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**New PISA results:
strengthening education
systems in the wake of the
pandemic**

Programme for International Student Assessment



New PISA results: strengthening education systems in the wake of the pandemic

- The results of the PISA 2022 mathematics, reading and science tests will be released on 5 December 2023.
- Around 690,000 15-year-old students in 81 countries and economies took the assessment.
- PISA 2022 focused on students' proficiency in mathematics and introduced an updated framework to reflect large-scale social changes with a greater emphasis on mathematical reasoning.

As the global benchmark in educational tests, PISA results are always hotly anticipated. The tests were originally planned to take place in 2021 but the disruption caused by COVID-19, including widespread lockdowns and school closures, forced the assessment to be postponed by a year. Despite the delay, 690 000 students took the assessment in 2022; representative of about 29 million 15-year-olds across 81 countries and economies. First-time participants include Cambodia, El Salvador, Guatemala, Jamaica, Mongolia, the Palestinian Authority, Paraguay and Uzbekistan.¹

As always, the tests assessed 15-year-old students' performance in mathematics, reading and science. In addition, as a result of the pandemic, students and school principals were also asked about their experiences during this period. This has enabled PISA to collate the largest and broadest collection of global data about young peoples' experiences during this harrowing period and examine its impact on learning directly reported by students and principals.

What do the results reveal? We are still analysing the data but the first results of PISA 2022 will be unveiled in two volumes on 5 December 2023.

How did student performance and equity in education change before and after the pandemic?

The first volume of PISA 2022, *The State of Learning and Equity in Education*, assesses how student performance in mathematics, reading and science evolved before and after the pandemic. Did student performance suddenly shift between 2018 and 2022 or stay the same? Are there long-term trends which have continued or sharply changed direction? The PISA team are examining these issues and whether specific student groups, such as socio-economically advantaged and disadvantaged students, boys and girls, and immigrant and non-immigrant students have exhibited varying performance trends.



Which education systems showed resilience?

The second volume of PISA 2022, *Learning During – and from – Disruption*, goes beyond academic ability and examines student well-being. It will identify “resilient education systems” that maintained or

promoted student learning, equity and well-being amid the disruption caused by COVID-19. Education systems will be scrutinised to see which maintained performance scores for all students, regardless of their socio-economic profiles, while keeping or boosting their sense of belonging at school.



Criteria used to identify resilient education systems



Performance

- Mathematics performance was at or above the OECD average in 2022
- Mathematics performance was stable or improved between 2018 and 2022

Equity

- Association between student performance and socio-economic status is at or weaker than the OECD average in 2022
- Disadvantaged and advantaged students maintained or improved their performance between 2018 and 2022

Well-being

- Students' sense of belonging at school was at or above the OECD average in 2022
- Students' sense of belonging at school was stable or improved between 2018 and 2022

What do resilient education systems have in common?

To figure out what makes education systems resilient, Volume II will also analyse common aspects such as: learning during school closures, school life and home support, students' pathways through school, investments in education and school governance. For example, in these resilient systems, how long were schools closed during the pandemic? What was the quality of learning experiences during this period? The Volume will go beyond experiences specific to the pandemic and will examine the fundamental structure, learning environment, resources and governance of education systems. It will examine how students were sorted into different schools. Did bullying increase? Were students distracted by mobile phones? Were principals concerned about materials and human resources? And how much autonomy did schools have regarding resources and educational content?

Deepened feature of mathematics measured in PISA 2022: mathematical reasoning

The focus of PISA 2022 was mathematics, with reading, science and creative thinking² as minor areas of assessment. The PISA 2022 mathematics framework considered large-scale social changes

such as digitalisation and new technologies, the use of data in personal decisions, and how globalisation has redefined what it means to be mathematically competent and well-equipped to fully participate in the 21st century.

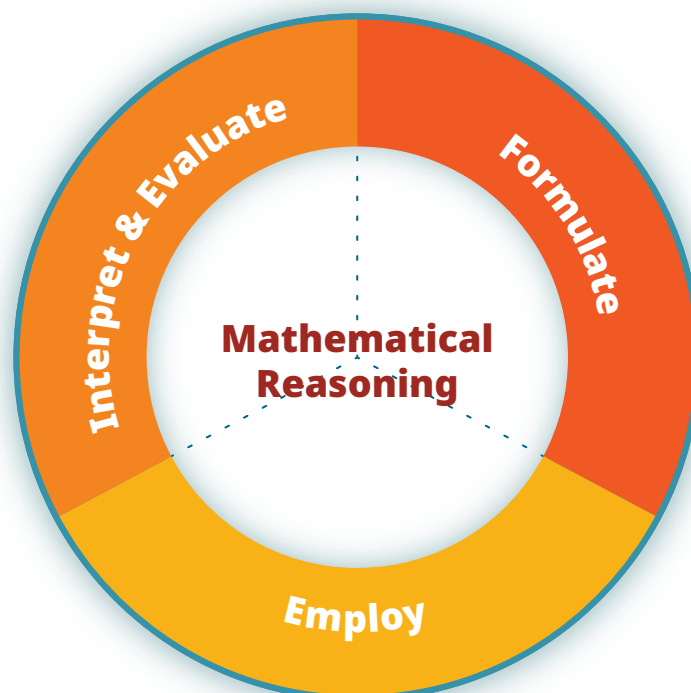
Mathematics competency is not just about being able to reproduce routine procedures. It is more about the use of mathematical reasoning; to think mathematically to solve complex real-life problems in a variety of modern contexts.

PISA has always assessed mathematical reasoning, but in 2022 we developed and used a new mathematics subscale to measure this dimension.

Mathematical reasoning does not necessarily require employing advanced mathematics, but it is necessary to have a solid grasp of foundational concepts. It is about independent, logical and creative thinking to tackle real-world tasks that cannot be easily automatised or solved.

To nurture mathematical reasoning, schools and education systems need to go beyond teaching and evaluating routine mathematical procedures – students need to be ready to address unfamiliar real-world challenges and use mathematical tools in innovative ways. It is a demanding shift in education that promises exciting results.

Mathematical modelling cycle in PISA 2022



Source: <https://pisa2022-maths.oecd.org/>

The bottom line

PISA still defines mathematics in much the same way as in the past. Students need to be able to formulate, employ and interpret mathematics to solve problems in a variety of real-world contexts. However, the PISA 2022 mathematics assessment was updated to reflect the evolving nature of mathematics competency. While PISA has always assessed mathematics reasoning, it now has a bit more emphasis to highlight its importance in tackling complex real-life challenges.

Now, the exciting part: PISA results are out in December and they are packed with answers to some big questions:

- Which countries/economies managed to keep or increase their students' performance in mathematics, reading and science despite the pandemic?
- Where do disadvantaged students have the best chance to do well and succeed?
- Which countries/economies aced all three education outcomes: student performance, equity and well-being?
- What do resilient systems that maintained or promoted student learning, equity and well-being have in common?

Look out for the results on 5 December 2023. It's going to be an eye-opener!

Notes

1. Cambodia and Guatemala participated in the PISA for Development programme.
2. Creative thinking was assessed as an innovative domain for the first time in PISA 2022. The results of creative thinking will be released in 2024.

For more information

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See:

OECD (2023), *PISA 2022 Assessment and Analytical Framework*, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/dfef0bf9c-en>.

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