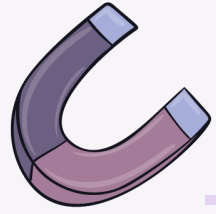




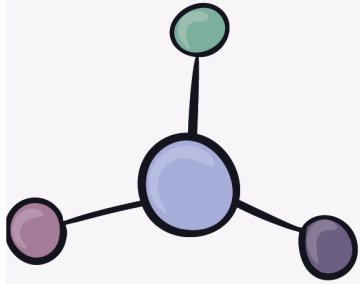
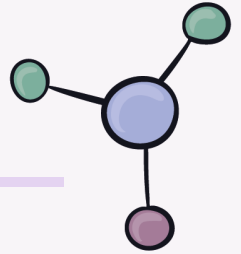
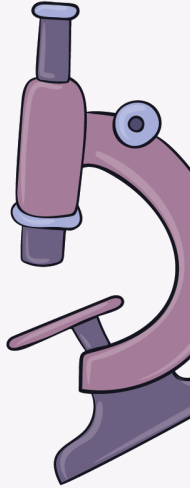
TIMSS 2023

SCHOOL REPORT

The Westminster School
Dubai Branch



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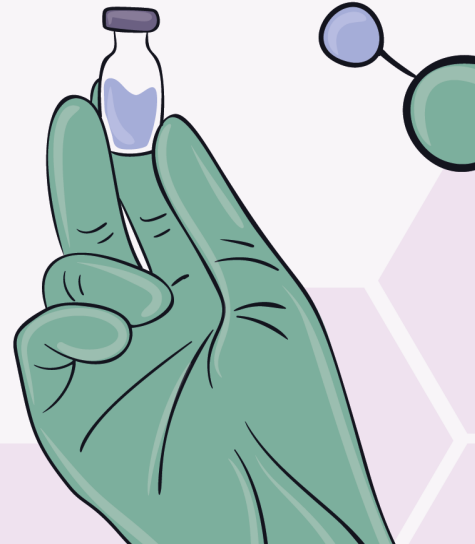
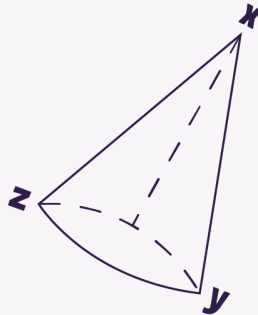
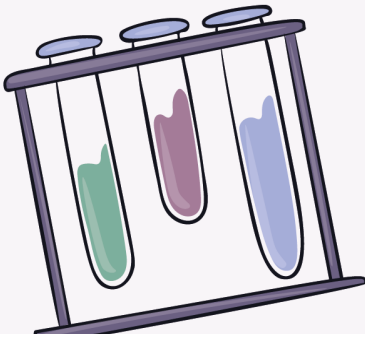




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TIMSS Background

Trends in International Mathematics and Science Study (TIMSS) is an international assessment of student achievement in mathematics and science at fourth and eighth grades. 64 countries and 8 regional entities (e.g. Madrid, Spain, Quebec, Canada) participated in the TIMSS 2023 cycle. TIMSS 2023 was the eighth cycle of TIMSS.


In 2023, Dubai chose to administer TIMSS 2023 in the digital format. 9500 Grade 4 students from 185 private schools and 8500 Grade 8 students from 159 private schools across various curricula participated. The average student score was above the international mean. Schools in Dubai are highly diverse in terms of the curriculum, with more than 14 different, international curricula in operation. Considerable variation was found in student achievement across schools offering different curricula.

This report summarises the performance of students in selected class(es) at your school who sat for the TIMSS 2023 assessments. The overall results from TIMSS provide very useful information for school leaders. Information on achievement of students, in key areas of learning. School Leaders can use the school level reports to study strengths and weaknesses in the achievement of their students in mathematics and science.

They are also able to compare the achievement of participating students in their own school with international benchmarks. Additionally, leaders can compare the achievement of their own students with that of students in other schools in Dubai and more specifically, other schools in Dubai following a similar curriculum.

This detailed assessment helps school leaders and teachers to better align the content of lessons and the broader curriculum to the identified needs of students in the school. Assessments and team will have the school level information and will train school leaders and staff in using the data provided in this report to match the curriculum and class activities to the learning needs of students in the school.

TIMSS Results Summary

	KHDA School ID	199
	Language of instruction	English
	School curriculum	UK
	Number of Grade 4 Students	63
	Number of Grade 8 Students	60

TIMSS Student Sample at your school



The students' sample selection process occurred through two phases to assure the representation of the school's sample and the accuracy of the data. Students were sampled using an advanced statistical technique to ensure representative sampling in each of the relevant curricula. The sampling was overseen by the International Association for the Evaluation of Educational Achievement (IEA) to maintain strict adherence. The basic design for the TIMSS sample is referred to as a two-stage stratified cluster sample design. The first stage consisted of establishing a sample of schools.

The second stage consisted of classes (mathematics or science) selected at random from the target grade levels (4 or 8) in the sampled schools. In this way, measures of achievement could be provided for the population, based on the responses of a sample of students, along with the confidence interval to indicate the precision of those measures.

Schools Overall Performance

Domain	Score	TIMSS Benchmark
Grade 4 Mathematics	551	High Benchmarking
Grade 4 Science	560	High Benchmarking
Grade 8 Mathematics	578	High Benchmarking
Grade 8 Science	596	High Benchmarking

How well did your students achieve compared to their peers in Dubai Private Schools, globally and Curricula?

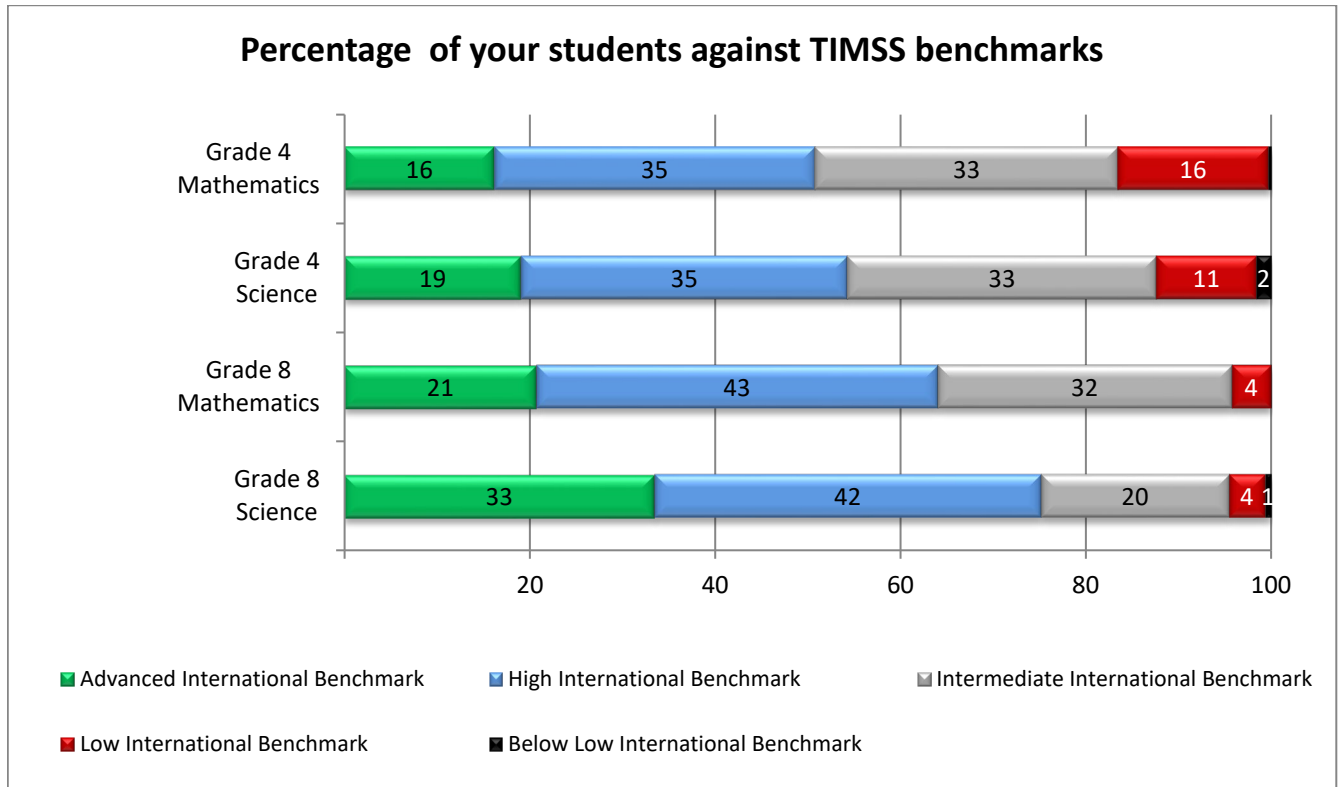
Comparing your students' results to average results as below				
 mathematics  science	Your School Score	Dubai Private Schools	TIMSS Average	Top performing country and its score
Grade 4 Mathematics	551	564	503	Singapore (615)
Grade 4 Science	560	571	494	Singapore (607)
Grade 8 Mathematics	578	561	478	Singapore (605)
Grade 8 Science	596	563	478	Singapore (606)

Performance of students in different curricula offered in Dubai

Curriculum	Grade 4 Mathematics	Grade 4 Science	Grade 8 Mathematics	Grade 8 Science
Indian	586	600	579	585
UK	570	575	577	578
IB	572	572	561	564
SABIS	541	551	551	552
Private - MOE	557	556	542	537
Philippine	542	564	519	528
US	515	516	514	513
Pakistani	493	490	503	489

How well did your students achieve against TIMSS International Benchmarks?

This chart shows the distribution of your students across each of the International Benchmark Levels. The chart indicates the percentage of students who have reached achievement levels at every benchmark.



***The total values might not add up to 100% due to rounding**

TIMSS International Benchmarks

Below is a table summarising the benchmark thresholds for the four key benchmarks; these are the same for each of the subjects and grades

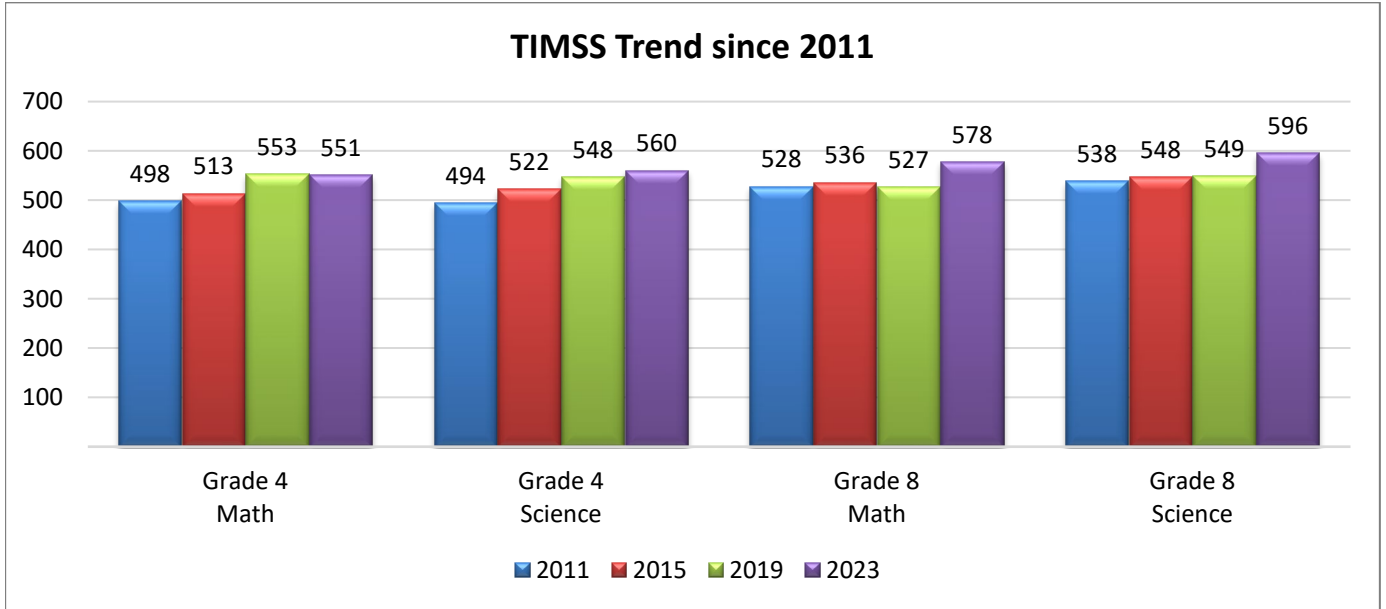
Benchmark Level	Benchmark threshold
Advanced International Benchmark	625
High International Benchmark	550
Intermediate International Benchmark	475
Low International Benchmark	400

*** Please refer to the Appendix for full descriptions of the international benchmarks**



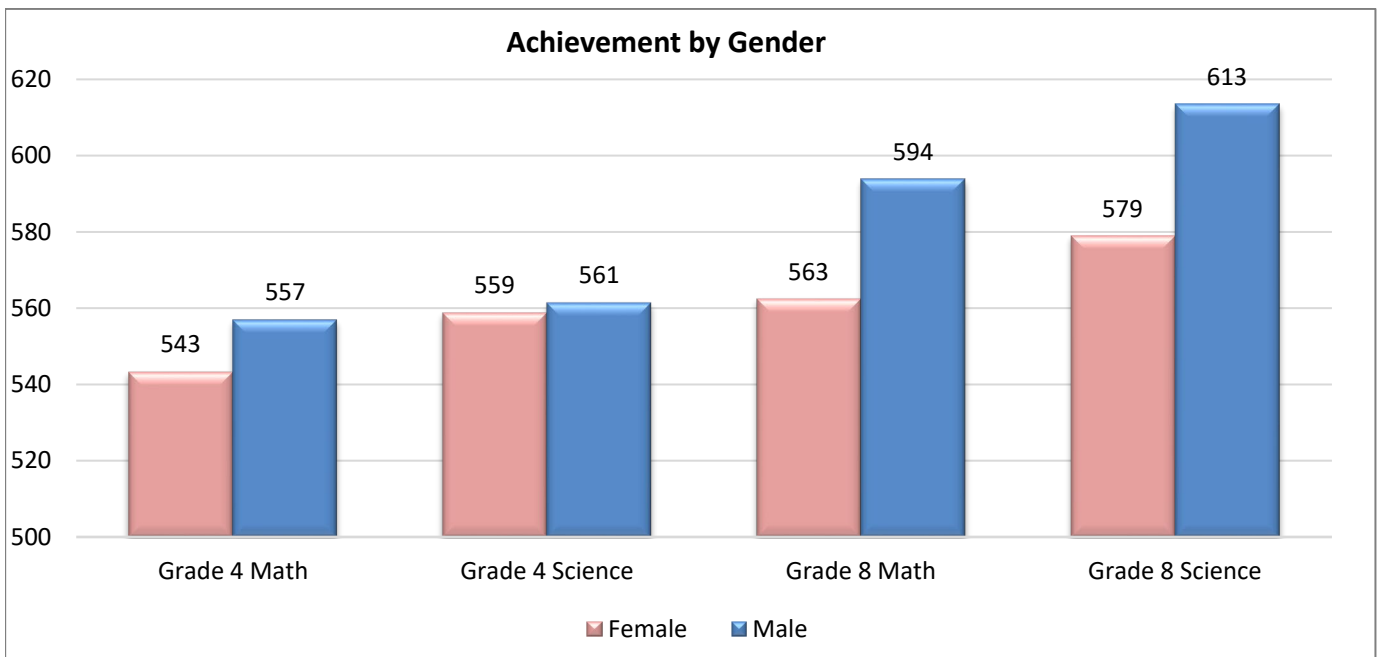
Trend Over Time

The chart below compares your students' scores in the last four cycles of TIMSS



How does achievement at your school vary by gender?

This bar chart indicates the performance of female and male in your school



TIMSS 2023 Achievement in the Content and Cognitive Domains

TIMSS student achievement results can be broken down into achievement by either content or cognitive domains. The content domains are three subject matter domains while cognitive domains are sets of skills required across different content domains in TIMSS. The content and the cognitive domains are accordingly designed and distributed as follows:

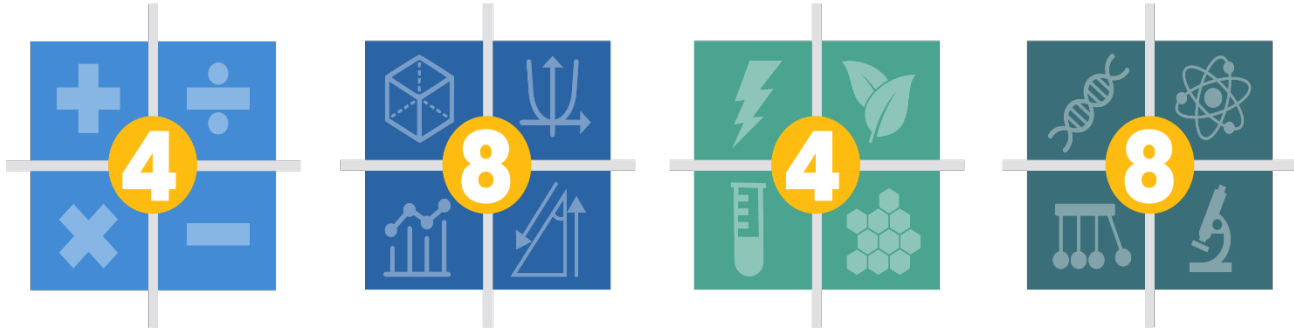
Mathematics Content Domains

Grade 4	Topic areas	Domain %	Grade 8	Topic areas	Domain %
Number	<ul style="list-style-type: none"> • Whole numbers • Fractions and decimals • Number sentences with whole numbers • Patterns and relationships 	50%	Number	<ul style="list-style-type: none"> • Whole numbers • Fractions and decimals • Integers • Ratio, proportion and percent 	30%
Geometric Shapes and Measures	<ul style="list-style-type: none"> • Points, lines and angles • Two-and three-dimensional shapes 	35%	Algebra	<ul style="list-style-type: none"> • Patterns • Algebraic expressions • Equations/formulas and functions 	30%
Data Display	<ul style="list-style-type: none"> • Reading and interpreting • Organizing and representing 	15%	Geometry	<ul style="list-style-type: none"> • Geometric shapes • Geometric measurement • Location and movement 	20%
			Data and Chance	<ul style="list-style-type: none"> • Data organisation and representation • Data interpretation • Chance 	20%



Science Content Domains

Grade 4	Topic areas	Domain %	Grade 8	Topic areas	Domain %
Life Science	<ul style="list-style-type: none"> • Characteristics and life process of living things • Interaction with the environment • Ecosystems • Human health 	45%	Biology	<ul style="list-style-type: none"> • Characteristics classification, and life processes of organisms • Cells and their functions • Life cycles, reproduction, and heredity • Diversity, adaptation, and natural selection • Ecosystems • Human Health 	35%
Physical Science	<ul style="list-style-type: none"> • Classification and properties of matter • Forces and motion • Sources and effects of energy 	35%	Chemistry	<ul style="list-style-type: none"> • Classification and composition of matter • Properties of matter • Chemical Change 	20%
Earth Science	<ul style="list-style-type: none"> • Earth's Structure, physical characteristics and resources • Earth's processes, cycles, and history • Earth in the solar system 	20%	Physics	<ul style="list-style-type: none"> • Physical states and changes in matter • Energy transformations, heat, and temperature • Light and sound • Electricity and magnetism • Forces and motion 	25%
			Earth Science	<ul style="list-style-type: none"> • Earth's structure and physical features • Earth's processes, cycles, and history • Earth's resources, their use and conservation • Earth in the solar system and the universe 	20%



Mathematics Cognitive Domains

Domains	Grade 4	Grade 8
Knowing	40%	35%
Applying	40%	40%
Reasoning	20%	25%

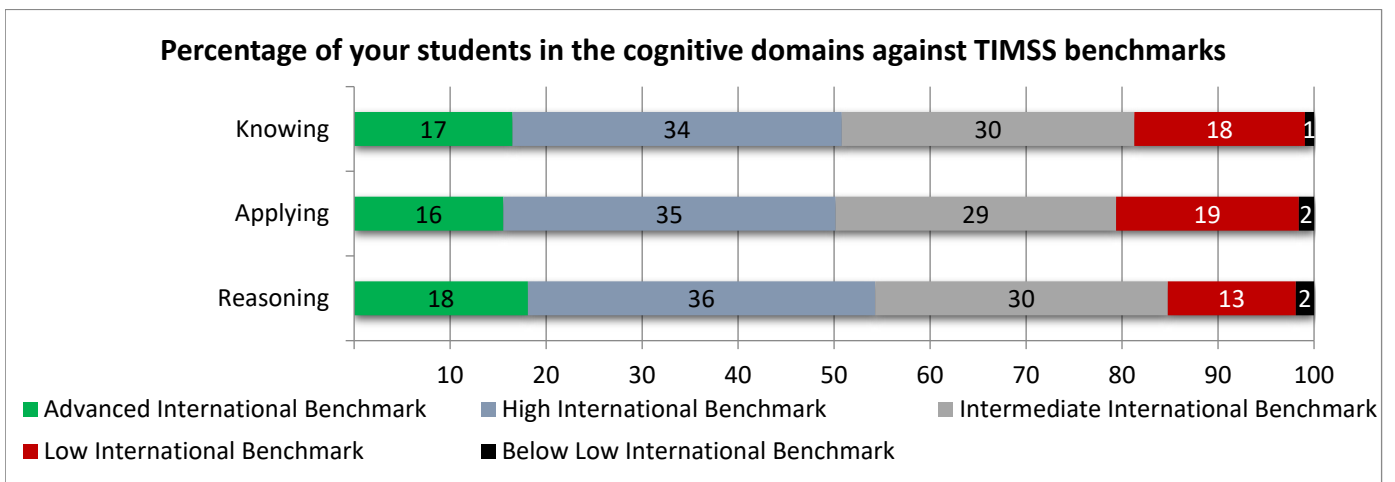
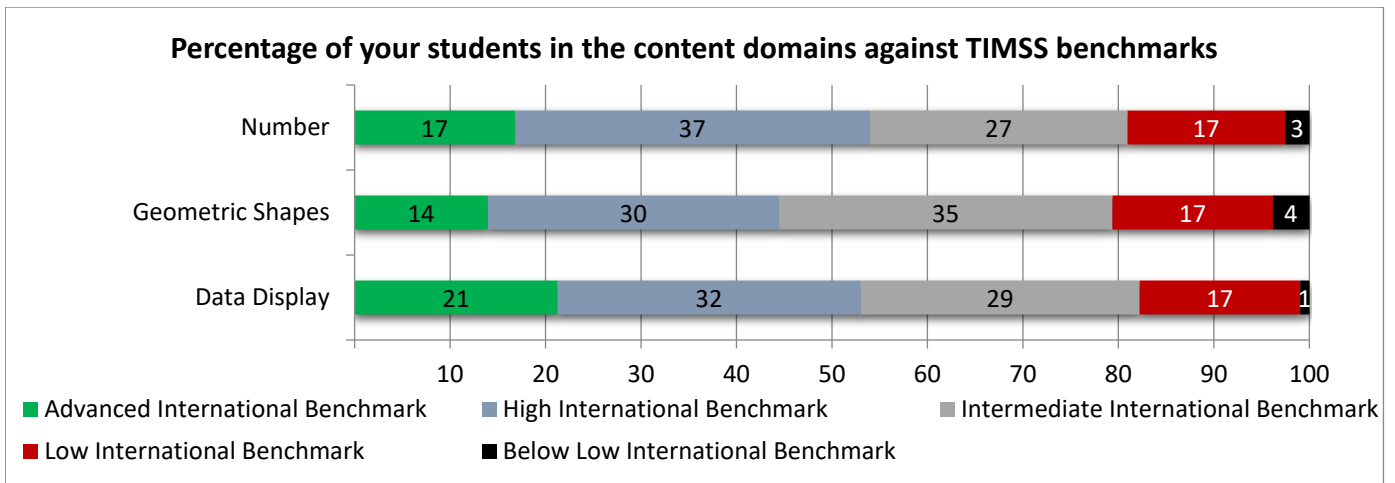
Science Cognitive Domains

Domains	Grade 4	Grade 8
Knowing	40%	35%
Applying	40%	35%
Reasoning	20%	30%



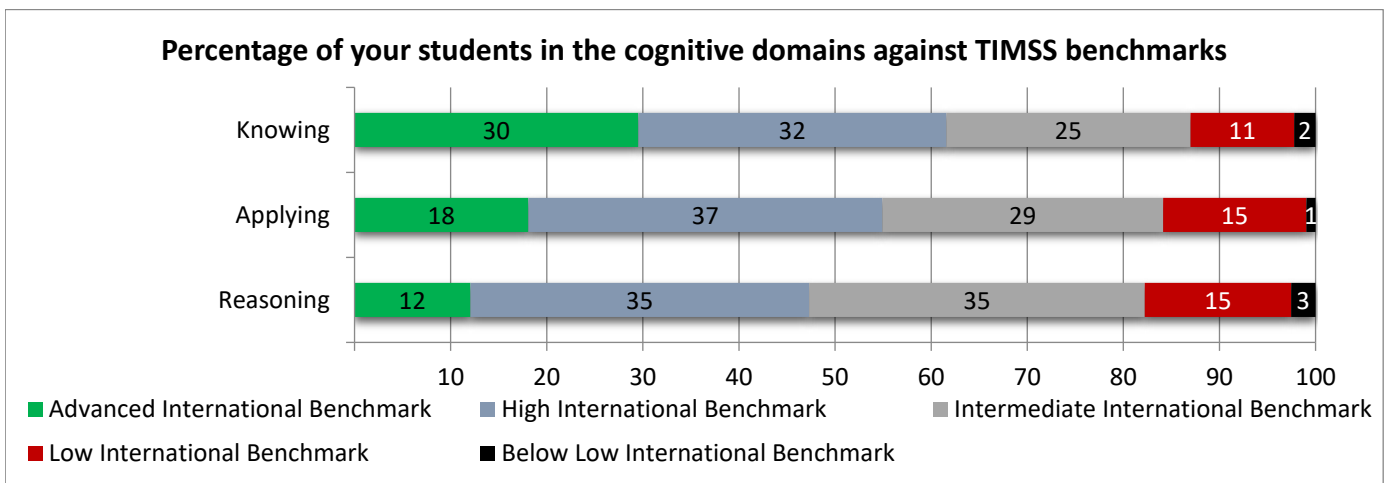
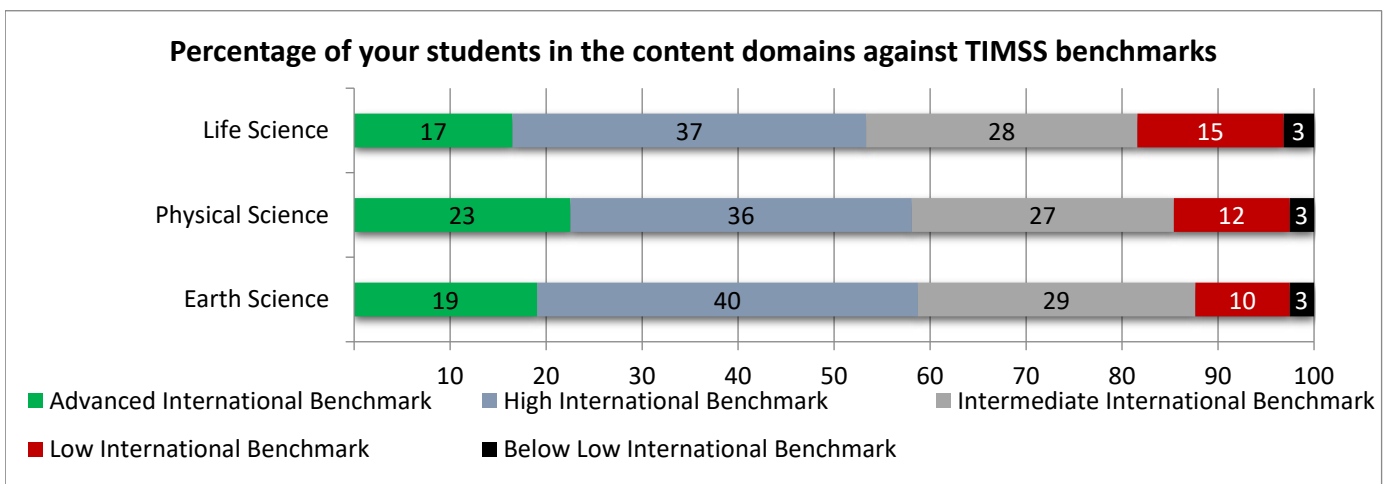
How well did your students achieve in each of the Content and Cognitive Domains in grade 4 Mathematics?

Grade 4 Mathematics	Content Domain			Cognitive Domain		
	Number	Geometric Shapes	Data Display	Knowing	Applying	Reasoning
Your School Score	550	538	556	550	550	554
Dubai private schools	566	556	572	564	564	565



How well did your students achieve in each of the Content and Cognitive Domains in grade 4 Science?

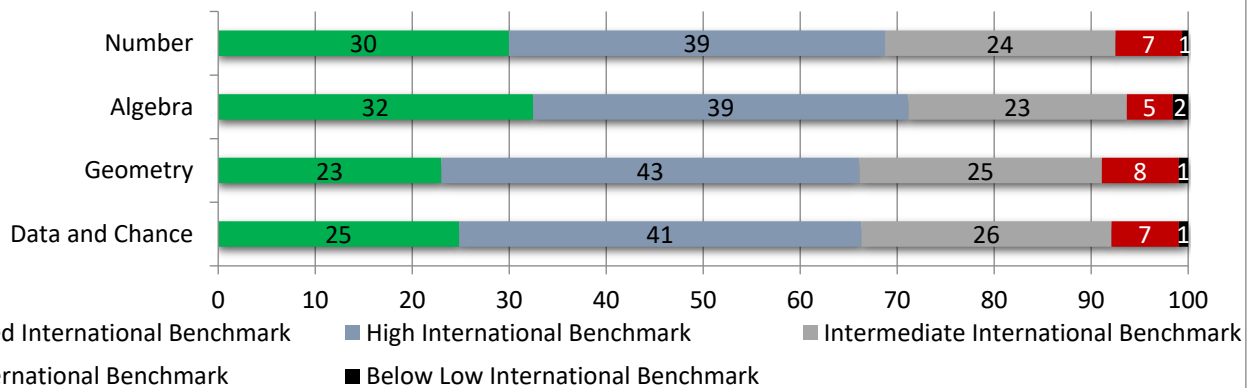
Grade 4 Science	Content Domain			Cognitive Domain		
	Life Science	Physical Science	Earth Science	Knowing	Applying	Reasoning
Your School Score	550	564	562	574	556	543
Dubai private schools	563	579	578	586	569	554



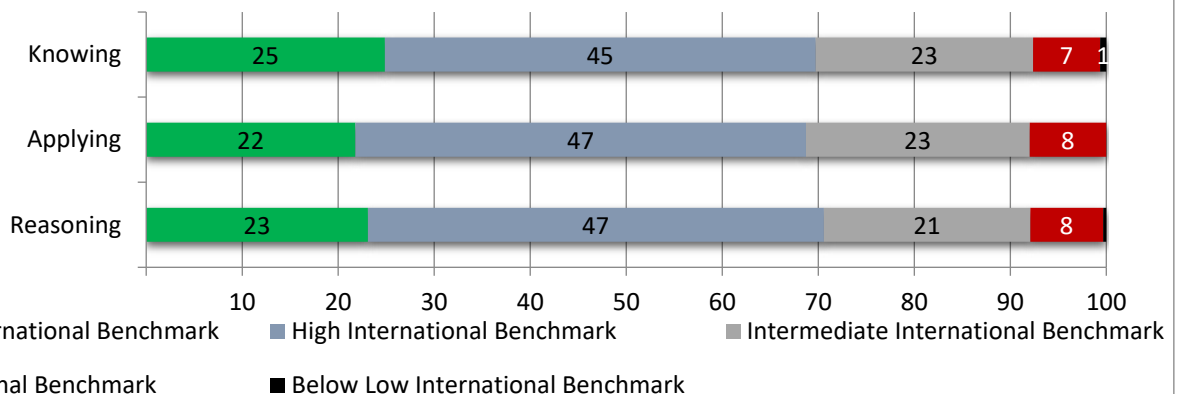
How well did your students achieve in each of the Content and Cognitive Domains in grade 8 Mathematics?

Grade 8 Mathematics	Content Domain				Cognitive Domain		
	Number	Algebra	Geometry	Data and Probability	Knowing	Applying	Reasoning
Your School Score	585	590	575	577	582	578	580
Dubai private schools	566	567	552	560	564	561	560

Percentage of your students in the content domains against TIMSS benchmarks



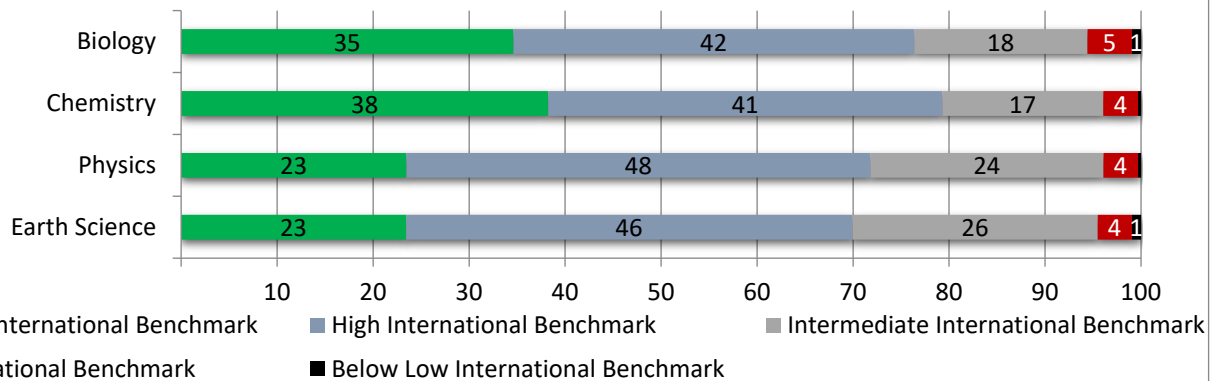
Percentage of your students in the cognitive domains against TIMSS benchmarks



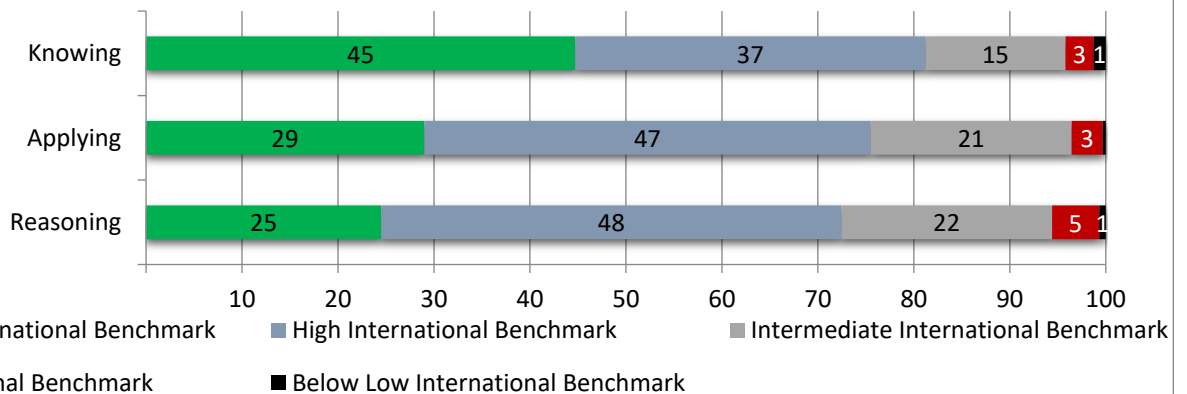
How well did your students achieve in each of the Content and Cognitive Domains in grade 8 Science?

Grade 8 Science	Content Domain				Cognitive Domain		
	Biology	Chemistry	Physics	Earth Science	Knowing	Applying	Reasoning
Your School Score	599	607	585	583	615	595	587
Dubai private schools	568	575	557	552	573	562	557

Percentage of your students in the content domains against TIMSS benchmarks



Percentage of your students in the cognitive domains against TIMSS benchmarks



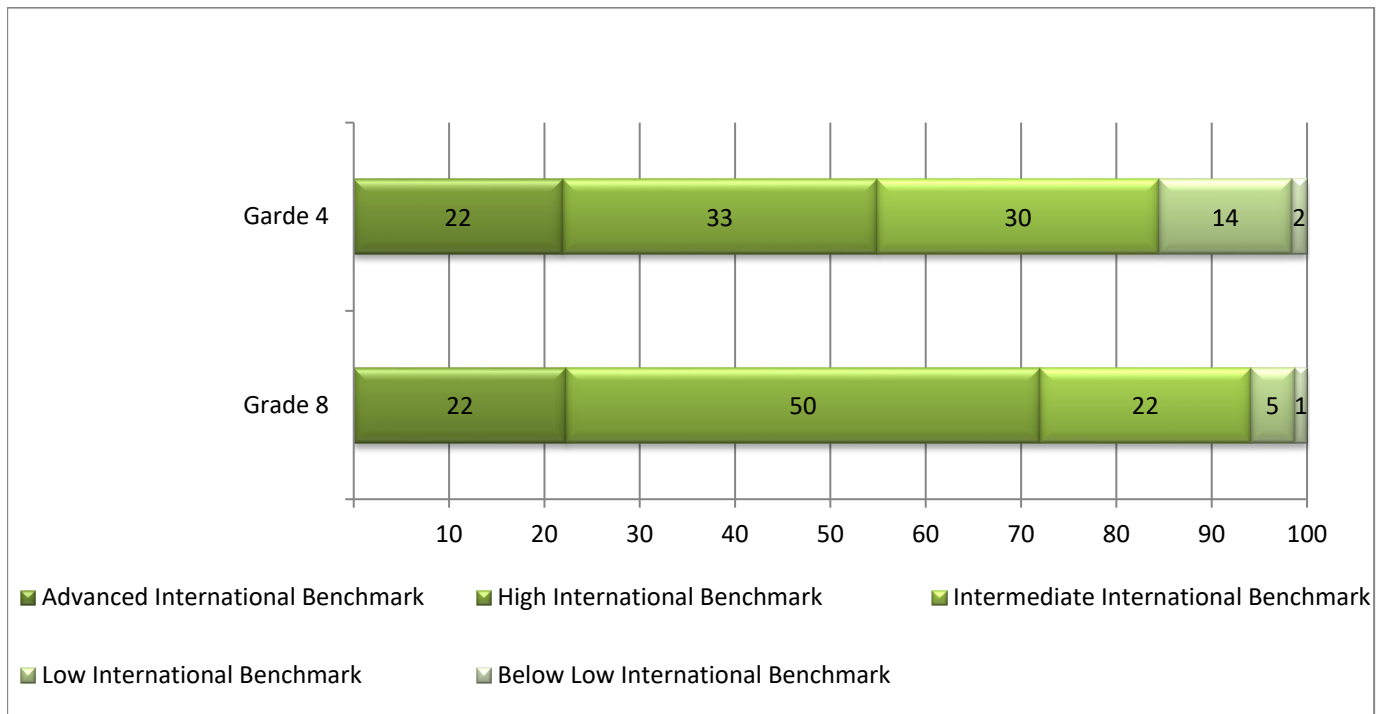


TIMSS 2023 Environmental Attitudes and Behaviors

TIMSS 2023 environment awareness results provide schools with valuable data and insights that can inform their efforts to enhance environmental education and foster greater sustainability awareness among students. The TIMSS 2023 Environmental Attitudes and Behaviors Framework describes the expansion of TIMSS 2023 Context Questionnaires to include information about the environmental attitudes and behaviors of students as well as the environmental practices of parents, teachers, and schools. For example, students will be asked how often they reuse materials, while parents will be asked how often they engage in various activities with their child to promote environmental responsibility.

	Grade 4	Grade 8
Your School Score	561	581
Dubai private schools	574	553

Students against TIMSS benchmarks in science environmental Attitudes and Behaviors



***The total values might not add up to 100% due to system rounding**

How well did your Emirati students Performed?

The standards of achievement of Emirati students is a very high priority for KHDA. The table below outlines the difference in achievement between Emiratis and expatriate students in your school.

As KHDA continues to prioritise improving the knowledge acquisition and skills development of Emirati students, it is important for schools to work towards improving the overall academic performance of this cohort by identifying ways to improve their levels of achievement in all domains.

Through strategic evaluation and planning and subsequent adaptations to the curriculum and pedagogy, schools must make provision to ensure that Emirati and expatriate students alike go on to make the highest levels of progress in mathematics, science and reading.

Nationality	Grade 4 Mathematics	Grade 4 Science	Grade 8 Mathematics	Grade 8 Science
Emirati students	Not Applicable	Not Applicable	557	547
Non - Emirati students	Not Applicable	Not Applicable	582	603
Emirati students in private Schools	515	519	518	512
2027 Target Scores for Emirati Students	530-535	534-539	533-538	532-537

***** Note: there is no comparison of Emirati students against Expatriate student if less than 5 Emirati students for comparison because of data restriction**

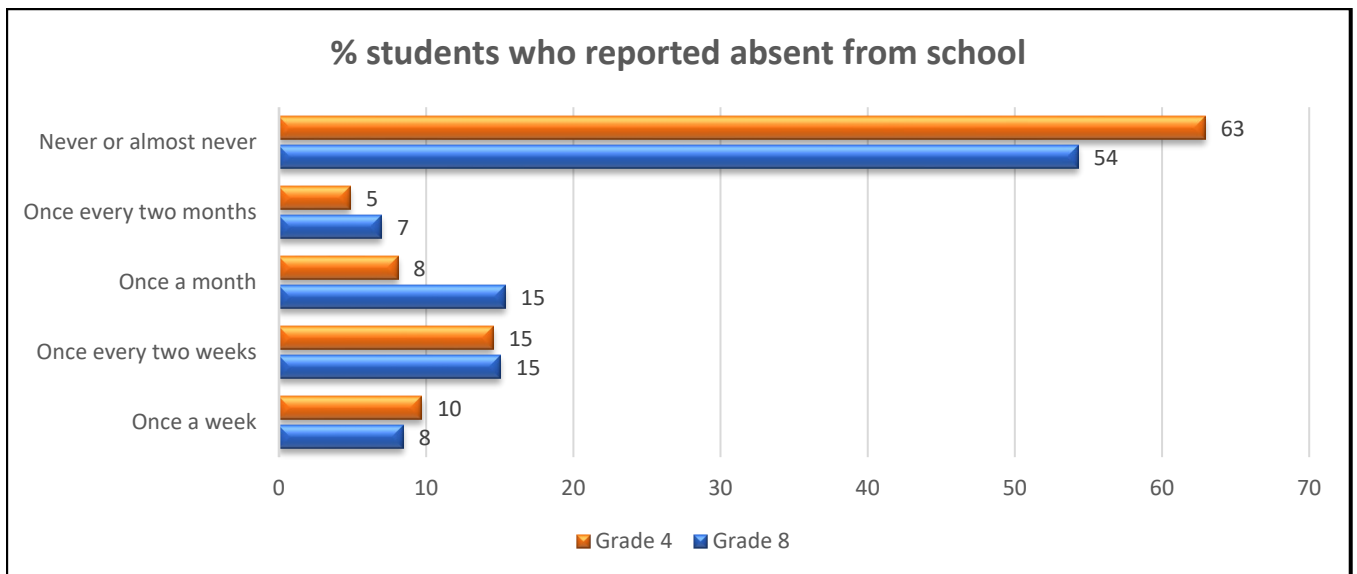
Background Context In TIMSS

Students who sat for TIMSS 2023, answered a background and well-being questionnaire in addition to the test. The test sought information about the students themselves, their home backgrounds, and their learning experiences in school.

KHDA has chosen a few of these questions to share with you. Answers to these questions may be relevant to your students' performance. Teachers and school principals need to be able to identify issues that students have. Understanding the problems that students face in their learning should help schools to find suitable solutions. TIMSS results also indicated that personal drive, motivation and confidence are essential if students are to fulfil their potential. TIMSS results clearly indicate that personal drive, motivation, and confidence are essential if students are to fulfil their potentials. Schools should reflect on what these responses are suggesting about provision and respond accordingly.

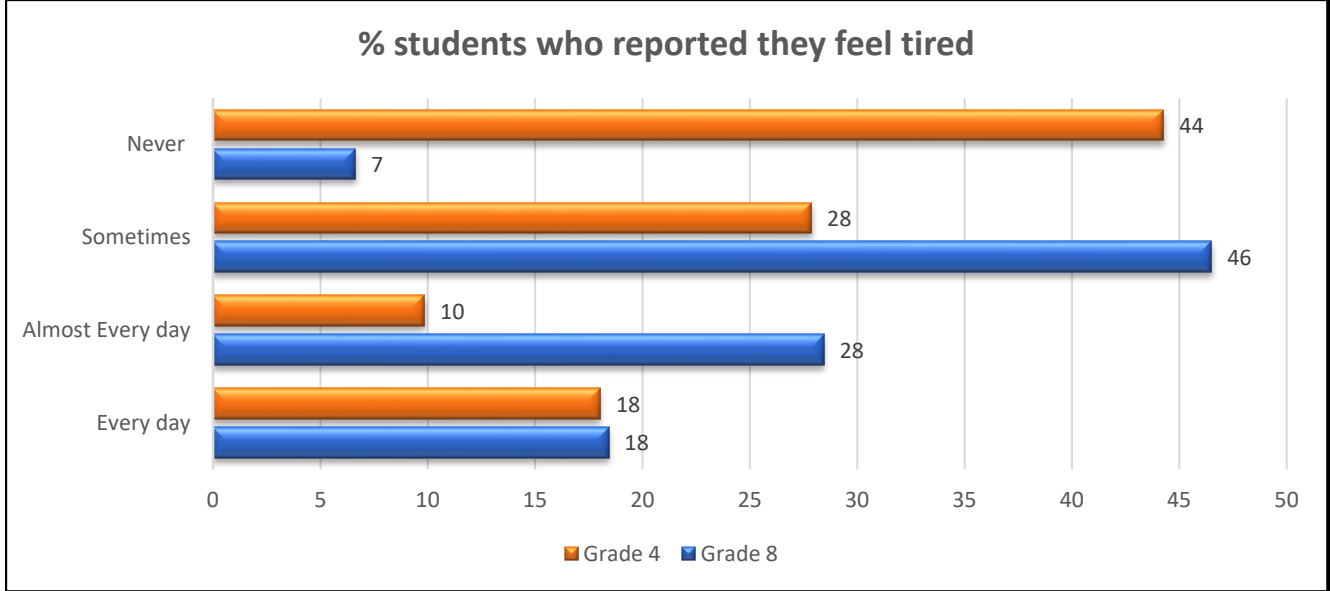
The charts below reflect the percentage of students in your school who answered to the following questions:

Students who reported absent from School

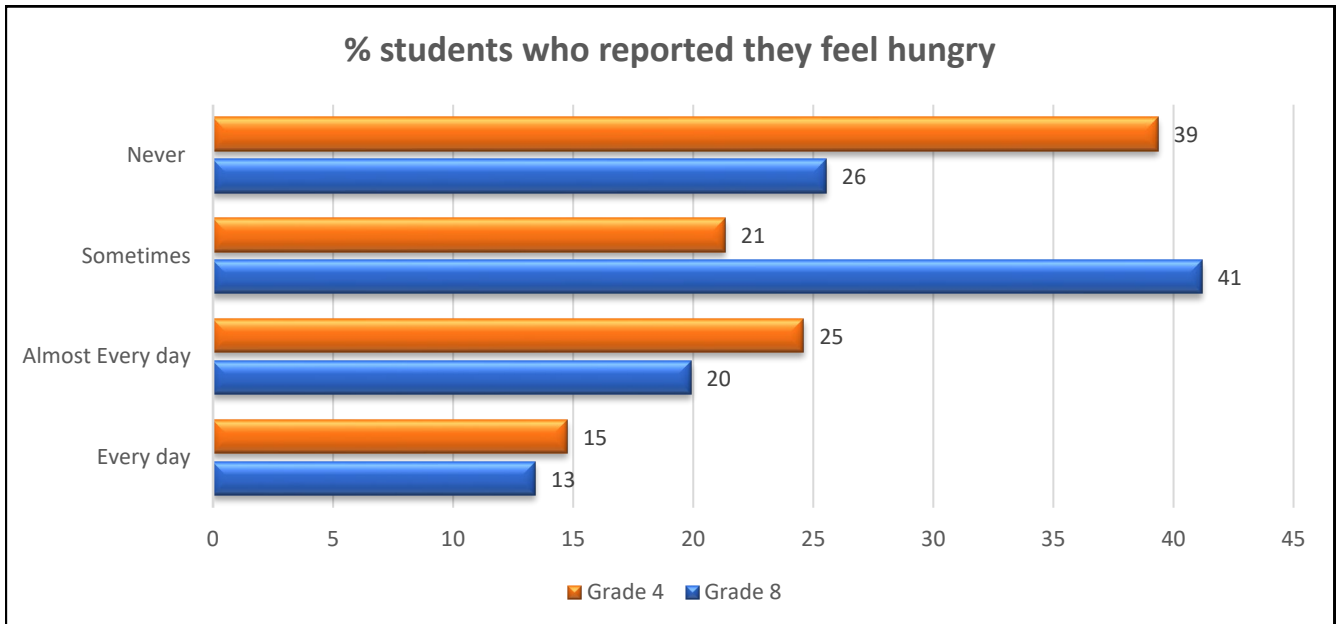




Students who reported they feel tired when they arrive at school

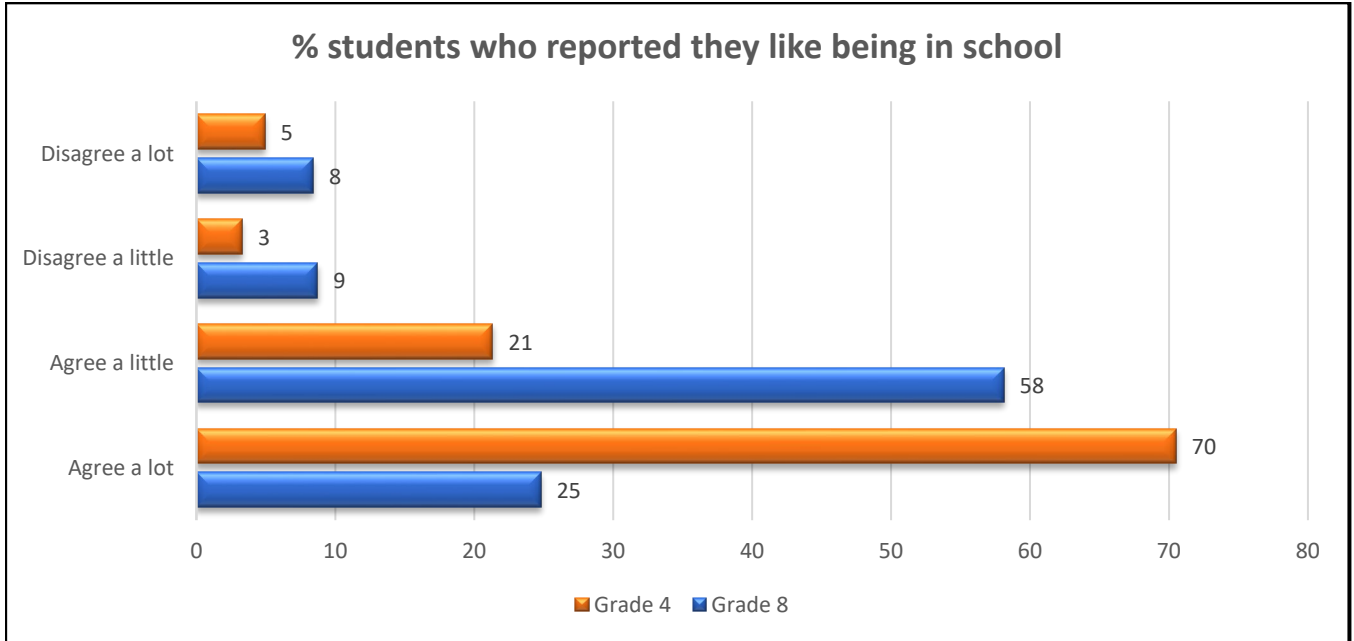


Students who reported they feel hungry when they arrive at school

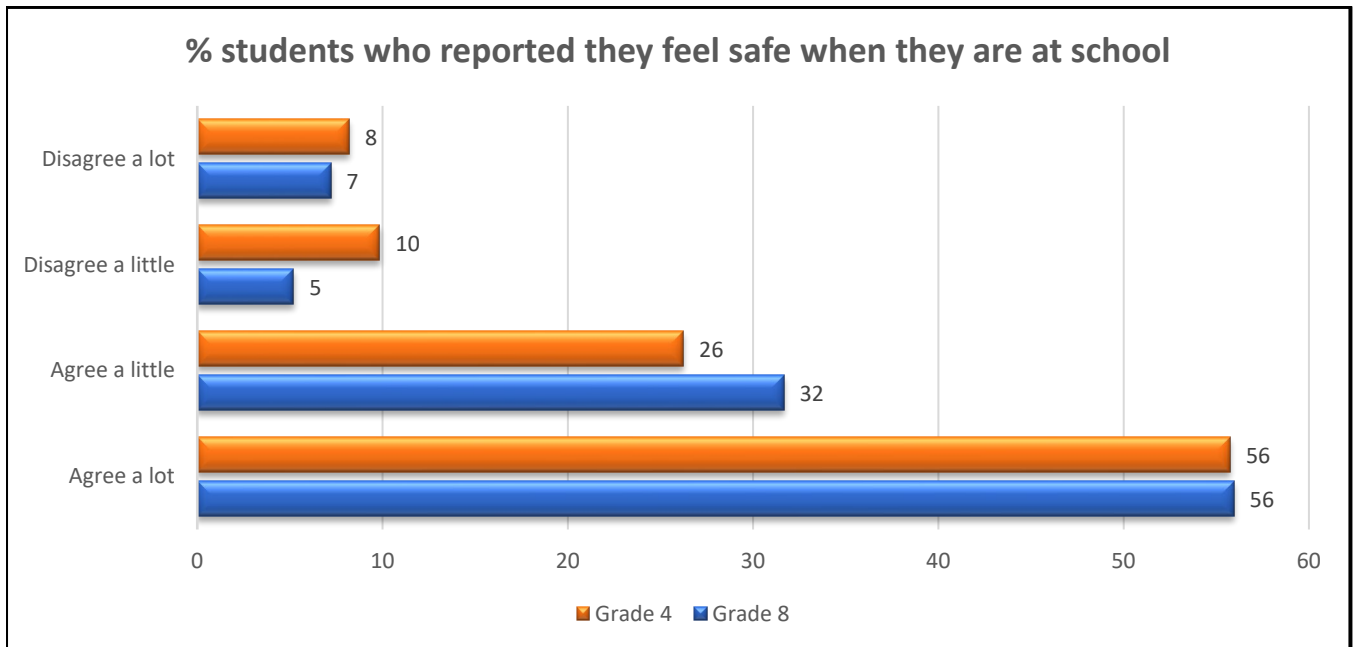




Students who reported they like being in school



Students who reported they feel safe when they are at school

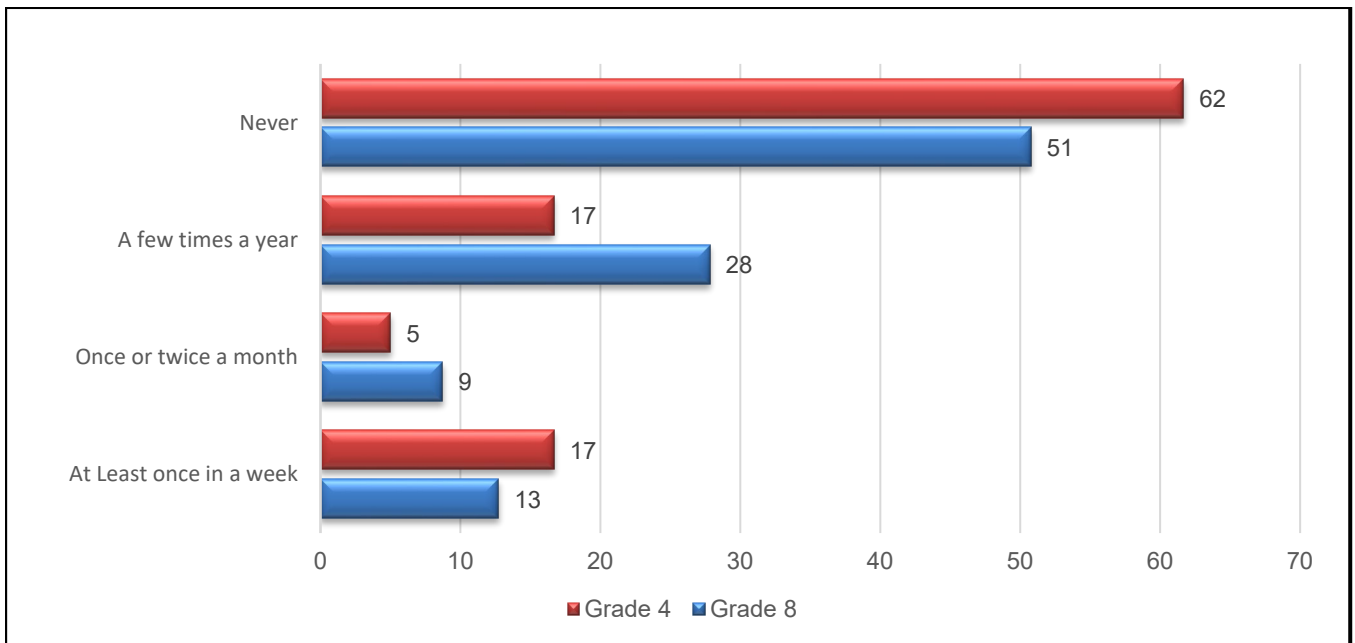




Wellbeing Context

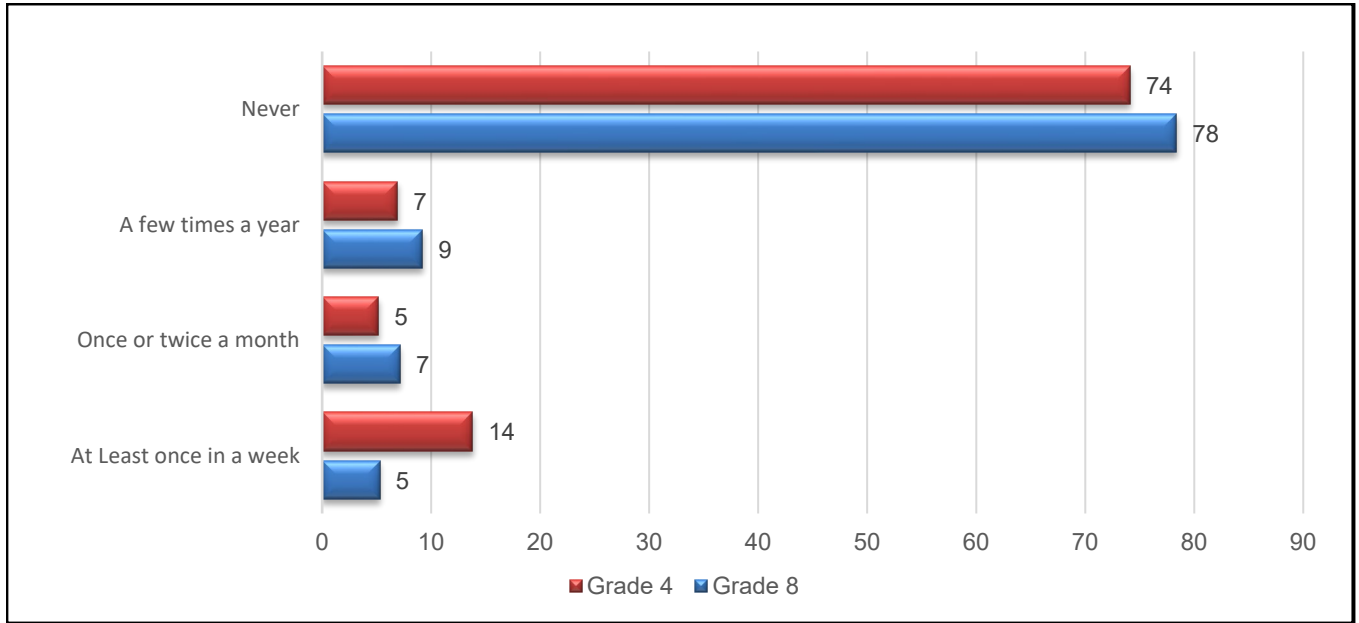
TIMSS 2023 (Trends in International Mathematics and Science Study) includes a focus on student well-being alongside traditional academic achievement measures. The study not only assesses students' math and science skills but also gathers extensive contextual data through questionnaires filled out by students. These questionnaires provide insights into students' attitudes, motivation, and emotional well-being, which are critical for understanding how educational environments influence academic outcomes.

Students who reported they were made fun of them or were called different names

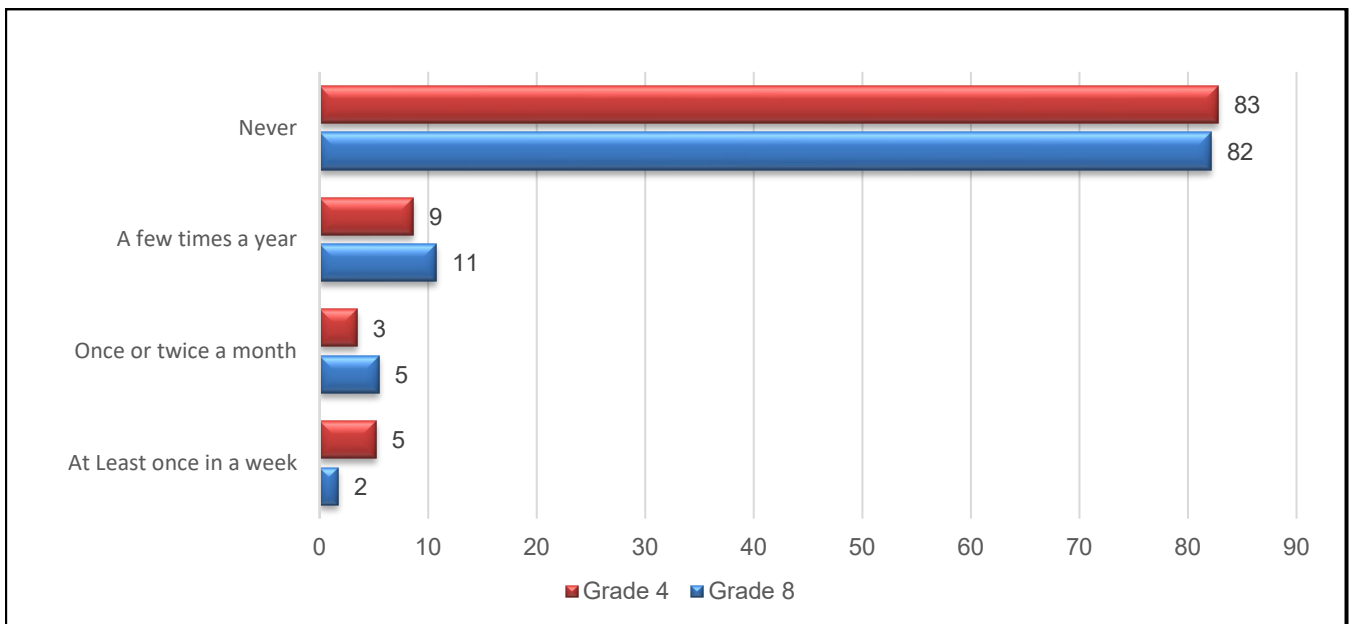




Students who reported they were Hit or hurt

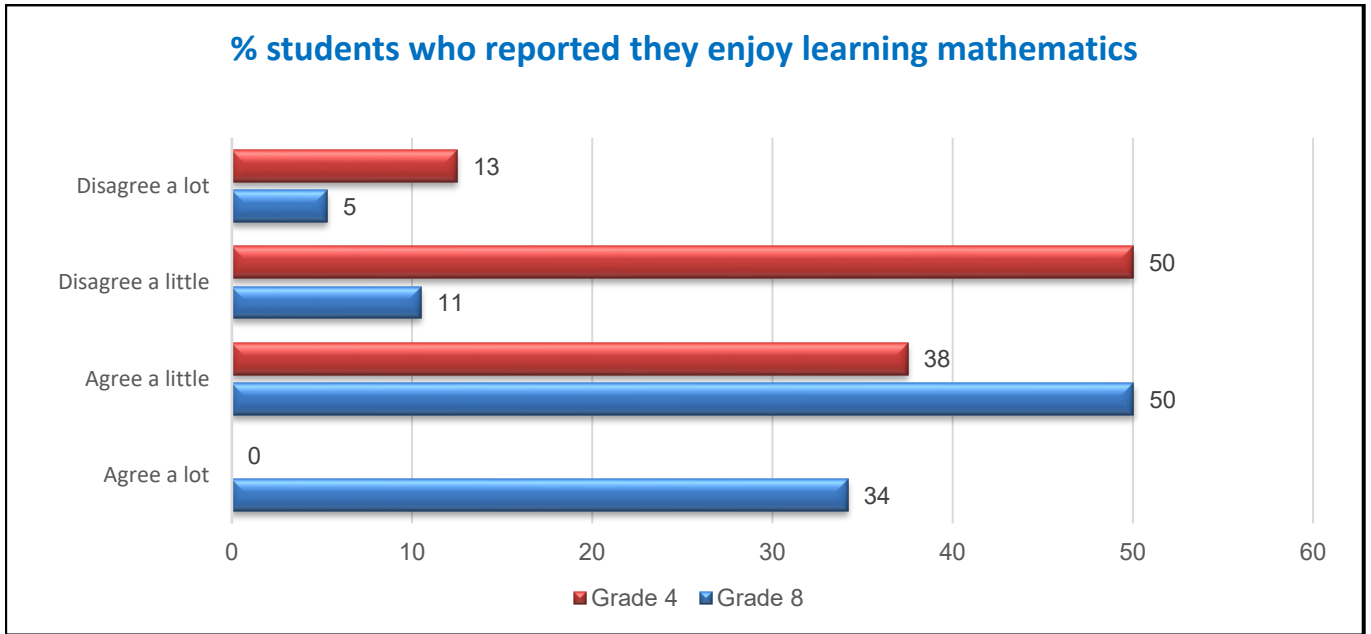


Students who reported they were sent hurtful messages about them online

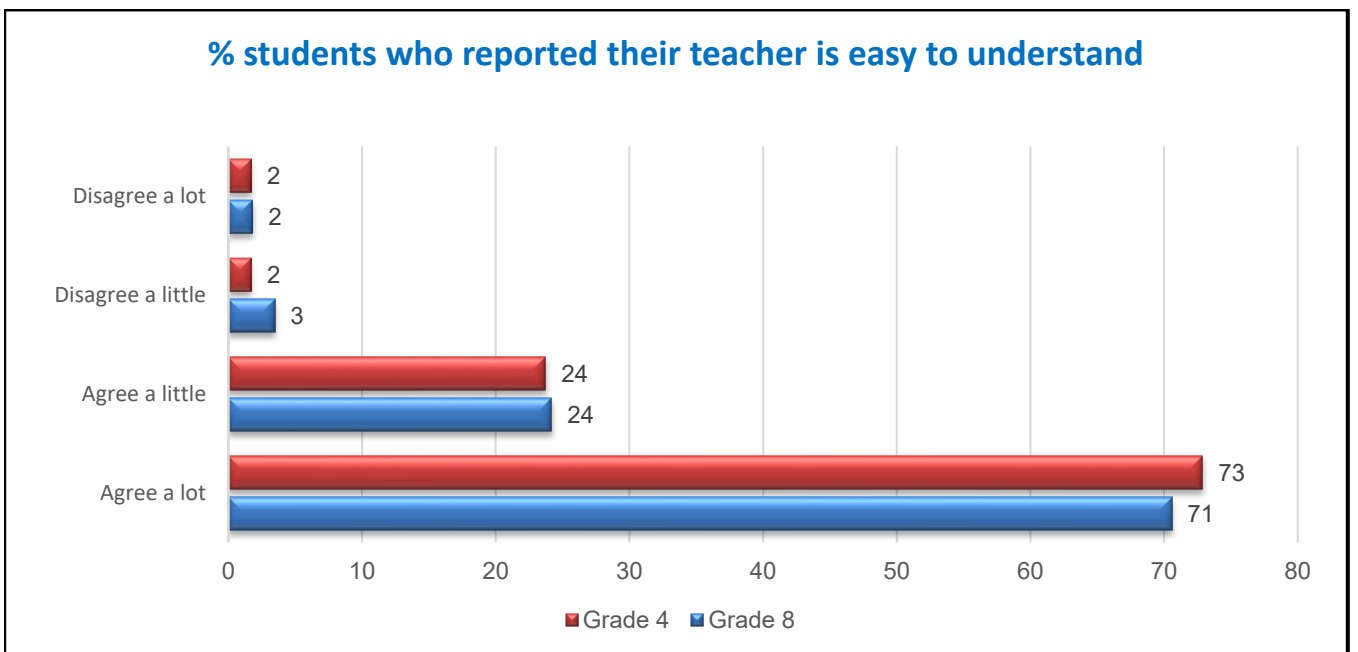


How Students feel about learning mathematics?

Students who reported they enjoy learning mathematics

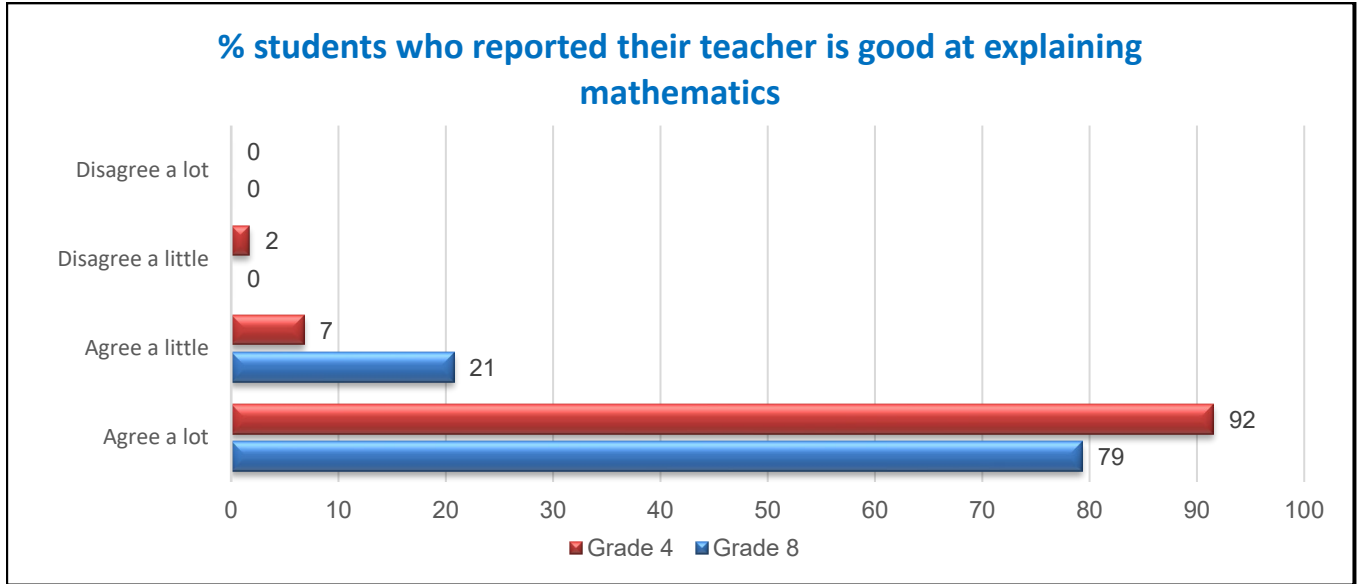


Students who reported their mathematics teacher is easy to understand

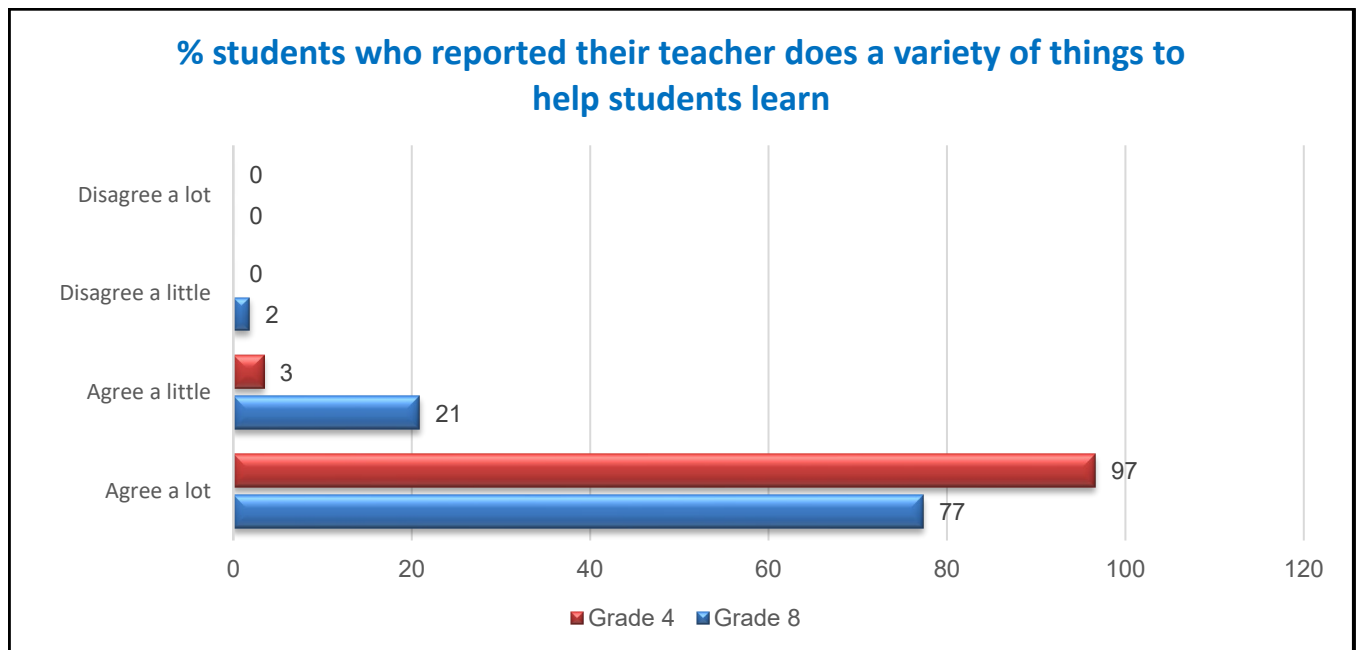




Students who reported their teacher is good at explaining mathematics

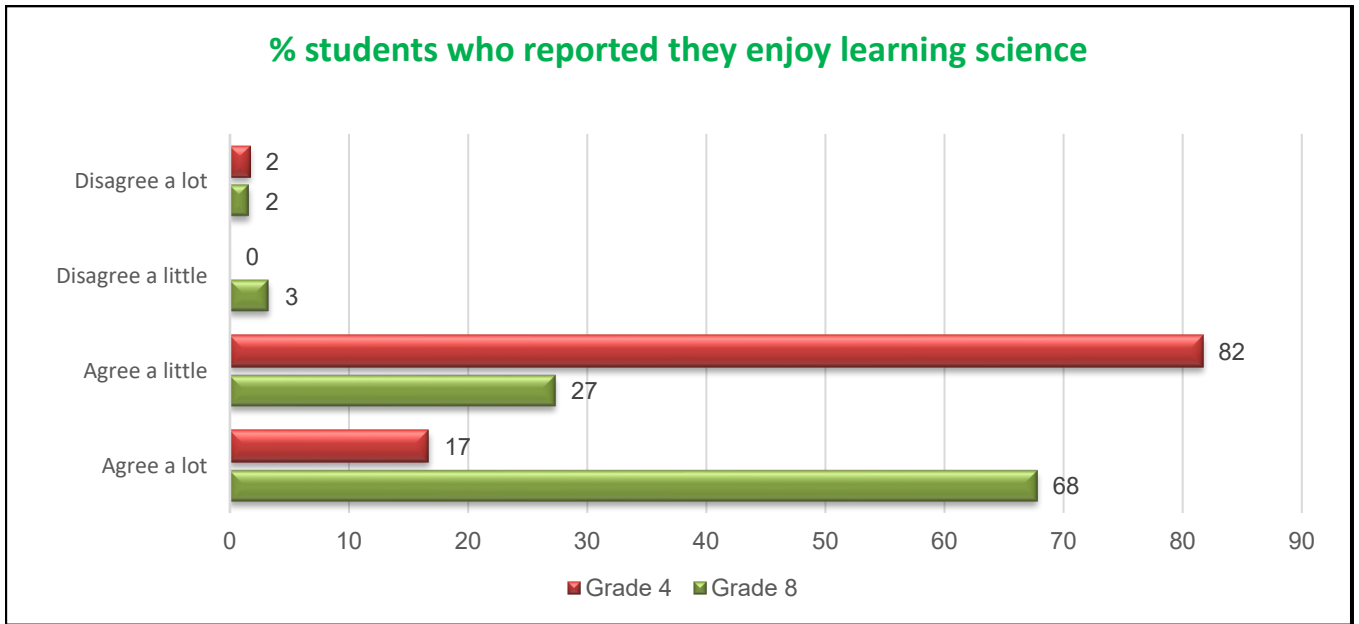


Students who reported their teacher does a variety of thing to help students learn

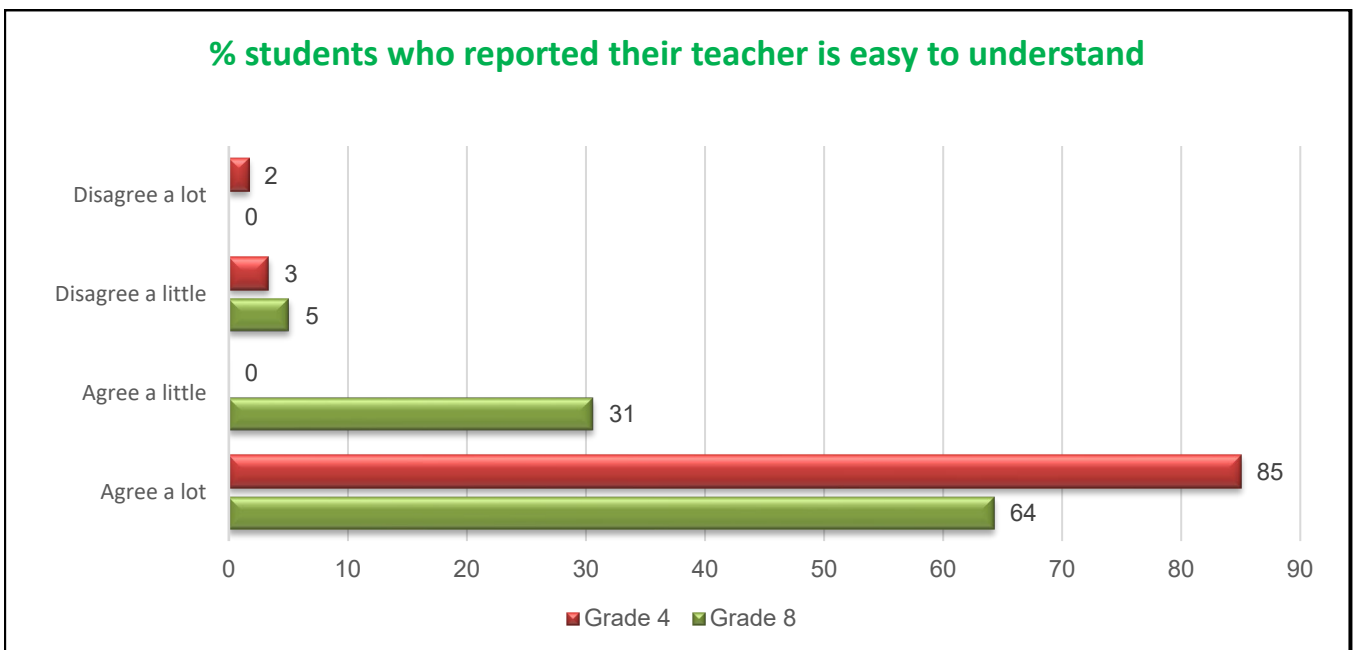


How Students feel about learning Science?

Students who reported they enjoy learning science

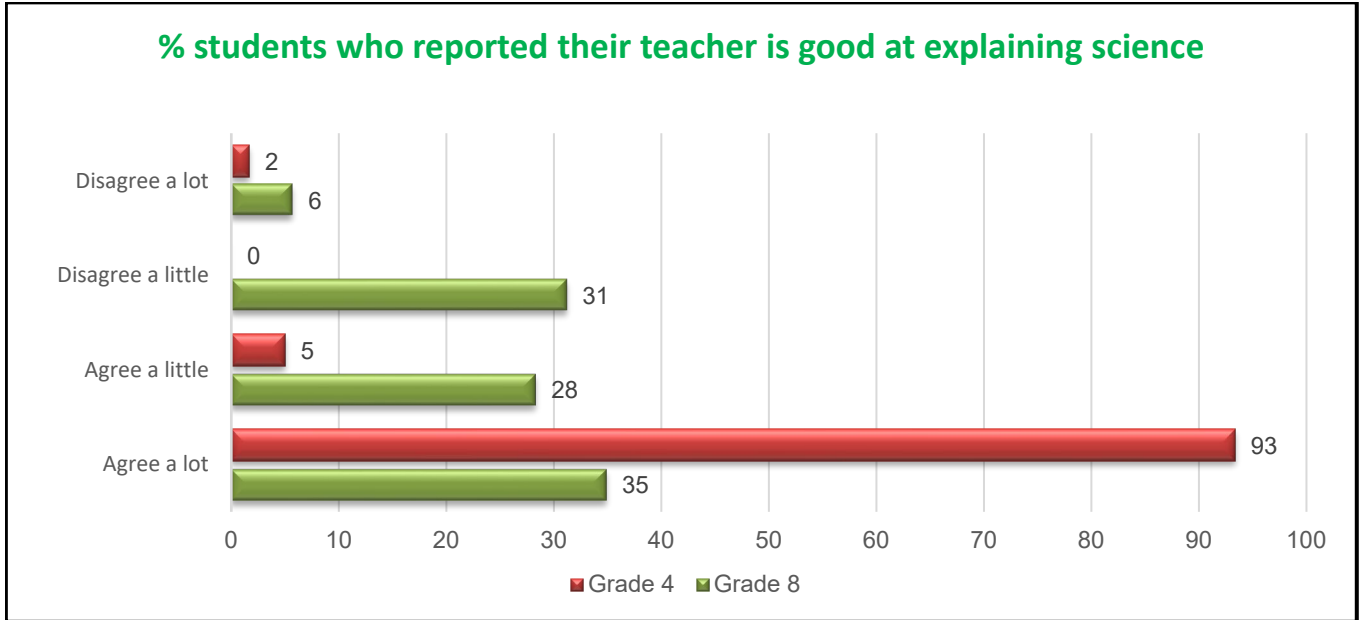


Students who reported their science teacher is easy to understand

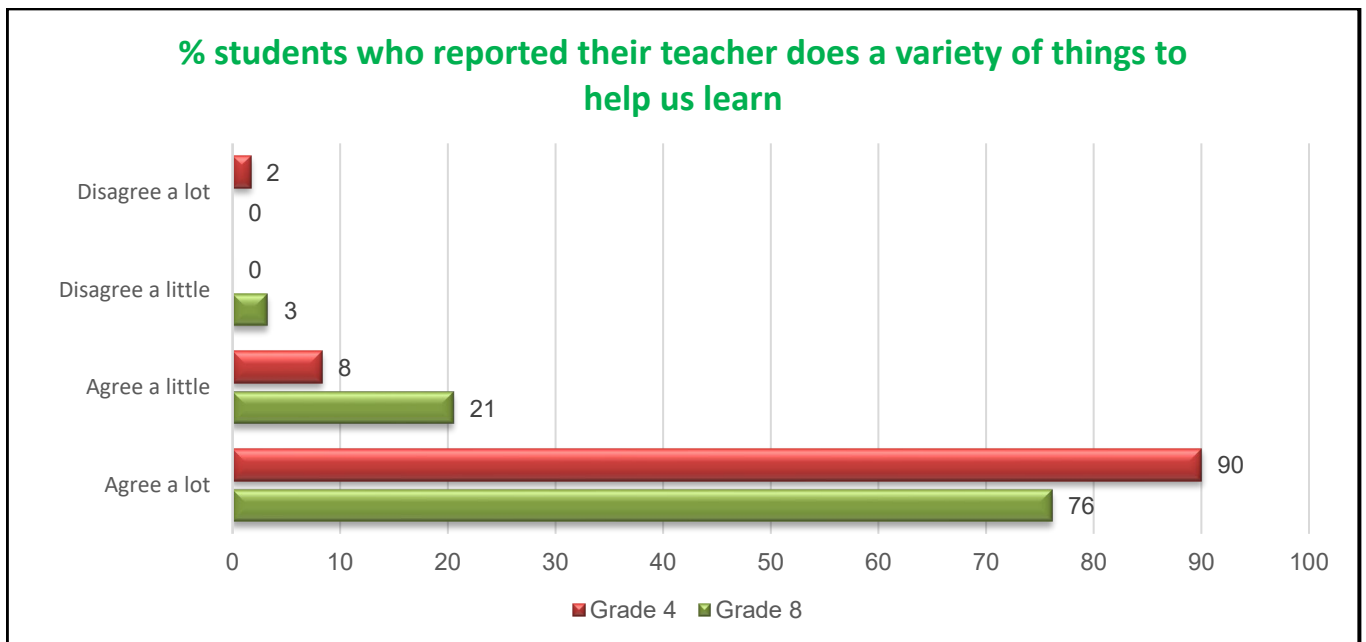




Students who reported their teacher is good at explaining science



Students who reported their teacher does a variety of thing to help students learn





TIMSS 2027 Targets Based on E33 strategy

As part of the new Education 33 (E33) strategy by Dubai to transform its education system and align it with global standards, while maintaining the city's cultural values. E33 aims to shift from a traditional, institution-focused model to a learner-centered education ecosystem. It emphasizes personalized learning, critical thinking, creativity, and lifelong skills to prepare students for an evolving global job market.

Dubai aims to rank among the world's top 10 cities for education under this strategy for education by 2033.

KHDA set individual school targets for the next TIMSS assessment in 2027 to further improve the performance of TIMSS results. These targets are calculated based on a projection model based on your TIMSS 2023 mean scores.

While this target may be challenging, the information provided in the next section will give you a good starting point to achieve this target.

It is therefore crucial for school leaders to use all the data presented in different sections of this report to plan strategically to meet these targets.

TIMSS 2027 Targets				
TIMSS Domains	Grade 4 Mathematics	Grade 4 Science	Grade 8 Mathematics	Grade 8 Science
Your TIMSS 2027 Targets	556-566	565-575	583-593	600-610



Suggested Reading

The two international benchmark assessment regimes that sit in prime position within the UAE National Vision (Education) are of course, TIMSS and PISA. These Two regimes provide a window on the state of education and achievement (mathematics, science and reading), across a range of participating countries every three to four years. These regimes also survey students about their attitudes to school, to learning and to their own progress. In addition, both TIMSS and PISA are, by default, substantive research programmes.

TIMSS (Trends in International Mathematics and Science Study) is indeed a comprehensive assessment focusing on curriculum and student achievement, with a particular emphasis on the role of the school, the teacher, and teaching practices. Unlike other international assessments that may focus more broadly on literacy or generalized skill sets, TIMSS provides detailed insights into how educational systems worldwide implement and support the teaching and learning of mathematics and science.

In addition to generating a significant dataset, quantitative and qualitative, at the levels of student, school and country, IEA also created a wealth of useful documentation that helps to identify the best path for future improvement.

Some of the documentation is of value at national and school-system levels, other documentation is more useful for principals and governing bodies. Yet other materials support the work of subject leaders and classroom teachers. This section of the report highlights some of this documentation, outlines its usefulness and signposts it for the most useful audience.

TIMSS Assessments Design and Context Framework

TIMSS 2023 Assessment Design:

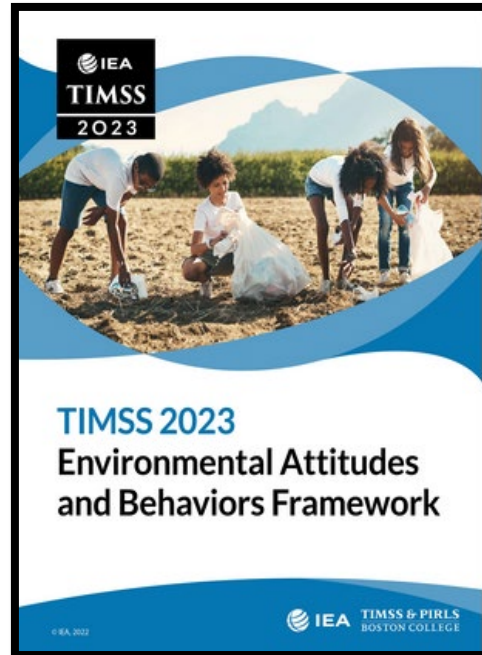
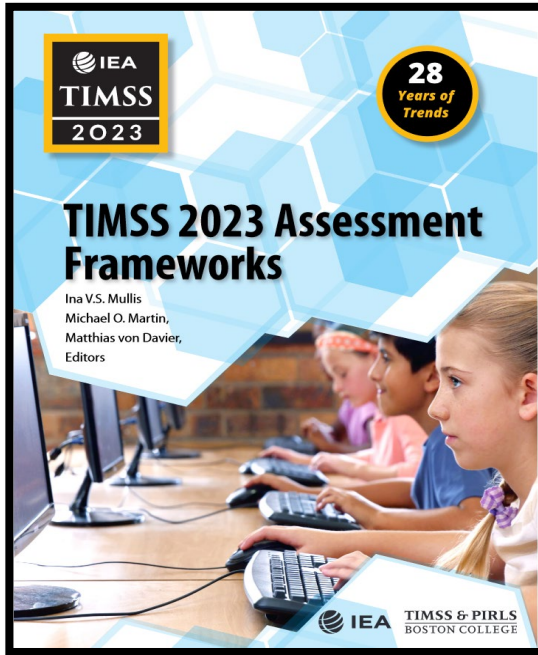
https://timssandpirls.bc.edu/timss2023/frameworks/pdf/T23_Frameworks_Ch4_Assessment-Design.pdf

TIMSS 2023 Assessments Framework:

https://timssandpirls.bc.edu/timss2023/frameworks/pdf/T23_Frameworks.pdf

TIMSS 2023 Context Questionnaire Framework:

<https://timssandpirls.bc.edu/timss2023/frameworks/chapter-3.html>





Appendix: Descriptions of the International Benchmarks

Grade 4 - Mathematics

Advanced International Benchmark- 625

Students can apply their understanding and knowledge in a variety of relatively complex situations and explain their reasoning. Students can solve a variety of multistep word problems involving whole numbers and show an understanding of fractions and decimals. They can apply knowledge of two- and three-dimensional shapes in a variety of situations. Students can interpret and represent data to solve multistep problems.

High International Benchmark- 550

Students apply conceptual understanding to solve problems. They can apply conceptual understanding of whole numbers to solve two-step word problems. They show understanding of the number line, multiples, factors, and rounding numbers, and operations with fractions and decimals. Students can solve simple measurement problems. They demonstrate understanding of geometric properties of shapes and angles. Students can interpret and use data in tables and a variety of graphs to solve problems.

Intermediate International Benchmark- 475

Students can apply basic mathematical knowledge in simple situations. They can compute with three- and four-digit whole numbers in a variety of situations. They have some understanding of decimals and fractions. Students can identify and draw shapes with simple properties. They can read, label, and interpret information in graphs and tables.

Low International Benchmark-400

Students have some basic mathematical knowledge. They can add, subtract, multiply, and divide one- and two-digit whole numbers. They can solve simple word problems. They have some knowledge of simple fractions and common geometric shapes. Students can read and complete simple bar graphs and tables.



Grade 8 - Mathematics

Advanced International Benchmark- 625

Students can apply and reason in a variety of problem situations, solve linear equations, and make generalizations. They can solve a variety of fraction, proportion, and percent problems and justify their conclusions. They can understand linear functions and algebraic expressions. Students can use their knowledge of geometric figures to solve a wide range of problems involving angles, area, and surface area. They can calculate means and medians and understand how changing data points can impact the mean. Students can interpret a wide variety of data displays to draw and justify conclusions and solve multistep problems. They can solve problems involving expected values.

High International Benchmark- 550

Students can apply their understanding and knowledge in a variety of relatively complex situations. They can solve problems with fractions, decimals, ratios, and proportions. Students at this level show basic procedural knowledge related to algebraic expressions and equations. They can solve a variety of problems with angles, including problems involving triangles, parallel lines, rectangles, and congruent and similar figures. Students can interpret data in a variety of graphs and solve simple problems involving outcomes and probabilities.

Intermediate International Benchmark- 475

Students can apply basic mathematical knowledge in a variety of situations. They can solve problems involving whole numbers, negative numbers, fractions, decimals, and ratios. Students have some basic knowledge about properties of two-dimensional shapes. They can read and interpret data in graphs and have some rudimentary knowledge of probability.

Low International Benchmark-400

Students have some basic mathematical knowledge. They can add, subtract, multiply, and divide one- and two-digit whole numbers. They can solve simple word problems. They have some knowledge of simple fractions and common geometric shapes. Students can read and complete simple bar graphs and tables.



Appendix: Descriptions of the International Benchmarks

Grade 4 - Science

Advanced International Benchmark- 625

Students communicate their understanding of life, physical, and Earth sciences and demonstrate some knowledge of the process of scientific inquiry. Students demonstrate knowledge of characteristics and life processes of a variety of organisms. They can communicate understanding of relationships in ecosystems and interactions between organisms and their environment. They communicate understanding of properties and states of matter and physical and chemical changes. Students communicate understanding of Earth's physical characteristics, processes, and history and show knowledge of Earth's revolution and rotation.

High International Benchmark- 550

Students communicate and apply knowledge of life, physical, and Earth sciences. Students communicate knowledge of characteristics of plants, animals, and their life cycles, and apply knowledge of ecosystems and of humans' and organisms' interactions with their environment. Students demonstrate knowledge of states and properties of matter and of energy transfer in practical contexts and show some understanding of forces and motion. Students know various facts about the Earth's physical characteristics and show basic understanding of the Earth-Moon-Sun system.

Intermediate International Benchmark- 475

Students show knowledge and understanding of some aspects of science. Students demonstrate some basic knowledge of plants and animals. They demonstrate knowledge about some properties of matter and some facts related to electricity and can apply elementary knowledge of forces and motion. They show some understanding of Earth's physical characteristics.

Low International Benchmark-400

Students have some basic Science knowledge. Students show limited understanding of scientific concepts and limited knowledge of foundational science facts.



Grade 8 - Science

Advanced International Benchmark- 625

Students communicate understanding of concepts related to biology, chemistry, physics, and Earth science in a variety of contexts. Students can classify animals into taxonomic groups. They can apply knowledge of cell structures and their functions. Students show some understanding of diversity, adaptation, and natural selection. They also recognize the interdependence of populations of organisms in an ecosystem. Students demonstrate knowledge of the composition of matter and the periodic table of the elements. Students use physical properties of matter to sort, classify, and compare substances and materials. They also recognize evidence that a chemical reaction has occurred. Students communicate understanding of particle spacing and motion in different physical states. Students apply knowledge of energy transfer and electrical circuits, can relate the properties of light and sound to common phenomena, and demonstrate understanding of forces in everyday contexts. Students communicate understanding of Earth's structure, physical features, and processes. They demonstrate knowledge of the Earth's resources and their conservation.

High International Benchmark- 550

Students apply understanding of concepts from biology, chemistry, physics, and Earth science. Students can apply knowledge of the characteristics of groups of animals, life processes in humans, cells and their functions, genetic inheritance, ecosystems, and nutrition. Students show some knowledge and understanding of the composition and properties of matter and chemical reactions. They can apply basic knowledge of energy transformation and transfer, electrical circuits, properties of magnets, light, sound, and forces. They can apply knowledge of Earth's physical features, processes, cycles, and history, and show some understanding of Earth's resources and their use.

Intermediate International Benchmark- 475

Students show and apply some knowledge of biology and the physical sciences. Students demonstrate some knowledge of characteristics of animals and apply knowledge of ecosystems. They show some knowledge of the properties of matter, chemical changes, and a few physics concepts.

Low International Benchmark-400

Students have some basic Science knowledge. Students show limited understanding of scientific concepts and limited knowledge of foundational science facts.