الإمـارات العربيـة المتحـدة
وزارة التـربيـة والتـعليـم

Programme for International Student Assessment

PiSA 2018

Abu Dhabi Private Schools' Report

School Name: GEMS AMERICAN ACADEMY LLC

Curriculum: American

Why PISA?

PISA is an international study that was launched by the OECD in 1997, first administered in 2000 and now covers 80 countries. As part of the PISA study, students are tested every three years at the age of 15 in the competence areas of reading, mathematics and science literacy.

PISA is an ongoing programme that monitors trends in student knowledge and acquired skills around the world, and in demographic subgroups within each country. The assessment does not only ascertain whether students can reproduce knowledge; it also examines how well students can extrapolate from what they have learned and can apply such knowledge in unfamiliar settings, both in and outside of school. This approach reflects the fact that modern economies reward individuals not only for what they know, but for how they can apply their knowledge.

In addition, each three-year cycle explores a distinct 'innovative domain' such as collaborative problem solving (PISA2015) and global competence (PISA2018). The results have informed education policy discussions at both national and global level since its inception. Policy makers around the world use PISA findings to evaluate their education system and understand relative strengths and weaknesses. The data is used to gauge the knowledge and skills of the students in their own country compared with those in other participating countries, and also establish benchmarks for improvements in learning outcomes.

In each round of PISA, students respond to approximately two hours of test questions in reading, mathematics and science literacy and answer a 30-minute student questionnaire. PISA is administered on a computer. The testing experience for a student lasts approximately three to three-and-a-half hours, including

instructions and break periods. One of the core domains is tested in detail, taking up roughly half of the total testing time. The major domain in 2018 was reading, as it was in 2000 and 2009. Mathematics was the major domain in 2003 and 2012, and science literacy was the major domain in 2006 and 2015. Through questionnaires distributed to students and school principals, and optional questionnaires distributed to parents and teachers, PISA also gathers contextual information about students' home background, their approaches to learning and their learning environments.

In 2018, the UAE participated in PISA for the fourth time. The total number of students sampled were 20,937 representing 684 schools. The overall results indicated no significant improvement from the previous cycle. This requires a very rigorous and transparent evaluation of our practices in order to identify factors affecting students' achievements and apply intervention programmes accordingly.

PISA2018 domains

Reading literacy (main domain)

An individual's capacity to understand, use, evaluate, reflect on and engage with texts in order to achieve one's goals, develop one's knowledge and potential, and participate in society.

Mathematical literacy

An individual's capacity to formulate, employ and interpret mathematics in a variety of contexts. It includes reasoning mathematically and using mathematical concepts, procedures, facts and tools to describe, explain and predict phenomena.

Science literacy

The ability to engage with science-related issues, and with the ideas of science, as a reflective citizen. A scientifically literate person is willing to engage in reasoned discourse about science and technology, which requires the competencies to explain phenomena scientifically, evaluate and design scientific enquiry, and interpret data and evidence scientifically.

Subdomains of the reading literacy

Reading literacy is understanding, using, evaluating, reflecting on and engaging with texts in order to achieve one's goals, to develop one's knowledge and potential and to participate in society.

PISA assesses students' performance in reading through questions that involve a variety of:

- Processes (aspects): Students are expected to demonstrate their proficiency in locating information, including both accessing and retrieving information within a piece of text, and searching for and selecting relevant text; understanding text, including both acquiring a representation of the literal meaning of text and constructing an integrated representation of text; and evaluating and reflecting on text, including both assessing its quality and credibility, and reflecting on content and form.

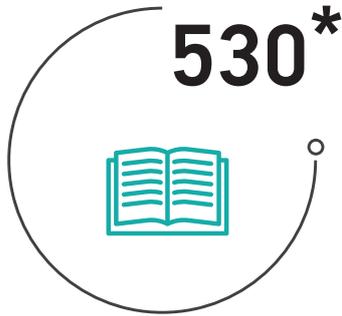- Text formats: PISA uses both single-source and multiple-source texts; static and dynamic texts; continuous texts (organised in sentences and paragraphs); non-continuous texts (e.g. lists, forms, graphs or diagrams); and mixed texts.

- Situations: These are defined by the use for which the text was constructed. For example, a novel, personal letter or biography is written for people's personal use; official documents or announcements are for public use; a manual or report is for occupational use; and a textbook or worksheet is for educational use. Since some students may perform better in one type of reading situation than another, a range of reading situations is included in the test.
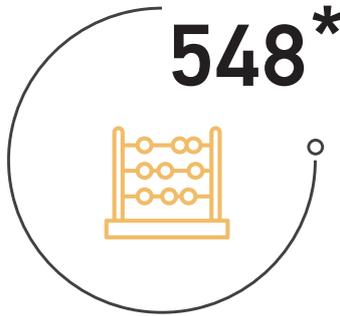
New forms of reading that have emerged since the framework was last updated in 2009, especially digital reading and the growing diversity of material available in both print and digital forms, have been incorporated into the revised PISA2018 reading framework.
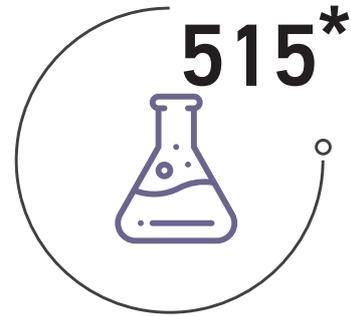
YOUR SCHOOL RESULTS

School results

530^*

Reading literacy

548^*

Mathematical literacy

515^*

Science literacy

Reading processes:

Locate information	**535**
Understand	**528**
Evaluate and reflect	**531**

Text source:

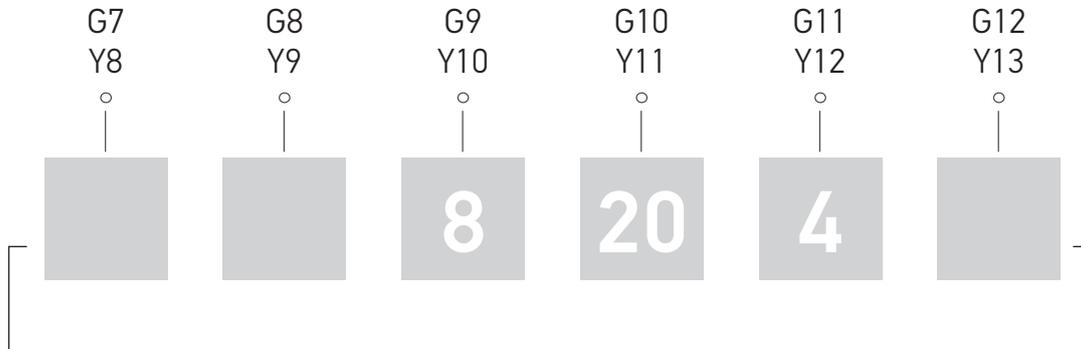|	
Single text	**527**
Multiple text	**535**

School sample

35

Total number of students

There may be a difference between the number of students sampled and assessed due to many factors such as exclusion criteria, incomplete answers or absenteeism.
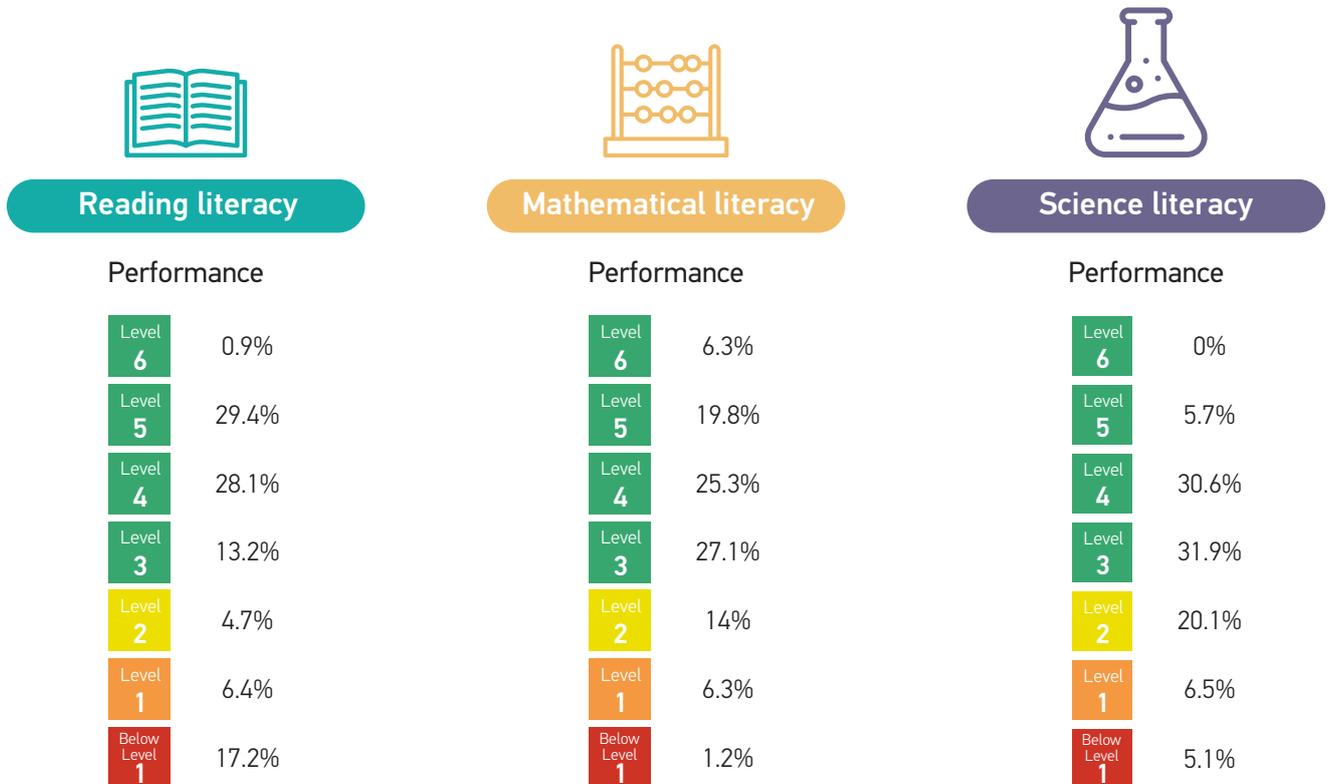
7

of which are Emirati students
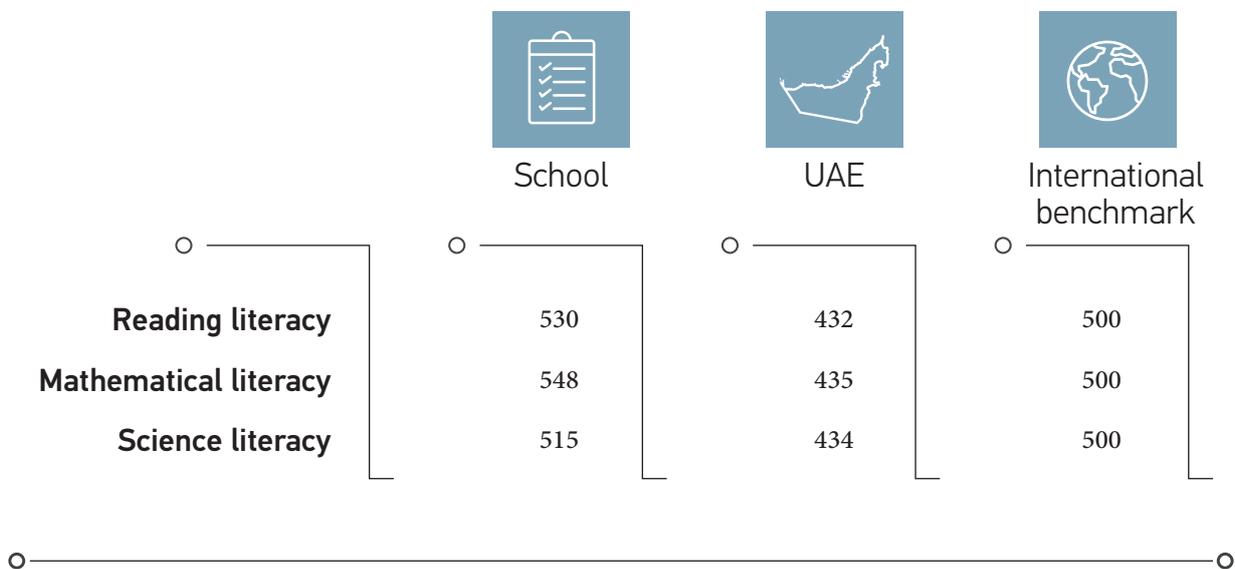
Number of students sampled from each grade

G7 Y8	G8 Y9	G9 Y10	G10 Y11	G11 Y12	G12 Y13
		8	20	4	

Percentage of students in each proficiency level

Reading literacy

Performance

Level 6	0.9%
Level 5	29.4%
Level 4	28.1%
Level 3	13.2%
Level 2	4.7%
Level 1	6.4%
Below Level 1	17.2%

Mathematical literacy

Performance

Level 6	6.3%
Level 5	19.8%
Level 4	25.3%
Level 3	27.1%
Level 2	14%
Level 1	6.3%
Below Level 1	1.2%

Science literacy

Performance

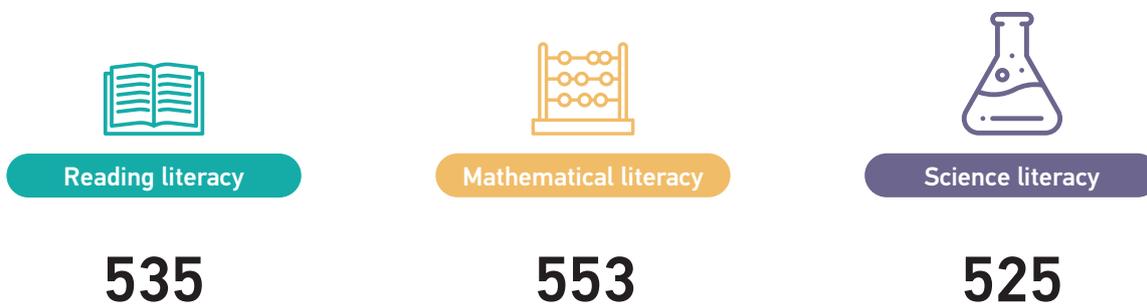| Level 6	0%
Level 5	5.7%
Level 4	30.6%
Level 3	31.9%
Level 2	20.1%
Level 1	6.5%
Below Level 1	5.1%

* Refer to pages 17-19 to determine the proficiency level of each domain score

PISA2018 score comparisons

	School	UAE	International benchmark
Reading literacy	530	432	500
Mathematical literacy	548	435	500
Science literacy	515	434	500

PISA2021 school targets

Reading literacy	Mathematical literacy	Science literacy
535	**553**	**525**

FACTORS AFFECTING ACHIEVEMENT ALONG WITH RECOMMENDATIONS

Factors	Recommendations
Attitudes towards subject - mindset	• Ensure that students understand and subscribe to the genuine value and purpose of what they are asked to learn and how it will contribute to their achievement in school and life after school • Engage the hearts and minds of students; convince them of your passion as a teacher to do all you can to ensure the highest possible achievement and personal development for each • Plan thoroughly for each lesson ensuring the content is related to real-life contexts with which students can immediately identify • Use a variety of teaching approaches to keep students engaged; ensure the students are "active learners" as opposed to "passive learners" • At all times look to exploit every learning opportunity making the activities practical almost without exception • Develop yourself as a teacher continually; know the subject matter you are teaching and get to know how students learn it; reference Carol Dweck work • Create in your lessons a "Promoting Positive Behaviour and Learning " culture in which the positive comment and response is used over the negative; look for the good at all times in students and reward with genuine praise for work, effort and behaviour • Encourage students to take risks in their learning, where inaccuracies or mistakes are not seen as weakness but a necessary element of the learning journey for all of us, teachers and students alike
Self-efficacy	• Ensure you have developed a sound rational for how you manage your time, how and when you plan for and assess students' work and how you promote positive behaviour in class • Work to have a high personal self-efficacy through which you sustain your effort and commitment to teaching students in ways which bring about consistently good learning experiences and outcomes for them • Make your learning objectives for students SMARTER*, and design tasks which build their learning progressively and incrementally ensuring students know of their progress • Ensure all students make progress, and where are those who require additional support with their learning and/or reassurance that they receive it

Factors	Recommendations
Teacher student relations	• Understand the role "emotional intelligence" ** plays in working relationships between teacher and student, and how it can be used to improve students' engagement and learning • Get to know your students well, particularly their strengths and areas for improvement in their learning and development; use collated performance data from previous year/term to inform your knowledge • Always set high expectations for all your students' and share this ideal with them; in your classes there will be CHALLENGE for all and support provided as required • Work collaboratively with other teachers in your subject area/cycle/school to build up a complete profile of your students' performance across their range of experiences/curriculum • Take the time at the start of each lesson to welcome your students; this sets a positive tone for how the lesson will progress • "Praise the good and ignore the bad". Commend students for their work and/or effort, deliberately singling out and naming students in this approach. Low level inappropriate behaviour can usually be tolerated through not giving it the 'oxygen' of attention. Become a teacher who looks for and commends the good in students' work rather than one who continually reprimands for any type of demeanour • Where inappropriate student behaviour rises to a level which is disruptive to other students or their learning, then apply the 'consequences' in a consistent manner in accordance with the school's policy • Develop a positive communication strategy between school and home, in line with the school's policy, and seek to involve parents as partners with the school in their child's education
Teacher's classroom management	• How you, as a teacher, manage the lesson and the learning of all students is arguably the most important pedagogical skill you will use in your teaching • Have a well-defined structure to your lessons in which you get buy-in from the students for the learning they will undertake, an engaging introduction, a practical development of skills, knowledge and understanding section, and a mandatory conclusion in which students feedback to you on the quality and extent of their progress/learning • Plan beforehand for how the range of abilities in the class will be catered for; consider DIFFERENTIATION principally by TASK or by OUTCOME • Monitor the students while they are on task, ensuring all remain focused and attentive • Provide "at the elbow" challenge and support as appropriate either orally given or with a comment in their book which indicates to them how their work could be improved

Factors	Recommendations
Attitude towards school	• Identify actions which could be taken to improve and make best use of the environment of the school • Consider and implement strategies that showcase the work and progress of students at every conceivable opportunity eg through newsletter, school app posting, presentation/demonstration in assembly etc • Involve students more in the life and work of the school through student councils, the "Student Voice" etc. Give them responsibilities in line with their age and stage of development to initiate developments, contribute to problem solving • Find out what students think of their life and work in school through periodic student surveys; use the outcomes of these to inform developments leading to improvement in the quality of provision, principally learning and teaching • Work to ensure students feel valued; embed in them the notion that this school campus is a shared space occupied by those who teach and lead, and those who learn, and working collaboratively will result in better outcomes for everyone • Students will inevitably experience variation in the quality of teaching they receive; work to ensure that this variation is reduced to a minimum through on-going whole-school professional development, with the result that most of the teaching they receive is consistently of a good or better quality • Enhance the experiences of students by moving parts of their learning beyond the classroom; educational visits present opportunities for students to apply their learning and development in real life settings
Students who receive a blend of inquiry-based and teacher-directed instruction have the best outcomes	• "Blend" is the key word in this title, but "balance" is also of the utmost importance • Not only do we, as educators, wish to develop students' attainment and ensure they all make good progress • We also want to provide approaches in our teaching which ensure students play an active role in their learning • We need to develop their "learning skills" specifically: encouraging them to take more responsibility for aspects of their own learning; to learn to collaborate and interact effectively with others; to be able to apply what skills they have learned and knowledge acquired to the real world and other areas of the curriculum; and be able to create, to research, to think critically*** and to make good use of technology to enhance their learning • Include project-based activities in your teaching which have the benefit of providing practical experiences, relating student tasks to the real world and developing their learning skills as identified above • Ensure that learning technologies are used to enhance students' learning and not an end in themselves

Factors	Recommendations
Cross-curricular collaboration	• Work with colleagues in other departments to embed cross-curricular skills and strategies • Analysing the curricula in different departments to identify aspects in one which link well with aspects in another; when made known to students through their studies this has the effect of opening students' appreciation of their learning more as a connected enterprise and not solely a series of separate and unconnected subjects
Significant gains can also be made from using existing time better	• Encourage all staff to reflect on their use of time, time spent planning for lessons, marking students' work, engaging in professional development, staff meetings and actual teaching time • Where appropriate engage in Time Management professional development • Focus on timetabling of key subjects and exam classes in the earlier part of each day • Discuss and agree the most effective way in your school of reducing time wastage between periods eg, more double periods, students move classes as opposed to teachers moving classes etc; all of this contributes to the PRODUCTIVITY of teachers and students within a school and is only rarely measured
Getting all schools to a minimum quality level	• Every school should aspire to being an "Effective School" • An Effective School is one in which key enablers including teaching and assessment, leadership and management, the curriculum and the care and welfare of students are brought together in ways which ensure the highest possible achievement for all students and their personal development • Schools are principally about learning and teaching, all developments which are enacted must relate to how they will add value to these • The quality of teaching is seen in research to be the most important factor in good learning • The regular and consistent evaluation of teaching needs to be part of the fabric of all schools, with quality feedback given to teachers and a development plan agreed of what needs to be done to effect improvement where this is needed • The goal of every school has to be getting to a situation where the quality of teaching is consistently in the range of "good or better" • The use of reliable performance data on student learning is an essential component of a school's Improvement Strategy • Students outcomes need to be assessed regularly at all levels; individual, class, year group, cycle, subject and whole-school and used to inform developments in teaching to bring about further student improvement

Factors	Recommendations
Getting students in seats	• Expand school seats • Fulfil students' basic needs to raise attendance; the physical learning environment needs to be made welcoming for students where they see their work displayed on notice boards or in project areas and where other learning and teaching resources are displayed to provide them with learning opportunities • Effective communication systems between school and home; essential to get right and worth persevering with; work to create a culture in which parents see themselves as partners with the school in the education of their child • Targeting of non-attenders with support from a range of audiences and agencies
Providing motivation and scaffolding for low skill teachers	• In addition to actions detailed above in "Getting all schools to a minimum quality level" also consider: scripted teaching materials, coaching and mentoring from skilled academic support and incentives for improved performance • Peer evaluation is a strong strategy for improving quality; it works at two levels as the peer evaluator becomes skilled in evaluating the indicators of effective learning and teaching in lessons for the benefit of feedback to the teacher, and additionally the peer evaluator takes some of that good practice back to his/her class

* SMARTER objectives: Specific, Measureable, Achievable, Relevant, Time-bound, Evaluated (on a regular basis) and Recognised/Rewarded when achieved or Revisited when not

** Emotional Intelligence (EI): By understanding one's own feelings you can better understand and evaluate others. Five main elements of EI are self-awareness, self-regulation, motivation, empathy and social skills.

*** Critical Thinking: involves development of higher order thinking skills such as Analysing, Evaluating and Creating to build on the lower order ones of Remembering, Understanding and Applying.

NEXT STEPS

Next steps

International Assessments are a whole school responsibility. All teachers and counsellors should be thinking together about the following action points:

01 Be very familiar with the PISA frameworks for maths, science and reading. The link is provided in the appendix.

02 Understand the PISA2018 report fully.

03 Understand the PISA proficiency levels for each subject domain (appendix).

04 Collectively conduct a self-evaluation to understand where the whole school stands in its preparation for the various International Assessments. Focus must be on teaching and learning.

05 Incorporate the findings from the PISA 2018 results, including identified weaknesses and associated remediation, into your school improvement and associated plans.

APPENDIX: PROFICIENCY LEVELS DESCRIPTIONS

Reading literacy – Proficiency levels descriptions

Level	Description
Level 6 **698**	Tasks at Level 6 typically require the student to make multiple inferences, comparisons and contrasts that are both detailed and precise. They require demonstration of a full and detailed understanding of one or more texts and may involve integrating information from more than one text. Tasks may require the student to deal with unfamiliar ideas in the presence of prominent competing information and to generate abstract categories for interpretations.
Level 5 **626**	Tasks at Level 5 that involve retrieving information require the student to locate and organize several pieces of deeply embedded information, inferring which information in the text is relevant. Reflective tasks require critical evaluation or hypotheses, drawing on specialized knowledge. Both interpreting and reflective tasks require a full and detailed understanding of a text whose content or form is unfamiliar. For all aspects of Reading, tasks at this level typically involve dealing with concepts that are contrary to expectations.
Level 4 **553**	Tasks at Level 4 that involve retrieving information require the student to locate and organize several pieces of embedded information. Some tasks at this level require interpreting the meaning of nuances of language in a section of text by taking into account the text as a whole. Other interpretative tasks require understanding and applying categories in an unfamiliar context. Reflective tasks at this level require the student to use formal or public knowledge to hypothesize about or critically evaluate a text. The student must demonstrate an accurate understanding of long or complex texts whose content or form may be unfamiliar.
Level 3 **480**	Tasks at Level 3 require the student to locate and in some cases, recognize the relationship between several pieces of information that must meet multiple conditions. Interpreting tasks at this level require the student to integrate several parts of a text in order to identify a main idea, understand a relationship, or construe the meaning of a word or phrase. The student needs to take into account many features in comparing, contrasting, or categorizing. Often the required information is not prominent or there is much competing information; or there are other obstacles in the text, such as ideas that are contrary to expectation or negatively worded.
Level 2 **407**	Tasks at Level 2 require the student to locate one or more pieces of information that may have to be inferred and may have to meet several conditions. Others require recognizing the main idea in a text, understanding relationships, or construing meaning within a limited part of a text when the information is not prominent and the student must make low-level inferences. Tasks at this level may involve comparisons or contrasts based on a single feature in the text.
Level 1 **335**	Tasks at Level 1 require the student to locate one or more independent pieces of explicitly stated information, recognize the main theme or author's intent in a text about a familiar topic, or make a simple connection between information in the text and common, everyday knowledge. The required information in the text is usually prominent and there is little, if any, competing information. The student is explicitly directed to consider relevant factors in the task and in the text.
Below Level 1	Tasks at below Level 1 require the student to locate a single piece of explicitly stated information in a prominent position in a short, syntactically simple text with a familiar context and text type, such as a narrative or a simple list. The text typically provides support to the student, such as repetition of information, picture, or familiar symbols. There is minimal competing information. In tasks requiring interpretation, the student may need to make simple connections between adjacent pieces of information.

Mathematical literacy – Proficiency levels descriptions

Level 6 **669**	At Level 6 students can conceptualise, generalise and utilise information based on their investigations and modelling of complex problem situations. They can link different information sources and representations and flexibly translate among them. Students at this level are capable of advanced mathematical thinking and reasoning. These students can apply this insight and understandings along with a mastery of symbolic and formal mathematical operations and relationships to develop new approaches and strategies for attacking novel situations. Students at this level can formulate and precisely communicate their actions and reflections regarding their findings, interpretations, arguments and the appropriateness of these to the original situations.
Level 5 **607**	At Level 5 students can develop and work with models for complex situations, identifying constraints and specifying assumptions. They can select, compare and evaluate appropriate problem solving strategies for dealing with complex problems related to these models. Students at this level can work strategically using broad, well-developed thinking and reasoning skills, appropriate linked representations, symbolic and formal characterisations and insight pertaining to these situations. They can reflect on their actions and formulate and communicate their interpretations and reasoning.
Level 4 **545**	At Level 4 students can work effectively with explicit models for complex concrete situations that may involve constraints or call for making assumptions. They can select and integrate different representations, including symbolic ones, linking them directly to aspects of real- world situations. Students at this level can utilise well-developed skills and reason flexibly, with some insight, in these contexts. They can construct and communicate explanations and arguments based on their interpretations, arguments and actions.
Level 3 **482**	At Level 3 students can execute clearly described procedures, including those that require sequential decisions. They can select and apply simple problem solving strategies. Students at this level can interpret and use representations based on different information sources and reason directly from them. They can develop short communications reporting their interpretations, results and reasoning.
Level 2 **420**	At Level 2 students can interpret and recognise situations in contexts that require no more than direct inference. They can extract relevant information from a single source and make use of a single representational mode. Students at this level can employ basic algorithms, formulae, procedures, or conventions. They are capable of direct reasoning and making literal interpretations of the results.
Level 1 **358**	At Level 1 students can answer questions involving familiar contexts where all relevant information is present and the questions are clearly defined. They are able to identify information and to carry out routine procedures according to direct instructions in explicit situations. They can perform actions that are obvious and follow immediately from the given stimuli.
Below Level 1	Students below Level 1 may be able to perform very direct and straightforward mathematical tasks, such as reading a single value from a well-labeled chart or table where the labels on the chart match the words in the stimulus and question, so that the selection criteria are clear and the relationship between the chart and the aspects of the context depicted are evident and performing arithmetic calculations with whole numbers by following clear and well-defined instructions.

Science literacy – Proficiency levels descriptions

Level	Description
Level 6 **708**	At Level 6, students can consistently identify, explain and apply scientific knowledge and knowledge about science in a variety of complex life situations. They can link different information sources and explanations and use evidence from those sources to justify decisions. They clearly and consistently demonstrate advanced scientific thinking and reasoning and they use their scientific understanding in support of solutions to unfamiliar scientific and technological situations. Students at this level can use scientific knowledge and develop arguments in support of recommendations and decisions that center on personal, social or global situations.
Level 5 **633**	At Level 5, students can identify the scientific components of many complex life situations, apply both scientific concepts and knowledge about science to these situations and can compare, select and evaluate appropriate scientific evidence for responding to life situations. Students at this level can use well-developed inquiry abilities, link knowledge appropriately and bring critical insights to situations. They can construct explanations based on evidence and arguments based on their critical analysis.
Level 4 **559**	At Level 4, students can work effectively with situations and issues that may involve explicit phenomena requiring them to make inferences about the role of science or technology. They can select and integrate explanations from different disciplines of science or technology and link those explanations directly to aspects of life situations. Students at this level can reflect on their actions and they can communicate decisions using scientific knowledge and evidence.
Level 3 **484**	At Level 3, students can identify clearly described scientific issues in a range of contexts. They can select facts and knowledge to explain phenomena and apply simple models or inquiry strategies. Students at this level can interpret and use scientific concepts from different disciplines and can apply them directly. They can develop short statements using facts and make decisions based on scientific knowledge.
Level 2 **410**	At Level 2, students have adequate scientific knowledge to provide possible explanations in familiar contexts or draw conclusions based on simple investigations. They are capable of direct reasoning and making literal interpretations of the results of scientific inquiry or technological problem solving.
Level 1 **335**	At Level 1, students have such a limited scientific knowledge that it can only be applied to a few, familiar situations. They can present scientific explanations that are obvious and follow explicitly from given evidence.
Below Level 1	Students scoring below Level 1 usually do not succeed at the most basic levels of Science that PISA measures. Such students will have serious difficulties in using Science to benefit from further education and learning opportunities and in participating in life situations related to Science and technology.