

What can students do in mathematics?

- In the OECD area, 3.3% of students reached the highest level on the PISA mathematics scale.
- An average of just over 21% of students performed at or below Level 1, the lowest level.
- Boys scored higher than girls in mathematics in PISA; however, their advantage is smaller than that of girls in reading.

Significance

This indicator looks at the performance of 15-year-old students in the assessment of mathematics skills in the 2006 PISA round. PISA uses a concept of mathematical literacy that is concerned with the capacity of students to analyse, reason and communicate effectively as they pose, solve and interpret mathematical problems in a variety of situations involving quantitative, spatial, probabilistic or other mathematical concepts.

Findings

Among OECD countries, 3.3% of students were proficient at Level 6, the highest level on the PISA mathematics scale. This level indicates students are capable of applying insight and understanding, and a mastery of formal mathematics, to develop new strategies to respond to new problems. In Korea, 9.1% of the students achieved this level; in Belgium, the Czech Republic, Finland and Switzerland the proportion was 6% or more; in partner economies Chinese Taipei and Hong Kong-China, the figures were 11.8 and 9.0% respectively. By contrast, 0.1% of the students in Mexico reached Level 6 and in the partner countries Colombia, Indonesia, Jordan, Kyrgyzstan and Tunisia the percentages were even lower.

At the other end of the scale, in the OECD area, an average of 13.6% of students performed at Level 1, the lowest level, and 7.7% below Level 1, but there were wide differences between countries. In Finland, Korea and the partner economy Hong Kong-China, less than 10% of students performed at or below Level 1. In all other OECD countries, the percentage of students performing at or below Level 1 ranged from 10.8% in Can-

ada to 56.5% in Mexico. Students performing below Level 1 usually do not demonstrate success on the most basic type of mathematics that PISA seeks to measure. Such students will have serious difficulties in using mathematics as an effective tool to benefit from further education and learning opportunities throughout life.

In general, boys performed better in mathematics than girls. The largest gender differences were in Austria and Japan, with boys showing 23- and 20-point advantages, respectively, over girls. However, the advantage that boys enjoyed in mathematics was smaller than that of girls in reading (see previous indicator).

Results from PISA showed wide disparities in student performance in mathematics within most countries, which suggests that education systems still have some way to go to serve the wide range of student abilities, including those who perform exceptionally well and those most in need.

Definitions

See introduction to this section.

Going further

For additional material, notes and a full explanation of sourcing and methodologies, see Chapter 6 in *PISA 2006: Science Competencies for Tomorrow's World, Vol. 1: Analysis*.

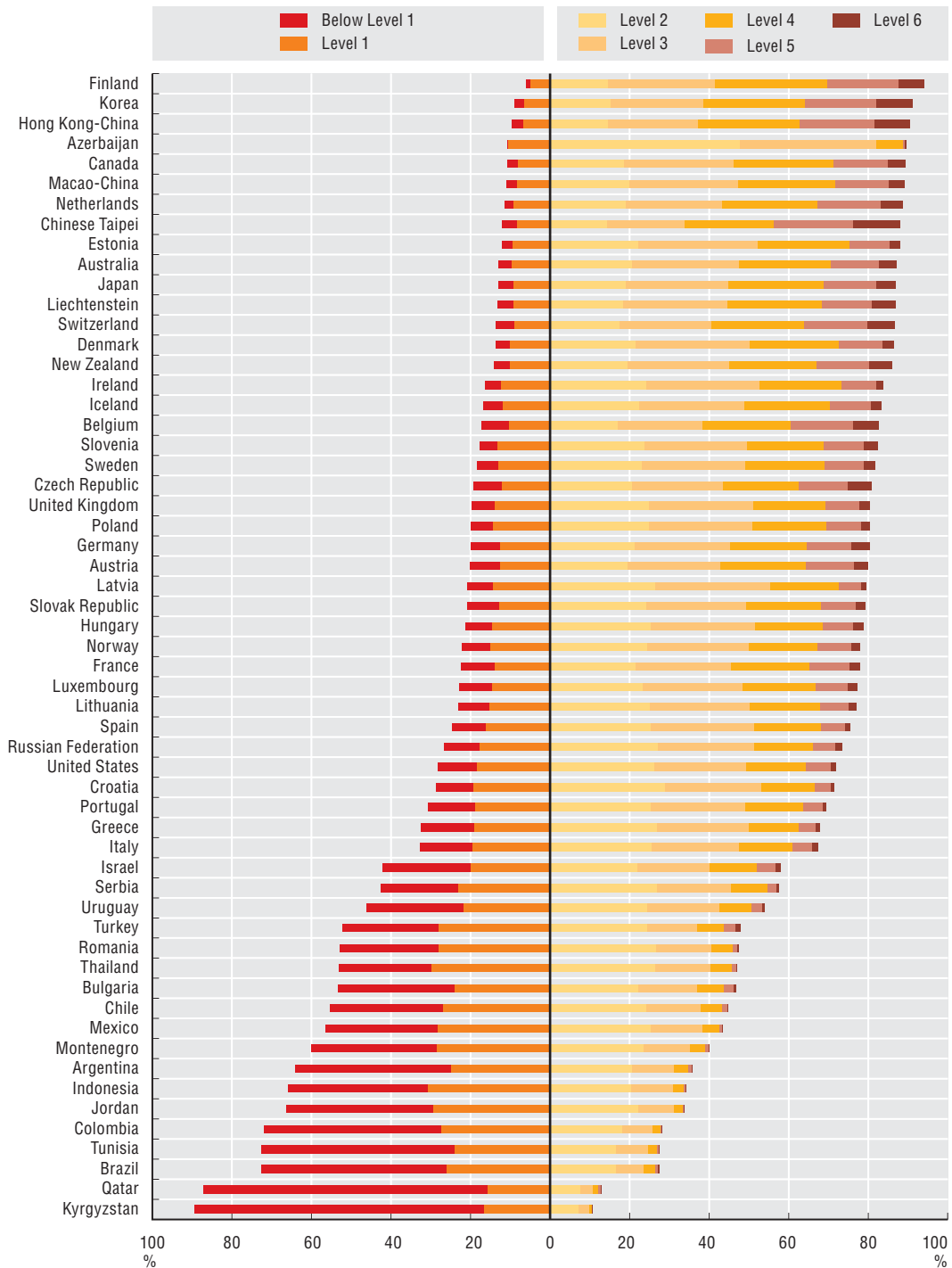
Further reading from OECD

PISA 2006: Science Competencies for Tomorrow's World, Vol. 1: Analysis (2007).

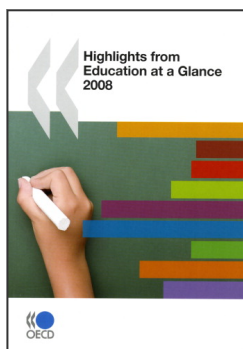
PISA: Learning for Tomorrow's World: First Results from PISA 2003 (2004).

Figure S.3. Student performance in mathematics in PISA 2006

This figure shows the percentage of students at each performance level in mathematics; students with scores at Level 6 are the strongest performers, those at Level 1 and below are the weakest.



Source: OECD (2007), PISA 2006, Science Competencies for Tomorrow's World, Volume 1: Analysis, Table 6.2a, available at <http://dx.doi.org/10.1787/142046885031>.



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