

## What can students do in science?

- On average among OECD countries, 1.3% of students reached the highest level of science proficiency on the PISA scale (Level 6).
- With the exception of Finland, and the partner countries/economies Estonia and Hong Kong-China, all countries had at least 10% of students who perform at Level 1 or below.
- Girls and boys showed no difference in average overall science performance in most countries, including 22 of the 30 OECD countries.

### Significance

This indicator examines the scientific literacy of 15-year-old students and draws on data from the 2006 PISA round, in which science was the major focus. Given the pervasiveness of science, mathematics and technology in modern life, it has become increasingly important for adults to be literate in these subjects in order to maximise their employment and earnings prospects and to participate fully in society.

### Findings

On average across OECD countries, 1.3% of students reached the highest level on the PISA science scale, Level 6, but in Finland and New Zealand over 3.9% did so. In Australia, Canada, Japan and the United Kingdom, and partners Hong Kong-China, Liechtenstein and Slovenia, between 2.1% and 2.9% of students reached Level 6. Among other characteristics, students at this level can consistently identify, explain and apply scientific knowledge and knowledge about science in a variety of complex life situations, and clearly and consistently demonstrate advanced scientific thinking and reasoning.

Including students who scored at Level 5 brings the percentage of high performers to 9% across OECD countries. In Finland, 20.9% of students performed at Levels 5 and 6. Other countries with a high proportion of students at these levels were New Zealand, 17.6%;

Japan, 15.1%; and Australia, 14.6%; as well as partner economies Hong Kong-China, 15.9% and Chinese Taipei, 14.6%.

Among students in OECD countries, an average of 19.2% were classified as below Level 2 and 5.2% were below Level 1. At Level 2, students start to demonstrate the science competencies that will enable them to participate actively in life situations related to science and technology; at Level 1, students have such a limited scientific knowledge that it can only be applied to a few, familiar situations.

In two OECD countries, Mexico and Turkey, around one-half of the students were not proficient at Level 2. In nine of the partner countries/economies at least 50% of students did not get to Level 2. Thus, a level of basic science competency held by the overwhelming majority of the population in some countries, and by eight out of ten students on average in OECD countries, was not achieved in many other countries.

### Definitions

See introduction to this section.

### Going further

For additional material, notes and a full explanation of sourcing and methodologies, see *PISA 2006: Science Competencies for Tomorrow's World* (Chapter 2) and *Education at a Glance 2008* (Indicator A5).

Areas covered include:

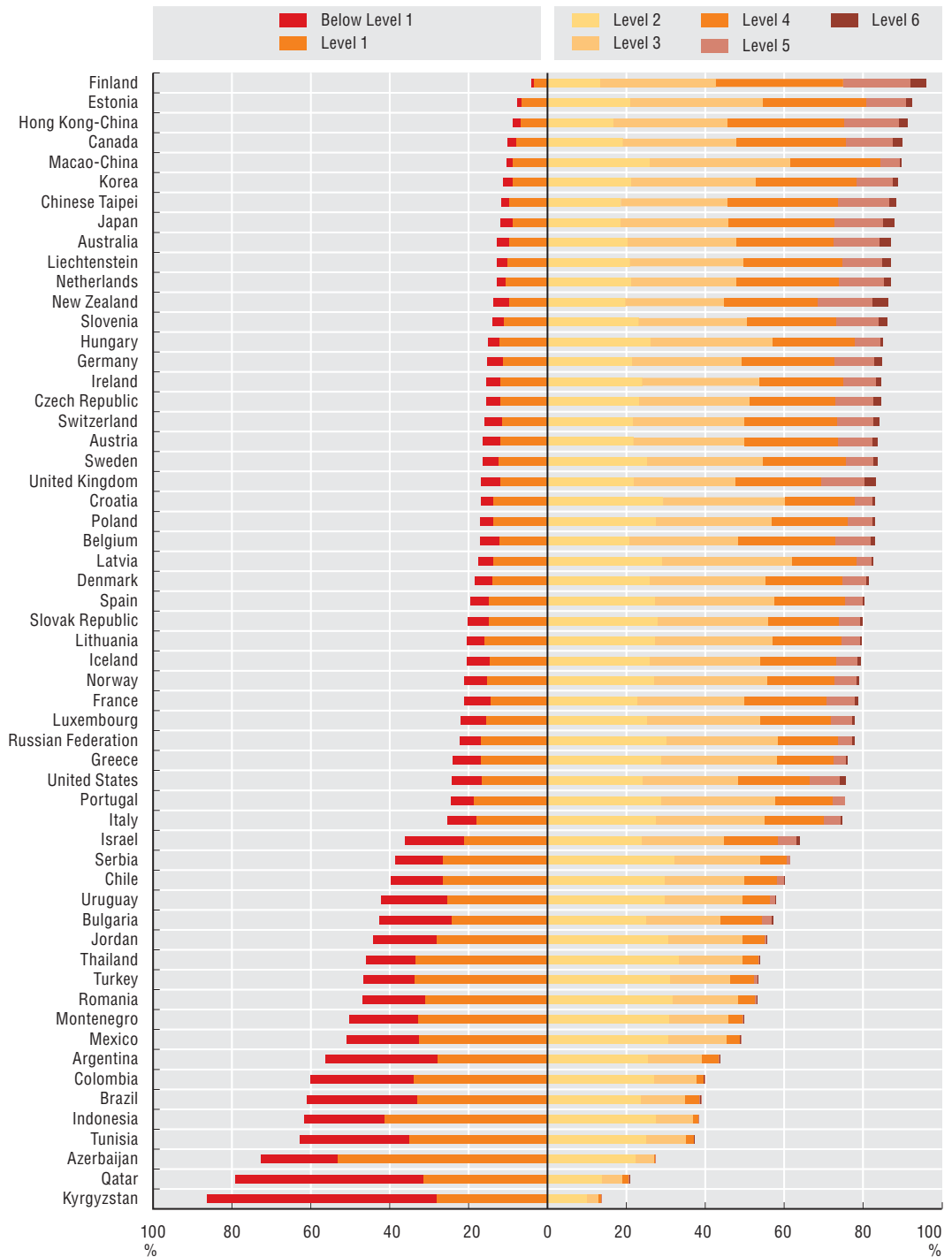
- Distribution of student performance on the PISA science scale.
- Mean score, variation and gender difference in student performance.

### Further reading from OECD

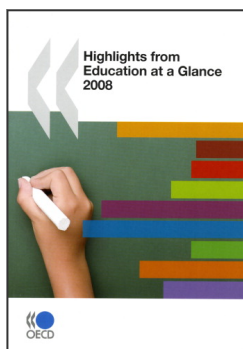
*PISA 2006: Science Competencies for Tomorrow's World*, Vol. 1: Analysis (2007).

Figure S.1. Student performance in science in PISA 2006

This figure shows the percentage of students at each performance level in science; 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, Fig 2.11a, available at <http://dx.doi.org/10.1787/141844475532>.



**From:**  
**Highlights from Education at a Glance 2008**

**Access the complete publication at:**  
<https://doi.org/10.1787/9789264040625-en>

**Please cite this chapter as:**

OECD (2009), "What can students do in science?", in *Highlights from Education at a Glance 2008*, OECD Publishing, Paris.

DOI: [https://doi.org/10.1787/eag\\_highlights-2008-34-en](https://doi.org/10.1787/eag_highlights-2008-34-en)

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