

## INTERNATIONAL STUDENT ASSESSMENT

How effective are school systems in providing young people with a solid foundation in the knowledge and skills that will equip them for life and learning beyond school? The OECD Programme for International Student Assessment (PISA) assesses student knowledge and skills at age 15, i.e. toward the end of compulsory education. The PISA 2012 survey covers mathematics, reading, science and problem-solving. For the first time, PISA 2012 also included an assessment of the financial literacy of young people and an optional computer-based assessment of mathematics.

### Definition

PISA is a triennial survey of 15-year-old students around the world. The survey examines how well students can extrapolate from what they have learned and can apply that knowledge in unfamiliar settings, both in and outside of school. The PISA survey covers 3 main subjects: mathematics, reading and science and in each round, one of these subjects is the major domain and the other two are minor domains. In PISA 2012 the major domain was mathematics.

For PISA, mathematical literacy means the capacity to formulate, employ and interpret mathematics in a variety of contexts to describe, predict and explain phenomena. It assists individuals in recognising the role that mathematics plays in the world and to make the well-founded judgements and decisions needed by constructive, engaged and reflective citizens. Reading literacy is the capacity to understand, use and reflect on written texts in order to achieve one's goals, develop one's knowledge and potential, and participate in society. Scientific literacy is

### Overview

The average score from the PISA 2012 results across OECD countries are 494 points for mathematics, 496 points for reading and 501 points for science. Korea has the highest score in mathematics, with a mean score of 554 points, while Japan shows the highest scores in reading and science, with mean scores of 538 and 547 respectively.

Marked gender differences in mathematics performance – in favour of boys – are observed in 27 countries presented. Only in Iceland do girls outperform boys in mathematics. Across OECD countries, boys outperform girls with an 11 score-point difference. By contrast, girls outperform boys in reading everywhere. Across OECD countries, the difference in favour of girls is about 38 score points. In science, boys outperform girls in eight countries, while in five countries girls outperform boys. Across OECD countries, the gender differences in science tend to be smaller than in mathematics and reading, with only one score point in favour of boys.

the capacity to use scientific knowledge to identify questions, acquire new knowledge, explain scientific phenomena, and draw evidence-based conclusions about science-related issues.

### Comparability

Leading experts in countries participating in PISA provide advice on the scope and nature of the assessments, with final decisions taken by the PISA Governing Board. Substantial efforts and resources are devoted to achieving cultural and linguistic breadth and balance in the assessment materials. Stringent quality assurance mechanisms are applied in the item development and translation, sampling, data collection, scoring and data management stages to ensure comparability of the results.

Around 510 000 15-year-old students in 65 participating countries or economies were assessed in PISA 2012. Because the results are based on probability samples, standard errors (S.E.) are normally shown in the tables.

### Sources

- OECD (2014), *PISA 2012 Results: What Students Know and Can Do: Student Performance in Mathematics, Reading and Science (Volume I, Revised edition, February 2014)*, PISA, OECD Publishing.

### Further information

#### Analytical publications

- OECD (2013), *PISA 2012 Results: Excellence Through Equity (Volume II): Giving Every Student the Chance to Succeed*, PISA, OECD Publishing.
- OECD (2013), *PISA 2012 Results: What Makes Schools Successful? (Volume IV): Resources, Policies and Practices*, PISA, OECD Publishing.

#### Statistical publications

- OECD (2015), *Education at a Glance. OECD Indicators*, OECD Publishing.

#### Methodological publications

- OECD (2014), *PISA 2012 Technical Report*, OECD, Paris.
- OECD (2013), *PISA 2012 Assessment and Analytical Framework: Mathematics, Reading, Science, Problem Solving and Financial Literacy*, PISA, OECD Publishing.

#### Online databases

- *OECD PISA Database*.

#### Websites

- Programme for International Student Assessment (PISA), [www.oecd.org/pisa](http://www.oecd.org/pisa).



Mean scores by gender in PISA  
2012

	Mathematics scale				Reading scale				Science scale			
	Girls		Boys		Girls		Boys		Girls		Boys	
	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.
Australia	498	2.0	510	2.4	530	2.0	495	2.3	519	2.1	524	2.5
Austria	494	3.3	517	3.9	508	3.4	471	4.0	501	3.4	510	3.9
Belgium	509	2.6	520	2.9	525	2.7	493	3.0	503	2.6	507	3.0
Canada	513	2.1	523	2.1	541	2.1	506	2.3	524	2.0	527	2.4
Chile	411	3.1	436	3.8	452	2.9	430	3.8	442	2.9	448	3.7
Czech Republic	493	3.6	505	3.7	513	3.4	474	3.3	508	3.5	509	3.7
Denmark	493	2.3	507	2.9	512	2.6	481	3.3	493	2.5	504	3.5
Estonia	518	2.2	523	2.6	538	2.3	494	2.4	543	2.3	540	2.5
Finland	520	2.2	517	2.6	556	2.4	494	3.1	554	2.3	537	3.0
France	491	2.5	499	3.4	527	3.0	483	3.8	500	2.4	498	3.8
Germany	507	3.4	520	3.0	530	3.1	486	2.9	524	3.5	524	3.1
Greece	449	2.6	457	3.3	502	3.1	452	4.1	473	3.0	460	3.8
Hungary	473	3.6	482	3.7	508	3.3	468	3.9	493	3.3	496	3.4
Iceland	496	2.3	490	2.3	508	2.5	457	2.4	480	2.9	477	2.7
Ireland	494	2.6	509	3.3	538	3.0	509	3.5	520	3.1	524	3.4
Israel	461	3.5	472	7.8	507	3.9	463	8.2	470	4.0	470	7.9
Italy	476	2.2	494	2.4	510	2.3	471	2.5	492	2.4	495	2.2
Japan	527	3.6	545	4.6	551	3.6	527	4.7	541	3.5	552	4.7
Korea	544	5.1	562	5.8	548	4.5	525	5.0	536	4.2	539	4.7
Luxembourg	477	1.4	502	1.5	503	1.8	473	1.9	483	1.7	499	1.7
Mexico	406	1.4	420	1.6	435	1.6	411	1.7	412	1.3	418	1.5
Netherlands	518	3.9	528	3.6	525	3.5	498	4.0	520	3.9	524	3.7
New Zealand	492	2.9	507	3.2	530	3.5	495	3.3	513	3.3	518	3.2
Norway	488	3.4	490	2.8	528	3.9	481	3.3	496	3.7	493	3.2
Poland	516	3.8	520	4.3	539	3.1	497	3.7	527	3.2	524	3.7
Portugal	481	3.9	493	4.1	508	3.7	468	4.2	490	3.8	488	4.1
Slovak Republic	477	4.1	486	4.1	483	5.1	444	4.6	467	4.2	475	4.3
Slovenia	499	2.0	503	2.0	510	1.8	454	1.7	519	1.9	510	1.9
Spain	476	2.0	492	2.4	503	1.9	474	2.3	493	1.9	500	2.3
Sweden	480	2.4	477	3.0	509	2.8	458	4.0	489	2.8	481	3.9
Switzerland	524	3.1	537	3.5	527	2.5	491	3.1	512	2.7	518	3.3
Turkey	444	5.7	452	5.1	499	4.3	453	4.6	469	4.3	458	4.5
United Kingdom	488	3.8	500	4.2	512	3.8	487	4.5	508	3.7	521	4.5
United States	479	3.9	484	3.8	513	3.8	482	4.1	498	4.0	497	4.1
EU 28	..	..	..	..	..	..	..	..	..	..	..	..
OECD	489	0.5	499	0.6	515	0.5	478	0.6	500	0.5	502	0.6
Brazil	383	2.3	401	2.2	425	2.2	394	2.4	404	2.3	406	2.3
China	..	..	..	..	..	..	..	..	..	..	..	..
India	..	..	..	..	..	..	..	..	..	..	..	..
Indonesia	373	4.3	377	4.4	410	4.3	382	4.8	383	4.1	380	4.1
Russian Federation	483	3.1	481	3.7	495	3.2	455	3.5	489	2.9	484	3.5
South Africa	..	..	..	..	..	..	..	..	..	..	..	..

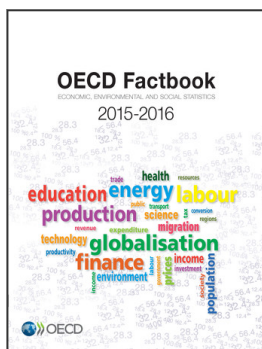
1 2 <http://dx.doi.org/10.1787/888933336494>

Performance in mathematics, reading and science, PISA 2012

Mean score



1 2 <http://dx.doi.org/10.1787/888933335359>



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