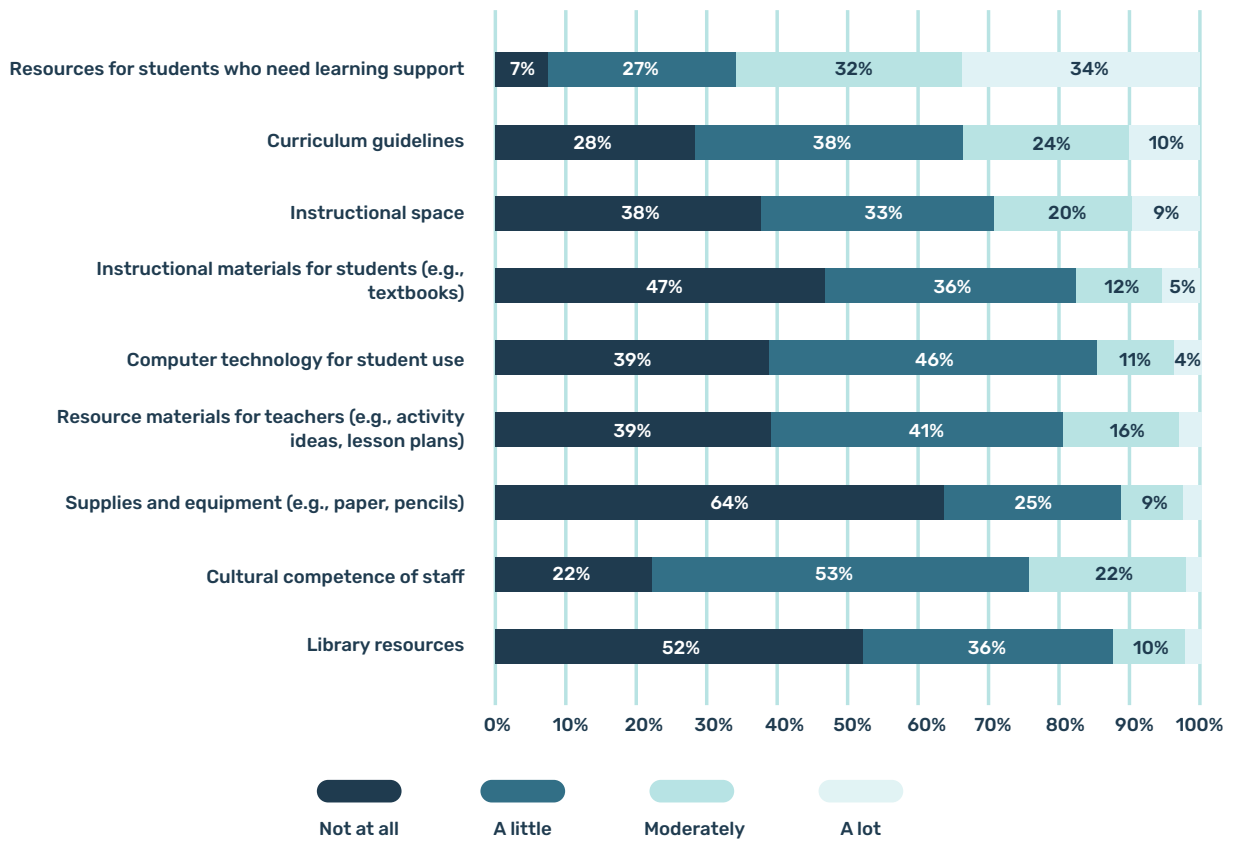
### Teachers and principals indicated that a shortage of resources for students who need learning support affects capacity to teach

We asked teachers and principals to identify the extent to which their capacity to teach is affected by a shortage of different resources. Figures 2.1 and 2.2 summarise their responses.

**Figure 2.1: Percentage of teachers responding to whether shortages impact on capacity to teach**



**Figure 2.2: Percentage of principals responding to whether shortages impact on capacity to teach**



Of the resources listed, the one identified most frequently by both principals and teachers was “resources for students who need learning support”. A shortage of these resources was identified as affecting their capacity to teach at least “a little” by 87% of teachers and 93% of principals. Over half of teachers and principals rated a shortage of resources for students with learning needs as impacting their teaching either “moderately” or “a lot”.

While 39% of teachers indicated that cultural competence of staff was not a barrier, only 22% of principals agreed. Conversely, 64% of principals reported that a shortage of supplies and equipment were not a barrier, compared to 37% of teachers.

We compared the proportions of teachers who rated a shortage in each resource category as affecting their teaching to at least some extent, across different school equity index groups. The results are summarised in Table 2.1.



**Table 2.1: Percentage of teachers rating shortages in each category as affecting their teaching at least “a little”, by equity index group.**

	Equity index group			
	More n=108	Moderate n=336	Fewer n=315	All n=759
Resource materials for teachers (e.g. activity ideas, lesson plans)	65%	69%	64%	67%
Instructional materials for students (e.g. textbooks)	70%	71%	65%	68%
Supplies and equipment (e.g. paper, pencils)	69%	68%	57%	63%
Curriculum guidelines	66%	68%	67%	67%
Instructional space	58%	64%	69%	65%
Cultural competence of staff	60%	64%	57%	61%
Computer technology for student use	55%	67%	63%	63%
Library resources	53%	55%	45%	51%
Resources for students who need learning support	87%	87%	87%	87%

In most categories, the proportions of teachers reporting that access to resources impacted their teaching, was similar for the three EQI groups, however, there were several places where differences were noted. For supplies and equipment, 57% of teachers in “Fewer barriers” schools report this as a concern, compared to 69% in the “More” group. A similar 12% gap appears for computer technology for student use, with 67% of teachers in “Moderate barriers” schools identifying it as a shortage, compared to only 55% in “More barriers” schools. Interestingly, instructional space shows an 11% difference in the opposite direction: 69% of teachers in “Fewer barriers” schools report it as a shortage, compared to 58% in “More barriers” schools.

## Findings relating to inquiry learning

Inquiry learning is a term often used to describe student-led, teacher-guided approaches to learning where learners investigate questions, issues, or topics of interest—drawing on multiple learning areas to make sense of the world, solve problems, and take informed action. This section describes findings related to the implementation of inquiry learning in the schools involved in the study.

**The learning area most commonly included in inquiry learning is social sciences**

We asked teachers how much time they spend on inquiry learning in a typical week, where several learning areas are addressed together. The results are summarised in Table 2.2.

**Table 2.2: Amount of time teachers report that they spend on inquiry learning in a typical week**

Time per week	Percentage of teachers			
	Year 3 n=176	Year 6 n=196	Year 8 n=350	All n=722
No time			3%	1%
Less than 3 hours	13%	11%	10%	11%
3-5 hours	44%	38%	35%	38%
6-10 hours	26%	32%	30%	30%
More than 10 hours	18%	18%	22%	20%

Only 9 teachers (1%) indicated that they do not use inquiry learning in their class. Eighty-eight percent of participating teachers spend at least three hours per week, and 50% spend at least 6 hours.

Those teachers who use inquiry learning were asked to identify which learning areas are typically included in inquiry learning in their classroom (see Table 2.3).

**Table 2.3: Learning areas teachers report that they include in inquiry learning**

Learning area	Percentage of teachers			
	Year 3	Year 6	Year 8	All
Social Sciences	87%	89%	89%	88%
English	80%	82%	85%	83%
Science	87%	82%	70%	77%
The Arts	85%	75%	50%	66%
Technology	80%	78%	50%	65%
Mathematics and Statistics	45%	58%	54%	53%
Learning Languages	39%	30%	24%	29%
Health and Physical Education	27%	29%	20%	24%

For all year levels, social sciences was reported as being included the most often in inquiry learning. English and science were also included by over two thirds of teachers in every year level. While most Years 3 and 6 teachers also included technology and the arts, only half of Year 8 teachers did, possibly because these subjects are more likely to be taught by specialists in Year 8 than in Years 3 and 6. Learning languages and health and physical education were the least frequently included learning areas.

## Findings relating to professional learning and development

This section presents findings on the types and extent of PLD available to participating teachers in the focus learning areas. It examines reported access, time spent in formal development activities, and whether PLD has been a recent priority in schools. These insights help us understand how well the system is supporting teachers to deliver rich, responsive learning in these areas.

### PLD is more frequent in mathematics and statistics than in science

We asked principals to indicate how much access teachers in their school have to PLD in each of the Curriculum Insights Study's curriculum focus learning areas (mathematics and statistics or science). They were also asked to indicate whether mathematics and statistics, the intentional teaching of science, or science as an integrated learning area, were a focus of PLD in their school in the last two years. The results are summarised in Tables 2.4 and 2.5.

**Table 2.4: Principals' responses regarding teacher access to PLD**

	No access	Little access	Moderate access	Extensive access
Mathematics and statistics	1%	12%	62%	26%
Science	11%	50%	33%	6%

**Table 2.5: Principals' responses regarding PLD focus in the last two years**

	No, not a focus	Yes, a minor focus	Yes, a major focus
Mathematics and statistics	17%	37%	47%
The intentional teaching of science	57%	34%	10%
Science as an integrated learning approach	26%	54%	20%

Nearly half of principals (47%) reported that mathematics and statistics had been a major focus of PLD in their schools over the past two years. Additionally, 88% indicated that their teachers had moderate or extensive access to mathematics and statistics PLD.

In contrast, far fewer principals reported a major focus on science PLD: only 10% for the intentional teaching of science, and 20% for teaching science through an integrated learning approach. Furthermore, 61% of principals said their teachers had little or no access to science PLD.

We asked teachers to estimate how many hours in total they had spent in formal professional development, including workshops, seminars, both school-led and externally facilitated for teaching each of the focus learning areas. The results are summarised in Table 2.6.

**Table 2.6: Teachers' estimates of PLD time for focus learning areas in the last two years**

	None	Less than 6 hours	6-15 hours	16-35 hours	More than 35 hours
Mathematics and statistics	1%	12%	62%		26%
Science	11%	50%	33%		6%

Teachers reported more time spent on mathematics and statistics PLD than on science, with over a quarter (28%) of teachers spending 16 or more hours on mathematics and statistics PLD in the last two years, compared to 4% for science. More than half of teachers reported that they had had no formal PLD for science in the previous two years.

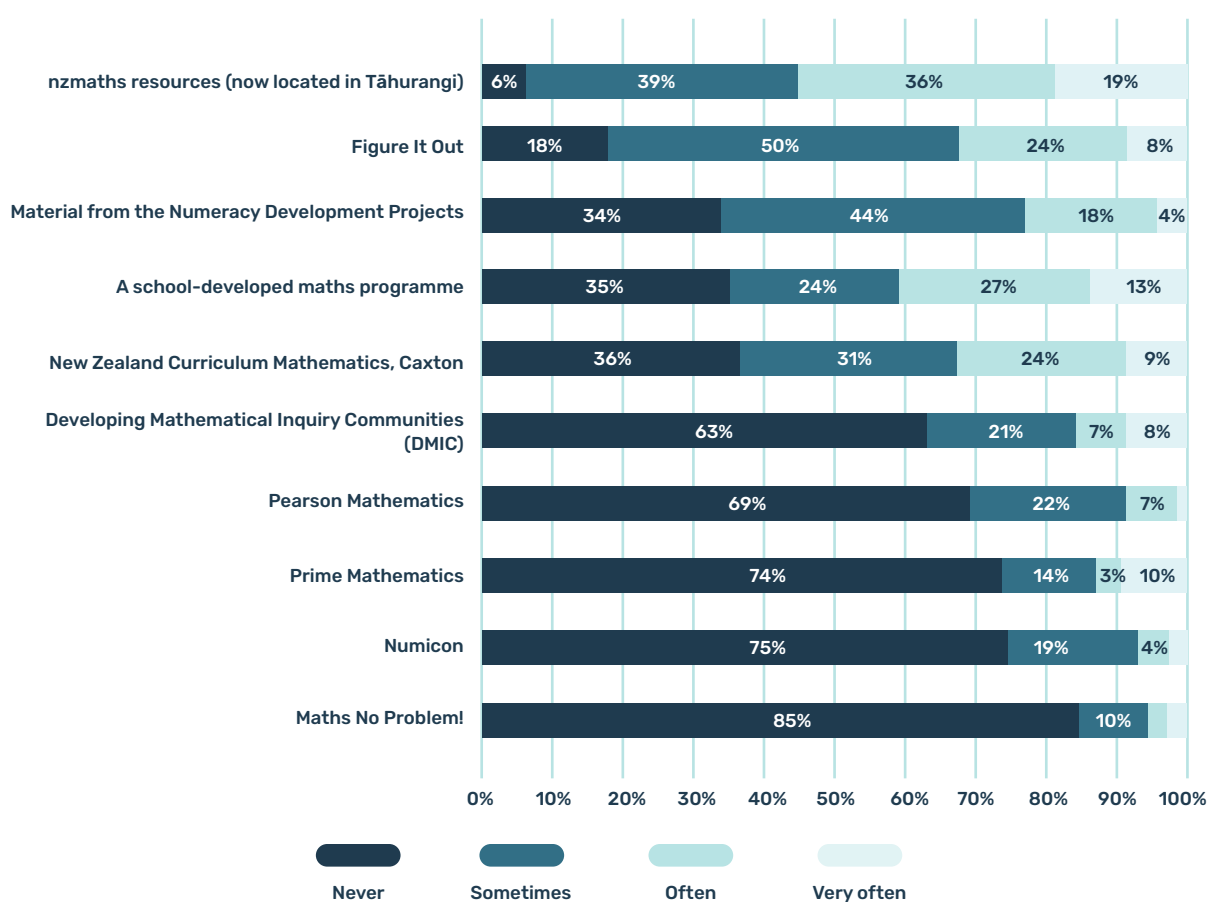
## Findings relating to the teaching and learning of mathematics and statistics

This section summarises findings on the implementation of the mathematics and statistics learning area.

### Older maths resources, developed for New Zealand schools, remain popular

We asked teachers to identify, from a list, which instructional programmes, approaches, or materials they use. The results are summarised in Figure 2.3.

**Figure 2.3: Percentages of teachers using instructional programmes, approaches or materials**

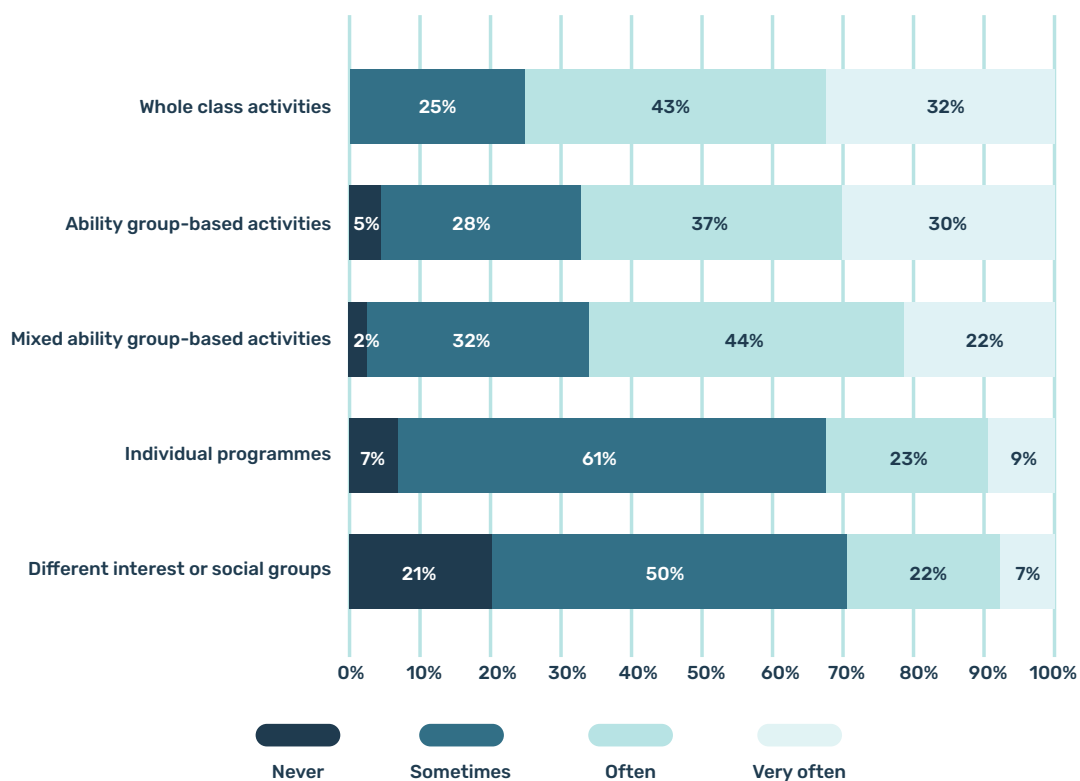


The most commonly used were resources from the nzmaths website, which were developed between 2000 and 2022, and have been available on Tāhurangi, the Ministry of Education’s online curriculum hub, since the beginning of 2024. Almost all teachers (94%) use these resources, with over half (55%) reporting that they use them “often” or “very often”. Most (82%) teachers also use the Figure It Out series of books, though only about a third (32%) use them “often” or “very often”. Material from the Numeracy Development Projects, school developed maths programmes, and the New Zealand Curriculum

Mathematics books produced by Caxton were used by over half of the responding teachers. These resources were all developed specifically for use in New Zealand schools, and have all been available for an extended period of time.

We asked teachers to identify, from a list, the organisational structures they use in their classroom mathematics programme. The results are summarised in Figure 2.4.

**Figure 2.4: Percentages of teachers using organisational structures**

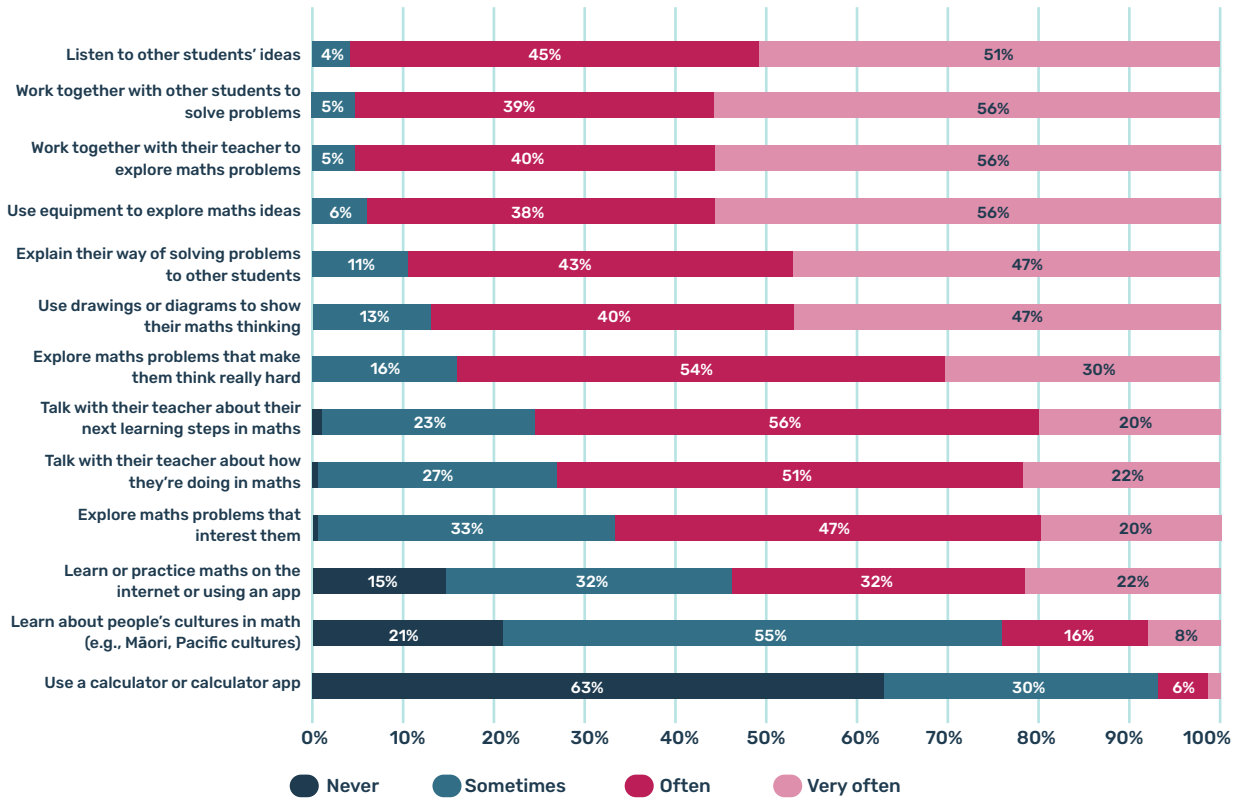


For every organisational structure listed, the majority of teachers indicated that they use it at least some of the time, with the least commonly used being “Different interest or social groups.” Seventy-five percent of teachers “often” or “very often” use whole class activities, while 67% and 66% “often” or “very often” use ability groups and mixed ability groups, respectively. Only 32% of teachers report “often” or “very often” using individual programmes.

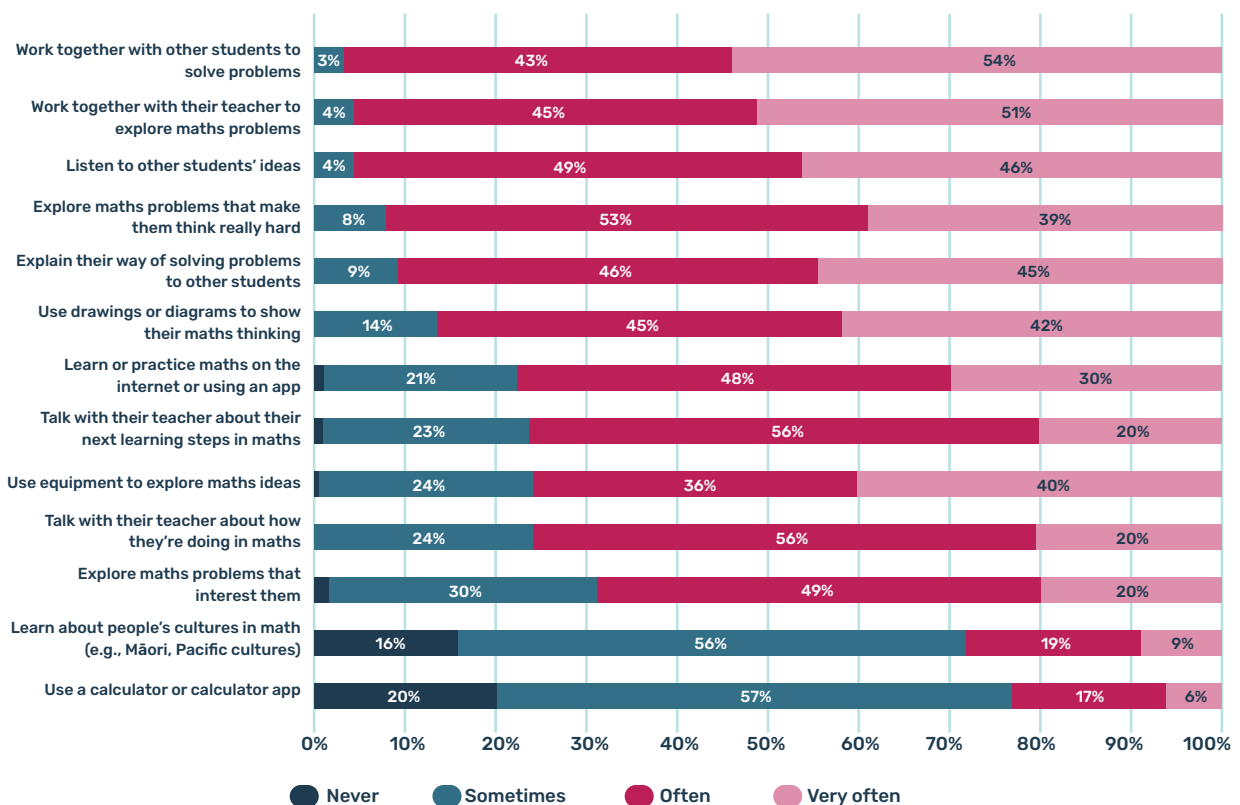
We asked teachers a series of questions about the mathematics and statistics learning opportunities they provide their students. The results are summarised in Figures 2.5 to 2.7.



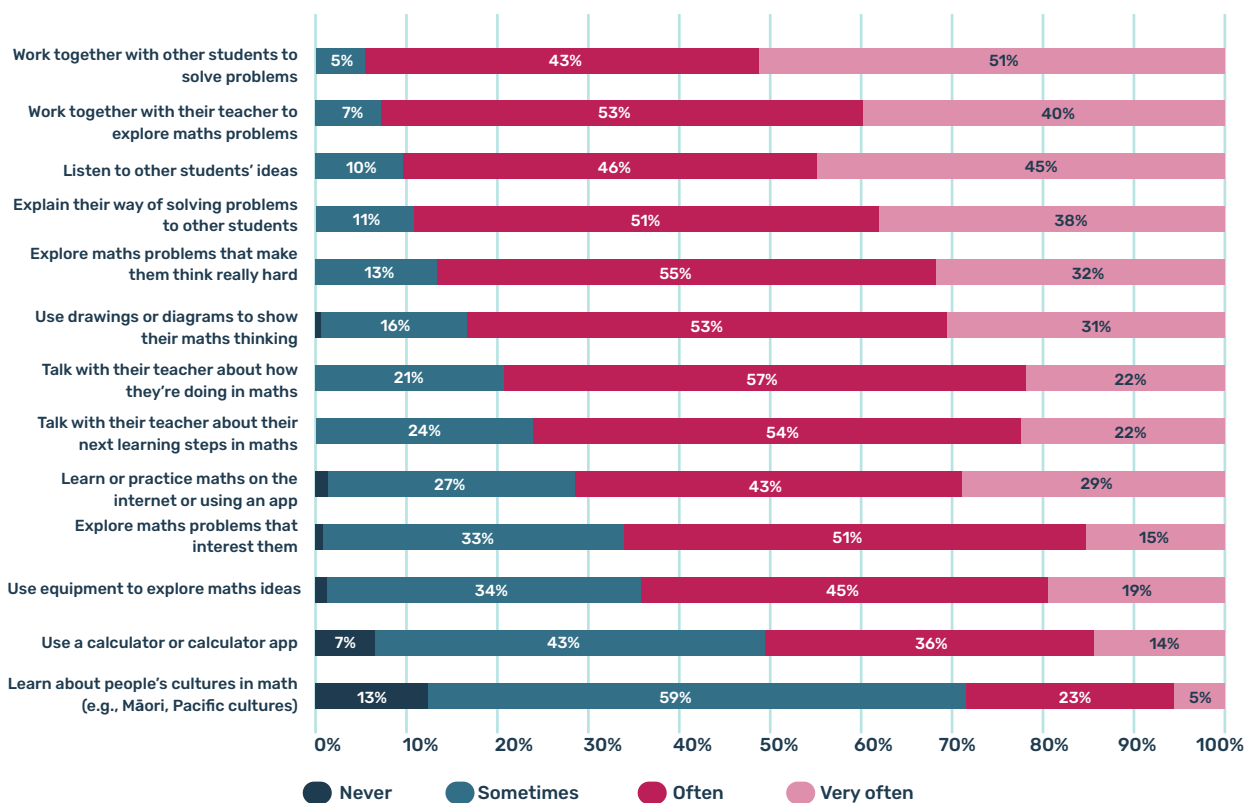
**Figure 2.5: Percentage responses of Year 3 teachers regarding learning opportunities in mathematics and statistics**



**Figure 2.6: Percentage responses of Year 6 teachers regarding learning opportunities in mathematics and statistics**



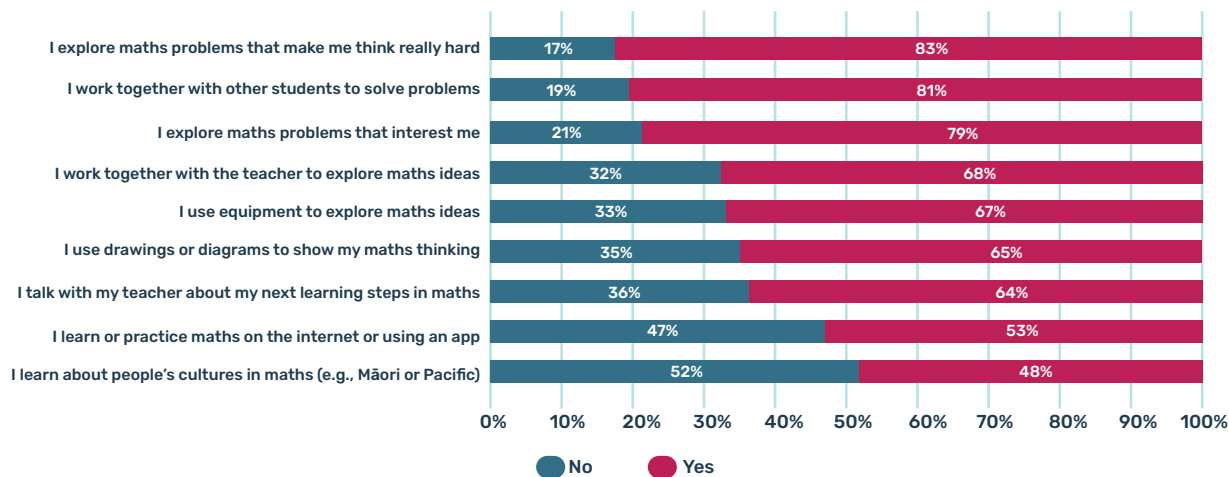
**Figure 2.7: Percentage responses of Year 8 teachers regarding learning opportunities in mathematics and statistics**



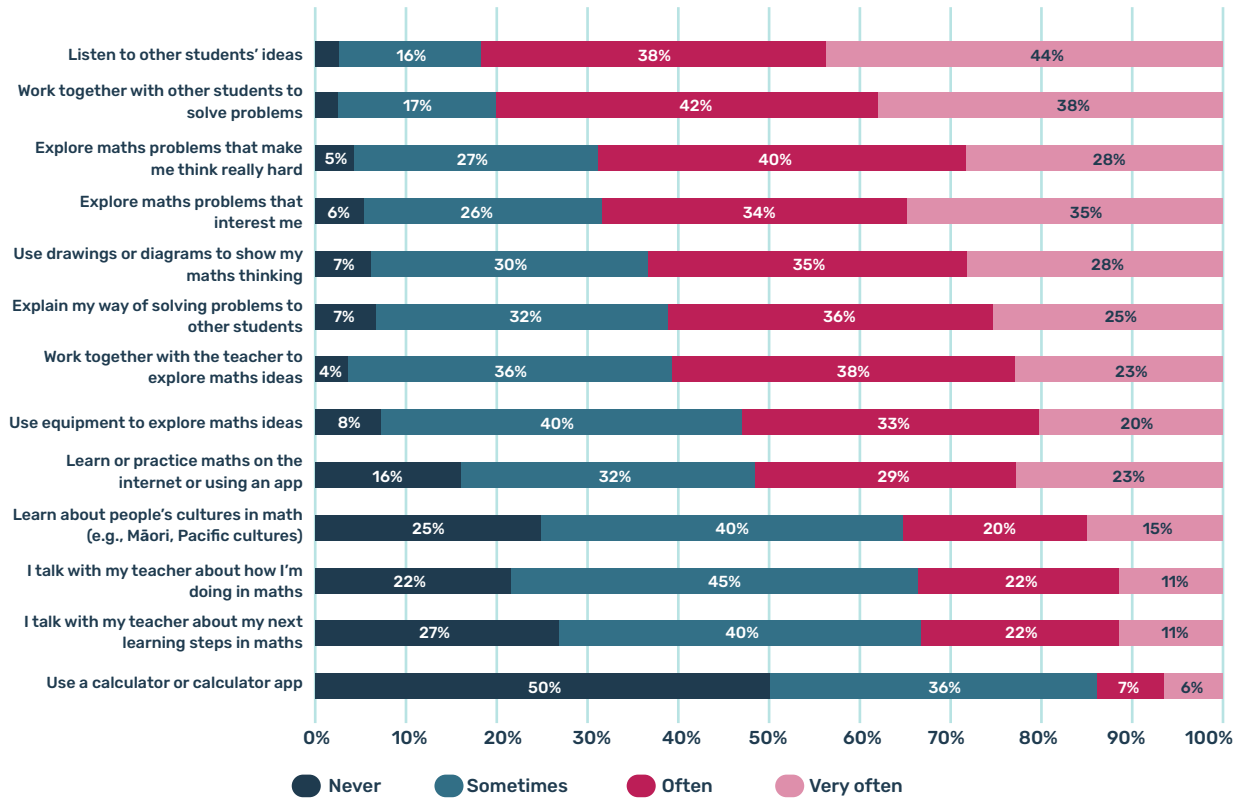
At all three year levels, the least commonly provided opportunities to learn were “learn about people’s cultures in maths”, and “using a calculator or calculator app”. Around a quarter of teachers of each year level indicated that they “often” or “very often” provide opportunities to learn about other cultures in maths. The proportion that “often” or “very often” use calculators with their students increases from 7% in Year 3 to 23% in Year 6, to 50% in Year 8.

We asked students to respond to statements about mathematics and statistics learning opportunities they experience in class. The results are summarised in Figures 2.8 to 2.10.

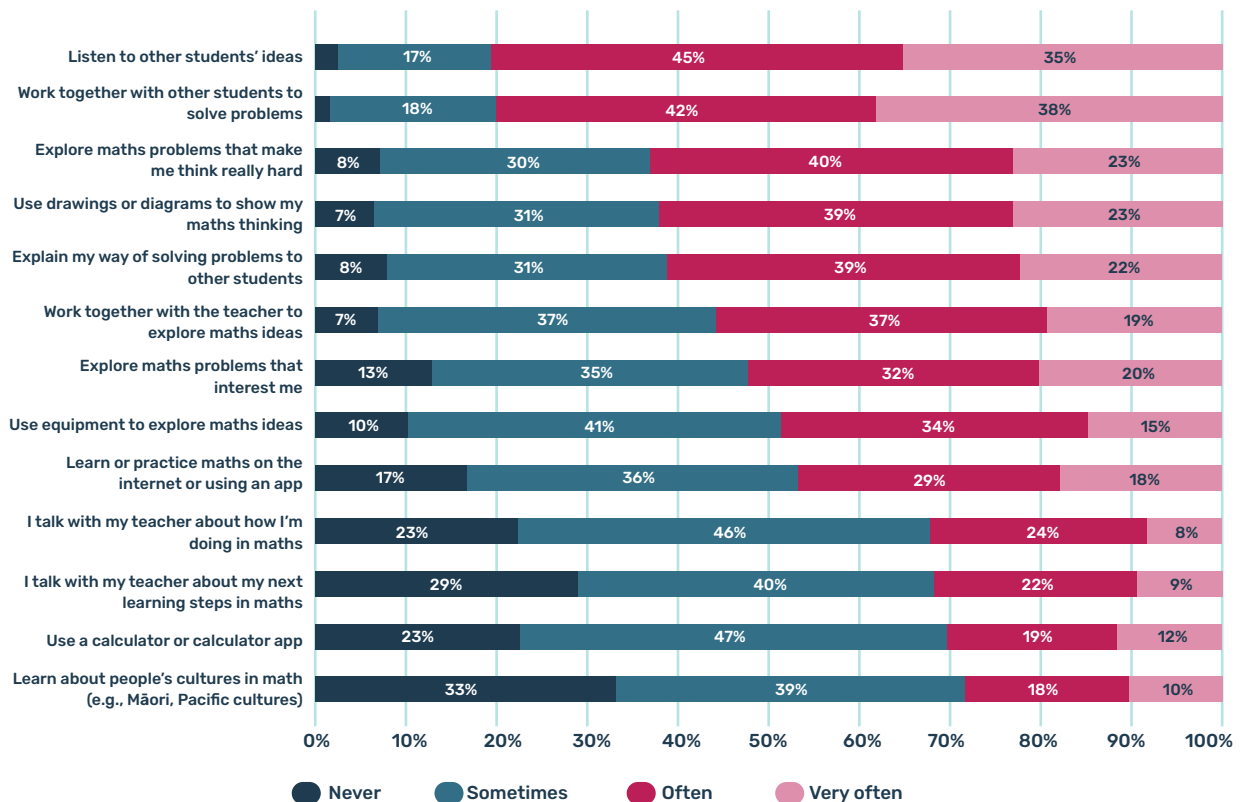
**Figure 2.8: Percentage responses of Year 3 students regarding learning opportunities in mathematics and statistics**



**Figure 2.9: Percentage responses of Year 6 students regarding learning opportunities in mathematics and statistics**



**Figure 2.10: Percentage responses of Year 8 students regarding learning opportunities in mathematics and statistics**



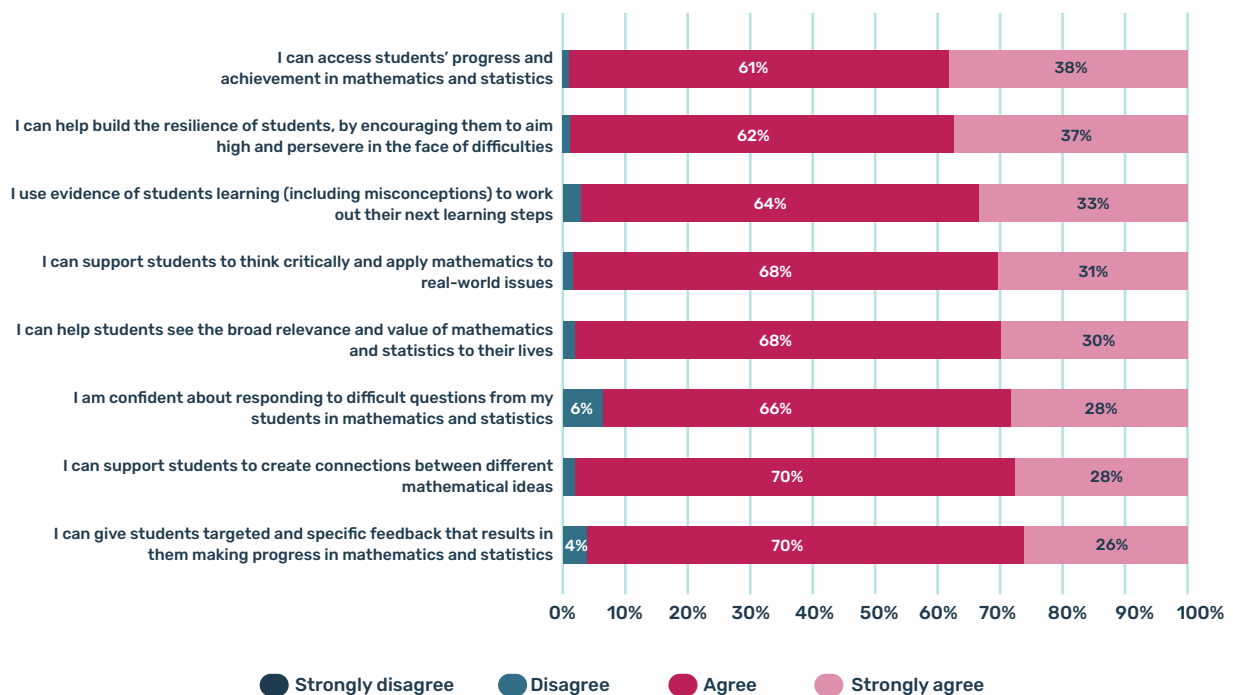
Students at all year levels responded that they work together with other students to solve problems, with 81% of Year 3 students responding “Yes”, and 80% of Year 6 and Year 8 students indicating that they do it “often” or “very often”. Similar proportions of Years 6 and 8 students indicated that they listen to other students’ ideas. Students agree with their teachers that they do not frequently learn about other’s cultures in maths, with only 35% of Year 6 students and 28% of Year 8 students indicating that this happens “often” or “very often”. The proportion of students that reported that they “often” or “very often” use calculators increased from 13% in Year 6, to 31% in Year 8.

Around a third of students in Years 6 and 8 indicated that they “often” or “very often” talk with their teacher about how they are doing in maths and about their next learning steps in maths. Interestingly, over three quarters of the teachers of Years 6 and 8 believed that they have these conversations with their students, possibly indicating that teachers are not being sufficiently explicit about the purpose of these conversations.

### Teachers indicated a high level of self-efficacy as maths teachers

We asked teachers to respond to a series of statements about their self-efficacy as a mathematics and statistics teacher. Their responses are summarised in Figure 2.11.

**Figure 2.11: Percentage responses of teachers to mathematics and statistics teaching statements**

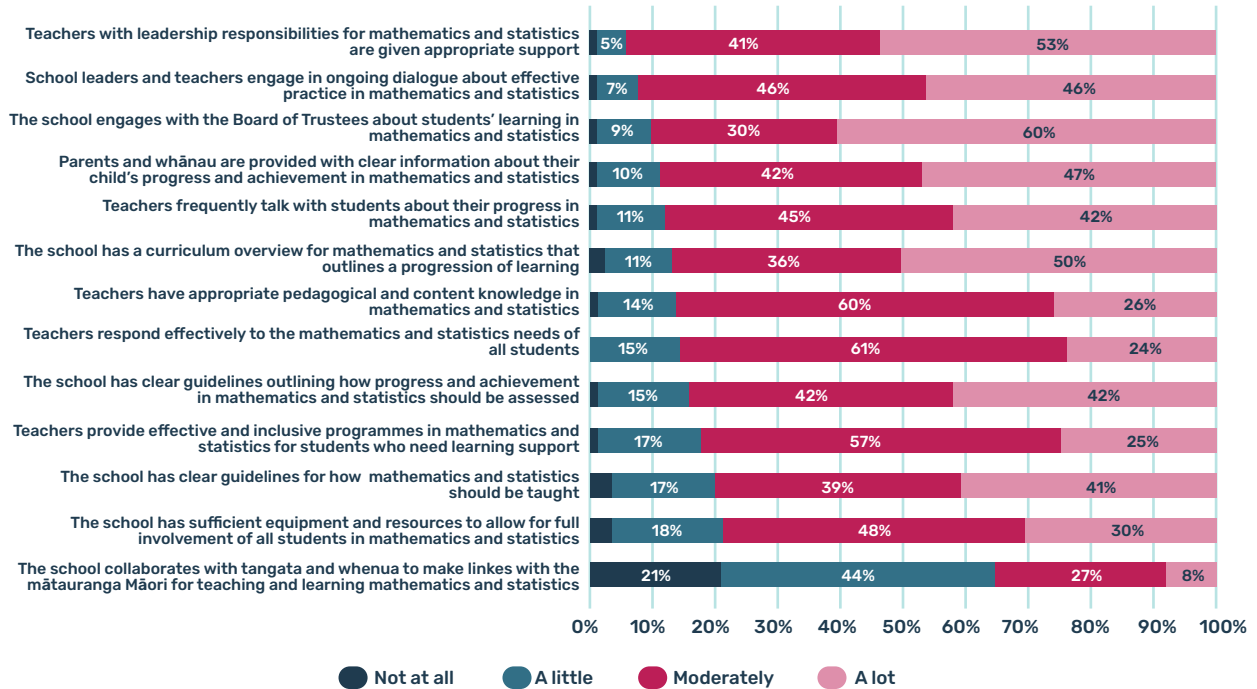


Teachers were generally confident in their ability to perform all the identified aspects of mathematics and statistics teaching, with at least 94% of teachers agreeing with each statement.

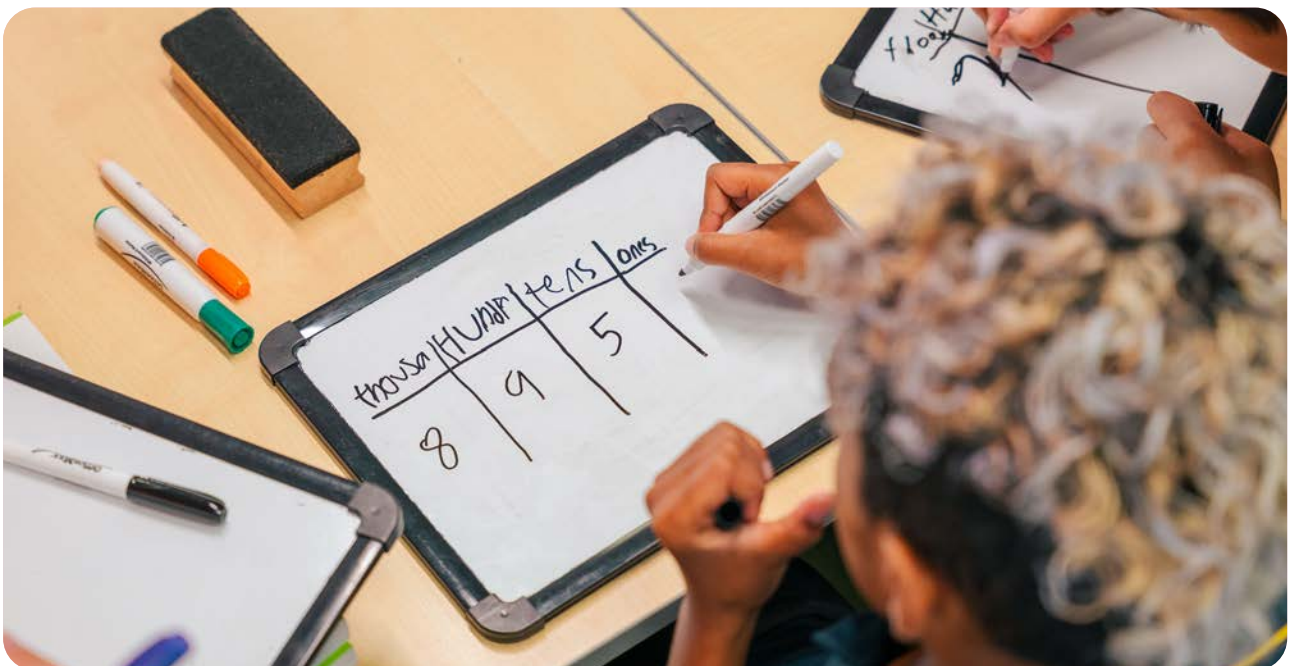
Teachers were also asked to respond to two statements about incorporating cultural perspectives in their teaching of mathematics and statistics. Eighty percent agreed with the statement “I can engage with Māori, Pacific and other cultural perspectives when I plan and teach mathematics and statistics”, while 75% agreed with the statement “I can plan for opportunities to include mātauranga Māori in mathematics and statistics”. These results suggest that most teachers feel confident in their ability to include cultural knowledge and perspectives in their teaching practice. Teachers from schools with more socioeconomic barriers were slightly more likely to agree that they could engage with other cultural perspectives (88%), than teachers from schools with fewer barriers (74%).

Principals were asked a series of statements about their school's resources and teachers' pedagogical content knowledge and instructional practices with regard to teaching mathematics and statistics. The responses are summarised in Figure 2.12.

**Figure 2.12: Percentage responses of principals to statements about the implementation of mathematics and statistics**



Principals responded positively to almost all of the statements regarding their school's implementation of mathematics and statistics. The only statement that fewer than 75% of teachers identified as at least moderately like their school was "the school collaborates with tangata whenua to make links with mātauranga Māori for teaching mathematics and statistics". A third (35%) of principals described this as moderately or a lot like their school, while 21% responded that it was not at all like their school.



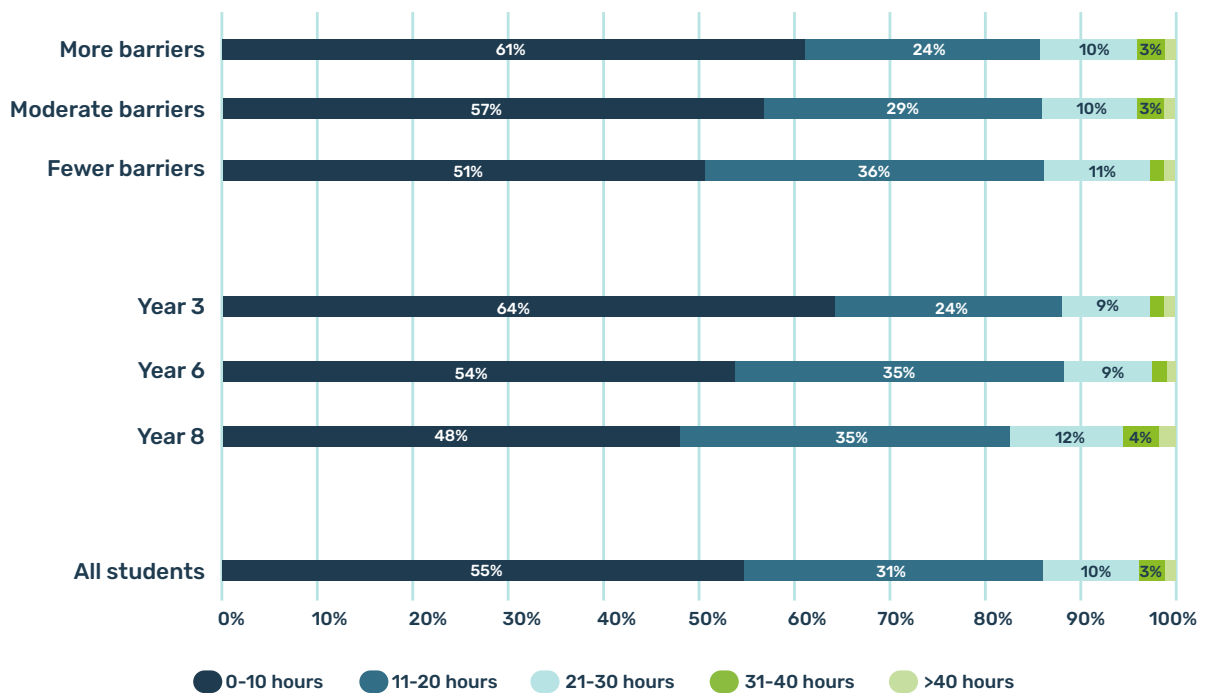
## Findings relating to the teaching and learning of science

This section summarises findings on the implementation of the science learning area.

### Most teachers report that students spend 10 hours or less per term learning science

We asked teachers to indicate how many hours per term their students spend learning science. The results are summarised in Figure 2.13

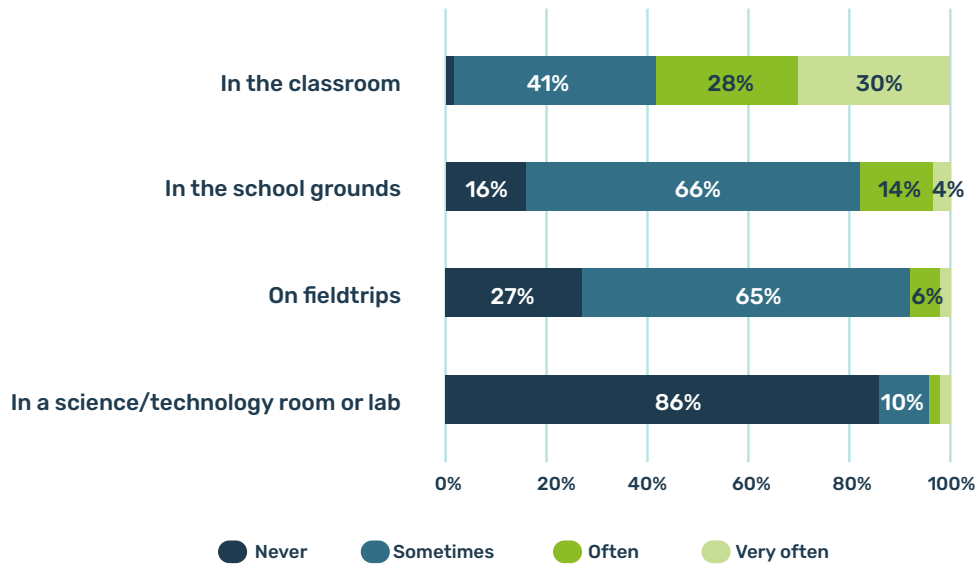
Figure 2.13: Hours per term spent learning science by demographic group



Over half of teachers (55%) indicated that their students spend 10 hours or less per term learning science. Teachers of students in higher year levels, and teachers in schools with fewer barriers to academic success were more likely to report spending more time teaching science.

We asked teachers to identify where they taught science. The results are summarised in Figure 2.14.

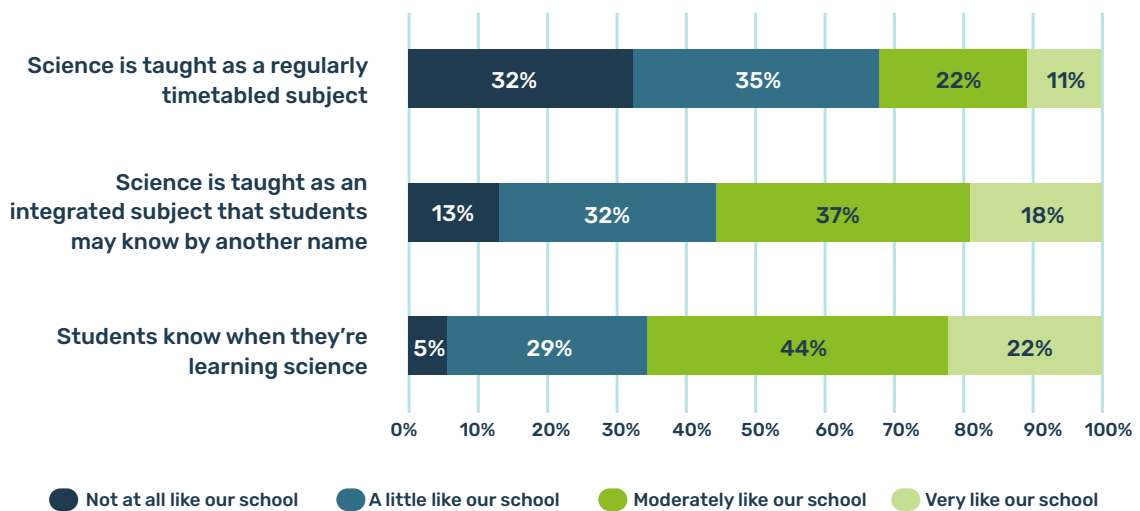
**Figure 2.14: Percentages of teachers teaching science in different locations**



Almost all teachers (99%) teach at least some science in the classroom, with most also teaching at least some science in the school grounds (84%) or on field trips (73%). Very few (14%) of the teachers surveyed teach science in a specialised technology room or laboratory. Teachers of Years 3 and 6 students were less likely (7% and 10%, respectively) to teach science in a specialised technology room or laboratory than teachers of Year 8 students (22%).

We asked teachers whether science is taught as a regularly timetabled subject at their school, and whether it is taught as an integrated subject that students may know by another name. Teachers were also asked to indicate whether they believe their students know when they are being taught science. The results are summarised in Figure 2.15.

**Figure 2.15: Teachers’ responses to statements about how science is taught to their students**

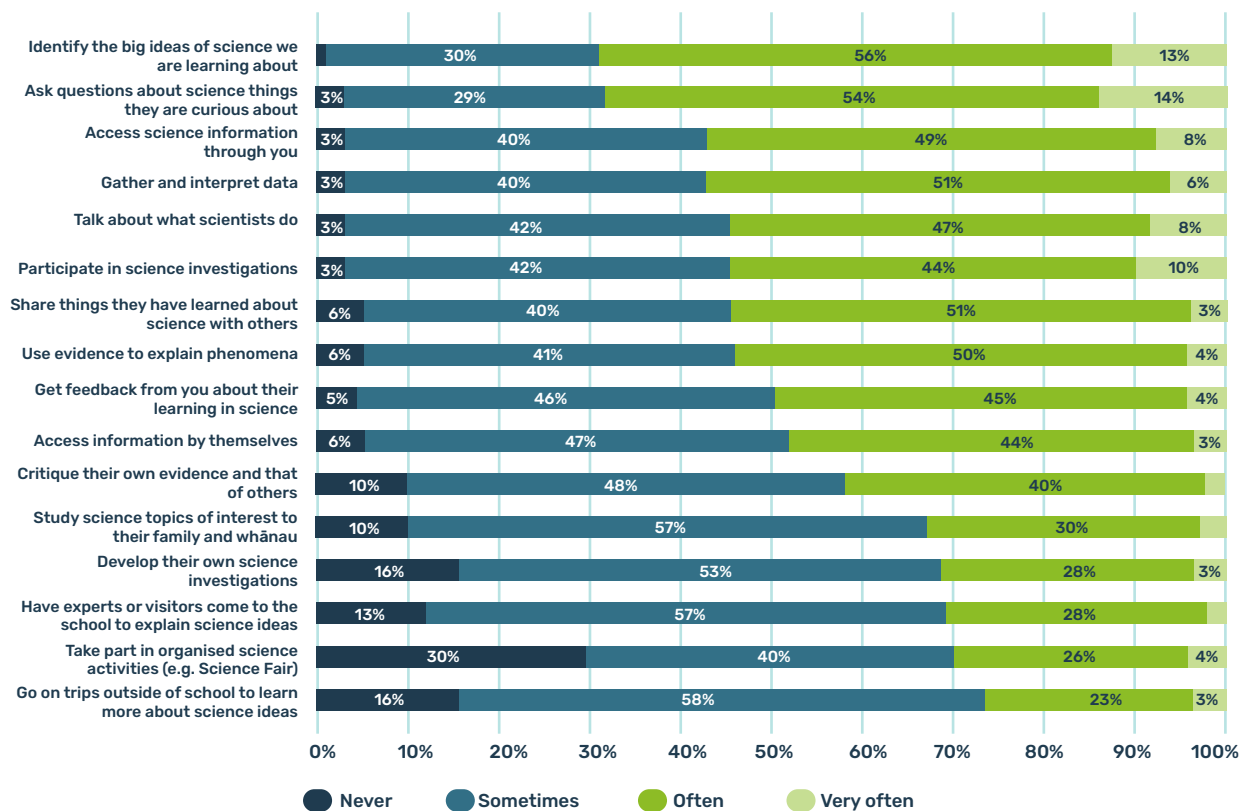


Teachers' responses suggest that science is more commonly taught as an integrated subject than as a regularly timetabled one, with 55% describing an integrated approach as moderately or very like their school, compared to 33% for the science subject approach. Most (87%) teachers describe science being taught as an integrated subject that students may know by another name (e.g. STEM, topic or inquiry-based learning) at least some of the time. Most teachers were confident that their students know when they are being taught science, with 66% describing this as moderately or very like their school.

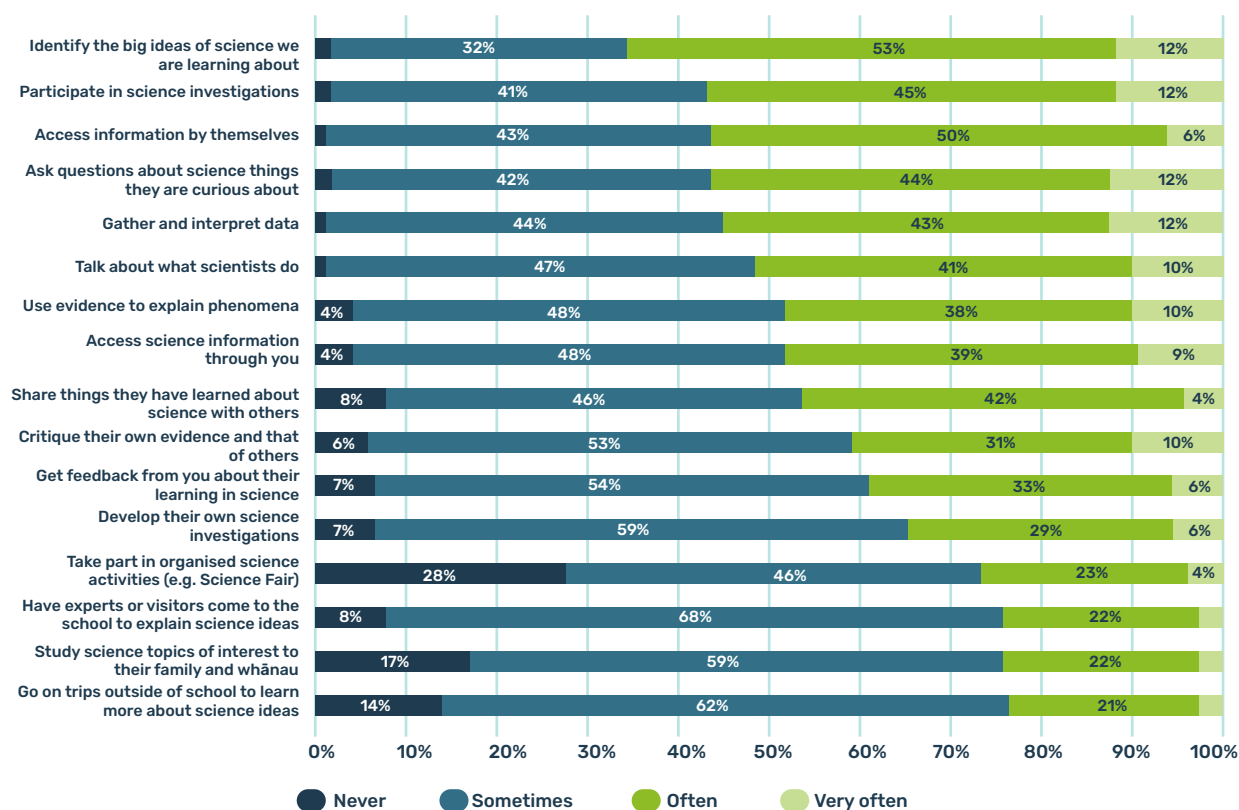
## Half of teachers provide opportunities for science investigations

We asked teachers a series of questions about the science learning opportunities they provide their students. The results are summarised in Figures 2.16 to 2.18.

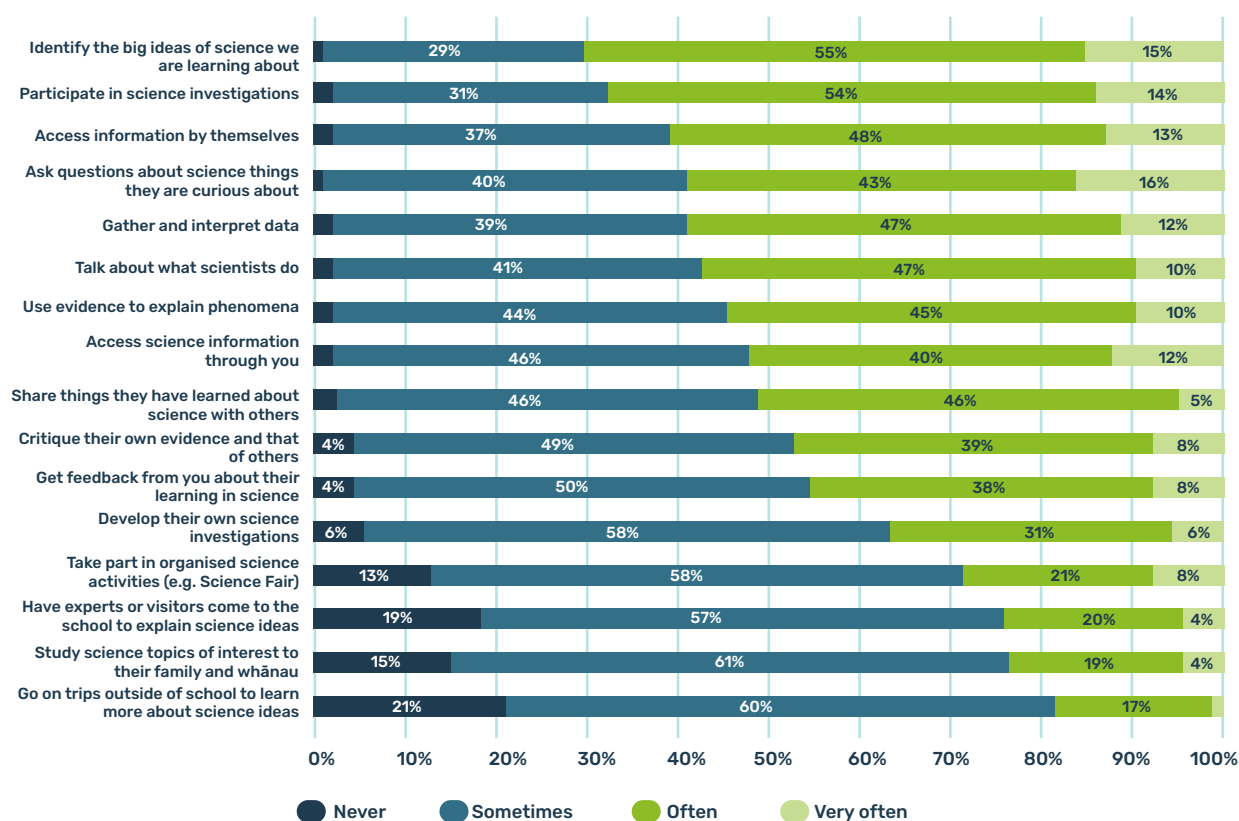
**Figure 2.16: Percentage responses of Year 3 teachers regarding learning opportunities in science**



**Figure 2.17: Percentage responses of Year 6 teachers regarding learning opportunities in science**



**Figure 2.18: Percentage responses of Year 8 teachers regarding learning opportunities in science**



Four of the statements in the figures above relate to the science capabilities<sup>1</sup>. The proportions of teachers in each year level who indicated that they provide their students with those opportunities either “often” or “very often” are summarised in Table 2.7.

**Table 2.7: Proportions of teachers who “Often” or “Very often” provide opportunities for their students to participate in the science capabilities**

Opportunity	Year 3	Year 6	Year 8
Ask questions about science things they are curious about	68%	56%	59%
Gather and interpret data	57%	55%	70%
Use evidence to explain phenomena	54%	49%	59%
Critique their own evidence and that of others	42%	41%	51%

Teachers of Year 8 students were more likely to provide opportunities for their students to gather and interpret data and to critique evidence, however, teachers of Year 3 students were more likely to have their students ask questions about science things they are curious about.

Two of the statements relate to scientific investigations. The proportions of teachers in each year level who indicated that they provide their students with those opportunities either “often” or “very often” are summarised in Table 2.8. The equivalent proportions from the previous science assessment carried out in 2017 by the National Monitoring Study of Student Achievement are included for comparison<sup>2</sup>.

**Table 2.8: Proportions of teachers who “Often” or “Very often” provide opportunities for their students to carry out scientific investigations**

Opportunity	Year 3	Year 6	Year 8	Year 8, 2017
Participate in science investigations	54%	56 %	55%	41%
Develop their own science investigations	31%	35%	37%	28%

Across all year levels, over half of teachers reported that their students “often” or “very often” participate in science investigations, with around one-third allowing students to develop their own investigations. Responses showed little variation by year level.

A comparison with Year 8 data from 2017 data suggests that science investigations may have become more common over time. In 2024, 55% of teachers indicated that students “often” or “very often” participate in science investigations, compared to just 41% in 2017. Similarly, more Year 8 teachers provided opportunities for students to develop their own science investigations in 2024 (37%) compared to 2017 (28%).

We asked students to respond to statements about science learning opportunities they experience in class. The results are summarised in Figures 2.19 to 2.21.

<sup>1</sup> The five science capabilities were developed to support teaching and learning in the science learning area of The New Zealand Curriculum with a focus on functional knowledge of science. The five capabilities are: gather and interpret data, use evidence, critique evidence, interpret representations, and engage with science.

<sup>2</sup> The National Monitoring Study of Student Achievement assessed students at Years 6 and 8.

Figure 2.19: Percentage responses of Year 3 students regarding learning opportunities in science

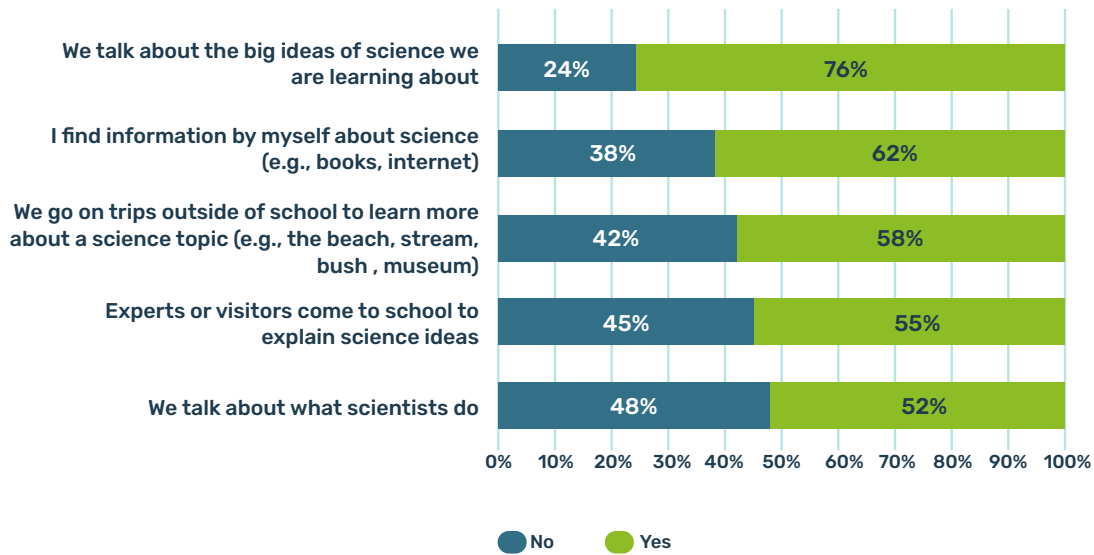
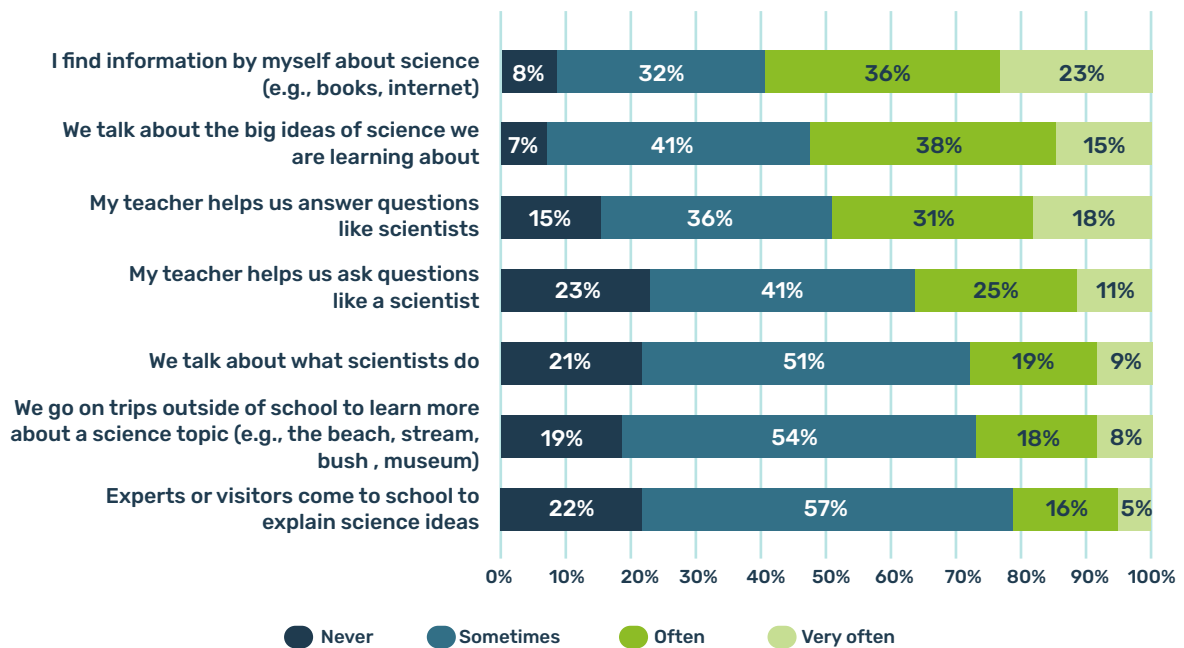
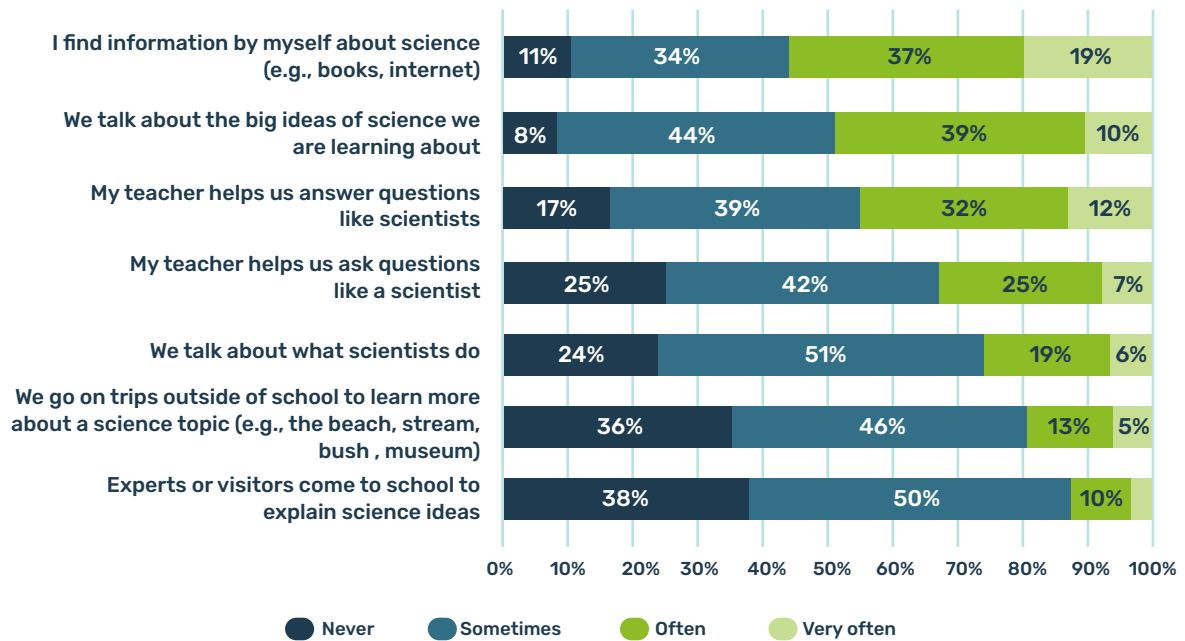


Figure 2.20: Percentage responses of Year 6 students regarding learning opportunities in science



**Figure 2.21: Percentage responses of Year 8 students regarding learning opportunities in science**



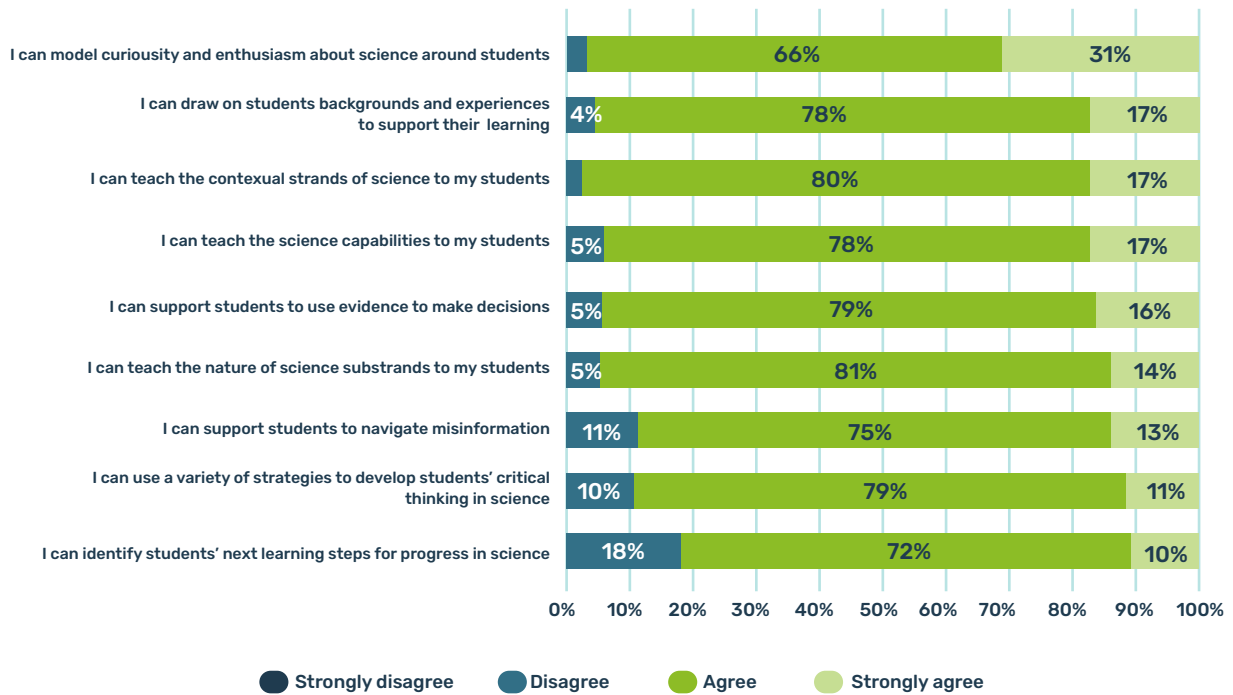
Student responses across Years 3, 6, and 8 show that generalised science learning opportunities such as talking about what scientists do, identifying big ideas, asking questions, accessing science information themselves (e.g. through books and internet, and gathering data) are largely consistent across year groups. However, opportunities to develop higher-order thinking skills in science such as using and critiquing evidence increase as students progress through the primary years. This is not unexpected. However, progressively fewer students report opportunities to share things they have learnt about science with others as they get older. Real-world and student-led experiences, such as using the school grounds as a science teaching resource, taking trips out of school, and hosting expert visitors, occur less frequently across all year levels, with a gradual decline by Year 8. This suggests that while classroom-based science learning is maintained, opportunities for richer, hands-on, and authentic experiences are more limited and decrease further as students progress through school.



## Teachers indicated a high level of self-efficacy as science teachers

We asked teachers to respond to a series of statements about their self-efficacy as a science teacher. Their responses are summarised in Figure 2.22.

**Figure 2.22: Percentage responses of teachers to science teaching statements**

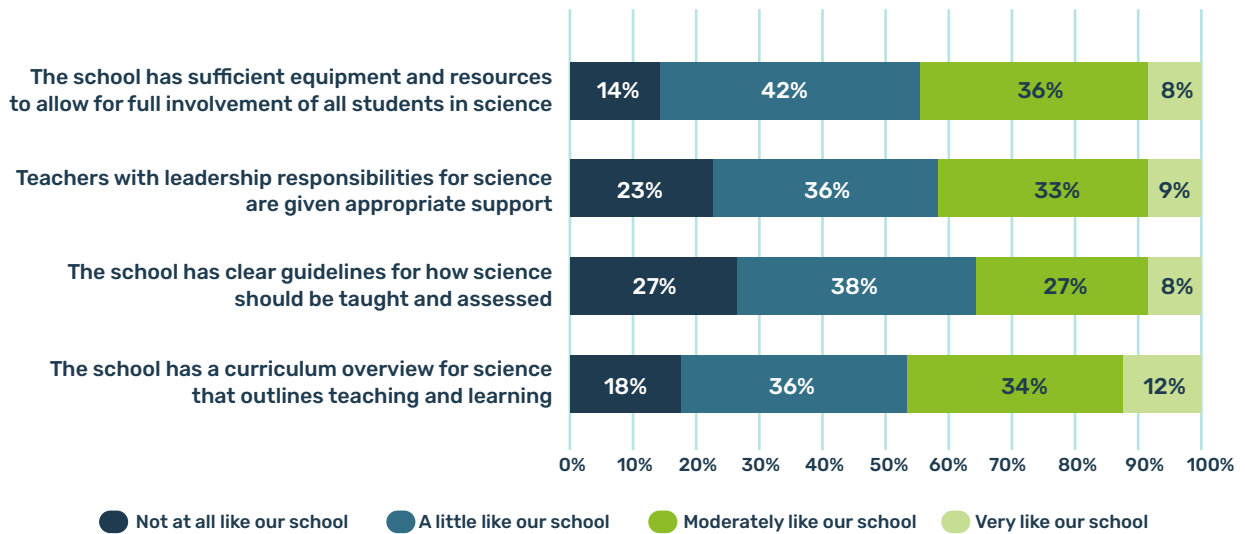


Teachers were generally confident in their ability to perform all the identified aspects of science teaching, with more than 80% of teachers agreeing with each statement. Eighteen percent of teachers indicated that they were not confident identifying their students' next steps in science.

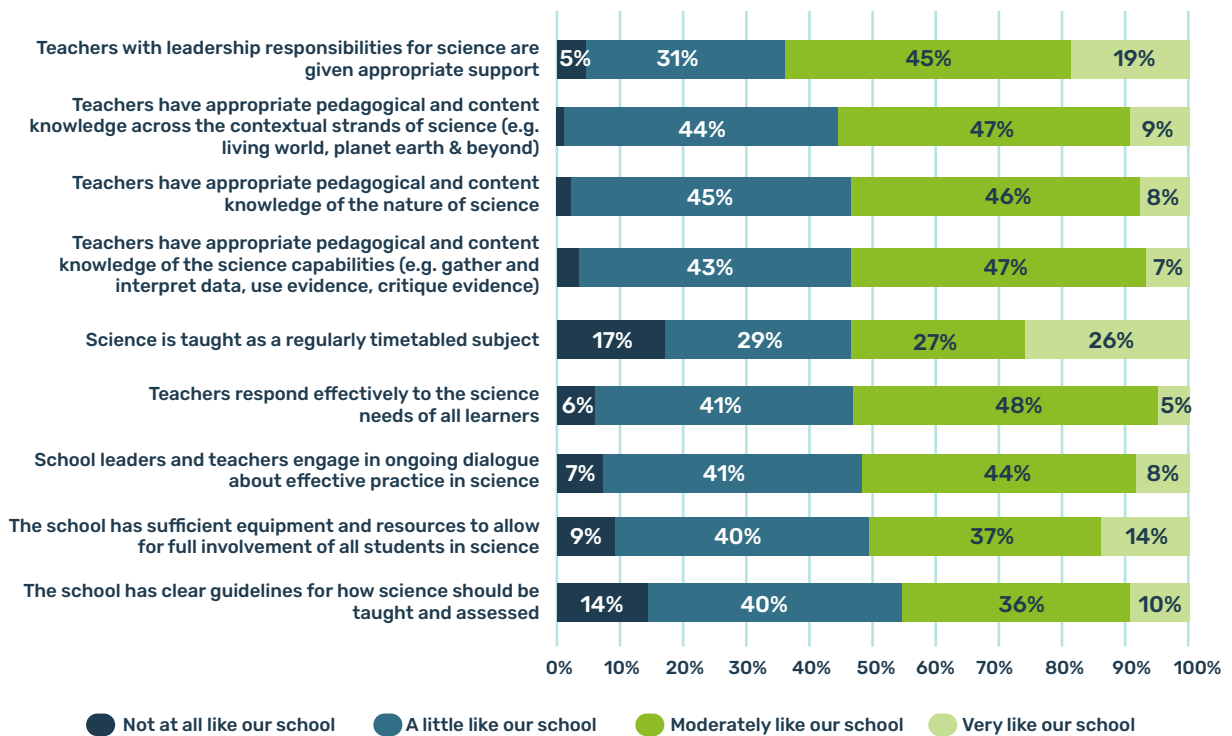
Teachers were also asked to respond to the statement "I can work with local iwi to explore mātauranga Māori", with sixty percent of teachers either agreeing or strongly agreeing. This indicates many teachers are developing their cultural competence to support Māori learners to succeed as Māori in science, by engaging with local iwi.

Teachers and principals were asked to respond to a series of statements about the implementation of science in their school. The responses are summarised in Figures 2.23 and 2.24.

**Figure 2.23: Percentage responses of teachers to statements about the implementation of science**

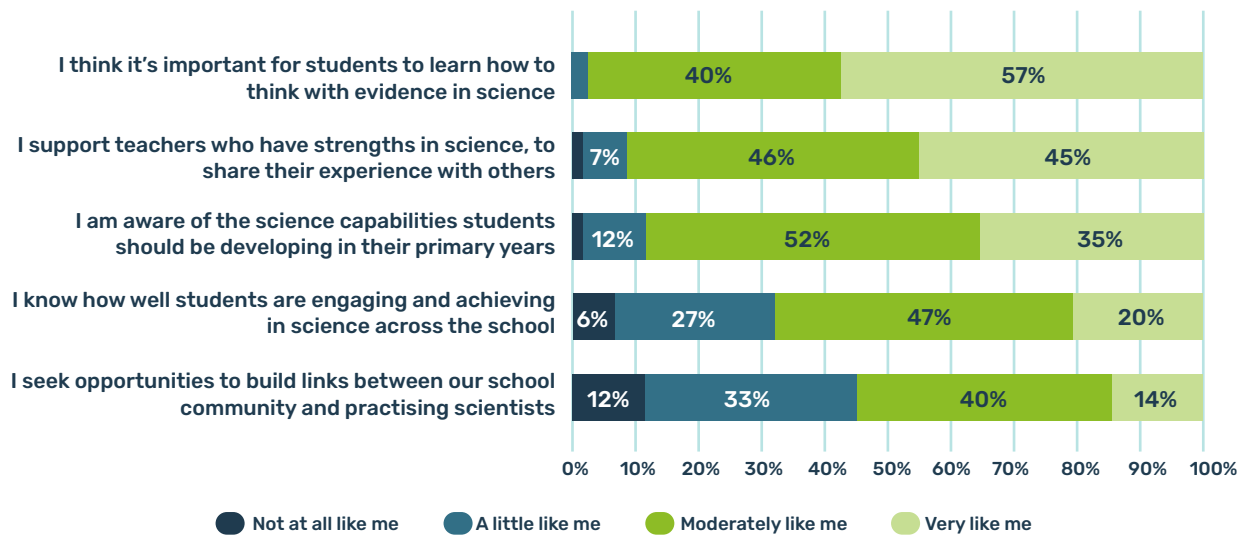


**Figure 2.24: Percentage responses of principals to statements about the implementation of science**



Principals were asked a series of statements about their leadership in science. The responses are summarised in Figure 2.25.

**Figure 2.25: Percentage responses of principals to statements about leadership in science**



Overall, principals strongly affirmed the importance of science in their leadership perspectives. Nearly all agreed it is important for students to learn to think with evidence in science (97% moderately or very like me), and a large majority (91%) reported supporting teachers with strengths in science to share their expertise. Awareness of the science capabilities students should be developing was also high (87%). However, fewer principals reported knowing how well students are engaging and achieving in science across the school (67%), and just over half (54%) said they actively seek opportunities to connect their school community with practising scientists.



## What does it mean?

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This study highlights several important insights into how the New Zealand Curriculum is being implemented in the surveyed schools and identifies areas where further support may be needed.

A consistent concern across both teachers and principals was the lack of adequate resources for students requiring learning support. This issue continues to present a significant barrier to effective teaching and equitable learning outcomes.

Inquiry learning remains a common pedagogical approach, particularly in the social sciences, followed by English and science. Year 6 teachers spent more time on inquiry learning compared to those teaching Year 3 or Year 8.

Professional learning and development (PLD) in mathematics and statistics appears to be relatively well supported. Nearly half of principals identified it as a major focus, with most reporting good access for their teaching staff. In contrast, access to science PLD is more limited. Only 39 percent of principals described teacher access to science PLD as moderate or extensive, and more than half of teachers reported receiving no science PLD in the past two years. This lack of access may be contributing to the limited instructional time dedicated to science.

A majority of teachers (55%) indicated that their students spend no more than 10 hours per term learning science, which is approximately one hour per week. These findings raise concerns about whether it is possible to achieve full coverage of the science curriculum under current conditions.

In mathematics and statistics, teachers continue to rely heavily on New Zealand-developed teaching resources, particularly those from the nzmaths website and the Figure It Out series, indicating the importance of maintaining and updating locally relevant resources. We note that, from the start of 2025, the Ministry of Education has provided funding for four print resources to support the implementation of the revised Mathematics and Statistics curriculum; this is likely to have had an impact on the resources used by teachers.

Teachers reported high levels of confidence in their ability to teach mathematics and statistics as well as science. Most also expressed confidence in their ability to incorporate mātauranga Māori into their teaching.

In science, 60 percent of teachers agreed that they could work with local iwi to explore mātauranga Māori. In mathematics and statistics, 75 percent felt confident in planning for its inclusion. These responses suggest a growing awareness and willingness among teachers to engage with cultural knowledge. However, they also point to an ongoing need for professional support and culturally responsive resources to build teacher capability in this area.

Overall, the findings indicate that many elements of the curriculum are being implemented with confidence. At the same time, there is a clear need for targeted support in areas such as science education and learning support, to ensure that all students have access to a broad, inclusive, and well-supported curriculum.



# 3. He Muka Hīhiri | Motivational Factors

This chapter presents descriptive data on three motivational constructs that are associated with student learning and progress: wellbeing at school, efficacy beliefs (self- and collective), and school emphasis on academic success. These constructs were selected based on research relevance, data availability, and alignment with our broader research goals: understanding the context in which achievement occurs and providing insights.

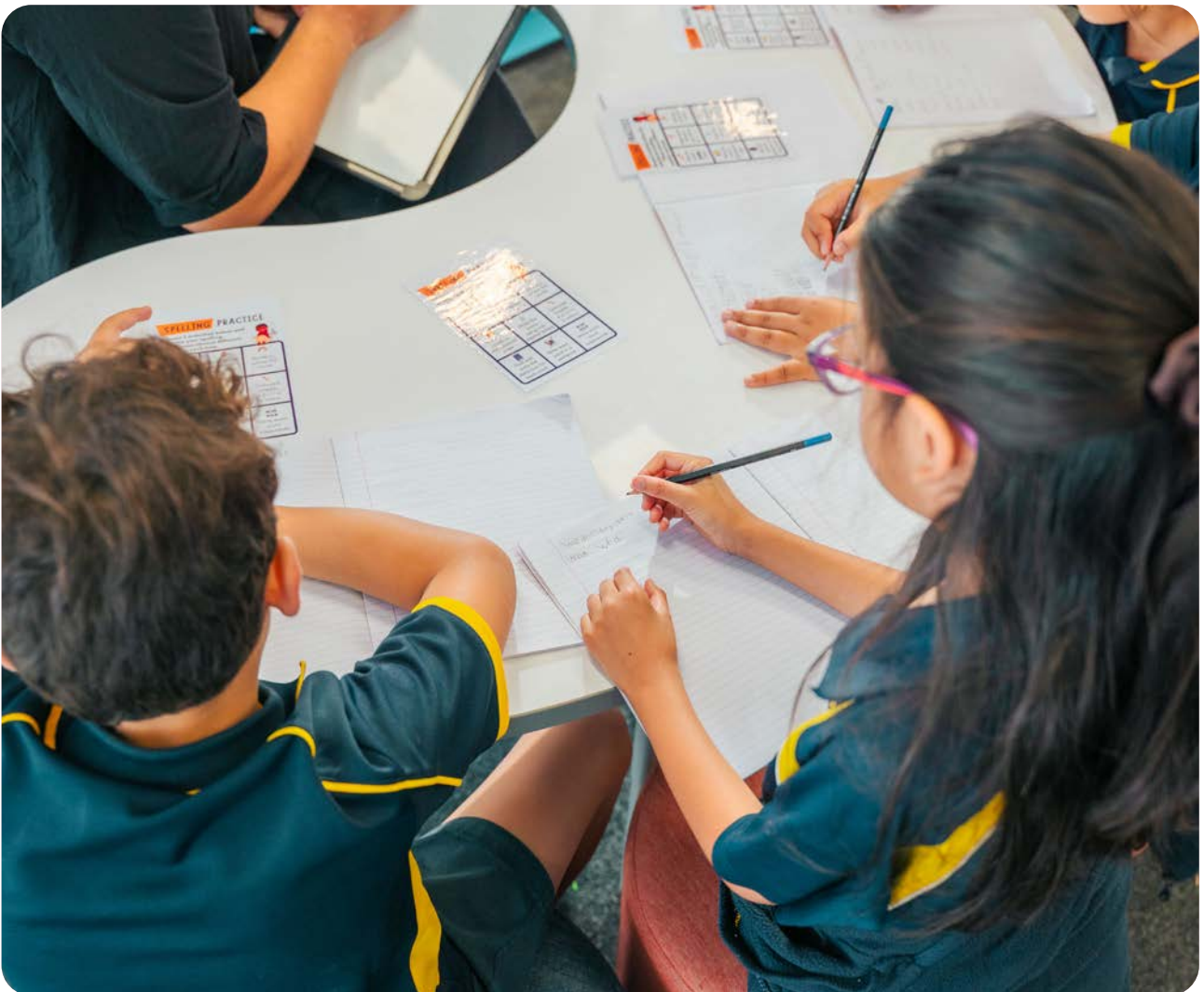
The data presented here reflect responses from students, teachers, and principals to items within the contextual questionnaires, offering insight into patterns across year levels and perspectives, and how these may relate to student achievement.

The chapter is divided into three sections with each one focusing on one of the three constructs.

## Section 1: Oranga Tangata | Wellbeing

## Section 2: Efficacy Beliefs

## Section 3: School Emphasis on Academic Success (SEAS)



# Section 1: Oranga Tangata | Wellbeing

Section 1 focuses on the theme of wellbeing at school among students, teachers, and principals. It begins by describing what wellbeing is and how we went about measuring it. This is followed by a detailed breakdown of the results for each group of respondents. Finally, it concludes with a brief discussion of the potential implications of the findings.

## What is wellbeing?

Wellbeing has been defined as “feeling good, functioning well, and feeling connected” (Educational Assessment and Research Unit, University of Otago and New Zealand Council for Educational Research [EARU & NZCER], 2023a). It is recognised as both an important outcome of schooling and a factor closely linked to overall student success. Wellbeing at school is supported by environments where everyone can thrive, feel supported, and maintain a healthy balance in their lives.

## Findings at a glance

Wellbeing is defined as “feeling good, functioning well, and feeling connected” (EARU & NZCER, 2023a).

To better understand wellbeing and its impact on learning, we asked students, teachers, and principals a series of questions about different aspects of their wellbeing. We then analysed the responses in relation to demographic variables and student achievement. This analysis revealed four main findings:

### Most students reported enjoying school, with younger students showing greater positivity

- 90% of Year 3, 67% of Year 6, and 52% of Year 8 students expressed a positive attitude toward school.

### There were more demographic differences in liking school at Year 8 than at other year levels

- While there are differences between ethnicities and equity index groups at Year 8, the only notable difference at Year 6 is that girls like school more than boys. There are no notable differences at Year 3.

### Students achieved similarly in mathematics and science regardless of how much they reported liking school

- There was no notable relationship between student enjoyment of school and their academic achievement scores.

### Professional engagement by principals and teachers is similar across gender, equity index, and student year levels

- All teachers and principals reported that they are at least “sometimes” proud of their work. No statistically significant differences were found between demographic subgroups, except for school type, where teachers in Intermediate schools reported slightly lower engagement than those in full primary schools.

## What did we do?

We measured aspects of student wellbeing at school by adapting questions used previously in three studies: the National Monitoring Study of Student Achievement (EARU & NZCER, 2018b; 2022), the Progress in International Reading Literacy Study, and the Trends in International Mathematics and Science Study (see Hooper et al., 2019; Mullis & Martin, 2017). In these sources, key aspects of student wellbeing at school include a sense of belonging and experiencing positive feelings while at school.

The items used to measure student wellbeing at school at Years 3, 6, and 8 can be found in Figures 3.1 to 3.3, respectively.

While these questions provide a useful indication of students' wellbeing at school, wellbeing is a complex concept to measure, and it is important to note that not all aspects of wellbeing are addressed in our survey.

To measure wellbeing among teachers and principals, we used a modified version of the nine-item Utrecht Work Engagement Scale (UWES-9; Schaufeli et al., 2006). Engagement in work is a key aspect of professional wellbeing and is commonly assessed using this scale, which has been widely applied internationally.

The UWES-9 captures three core dimensions of work engagement: absorption, dedication, and vigour (de Bruin & Henn, 2013). Teachers and principals were asked to respond to nine statements using a seven-point Likert scale, indicating how they felt at work. These items, which reflect the three dimensions of engagement, are presented in full in Figures 3.8 and 3.9, below.

## What did we find?

In what follows, we present key insights derived from the wellbeing data collected through the questionnaire.

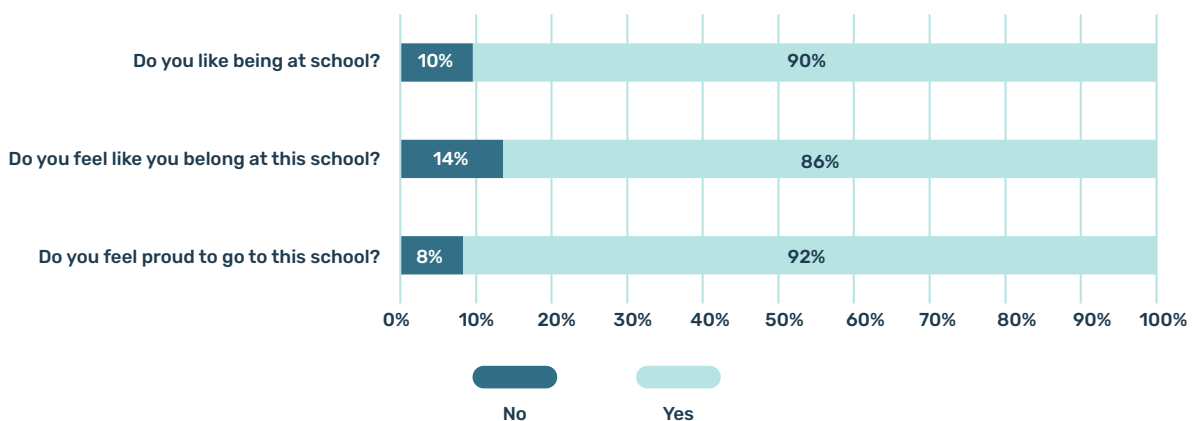
These insights are grouped into two main areas: first, those related to students and then those related to teachers and principals. Banner headlines are used throughout to highlight four overarching insights drawn from the patterns and observations within the data.

## Findings related to students

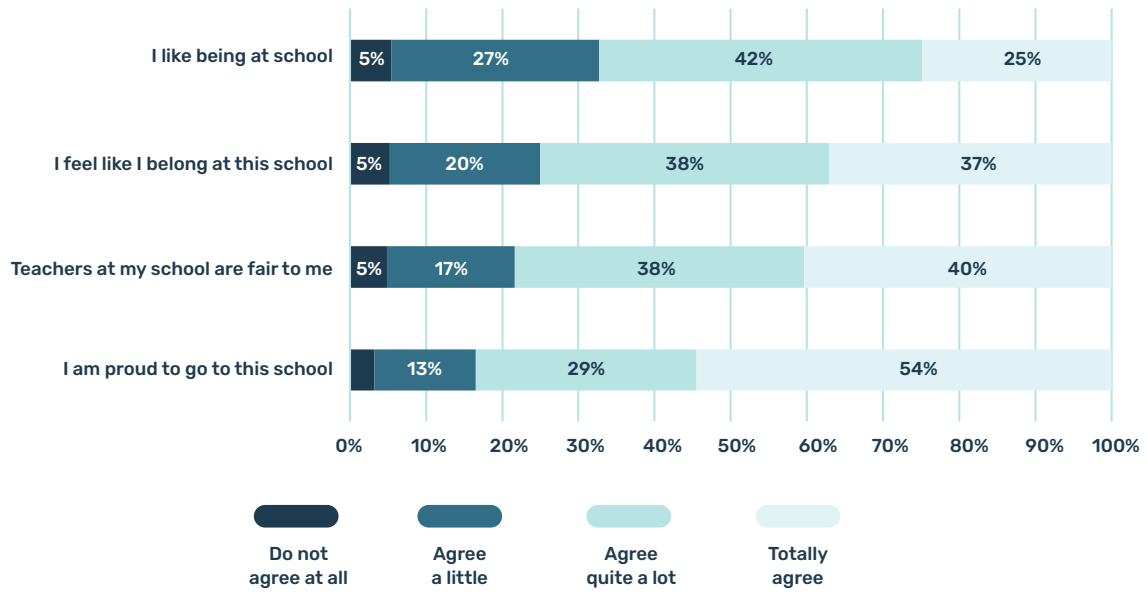
**Most students reported enjoying school, with younger students showing greater positivity**

Figures 3.1 to 3.3 summarise how students responded to the wellbeing at school questions at Years 3, 6, and 8, respectively.

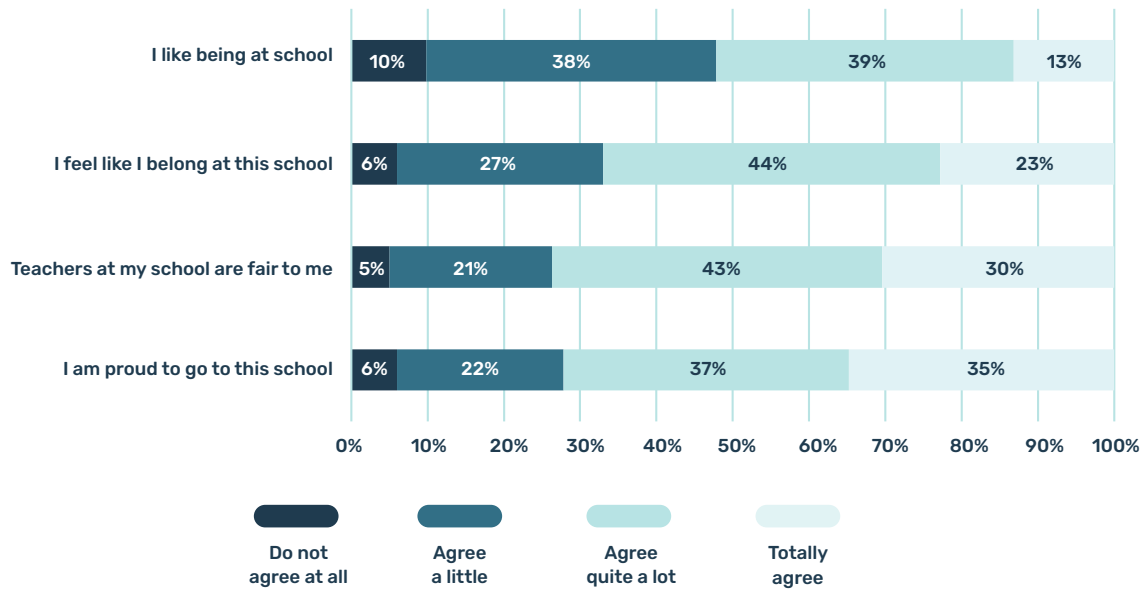
**Figure 3.1: Year 3 students' responses to wellbeing at school questions**



**Figure 3.2: Year 6 students' responses to wellbeing at school questions**



**Figure 3.3: Year 8 students' responses to wellbeing at school questions**



Responses were largely positive, with at least 86% of Year 3 students responding “Yes” to each of the wellbeing questions (Figure 3.1). A majority of Year 6 students (67% or more) and Year 8 students (at least 52%) agreed “quite a lot” or “totally” with each statement (Figures 3.2 and 3.3).

The statement with the lowest level of strong agreement among older students was “I like being at school,” with 25% of Year 6 and 13% of Year 8 students indicating they “totally agree.” Overall, Year 8 students were less likely than Year 6 to express strong agreement across all items. These patterns mirror the findings reported from the 2023 study.

## There were more demographic differences in liking school at Year 8 than at other year levels

We compared the percentages of Year 3 students who answered “Yes” to each of the wellbeing questions, broken down by gender, school equity index (EQI) group, and ethnicity. For Years 6 and 8, we compared the percentages of students agreeing either quite a lot or totally with each of the wellbeing statements across the same demographic subgroups.

At Year 6, notably more girls than boys reported liking school (75% vs 60%), indicating a more pronounced gender difference than at Year 3 (93% vs 88%) or Year 8 (51% vs 54%).

At Year 8, 40% of Māori students agreed “quite a lot” or “totally” that they liked being at school, compared with 56% of non-Māori students. In contrast, 64% of Pacific students agreed “quite a lot” or “totally” compared with 50% of non-Pacific students. At the same year level, students in the ‘fewer barriers’ equity category were more likely to report liking school (61%) than those in the ‘moderate barriers’ (49%) or ‘more barriers’ categories (45%).

These findings underscore the nuanced and sometimes conflicting patterns in students’ experiences of school, shaped by gender, ethnicity, and socioeconomic context. To better capture this complexity and support deeper insights, Curriculum Insights has developed a more comprehensive and refined approach to measuring student wellbeing for the 2025 study.

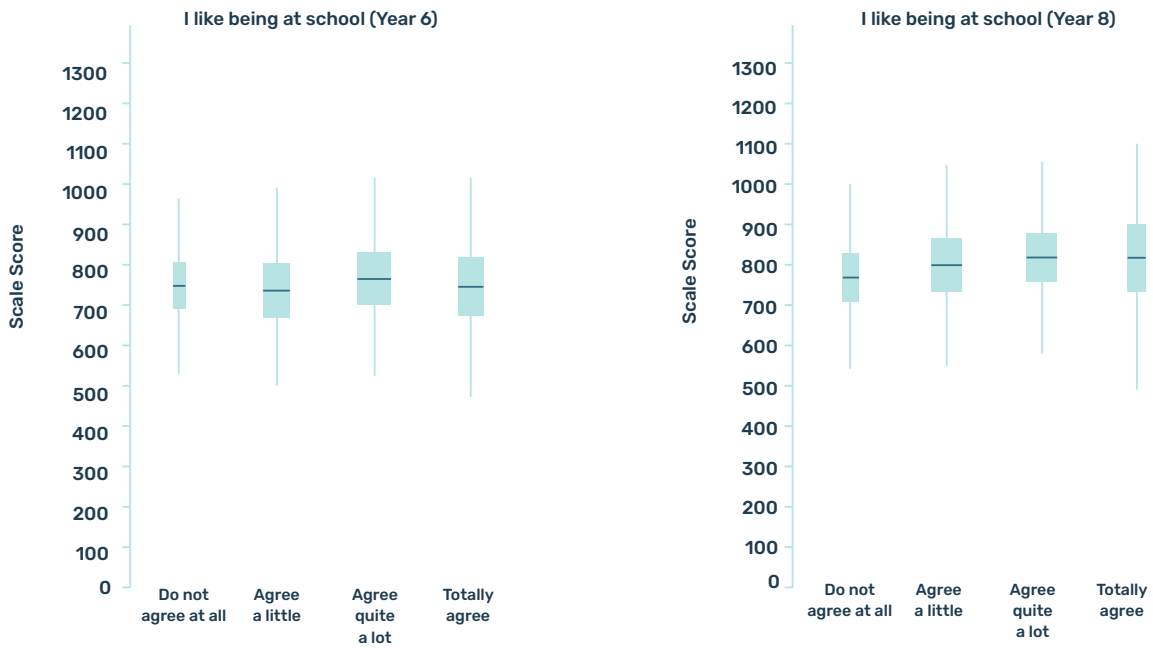
## Students achieved similarly in mathematics and science regardless of how much they reported liking school

Figures 3.4 to 3.7 illustrate how the distribution of students’ academic achievement in mathematics and science as measured by Curriculum Insights varies according to how strongly they agreed with the statement “I like being at school”. Overall, the distributions of achievement across both subjects were similar, regardless of how much students said they liked being at school.

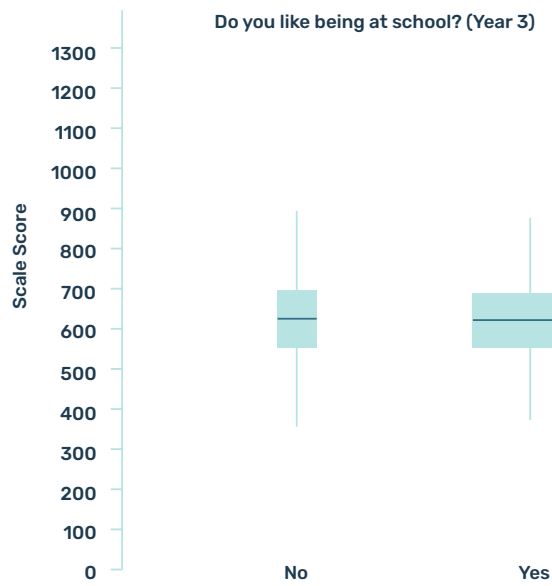
**Figure 3.4: Distribution of Year 3 students’ mathematics scale scores by extent to which they like being at school**



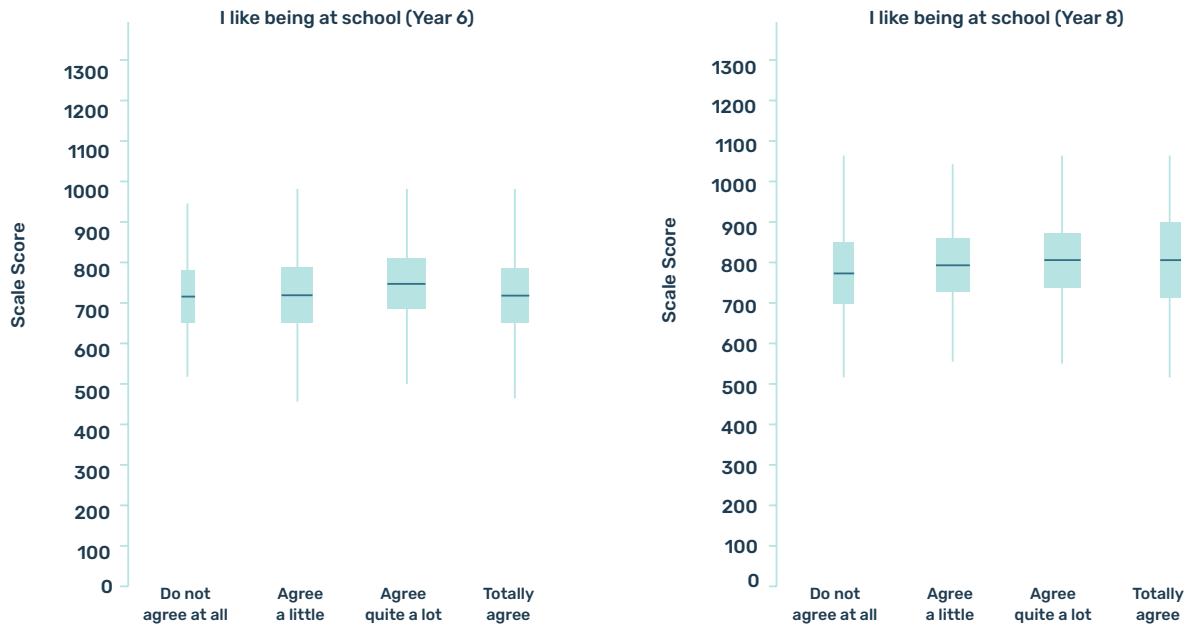
**Figure 3.5: Distribution of Year 6 and Year 8 students' mathematics scale scores by extent to which they like being at school**



**Figure 3.6: Distribution of Year 3 students' science scale scores by extent to which they like being at school**



**Figure 3.7: Distribution of Year 6 and Year 8 students' science scale scores by extent to which they like being at school**

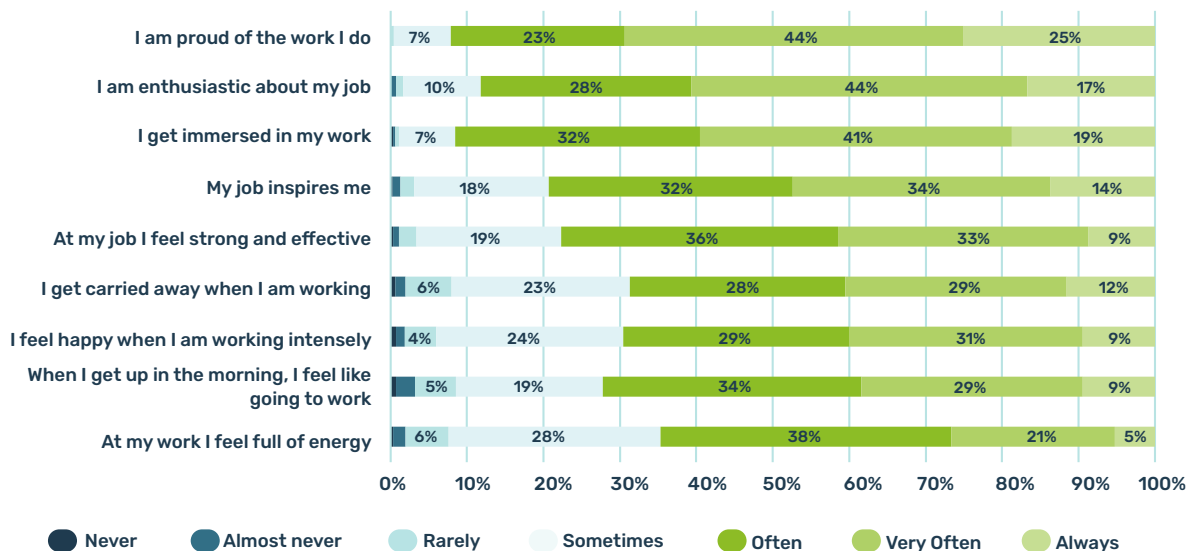


## Findings related to teachers and principals

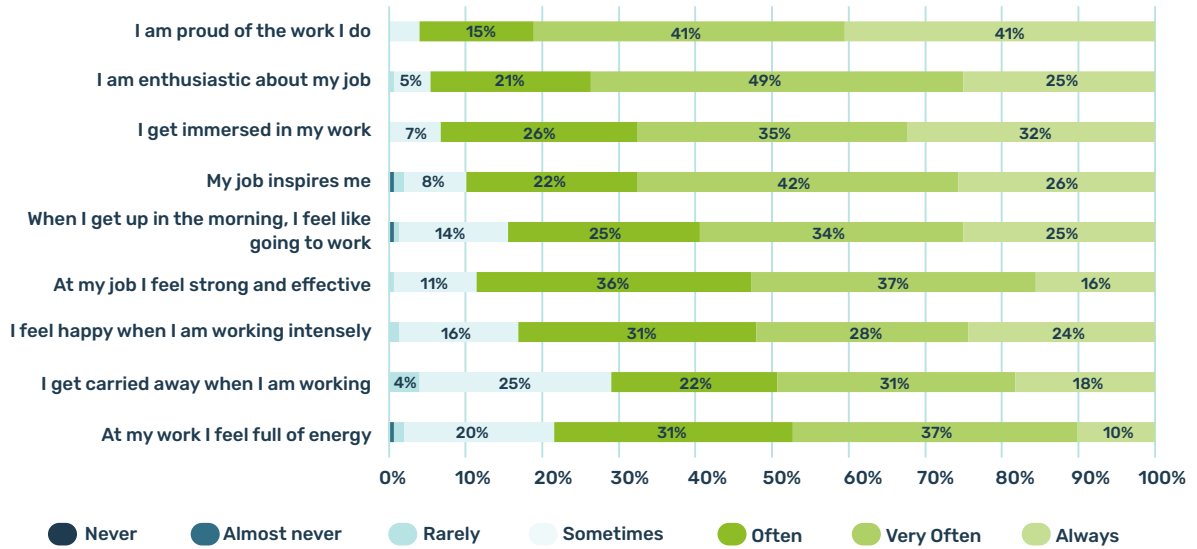
**Professional engagement by teachers and principals is similar across gender, equity index, and student year levels**

Teachers and principals responded to the nine items on our modified Utrecht Work Engagement Scale using a seven-point Likert scale labelled from "never" to "always". Figures 3.8 and 3.9 summarise their responses.

**Figure 3.8: Teachers' responses to items on the work engagement scale**



**Figure 3.9: Principals' responses to items on the work engagement scale**

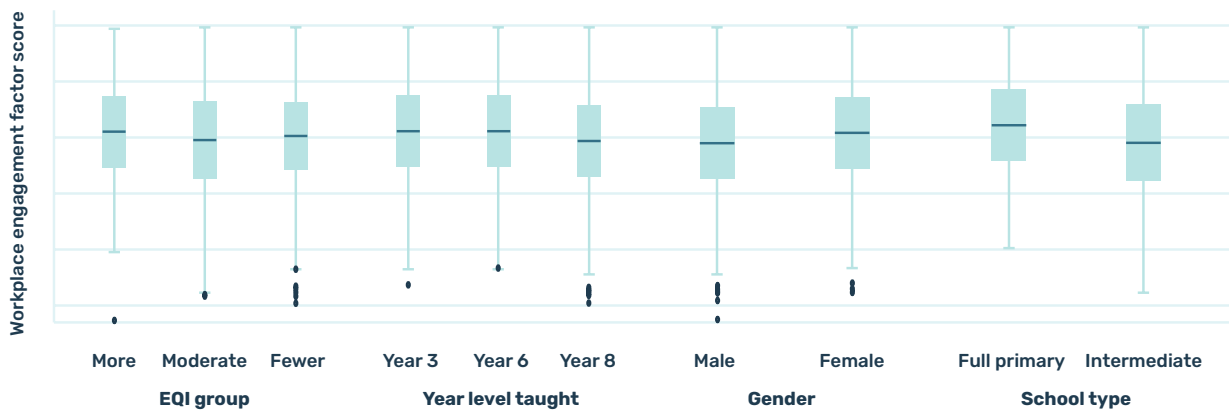


Teachers' and principals' responses to items on the scale were generally positive, with principals tending to be more positive than teachers. The most strongly endorsed item was "I am proud of the work I do", with all participants from both groups selecting at least "sometimes". A quarter of teachers (25%) and over a third of principals (41%) indicated that they are always proud of the work they do. In contrast, only 5% of teachers and 10% of principals indicated that they always feel full of energy at work. These responses are consistent with those given in 2023.

We used factor analysis (Brown, 2015) to examine how the items on the scale relate to each other and to estimate a single factor score for each participant, representing their overall work engagement.

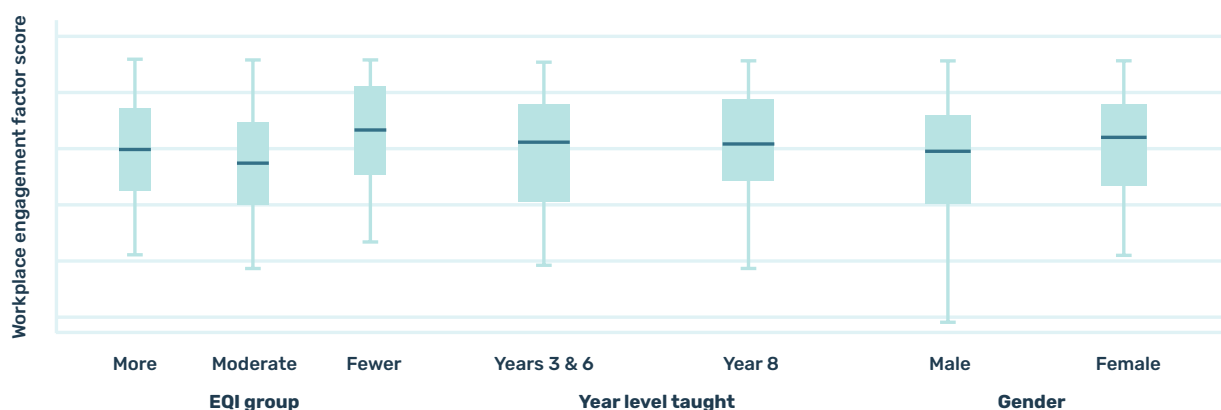
We then compared average factor scores across gender groups and year levels taught. We also used regression analysis to examine whether school-level EQI scores predicted work engagement scores. After controlling for age, race/ethnicity, and years of experience, we found no statistically significant differences ( $p < 0.05$ ) across these demographic groups or in relation to EQI scores. However, when we compared school type (full primary vs intermediate<sup>1</sup>), we found a small, but statistically significant difference in work engagement scores, with teachers in intermediate schools reporting lower engagement than those in full primary schools (effect =  $-0.159$ ,  $p < .01$ ). See Figures 3.10 and 3.11 for more details.

**Figure 3.10: Teacher work engagement estimated factor score distributions by demographic subgroup**



<sup>1</sup> Only full primary and intermediate schools were included in the analysis, as the number of teachers from other school types was too small for meaningful comparison.

**Figure 3.11: Principal work engagement estimated factor score distributions by demographic subgroup**



## What do the results mean?

This final part of the section reflects on the implications of the wellbeing findings and what they suggest for practice and further inquiry.

Ensuring that students enjoy school and feel a sense of belonging is widely recognised as fundamental to their overall success (e.g. Korpershoek et al., 2020). However, we were surprised to find little evidence that students who report enjoying school achieve higher academic outcomes in science and mathematics. This contrasts with findings from Korpeshoek et al. (2020) and with results from the 2023 Curriculum Insights and Progress Study, where a positive relationship between school enjoyment and achievement was observed in the English and social sciences learning areas.

One possible explanation for this unexpected result is that achievement in science and mathematics may be more strongly influenced by a range of other key factors, such as prior knowledge, quality of instruction, socioeconomic status, ethnic background, and access to resources. These influences are likely to interact differently across learning areas. While research suggests that positive school experiences support student engagement, learning, and resilience (Reschly et al., 2008), the pathways linking wellbeing and achievement are complex and not fully understood.

Students across all year levels and demographic groups were generally positive about school. However, the decline in reported wellbeing in school between Year 6 and Year 8 is noteworthy. This pattern aligns with findings from this study in 2023 and with international research, which also shows a decline in reported student wellbeing with age. That said, the underlying causes and long-term implications remain unclear and warrant further investigation (Blanchflower et al., 2024; Helliwell et al., 2024).

The high levels of work engagement reported by teachers and principals in this study align closely with findings from the 2023 dataset. Together, the two studies, show that these high levels are consistent across gender, school equity index groups, and the year levels taught.

# Section 2: Te mia me te whakapono | Efficacy beliefs

Section 2 presents findings on the self-efficacy beliefs of students, teachers, and principals, along with the perceptions that teachers and principals hold of their schools' collective efficacy. The section begins by outlining what efficacy beliefs are and how they were explored using questionnaire items. This is followed by a detailed breakdown of results for each group, and a discussion of the potential implications.

## What are efficacy beliefs?

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Efficacy beliefs, as defined in Bandura's (1997) social cognitive theory, refer to the confidence individuals or groups have in their ability to perform specific tasks and achieve intended goals. These beliefs are task-specific and differ from general confidence. According to Bandura, efficacy beliefs shape aspirations, influence the choices people make, and affect the effort, persistence, and resilience they show in the face of challenges.

In an educational context, self-efficacy plays a critical role. Students who believe in their capabilities are more likely to be motivated, persist through difficulties, and experience positive learning outcomes. Similarly, teachers and principals with strong self-efficacy tend to report higher levels of job satisfaction, motivation, and resilience. They are also more likely to foster environments that support student achievement and positive behaviour.

Collective efficacy is the belief among members of a group, such as a school's staff, in their collective capacity to overcome challenges and achieve common goals. It reflects a collective mindset that can influence school culture and student success.



## Findings at a glance

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Efficacy beliefs are the beliefs individuals or groups hold about their ability to perform specific tasks and achieve intended outcomes.

To explore efficacy beliefs within the context of our study, we asked students, teachers, and principals questions about their self-efficacy, and we asked teachers and principals about their perceptions of their school's collective efficacy. We analysed these responses in relation to demographic variables and student achievement data. This analysis revealed six notable findings.

### Students of all ages are more confident about mathematics than science

- 82% of Year 3 students think they are good at mathematics compared to 67% for science. The proportion of students in Year 6 and Year 8 who agreed they were good at mathematics was over 20 percentage points higher than for science.

### At Year 8, girls reported lower confidence than boys in both mathematics and science, with the gender gap being larger in mathematics

- At Year 8, 46% of girls and 67% of boys agreed quite a lot or totally agreed that they are good at mathematics in comparison to 28% of girls and 39% of boys for science.

### Students who think they are good at mathematics tend to score more highly on academic measures

- Students that were confident in their ability scored more highly on the mathematics assessment.

### Both teachers and principals are generally confident of the collective efficacy of teachers at their school

- For all items, over 75% of teachers and principals were certain of their school's collective efficacy.

### Professional self-efficacy is consistently high for both teachers and principals, regardless of school equity index or student year level

- Over 90% of teachers and principals reported confidence in their abilities across all items.

### Teacher and principal collective efficacy were consistent across EQI groups

- No statistically significant differences were evident in mean factor scores for "More", "Moderate", or "Fewer" barriers schools.

## What did we do?

To explore efficacy beliefs in education, we used a range of validated and purpose-designed scales targeting students, teachers, and principals. For students, we measured students' self-efficacy in mathematics and science using items developed by the Curriculum Insights team. While these items do not strictly meet Bandura's (2006) theoretical criteria for task-specific self-efficacy, they provide meaningful insights into students' perceived capabilities and the influence of social persuasion—particularly from teachers and whānau.

Teachers responded to a modified version of the Norwegian Teacher Self-Efficacy Scale (Skaalvik, E. M., & Skaalvik, S., 2007) and a 12-item scale developed to measure self-efficacy for disability-inclusive pedagogy. Chapter 2 also reports on teachers' self-efficacy in teaching mathematics and science, using tailored instruments developed by Curriculum Insights.

For principals, we used a modified version of the Norwegian Self-Efficacy for Instructional Leadership Scale (Skaalvik, C., 2020), including three additional items relating to data use. Finally, both teachers and principals completed a collective efficacy scale, adapted from the Perceived Collective Teacher Efficacy (PCTE) instrument, to gauge shared beliefs about the school staff's capacity to achieve educational goals.

Table 3.1 summarises each scale, including its origin and the number of items used in the 2024 study.

**Table 3.1: Scales used to measure students', teachers' and principals' efficacy beliefs in 2024**

Group	Construct	Origin of scale	Number of items
Year 3 students	Self-efficacy in mathematics and science	Developed by Curriculum Insights	2
Year 6 and 8 students	Self-efficacy in mathematics and science	Developed by Curriculum Insights	6
Teachers	Teacher self-efficacy	Modified version of the Norwegian Teacher Self-Efficacy Scale	24
Teachers	Self-efficacy as a mathematics teacher	Developed by Curriculum Insights	8 (reported in chapter 2)
Teachers	Self-efficacy as a science teacher	Developed by Curriculum Insights	9 (reported in chapter 2)
Teachers	Teacher self-efficacy/ inclusive pedagogy	Disability inclusion scale (Developed by Curriculum Insights)	12
Principals	Principal self-efficacy	Modified version of the Norwegian Self-efficacy for Instructional Leadership Scale	15 (+3 additional SE for data use items)
Teachers/ Principals	Collective efficacy	Modified version of the Perceived Collective Teacher Efficacy (PCTE) scale	7

# What did we find?

In what follows, we present key insights derived from the efficacy beliefs data collected through the questionnaire.

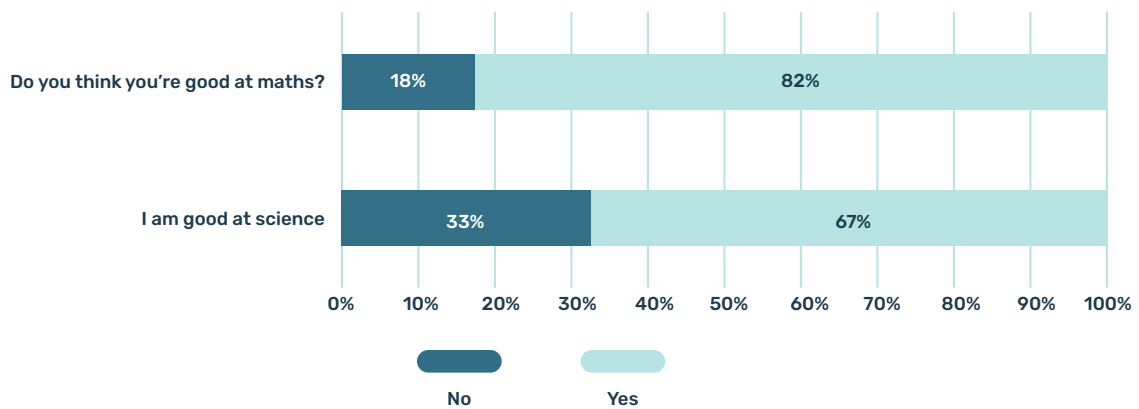
These insights are grouped into five main areas: first, student self-efficacy; second, teacher self-efficacy, third principal self-efficacy, fourth, differences in teacher and principal self-efficacy by demographic factors and school context, and finally teachers' and principals' perceptions of collective efficacy. Banner headlines are used throughout to highlight six overarching insights drawn from the patterns and observations within the data.

## Student self-efficacy

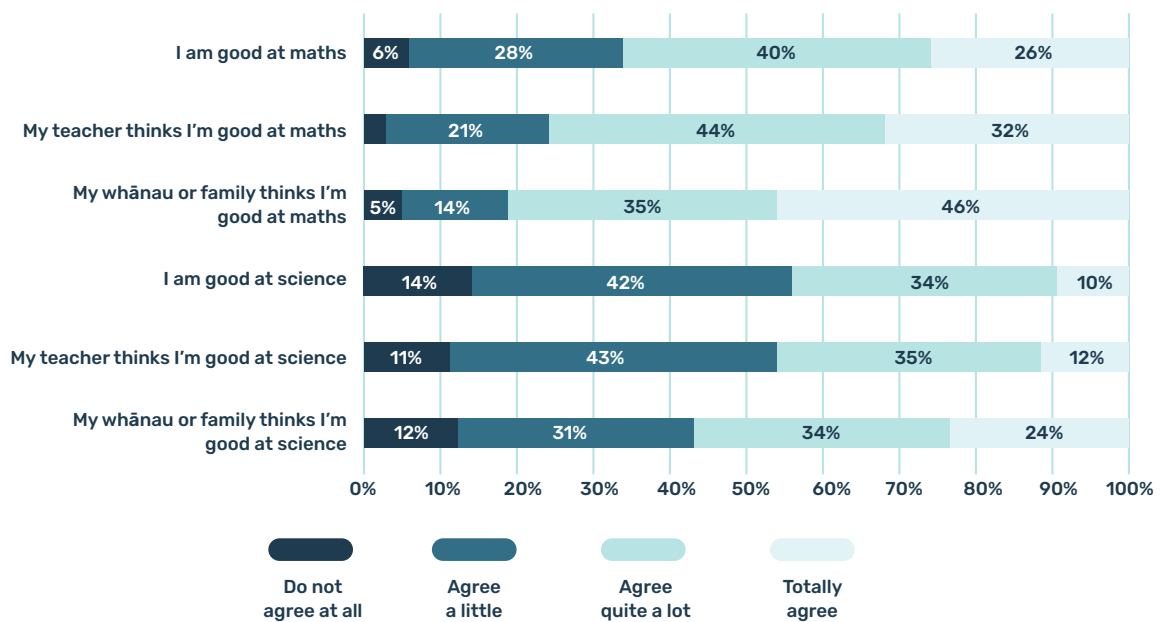
**Overall, students are more confident about mathematics than science**

Figures 3.12 to 3.14 summarise how students responded to the self-efficacy related items for each year level. The items related to mathematics and science are presented together for comparison purposes.

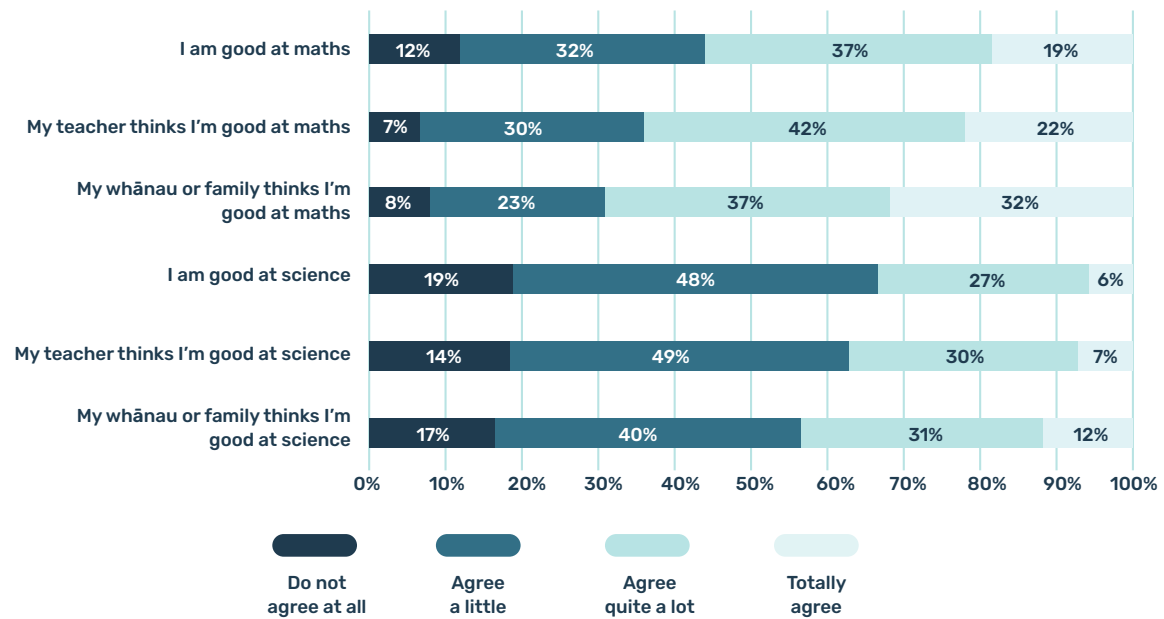
**Figure 3.12: Year 3 student responses to self-efficacy questions**



**Figure 3.13: Year 6 student responses to self-efficacy questions**



**Figure 3.14: Year 8 student responses to self-efficacy questions**



Responses were generally positive. Eighty-two percent of Year 3 students reported being good at mathematics, and 67% felt the same about science (Figure 3.12). Two-thirds of Year 6 students and more than half of Year 8 students agreed “quite a lot” or “totally” that they were good at mathematics. Fewer than half of Year 6 students and one-third of Year 8 students expressed similar confidence in science (Figures 3.13 and 3.14).

Students across all year levels reported greater self-efficacy in mathematics than in science. While confidence in both subjects declined with age, the drop in students’ positive responses was steeper in science. One possible factor may be differences in instructional time between mathematics and science, with students having fewer opportunities to experience and judge success in science than in mathematics.

This pattern suggests that students may experience increasing difficulty or disengagement with science as they progress through school, particularly between Years 3 and 6.

**At Year 8, girls reported lower confidence than boys in both mathematics and science, with the gender gap being larger in mathematics**

To explore how the academic self-efficacy of students varied across demographic subgroups, we compared the percentages of Year 3 students who answered ‘yes’ to each of the self-efficacy questions, broken down by gender, school equity index (EQI) group, and ethnicity. For Year 6 and Year 8 students, we examined the percentages agreeing either quite a lot or totally with each self-efficacy statement across the same demographic subgroups.

At Year 6, Pacific students were notably less likely than non-Pacific students to believe they are good at science, with 34% of Pacific students agreeing compared with 45% of non-Pacific students. Similarly, fewer Pacific students (48%) felt their family or whānau thinks they are good at science, compared to 59% of non-Pacific students.

A notably higher proportion of Year 8 boys than girls agreed they are good at mathematics (67% vs 46%), that their teacher thinks they are good at mathematics (73% vs 56%), and that their family or whānau think they are good at mathematics (77% vs 62%). Boys were also more likely to agree they are good at science, with 39% of boys agreeing, compared to 28% of girls.

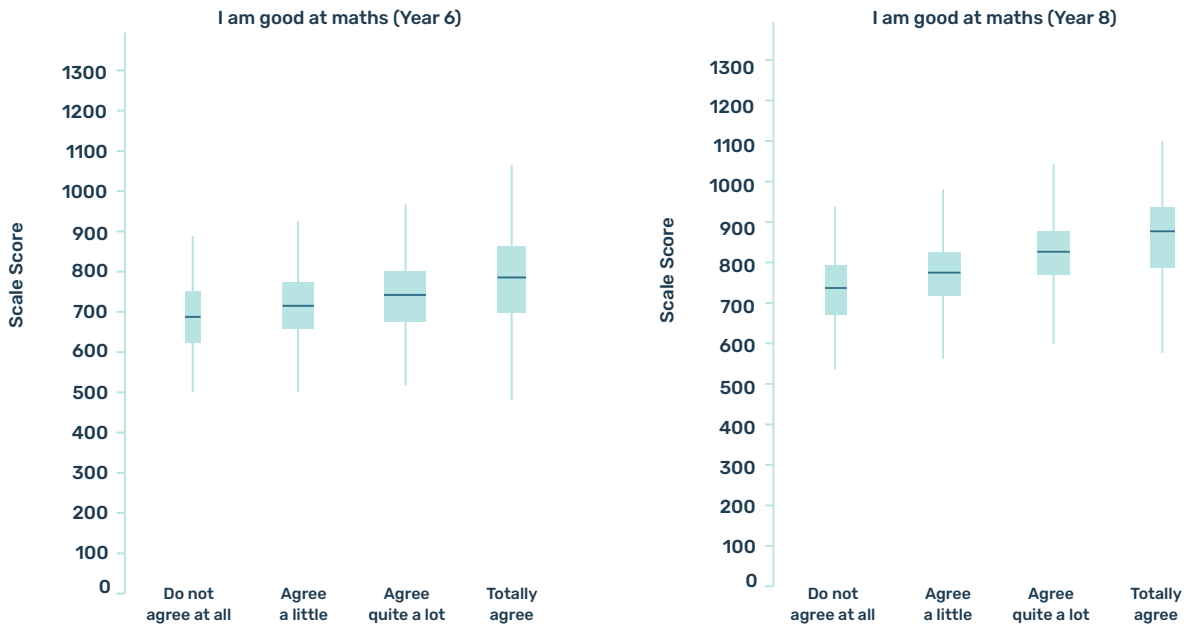
## Students who think they are good at mathematics tend to score more highly on academic measures

Figures 3.15 to 3.18 illustrate the distribution of student academic achievement in mathematics and science, based on students' self-perceptions of their ability in each subject. Science scale scores were derived from learning area assessments conducted during school visits in Term 3, 2024. Mathematics scale scores were based on foundational mathematics assessments administered in Term 4, 2024.

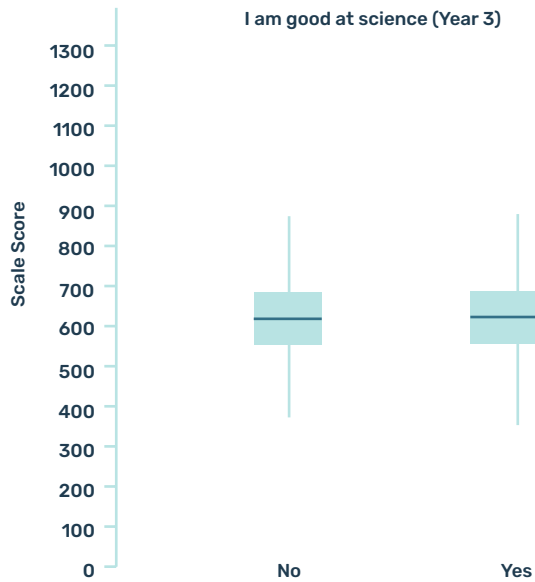
**Figure 3.15: Distribution of Year 3 students' mathematics scale scores by extent to which they think they are good at mathematics**



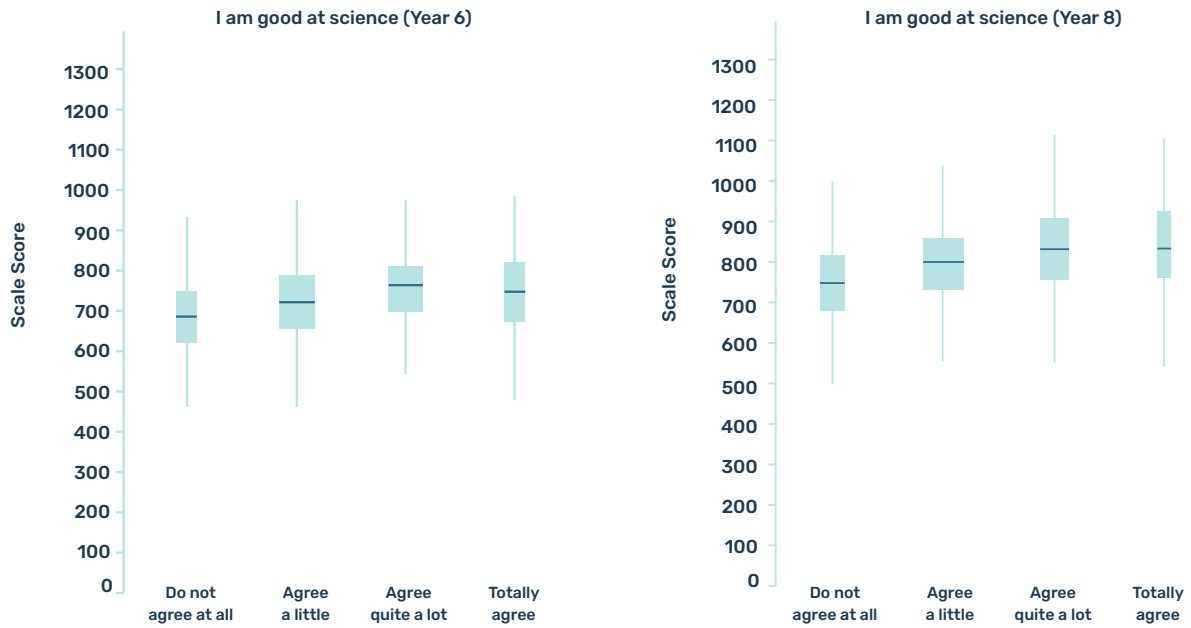
**Figure 3.16: Distribution of Year 6 and Year 8 students' mathematics scale scores by extent to which they think they are good at mathematics**



**Figure 3.17: Distribution of Year 3 students' science scale scores by extent to which they think they are good at science**



**Figure 3.18: Distribution of Year 6 and Year 8 students' science scale scores by extent to which they think they are good at science**



As anticipated, students who reported being good at mathematics (higher self-efficacy) generally demonstrated stronger achievement scale profiles than those with lower self-efficacy. However, it should be noted that there was considerable overlap in achievement between those who believed they were good at mathematics and those who did not. This overlap is important: according to Bandura's (1997) theory, students with similar current performance may respond differently to future challenges, with those higher in self-efficacy more likely to persist in the face of difficulty. Given equivalent levels of prior achievement, self-efficacy is likely to play a critical role in shaping students' future learning trajectories.

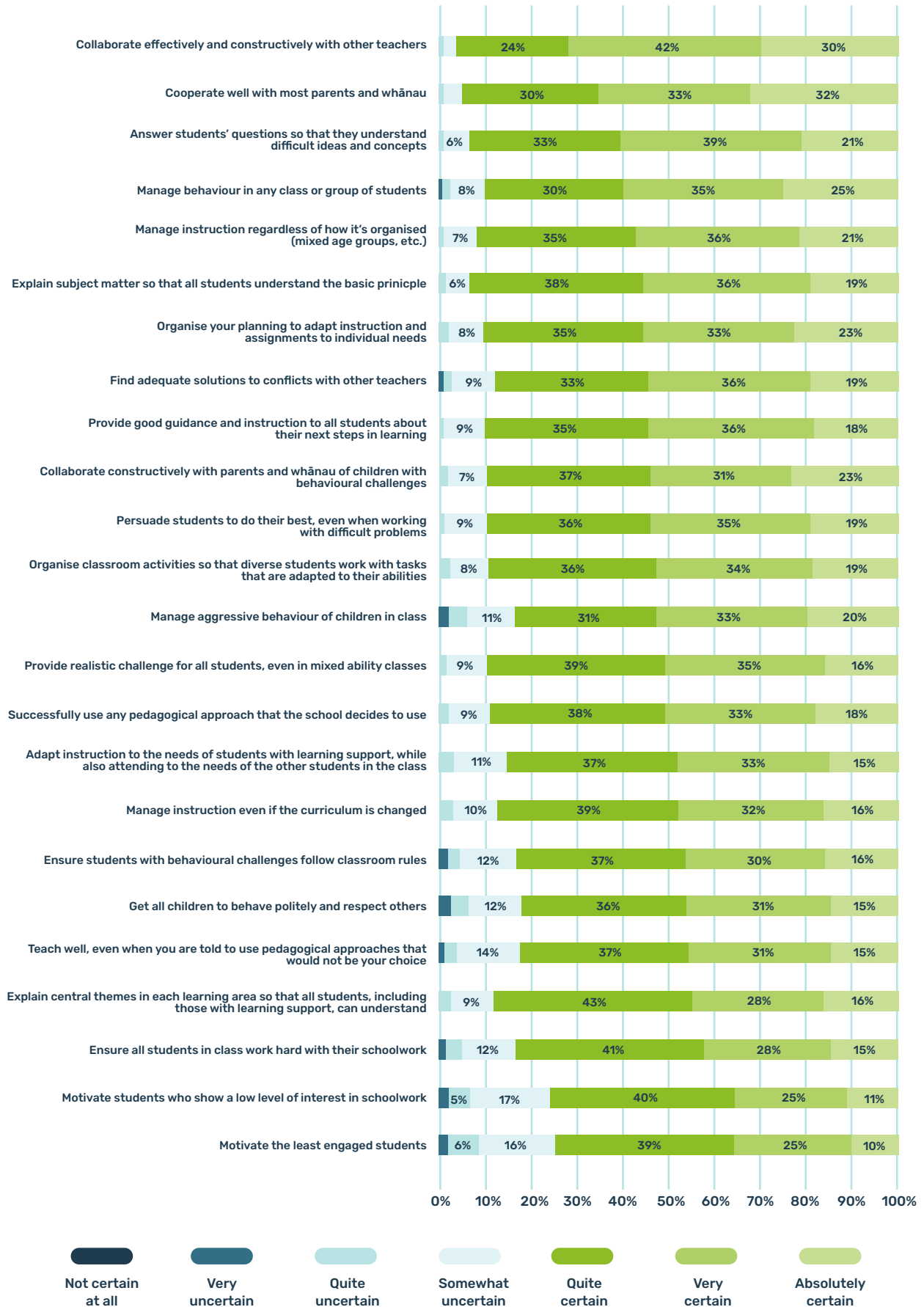
The relationship between students' self-efficacy in science and their achievement was less clear, though a small positive relationship between self-efficacy for science and science achievement was observed at Years 6 and 8. As with mathematics, there was considerable overlap in the achievement scores across all levels of self-efficacy, indicating that students with both high and low confidence have achieved at a wide range of levels.

## Teacher self-efficacy

**Professional self-efficacy is consistently high for both teachers and principals, regardless of school equity index or student year level**

Teachers rated their confidence on 24 items from our modified Teacher Self-Efficacy scale in response to the prompt: "How certain are you that you can do the following?" Responses were given on a seven-point Likert scale from "not at all certain" to "absolutely certain." Figure 3.19 summarises these responses.

Figure 3.19: Teacher responses to self-efficacy items

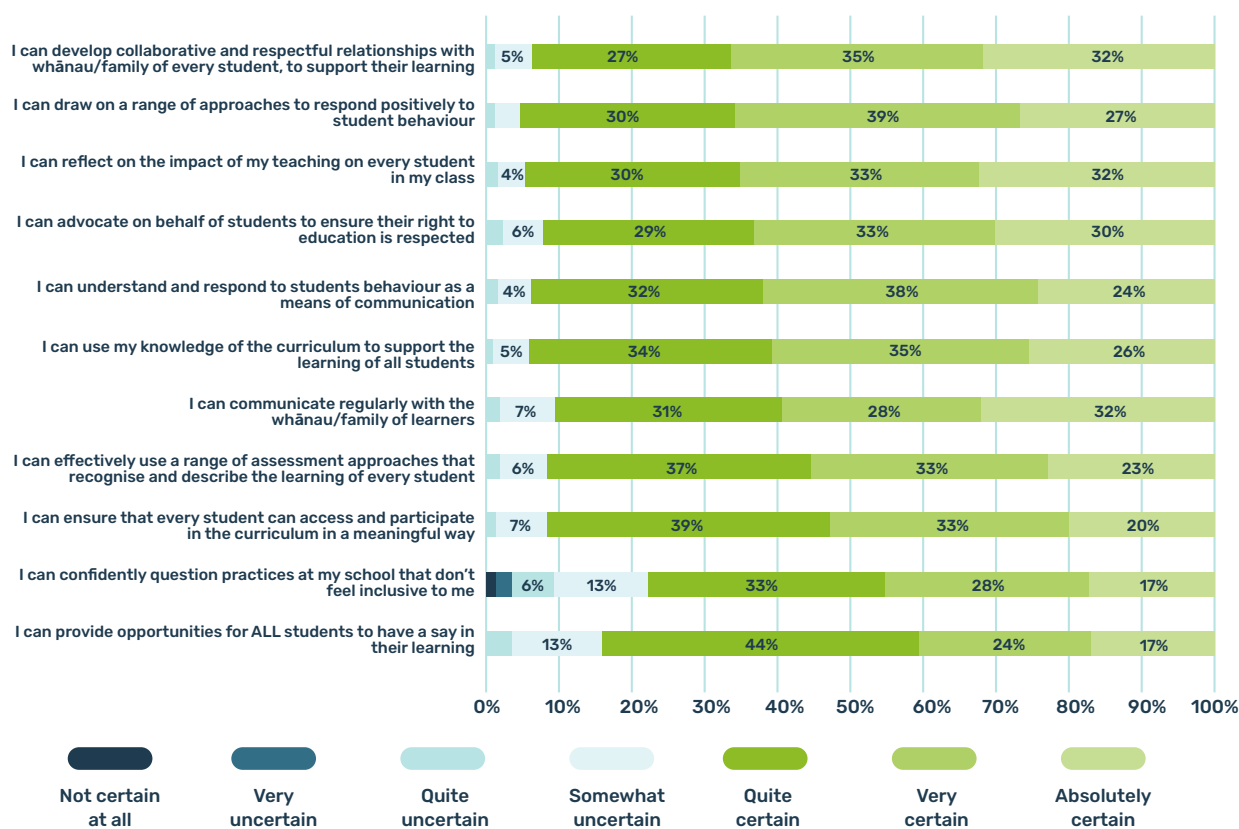


Teachers' responses to the scale were generally positive, with over 90% choosing a neutral response or better for each item. As in 2023, the most strongly affirmed items related to professional relationships with other adults. Thirty percent of the teachers were "absolutely certain" they collaborate effectively with other teachers and cooperate well with most parents and whānau. The lowest levels of certainty were reported in relation to motivating students.

## Teacher self-efficacy for disability inclusion

Teachers also responded to the 12 items on our teacher self-efficacy for disability inclusion scale. Figure 3.20 summarises their responses.

**Figure 3.20 Teacher responses to the Self-efficacy for Disability Inclusion Scale**

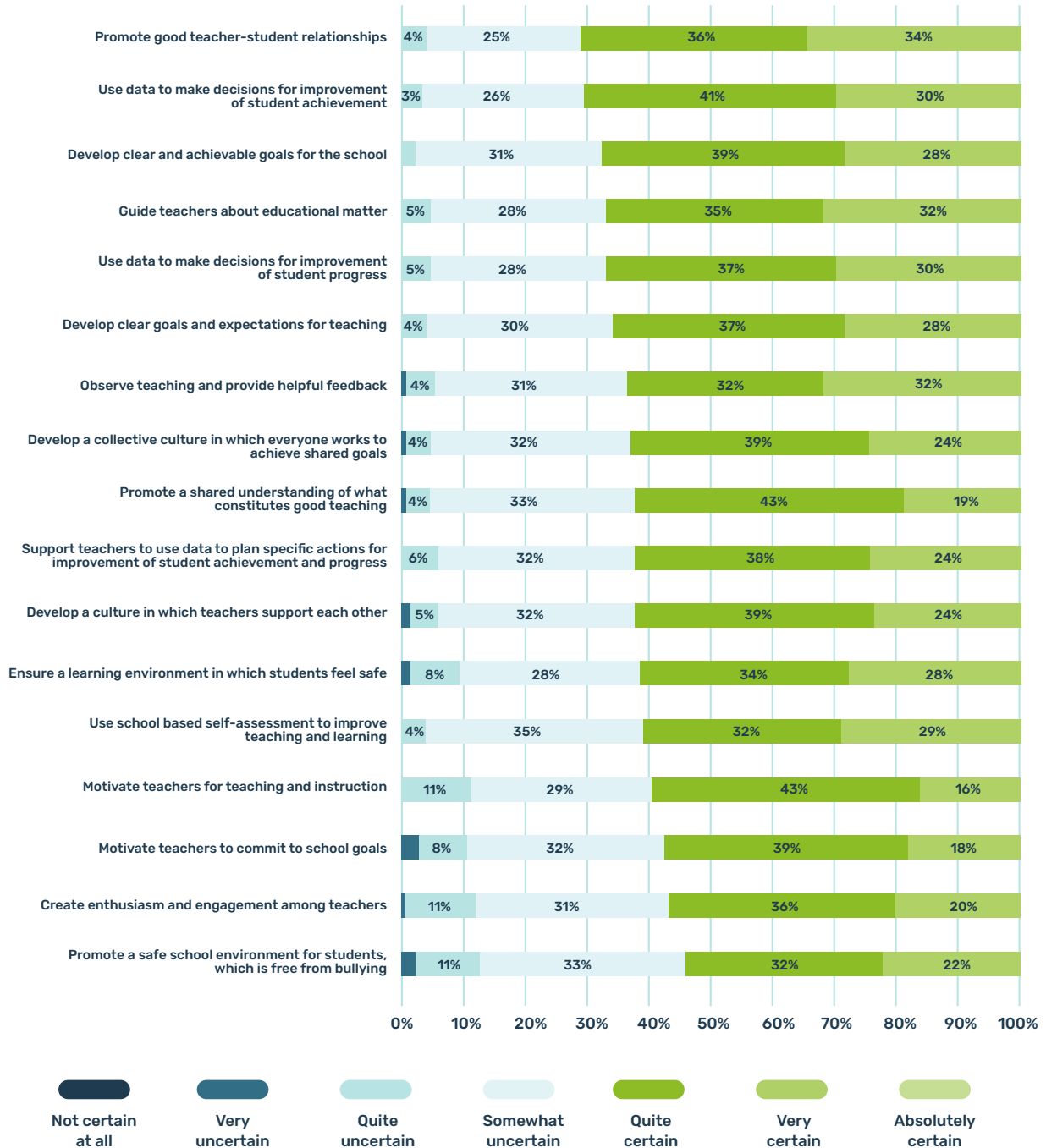


While most teachers reported moderate to high levels of self-efficacy regarding disability inclusion, variation was observed across individual items. Consistent with the findings from the general self-efficacy measure (discussed above), teachers demonstrated the highest levels of confidence in relational aspects—such as building respectful relationships with whānau. In contrast, self-efficacy was comparatively lower for items related to personal advocacy and the support of student agency.

## Principal self-efficacy

Principals responded to 18 items on a modified Self-Efficacy for Instructional Leadership scale, indicating their level of confidence in relation to the prompt: “How certain are you that you can do the following?” Responses were recorded on a seven-point Likert scale ranging from “not at all certain” to “absolutely certain”. Figure 3.21 summarises their responses.

**Figure 3.21 Principal responses to the modified Self-Efficacy for Instructional Leadership scale**



Principals' responses to the self-efficacy items were very positive, with most indicating a high level of certainty in their ability to carry out the actions described. While up to 11% selected the neutral option on the 7-point scale, few reported being "quite uncertain," and none selected "not certain at all."

The strongest responses were for the items "Promote good teacher–student relationships" and "Use data to make decisions for improvement of student achievement," with 70% of principals stating they were "absolutely certain" or "quite certain" they could do these things.

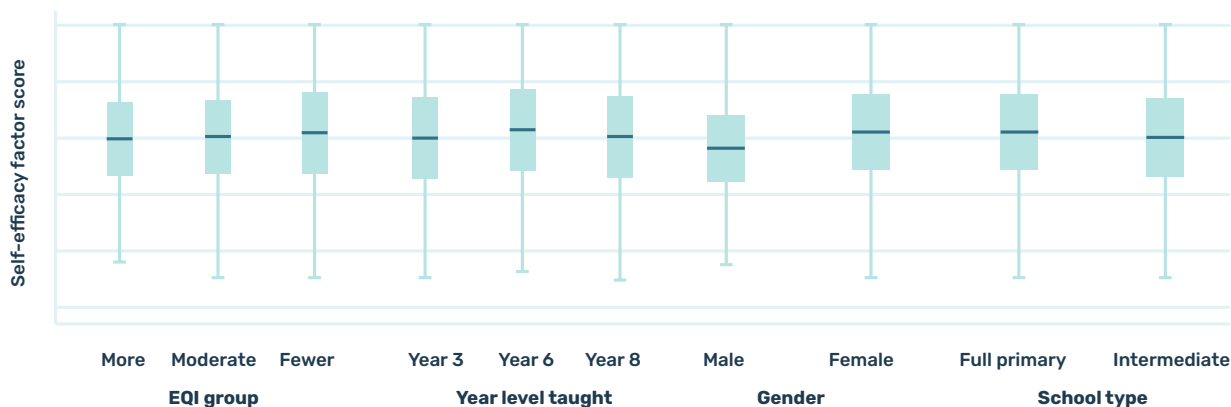
As in 2023, the items with the lowest levels of complete certainty (20% or fewer "absolutely certain" responses) related to motivating and guiding teachers, though most respondents still indicated they were reasonably certain. The item with the lowest overall positive response was "Promote a safe school environment for students, which is free from bullying," yet 87% of principals were at least "quite certain" they could do this. It is possible that some principals interpreted this item as referring to a completely bullying-free environment, an ideal they may view as not entirely within their control.

## Differences in teacher and principal self-efficacy by demographic factors and school context

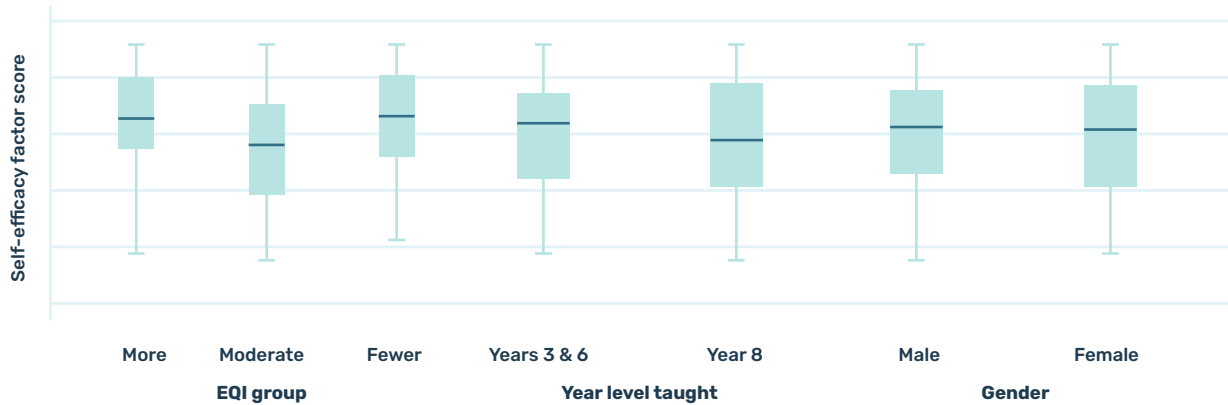
Factor analysis (Brown, 2015) was used to examine the relationships among items in the teacher self-efficacy scale and to estimate a single summary score, referred to as a factor score, for each teacher. This score represents their overall, estimated level of self-efficacy based on their responses to the scale items. Comparisons of average factor scores showed small, but statistically significant, differences by gender and for teachers of Year 3 (compared to Year 8) after controlling for age, race/ethnicity, and years of experience ( $p < 0.05$ ; see Figure 3.22). Regression analyses also examined whether school-level EQI scores, and school type were associated with these factor scores but found no significant relationship.

For principals' self-efficacy, the same analyses showed no significant differences in factor scores between demographic groups after adjusting for the same variables ( $p < 0.05$ ; see Figure 3.23).

**Figure 3.22: Teacher self-efficacy estimated factor score distributions by demographic subgroup**



**Figure 3.23: Principal self-efficacy estimated factor score distributions by demographic subgroup**

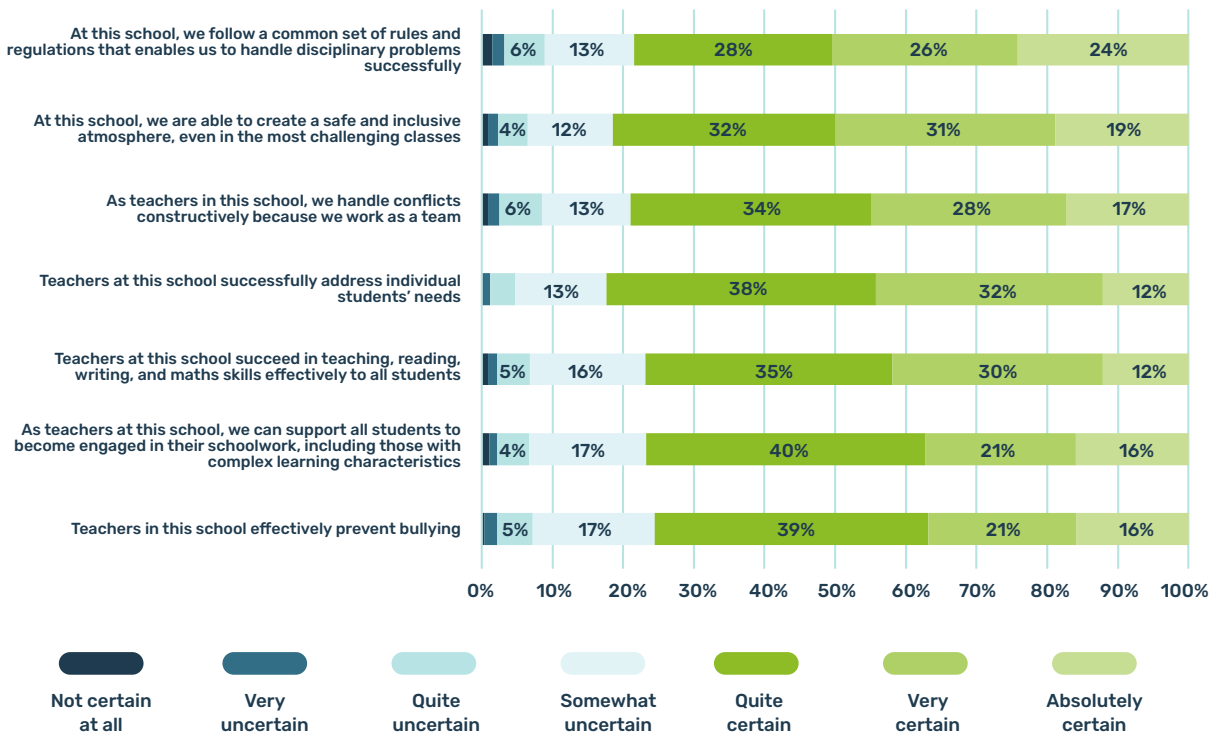


## Teacher and principal perceptions of collective efficacy

Our analysis of collective efficacy responses from teachers and principals highlighted two key findings. These findings are described below. Note that, for consistency with existing literature, when we refer to collective efficacy, we are describing individuals' perceptions of the collective efficacy of the staff of their school.

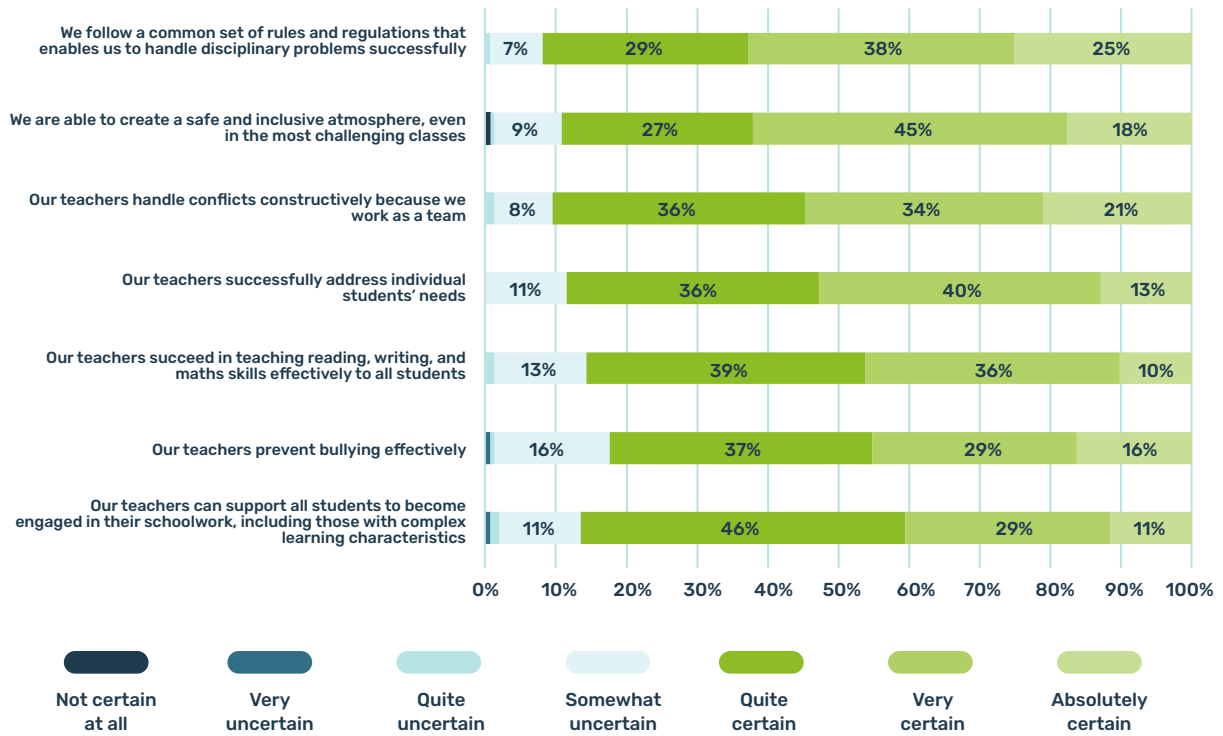
Teachers and principals responded to the seven items on the modified perceived teacher collective efficacy scale. Figures 3.24 and 3.25 summarise the responses for teachers and principals, respectively.

**Figure 3.24: Teacher responses to collective efficacy items**



Overall, teachers responded positively to the collective efficacy statements, including those related to classroom management, meeting individual needs, and fostering a safe and inclusive atmosphere. More than 75% selected at least “quite certain” for every item. While 76% of teachers indicated they were at least “quite certain” that “The teachers in this school effectively prevent bullying,” a sizeable minority were less certain in their responses to this item.

**Figure 3.25: Principal responses to collective efficacy items**



Principals answered more positively in their responses than teachers, with over 80% of principals rating each statement as at least “quite certain” or higher, compared with 75% of teachers.

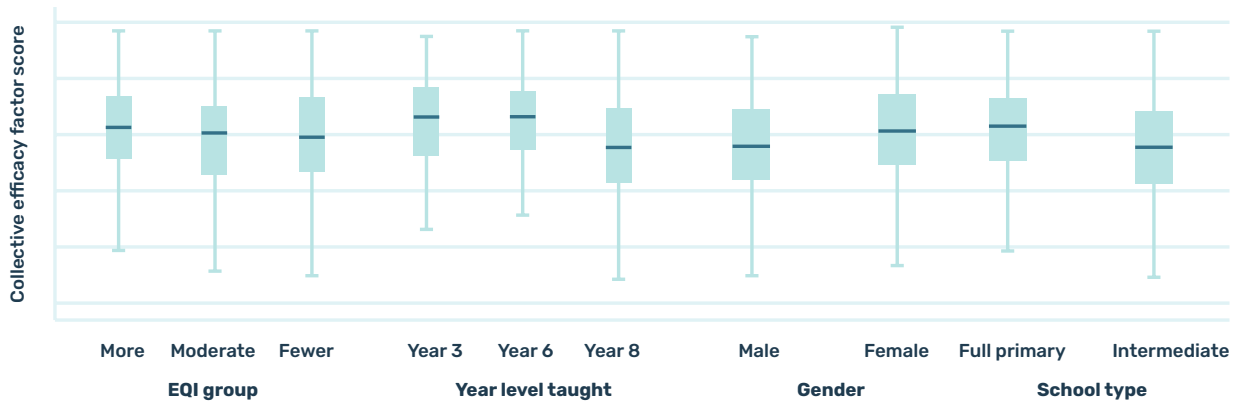
## Differences in Collective Efficacy by Year Level, Demographic Factors and School Context

### Teacher and principal collective efficacy were consistent across EQI groups

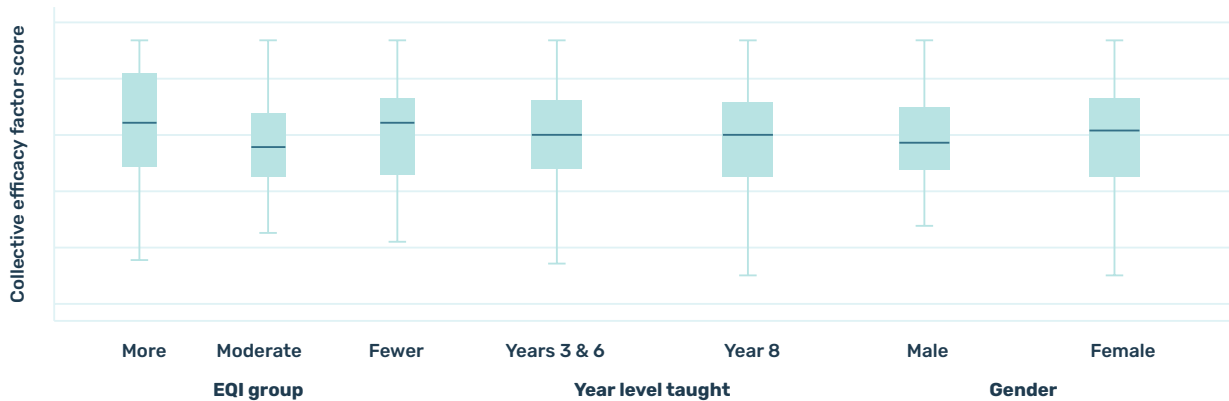
Analyses of teacher factor scores showed statistically significant differences for those teaching Year 3 and Year 6 compared to Year 8 (the reference group), after controlling for age, race/ethnicity, and years of experience ( $p < 0.05$ ). However, regression analyses found no significant relationships between school-level EQI scores and teacher factor scores, nor between school type and teacher scores.

No significant differences in factor scores were observed among principals across demographic groups when accounting for the same factors. Distributions of estimated collective efficacy factor scores for demographic subgroups of teachers and principals are shown in Figures 3.26 and 3.27.

**Figure 3.26: Teacher collective efficacy estimated factor score distributions by demographic subgroup**



**Figure 3.27: Principal collective estimated efficacy factor score distributions by demographic subgroup**



## What do the results mean?

This last part of Section 2 draws together key findings from the analysis, highlighting how confidence in students, teachers, leaders, and school teams can shape curriculum implementation and learner success. While many strengths are evident, the findings also point to areas where targeted support may help reduce disparities and foster positive learning environments.

### Student self-efficacy

The decline in student self-efficacy in mathematics and science from Year 3 to Year 8, particularly the sharper drop in science, highlights implications for curriculum design, teaching practice, and student support.

By Year 8, these declines are accompanied by clear disparities between groups: girls, Māori students, and those attending schools categorised as facing more socioeconomic barriers tend to report lower self-efficacy. These kinds of disparities point to the need for targeted strategies that promote equitable learner confidence across groups.

Given the link between self-efficacy and future learning outcomes, these trends raise concerns about the risk of disengagement and underachievement among some students if not addressed early.

Self-efficacy in science remains consistently lower than in mathematics, suggesting that science learning environments may require particular attention. Strengthening students' belief in their science capabilities could be a key driver for improving long-term engagement and success in this area.

Taken together, these findings point to the importance of supporting teachers to foster student confidence, particularly in science and in the upper primary years. Further research into how learners' perceptions of their capabilities develop across different contexts, and can be supported, could help inform teaching strategies that build positive self-beliefs and reduce disparities.

### Teacher self-efficacy

High levels of self-efficacy among teachers are encouraging, particularly in relation to forming strong professional relationships. These strengths can be harnessed to support collaborative practice and whānau engagement, both of which are essential for effective curriculum implementation.

It was also pleasing to note that teacher self-efficacy was not related to school-level EQI, suggesting that students facing more barriers to success are as likely to have self-efficacious teachers as those facing fewer barriers.

Differences in teacher self-efficacy between Year 3 and Year 8 are likely to reflect contextual differences, though further research is needed to confirm this.

The lower levels of confidence teachers reported in relation to motivating students point to a potential area for greater support. As the curriculum places increasing emphasis on student progress, ensuring teachers feel equipped to inspire and sustain student motivation will be vital.

This may have implications for professional learning design, suggesting value in approaches that help teachers identify and respond to diverse learner needs and promote learner self-efficacy particularly in subjects like science where self-efficacy is low for many students.

In relation to teachers' self-efficacy for disability-inclusive teaching, our findings suggest that while teachers feel confident in building relationships to support inclusion, they are less certain about advocating for students and promoting student agency. Targeted professional learning in these areas may help to strengthen teacher self-efficacy and further enhance inclusive practices across schools.



## Principal self-efficacy

While principals reported strong confidence in areas such as setting direction and building relationships, the more variable responses in relation to motivating and guiding teachers suggest a need for continued focus on instructional leadership. Supporting principals to grow their capability in this area could have benefits for both teacher practice and student outcomes.

The consistent self-efficacy levels evident across different school contexts suggest that strong leadership is already present in schools facing a range of systemic challenges. Sustaining this capability is a valuable equity strategy, ensuring that all learners benefit from confident, well-supported leadership.

## Collective efficacy

Teachers and principals across schools, including those in higher-equity-barrier contexts, reported a strong sense of collective efficacy. While these self-perceptions do not directly indicate impact, they suggest that staff in a wide range of settings feel confident in their ability to work collaboratively. Notably, reported levels of collective efficacy did not differ significantly by school-level EQI, indicating that these beliefs are broadly distributed across the system. This may represent a positive foundation for collective action on curriculum change, although further research would be needed to explore how such perceptions translate into practice and outcomes.

Lower collective efficacy among Year 8 teachers may reflect the increased demands and structural complexity of middle schooling, particularly in subjects like mathematics. Reduced collaboration or fragmented teaching roles could be contributing factors. Interestingly, we did not observe a statistically significant difference in collective efficacy between full primary and intermediate school types, suggesting that the pattern may be linked more to year level than to school structure. This reported lower collective efficacy of Year 8 teachers warrants further research.

Schools with collaborative cultures, where staff share a strong belief in their collective capacity to influence outcomes, are well positioned to lead curriculum change and implement new initiatives in ways that benefit all learners. However, even a small proportion of teachers reporting low collective efficacy signals a risk to whole school progress. Understanding the conditions that support or hinder collective efficacy within schools, such as leadership practices, workload pressures, or staff cohesion, could help inform targeted supports. In turn, this may strengthen collective efficacy and benefit not only student outcomes but also teacher wellbeing and professional sustainability.



## Section 3: Whāia te mātauranga | School emphasis on academic success

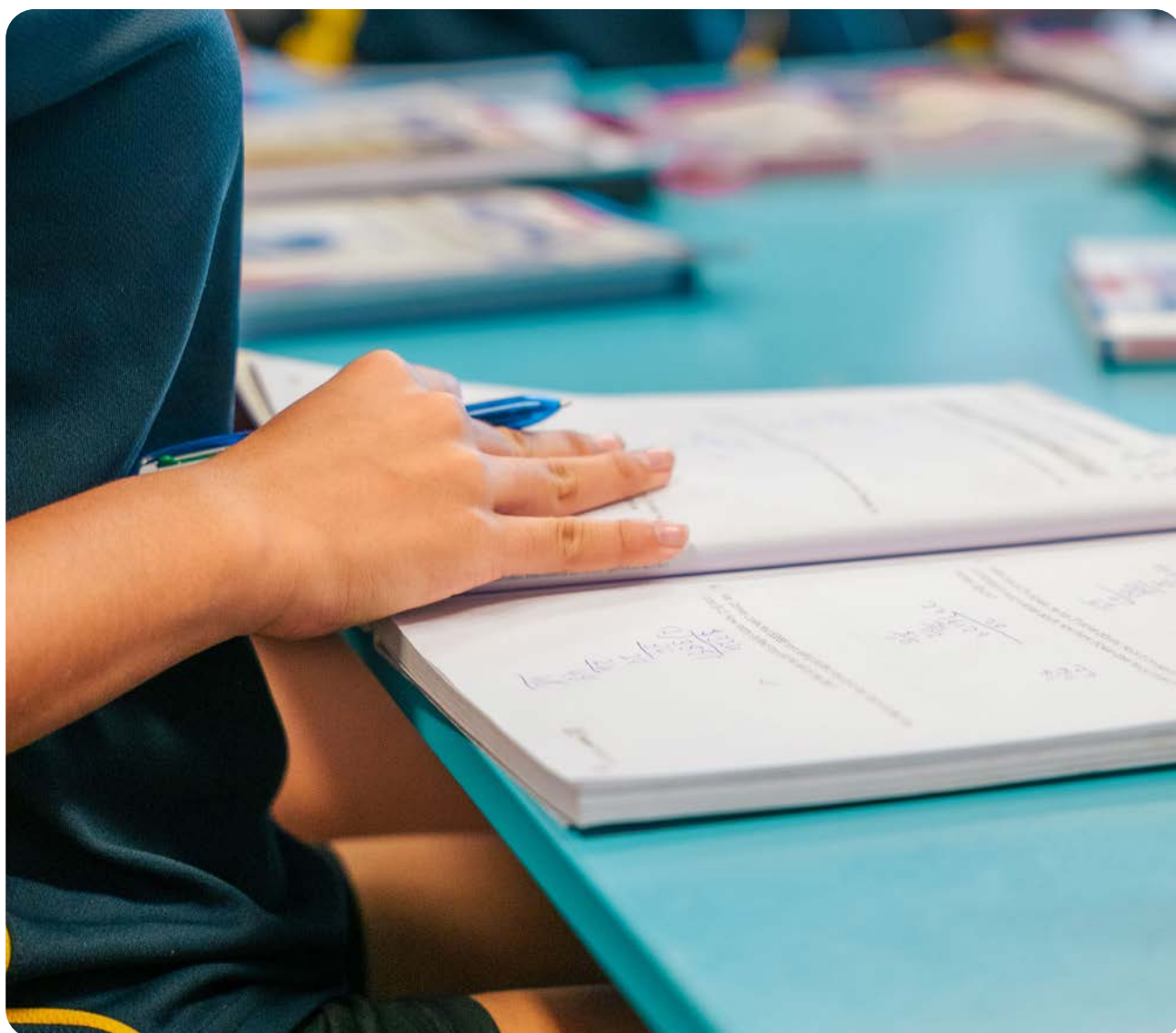
In this final section, we present our findings on School Emphasis on Academic Success (SEAS). We begin by explaining what SEAS is and how it was measured, then provide a breakdown of results from students, teachers, and principals, before briefly exploring the possible implications.

### What is SEAS?

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School Emphasis on Academic Success (SEAS) reflects the degree to which teachers and principals perceive that students, parents, and colleagues in their schools are collectively committed to achieving high levels of academic success (Mullis & Martin, 2017). The concept of SEAS is rooted in the construct of Academic Optimism, a school level construct, developed by Hoy and colleagues (Hoy, et al., 2006).

Research has shown that Academic Optimism contributes significantly to student achievement, even after controlling for demographic factors and prior performance (Hoy et al., 2006). When school environments emphasise mastery, understanding, and the development of skills and knowledge, students exhibit greater motivation and more positive learning patterns (Meece et al., 2006).



## Findings at a glance

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School Emphasis on Academic Success (SEAS) refers to the extent to which academic achievement is prioritised and valued within the school community.

In this study, we asked teachers and principals to report on how strongly they perceived their school community to value academic success. To complement and extend our exploration of SEAS, we asked students about their attitudes to the two focus learning areas: mathematics and science. We analysed these data in relation to demographic variables and student achievement.

### **Engagement with mathematics declines sharply from Year 3 to Year 8, especially for girls.**

In Year 3, 88% of students said they like mathematics. In contrast just, 66% of Year 6 and 50% of Year 8 students 'agree quite a lot' or 'totally agree' they like the subject. At Year 8 this is true of just 41% of girls in comparison to 61% of boys.

### **Engagement with science declines more steeply than engagement with mathematics, especially for Māori students and girls.**

While 84% of Year 3 students said they like learning science, this drops to 61% in Year 6 and 43% in Year 8. Interest in continuing science falls to just 33% by Year 8.

### **The association between academic attitudes and achievement appears stronger in mathematics than in science, and becomes more pronounced as children get older.**

The relationship between achievement and enjoyment is more clear at Year 8 than at Years 3 and 6.

### **Teachers and principals are less confident about parents and whānau supporting academic goals than they are about teachers and student doing so.**

The three items on the scale with the least positive ratings from both teachers and principals related to parents and whānau.

## What did we do?

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To extend our understanding of SEAS, we built on items from the National Monitoring Study of Student Achievement (NMSSA) student questionnaires to ask students about their attitude to learning in mathematics and science. Year 3 students were asked to respond "yes" or "no" to the five questions listed in Figure 3.28. Years 6 and 8 students were asked to indicate their level of agreement with eight statements using a four-point Likert scale. "totally agree", "agree quite a lot", "agree a little" and "do not agree at all". These statements can be seen in Figures 3.29 and 3.30.

To explore teachers' and principals' perceptions of SEAS, we adapted 11 items from the 2019 Trends in International Mathematics and Science Study (TIMSS) study. Respondents were asked to characterise their school on each item using a seven-point Likert scale, ranging from "very low" to "very high." Items can be seen in Figures 3.35 and 3.36.

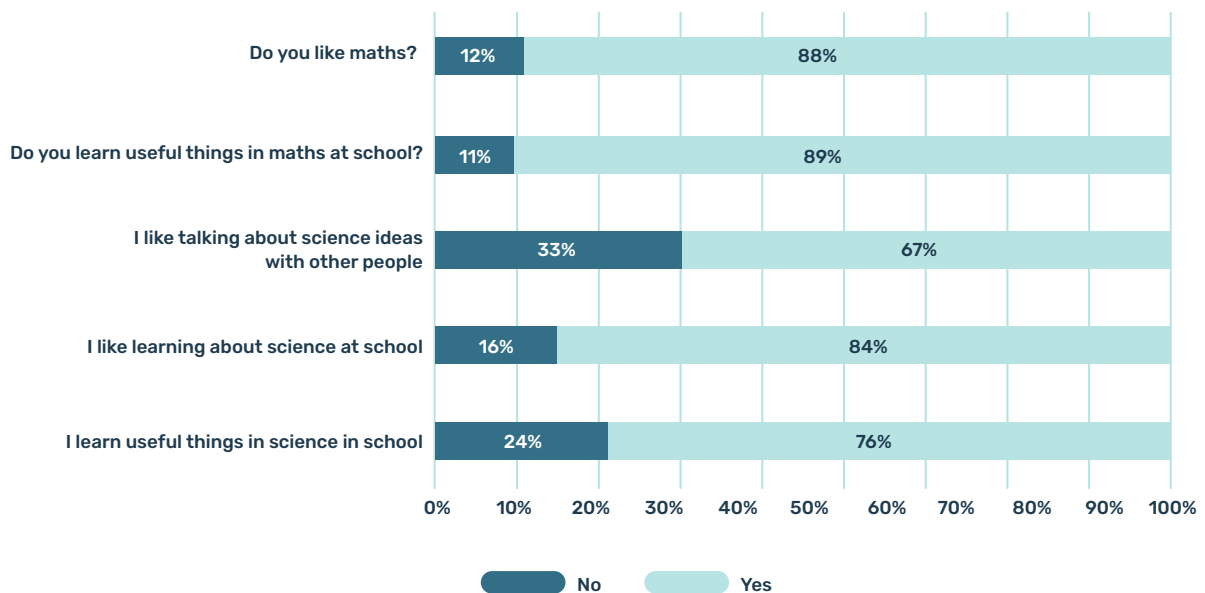
## What did we find?

Our analysis of responses identified four notable findings to report. These findings are described below, focusing first on students and then on teachers and principals.

### Engagement with mathematics declines sharply from Year 3 to Year 8, especially for girls

Figures 3.28 to 3.30 summarise responses to student items related to their attitude to mathematics and science for Year 3, Year 6, and Year 8, respectively.

Figure 3.28: Year 3 students' responses to academic attitude questions



## Year 3 Students' Attitudes Toward Mathematics and Science

Figure 3.28 shows that Year 3 students are generally positive about both mathematics and science. In mathematics, 88% of students said they like the subject, and 89% reported that they learn useful things in it—both strong indicators of engagement. Science responses were also favorable but more mixed. While most (84%) said they enjoy learning the subject and 76% agreed that they learn useful things, fewer (67%) said they enjoy talking about science ideas with other people. Although different questions were used for mathematics and science, the results suggest more hesitancy about science compared with mathematics.

Figure 3.29: Year 6 students' responses to academic attitude questions

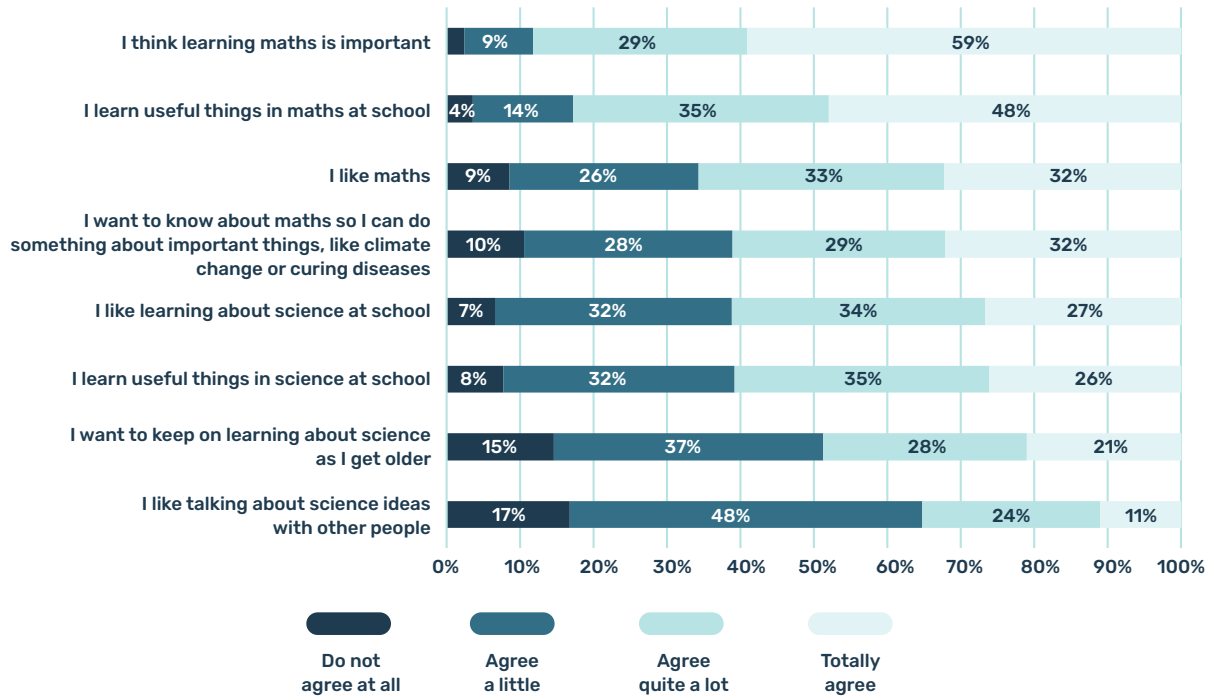
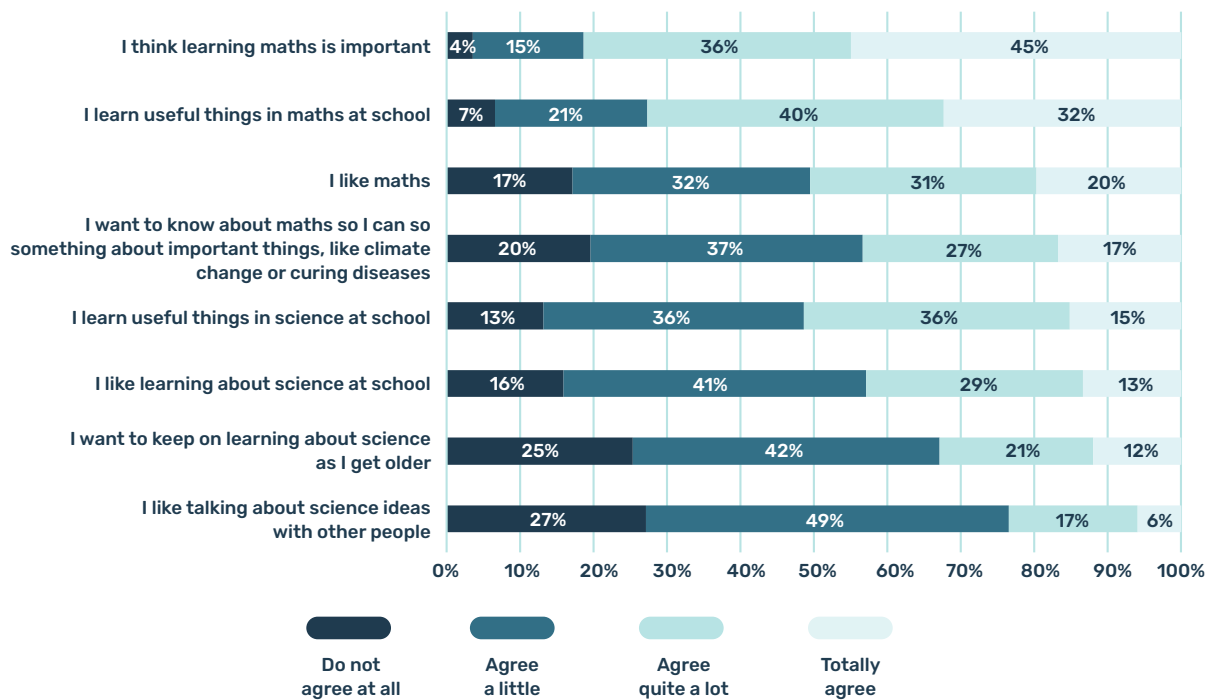


Figure 3.30: Year 8 students' responses to academic attitude questions



## Year 6 and Year 8 Students' Attitudes Toward Mathematics and Science

Figures 3.29 and 3.30 show Year 6 and Year 8 students' responses to statements about their attitudes toward mathematics and science. In the discussion below, the percentages reported as agreeing combine those who selected "agree quite a lot" or "totally agree."

Most students in both Year 6 and Year 8 responded positively to statements about liking mathematics, seeing its importance, and learning useful things at school. For example, 65% of Year 6 and 51% of Year 8 students agreed that they like mathematics, and over 80% in both groups thought learning mathematics is important.

Agreement rates for the items related to science were generally lower than for mathematics and declined more sharply from Year 6 to Year 8. In Year 6, 61% of students enjoyed learning science and 49% wanted to keep learning it as they got older. By Year 8, these figures fell to 42% enjoying science and 33% wanting to continue learning science. While both year levels overall indicated they learn useful things in science (61% in Year 6, 51% in Year 8), enjoyment of discussing science ideas was just 35% in Year 6 and dropped to 23% in Year 8.

These results indicate that while enthusiasm for mathematics remains relatively strong into Year 8, attitudes to science decline substantially. However, because the questions about mathematics and science focus on different aspects of each subject, comparisons between attitudes toward mathematics and science should be interpreted with caution.

Similar questions were asked at Year 8 in the National Monitoring Study of Student Achievement for mathematics in 2018 and 2022, and for science in 2017 (EARU & NZCER, 2018a, 2019, 2023b). A comparison of responses is illustrated in Tables 3.2 and 3.3.

**Table 3.2: Percentage of Year 8 students reporting that they 'quite a lot' or 'totally agree' with mathematics attitude items, 2018, 2022, and 2024**

	2018 n=2105	2022 n=1702	2024 n=1563
I think learning maths is important.	86%	85%	81%
I learn useful things in maths at school.	78%	74%	73%

**Table 3.3: Percentage of Year 8 students reporting that they 'quite a lot' or 'totally agree' with science items in 2017 and 2024**

	2017 n=2030	2024 n=1565
I like learning about science at school.	52%	43%
I want to keep on learning about science as I get older.	44%	33%
I learn useful things in science at school.	54%	51%

There are no notable changes in agreement rates for mathematics between 2017 and 2024. However, the proportion of Year 8 students who said they want to keep learning about science as they grow older declined from 44% in 2017 to 33% in 2024. This notable decrease raises concerns about a potential decline in student engagement with science and may signal a broader risk of disengagement from STEM pathways.

## **Engagement with science declines more steeply than engagement with mathematics, especially for Māori students and girls**

We compared the percentages of Year 3 students answering ‘yes’ to each of the academic attitude questions, by gender, school equity index (EQI) group, and ethnicity. For Year 6 and Year 8 students, we compared the percentages of Year 6 students agreeing either “quite a lot” or “totally” with each of the academic attitude statements for different demographic subgroups.

One notable finding is the higher enjoyment of mathematics among Year 6 students compared to those in Year 8 from schools facing greater socioeconomic challenges. In schools with more barriers, 76% of Year 6 students reported liking mathematics compared to 48% of Year 8 students.

An area of concern is the widening gender gap in enjoyment of mathematics: by Year 8, only 41% of girls say they like the subject, compared to 61% of boys. However, this disparity is less pronounced when students are asked about the importance of mathematics—both girls and boys tend to recognise its value.

A similar, but steeper pattern of decline is evident in students’ attitudes toward science. In Year 3, using a yes/no scale, 84% of students said they liked learning science at school, and 67% said they liked “talking about science ideas with other people”. By Year 6, measured using a 4-point Likert scale, these percentages drop to 61% and 35%, respectively, before falling further to 43% and 23% by Year 8. Interest in continuing to learn about science declines from 49% in Year 6 to 33% in Year 8.

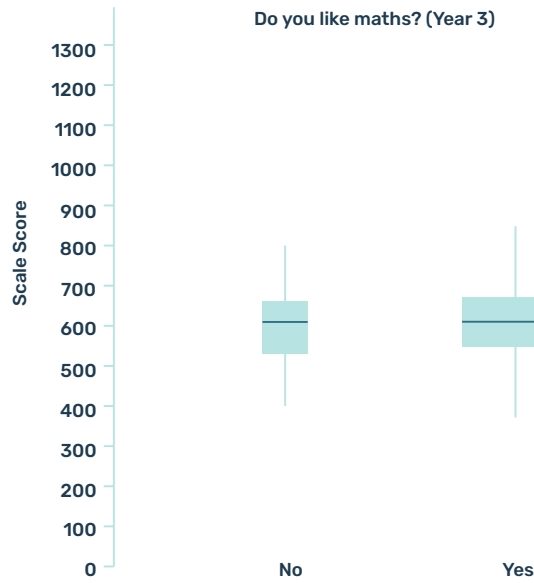
Pacific students were 12 percentage points more likely than non-Pacific students to ‘agree quite a lot’ or ‘totally agree’ with the statement “I learn useful things in mathematics at school.” They were also 15 percentage points more likely to agree that they “want to know about mathematics so I can do something about important things, like climate change or curing diseases.”

Māori students, girls, and students in more-barrier schools generally report lower levels of science enjoyment. Here, in contrast to mathematics, there is a more notable drop in both enjoyment and perceived usefulness of science over time, although close to half of Māori students and over half of Year 8 students in more-barriers schools and girls still agree they learn useful things in science.

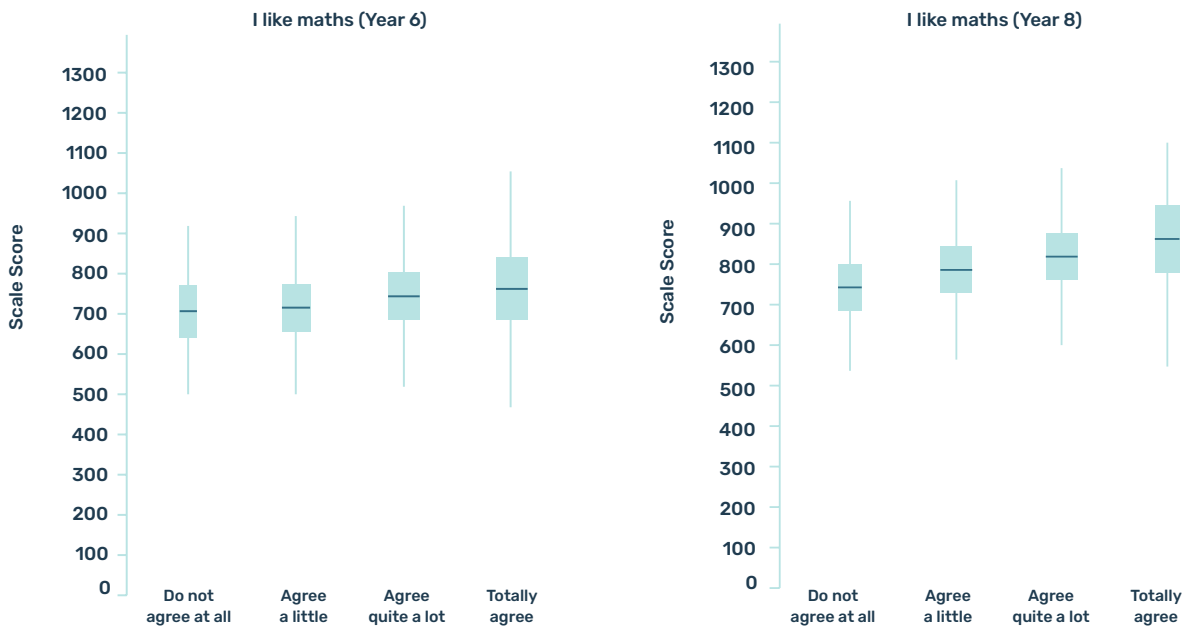
## **The association between academic attitudes and achievement appears stronger in mathematics than in science, and becomes more pronounced as children get older**

We compared students’ achievement distributions on Curriculum Insight’s foundational mathematics assessment according to how much they reported liking mathematics (Figures 3.31 to 3.34).

**Figure 3.31: Distribution of Year 3 students' mathematics scale scores by extent to which they like mathematics**



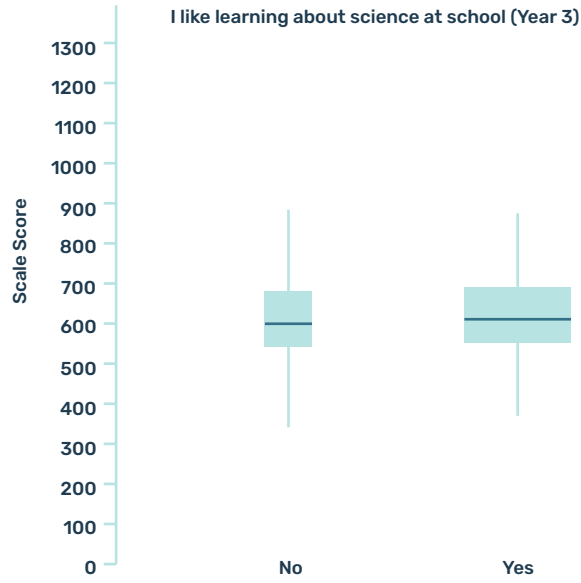
**Figure 3.32: Distribution of Year 6 and Year 8 students' mathematics scale scores by extent to which they like mathematics**



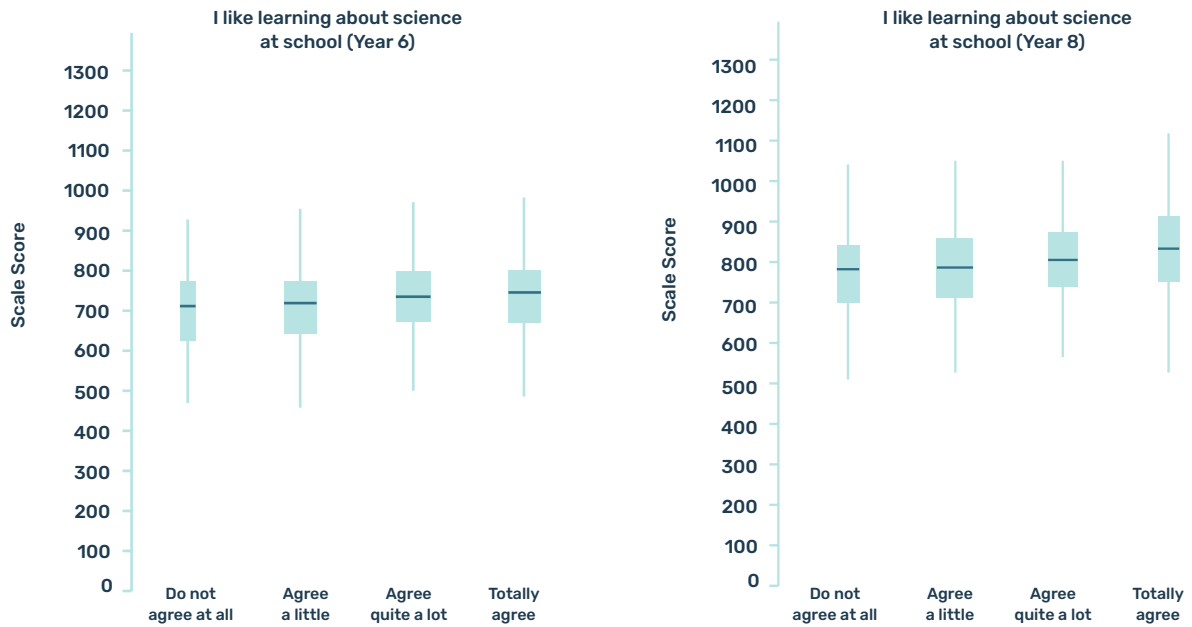
Students who report "liking" mathematics tend to achieve more highly, with this relationship becoming more pronounced over time, with little difference at Year 3, more evident at Year 6 and strongest at Year 8.

A similar analysis was carried out for science (Figures 3.33 and 3.34).

**Figure 3.33: Distribution of Year 3 students' science scale scores by extent to which they like learning about science**



**Figure 3.34: Distribution of Year 6 and Year 8 students' science scale scores by extent to which they like learning about science**

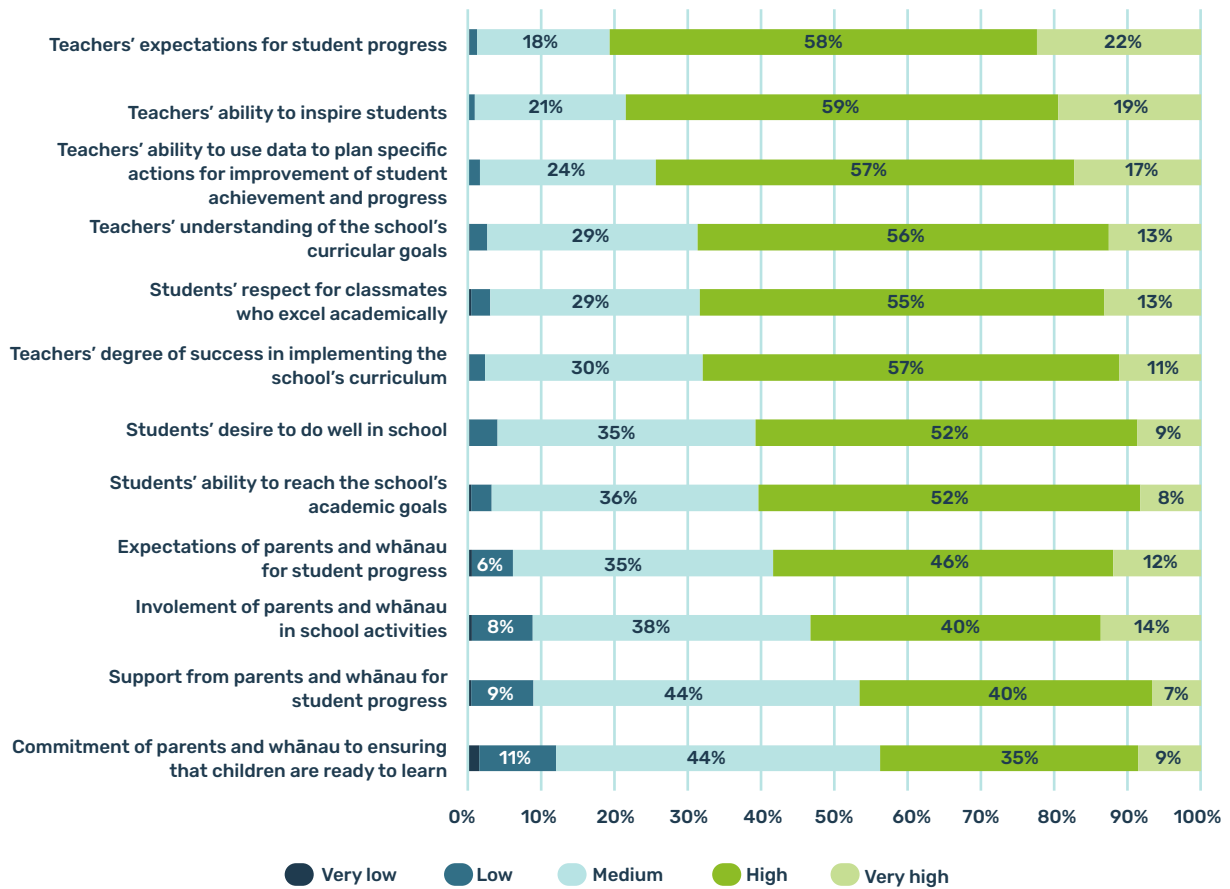


Compared to mathematics, there was less difference in the distributions of achievement in science between students based on the extent to which they indicated that they like learning about science.

## Teachers and principals are less confident about parents and whānau supporting academic goals than they are about teachers and students doing so

Figures 3.35 and 3.36 present a summary of teachers and principal responses, respectively, to our School Emphasis on Academic Success (SEAS) scale. For each item, respondents rated the extent to which the statement characterised their school's emphasis on academic success.

**Figure 3.35: Teacher responses to School Emphasis on Academic Success (SEAS) items**



**Figure 3.36: Principal responses to School Emphasis own Academic Success (SEAS) items**

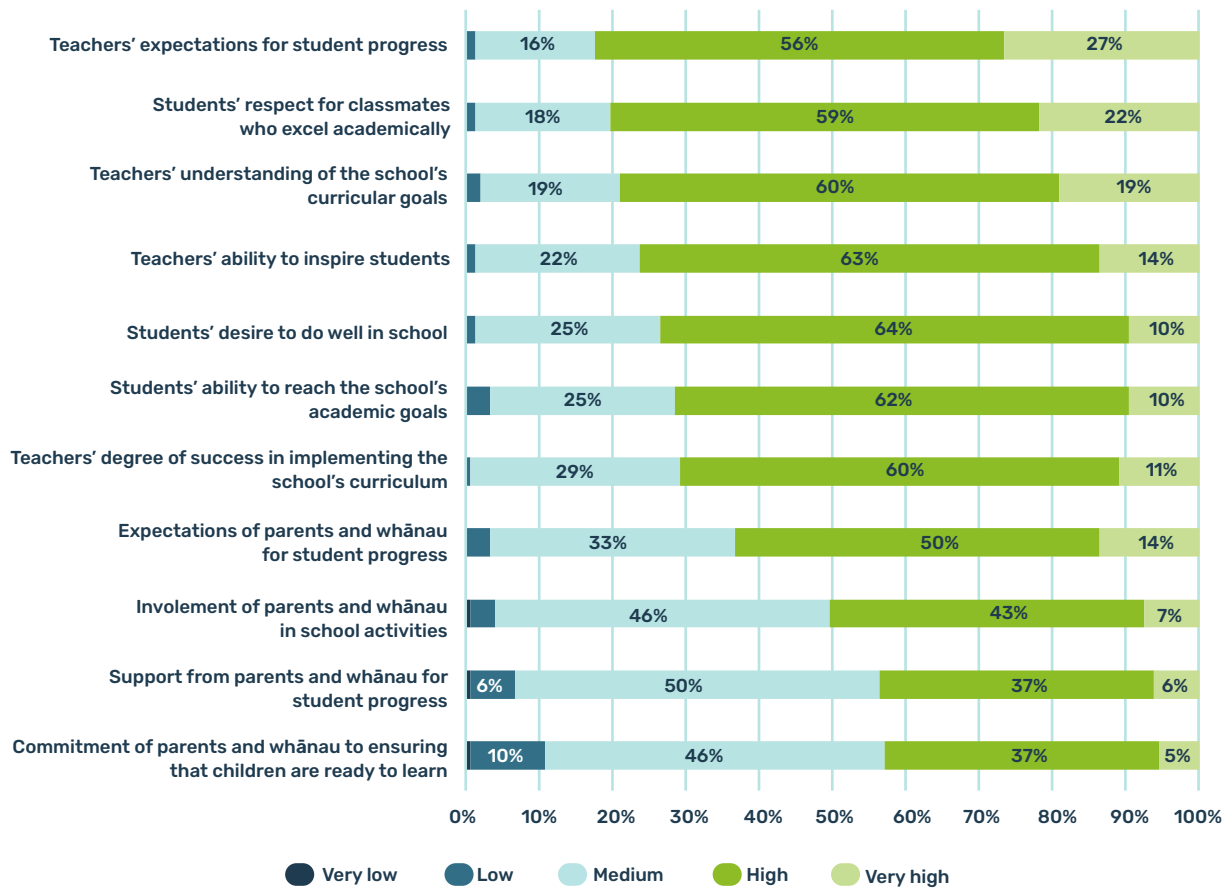


Figure 3.35 indicates that teachers generally saw strong academic expectations in their schools. Most rated teacher-related items highly, including expectations for student progress (80%) and ability to inspire students (78%). Students' motivation and achievement capability also received solid support, with around 60% of teachers giving high or very high ratings. However, perceptions were more mixed when it came to whānau engagement. Only 44% rated parents and whānau as strongly committed to student learning, and even fewer (35%) saw families as setting high expectations. These findings suggest a belief in strong internal commitment to academic success, but a need to deepen home-school connections.

Like teachers, principals reported a consistently strong emphasis on academic success across their schools (Figure 3.36). Over 80% gave high or very high ratings to teacher expectations, curricular understanding, and respect for high-achieving students. They also viewed student motivation positively—74% believed students wanted to do well in school. Confidence in staff use of data for improvement was particularly strong (90%). However, like teachers, principals expressed less confidence in whānau engagement. Fewer than half gave strong ratings for parental involvement or readiness to support learning. These results suggest that principals see a well-aligned and academically focused school culture, with family engagement as a relative gap.

While teachers and principals generally agreed that their schools emphasise academic success, some notable differences emerged. Principals were more positive about students' desire to do well at school (74% vs 61%) and respect for academically successful peers (81% vs 68%)—a difference of 13 percentage points in both cases. They also rated teachers' use of data for improvement more favourably (90% vs 74%), a 16-point gap. In other areas, such as teacher expectations, curricular understanding, and whānau engagement, differences were less than 10 percentage points. These results suggest that principals hold more optimistic views in areas related to student mindset and data use.

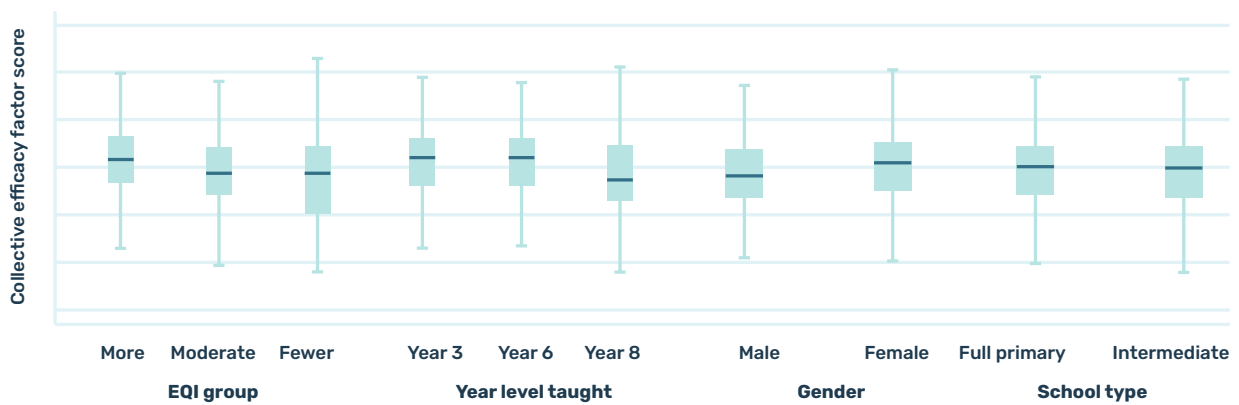
Factor analysis (Brown, 2015) was used to examine the relationships among items in the academic attitudes scale and to estimate a single summary score, referred to as a factor score, for each teacher or principal. This score represents their overall, estimated level of academic attitude based on their responses to the scale items.

Comparisons of mean factor scores across gender and year levels taught as well as a regression of estimated factor scores on raw, school-level EQI scores showed a statistically significant mean difference for Year 6 teaching level (relative to Year 8, which was used as the reference year) after controlling for all other variables in the model (age, race/ethnicity, and years of experience).

A significant relationship between school-level EQI and estimated academic attitude factor score was also noted with higher school EQI (higher need) being associated with worse self-reported academic attitudes for both teachers and principals. No significant differences were found in relation to school type.

Figures 3.37 and 3.38 show the distributions of academic factor scores across various demographic subgroups for teachers and principals, respectively. Note that the figures below show mean estimated factors scores by EQI group, whereas our analysis used the raw EQI score.

**Figure 3.37: Teacher academic attitude estimated factor score distributions by demographic subgroup**



The box plots (Figures 3.37) reveal patterns in teacher perceptions of SEAS across equity groups, year levels, and gender. Teachers in schools whose students have fewer socioeconomic barriers to achievement had higher academic attitude scores, on average, than those in schools with more barriers. A gradual downward trend is also evident across year levels: Year 6 teachers had higher academic attitude scores, on average, than Year 8 teachers.

**Figure 3.38: Principal academic attitude estimated factor score distributions by demographic subgroup**

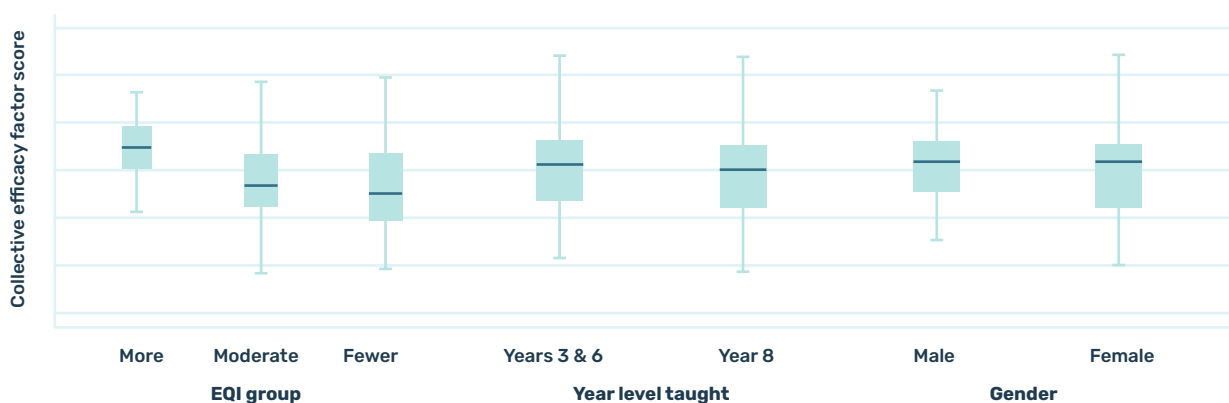


Figure 3.38 shows that principals' perceptions of SEAS vary moderately by equity group, year level, and gender.

Principals in schools whose students have fewer socioeconomic barriers to achievement had higher academic attitude scores, on average, than those in schools with more barriers, when other demographic variables (gender, ethnicity, experience, and age) are controlled for.

Overall, principal responses mirrored the trends reported by teachers, indicating a shared understanding of academic emphasis across roles.

## What do the results mean?

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The data reported in Section 3 highlights both strengths and areas for further development in how emphasis on academic success is experienced across schools. In what follows we explore what this means.

The decline in student attitudes toward mathematics and science from Year 3 to Year 8 is noteworthy. While younger students express high levels of liking both subjects (88% for mathematics and 84% for science at Year 3), this drops significantly by Year 8 (to 50% and 43%, respectively). This suggests a need for schools to maintain and renew efforts to make learning engaging and meaningful as students move through the primary years; particularly in science, where interest and enjoyment appear to fall off more sharply.

The persistence of valuing mathematics, even when enjoyment declines, especially among girls, suggests that students continue to recognise its importance. However, demographic patterns in engagement, where boys, non-Māori students, and those in lower-barrier schools report more positive attitudes, signal equity concerns. Supporting science engagement for girls, Māori students, and students in high-barrier contexts could help ensure that the benefits of a strong SEAS are distributed more equitably.

The perceptions of teachers and principals provide insight into how SEAS is enacted at the school level. Both groups expressed strong confidence in teacher expectations, instructional competence, and use of achievement data: factors that underpin a shared academic culture. However, perceptions of parent and whānau engagement were notably weaker. Over 10% of teachers rated general whānau support for student readiness and progress as low.

A significant relationship between school-level EQI and estimated academic attitude factor scores was also observed, with higher school EQI (indicating higher need) associated with less positive self-reported academic attitudes for both teachers and principals. This finding highlights how greater systemic need may be linked to challenges in building and sustaining a strong academic culture. It aligns with broader system concerns (e.g. Education Review Office, 2023) about the impact of home-school relationships on attendance and engagement. Strengthening partnerships with whānau, particularly in communities facing systemic barriers, may help reinforce shared expectations for learning and boost the schoolwide emphasis on academic success.



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Kei te hirikapo o ngā tamariki,  
te kairangitanga o te anamata

## **The future lies within the minds of our children**

This whakataukī speaks to the idea that our tamariki hold the key to what lies ahead. What they see, hear, experience, and learn now will build their social and cultural understandings. These together will shape the world to come. By nurturing their potential and supporting their growth, we are empowering them to become kaitiaki | guardians and rangatira | leaders who will guide and lead the future.

E ai ki ngā kōrero a Dame Whina Cooper

**As said by Dame Whina Cooper**

---

***“Take care of our children.  
Take care of what they hear.  
Take care of what they see.  
For how the children grow,  
so will the shape of Aotearoa.”***

## More information

More information related to the 2024 mathematics and statistics and science learning area studies is available on the website of the Curriculum Insights and Progress Study

[curriculuminsights.otago.ac.nz](https://curriculuminsights.otago.ac.nz)

### 2024 maths and science combined reports (summary and contextual)

The Curriculum Insights and Progress Study is conducted by the University of Otago's Educational Assessment Research Unit (EARU) and the New Zealand Council for Educational Research (NZCER), under contract to the Ministry of Education.

#### Mathematics and statistics study team 2024

EARU: David Berg, Andrew Tagg, Jenny Ward, Jane White.

NZCER: Bronwyn Gibbs (Leader), Charles Darr, Jessie Dong, Jonathan Fisher, Jess Mazengarb.

#### Science study team 2024

EARU: Jill Hayhurst (Leader), Jane White (Leader), David Berg, Kalika Kastein, Rose Stanley, Andrew Tagg, Ray Reichenberg, Jenny Ward.

NZCER: Davina Hunt (Leader), Charles Darr, Jessie Dong, Rosemary Hipkins.

#### Operations team

EARU: Alison Richardson (Leader), Ruth Barton, Kristel De Ryck, Roshan Dixon, Linda Jenkins, Jack Matterson, James Rae, Rebecca Richardson.

#### Design team

Obvious Brand Partners.

ISSN: 3021-3541 (Online)

ISBN: 978-1-991350-19-0

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