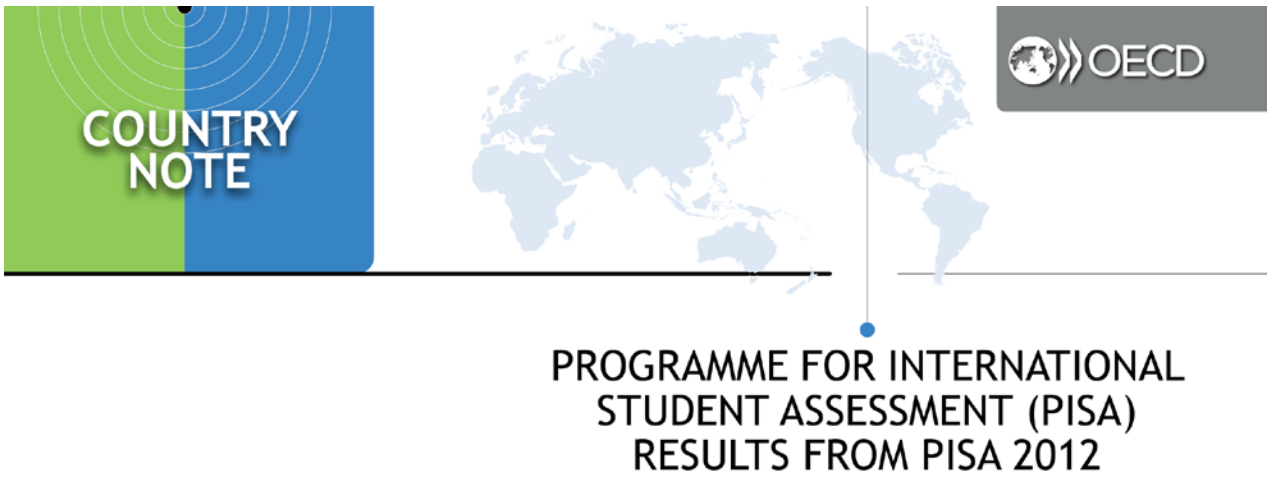


NORWAY

Key findings

- Norway performs around average in mathematics, above average in reading, but below average in science.
- Norway's mean performance in mathematics declined since the previous PISA assessment in 2009. Since 2003, however, Norway's performance did not change significantly.
- The share of low performers in mathematics is close to the OECD average. It increased from 2009 to 2012, but is unchanged when compared with 2003. The share of top performers in mathematics is below the OECD average. It is comparable with the share in 2009, but lower than in 2003.
- Although Norway's reading performance dipped in 2006, results between 2000 and 2012 are relatively stable.
- The level of equity in education is high in Norway and has improved since 2003. A relatively small part of the variation of performance can be attributed to differences in students' socio-economic status.
- The learning environment in Norwegian schools has improved over the past ten years. While teacher-student relations are still less positive in Norway than on average across OECD countries, relations improved between 2003 and 2012. Other aspects of the learning environment, such as the disciplinary climate in classrooms, have also improved in Norway since 2003.

Student performance in mathematics, reading and science

Mean mathematics performance

- Students in Norway score 489 in mathematics on average. This is around the OECD average. Norway is listed 22nd in mathematics among the 34 OECD countries, but because results are based on a sample, its relative position could be between 19 and 25. Norway's results are comparable with those of France, Iceland, Italy, Latvia, Luxembourg, Portugal, the Russian Federation, the Slovak Republic, Spain, the United Kingdom and United States.
- Norway's mean performance declined from 498 points to 489 points since PISA 2009. Over a longer time span, however, Norway's performance has remained relatively stable, despite minor fluctuations: 2012 results are not significantly different from the results obtained in 2003.

- When comparing performance among the Nordic countries, students in Norway perform below students in Finland and Denmark, above students in Sweden, and not significantly different from students in Iceland.

Share of top- and low-performing students in mathematics

- In Norway, the decline in students' mean performance in mathematics seems to be related to an increase in the share of low performers since 2009, while the share of top performers has remained stable.
- The share of low performers in mathematics increased from 18.2% in 2009 to 22.3% to 2012, but is unchanged when compared with 2003. The share of low performers in Norway is not significantly different from the OECD average. Low performers in mathematics can, at best, extract relevant information from a single source and use basic algorithms, formulae, procedures or conventions to solve problems involving whole numbers.
- The share of top performers in mathematics is 9.4% in Norway, comparable with the share in 2009 but lower than in 2003. The share of top performers in Norway is lower than the OECD average. Top performers in mathematics can develop and work with models for complex situations, and work strategically using broad, well-developed thinking and reasoning skills.

Gender differences in mathematics performance

- Norwegian girls and boys perform at around the same level in mathematics, while on average across OECD countries, boys outperform girls by 11 points.
- When comparing gender differences in mathematics performance among the other Nordic countries, boys and girls also perform at similar levels in Sweden and Finland. In Denmark boys outperform girls, while Iceland is the only OECD country where girls outperform boys in mathematics.

Student performance in different areas of mathematics

- Norway's 15-year-old students have the highest mean scores in interpreting mathematical problems and situations. Students are weaker in formulating situations mathematically and in employing mathematical concepts, facts, procedures and reasoning.
- Students in Norway are strongest in the content category of *uncertainty and data*, which covers two closely related sets of issues: how to identify and summarise the messages that are embedded in sets of data presented in different ways, and how to appreciate the likely impact of the variability that is inherent in many real processes. Students in Norway are weakest in the content category *change and relationships*.

Mean reading performance

- Students in Norway score 504 points in reading, on average. This is above the OECD average. Norway is listed 15th in reading among the 34 OECD countries, but because results are based on a sample, its relative position could be between 11 and 17. Norway's results are comparable with those of Belgium, Denmark, France, Germany, Macao-China, the Netherlands, Switzerland, the United Kingdom, the United States and Viet Nam.
- Norway's reading performance in 2012 is not significantly different from that observed in 2009. Although Norway's reading score dipped in 2006, its results are relatively stable when looking at the longer trend from 2000 to 2012.
- When comparing reading performance among the Nordic countries, Norway performs below Finland, above Iceland and Sweden, and not significantly different from Denmark.

Share of top- and low-performing students in reading

- The share of low performers in reading is 16.2% in Norway, not significantly different from the previous PISA assessment where the share was 15.0% and similar to the share observed in the first PISA assessment in 2000. Low performers score below the baseline level in reading (Level 2), at which students begin to demonstrate the reading competencies that will enable them to participate effectively and productively in life. These students can, at best, recognise the main theme or author's purpose in a text about a familiar topic and make a simple connection between information in the text and everyday knowledge.
- The share of top performers in reading is 10.2% in Norway, which is also not significantly different from 2009 when the share was 8.4% and similar to the share in 2000. Top performers in reading perform at proficiency Level 5 or above, meaning that they can handle texts that are unfamiliar in either form or content and can produce fine-grained analyses of texts.

Gender differences in reading performance

- Girls outperform boys in reading by an average of 46 score points. This gender gap is unchanged since the first PISA assessment in 2000.
- In all OECD countries, including the five Nordic countries, girls outperform boys in reading. The largest gender difference is observed in Finland where girls perform 62 points higher than boys, on average, while the average difference between girls and boys across OECD countries is 38 points.

Mean science performance

- Students in Norway score 495 points in science on average. This is below the OECD average. Norway is listed 22nd in science among the 34 OECD countries, but because results are based on a sample, its relative position could be between 19 and 26. Norway's results are comparable with those of Croatia, Denmark, France, Hungary, Italy, Latvia, Lithuania, Luxembourg, Portugal, the Russian Federation, Spain and the United States.
- Norway's average performance in 2012 is not significantly different from its performance in 2009 and in 2006.
- When comparing science performance among the Nordic countries, Norway performs below Finland, above Iceland and Sweden, and not significantly different from Denmark.

Share of top- and low-performing students in science

- The share of low performers in science is 19.6% in Norway, a significant increase from 15.8% observed in 2009. Low performers in science can, at best, present scientific explanations that are obvious and follow explicitly from given evidence.
- The share of top performers in science is 7.5% in Norway, not significantly different from previous PISA assessments. Top performers in science can identify, explain and apply scientific knowledge and knowledge about science in a variety of complex life situations.

Gender differences in science performance

- In Norway, as well as on average across OECD countries, girls and boys perform at similar levels in science.

- When comparing gender differences in science performance across the Nordic countries, boys and girls also perform at similar levels in Iceland. In Finland and Sweden, girls outperform boys, while in Denmark boys outperform girls.

Giving every student the chance to succeed

Equity and performance

- Only 7% of the variation in student performance in mathematics is attributed to differences in students' socio-economic status (the OECD average is 15%).
- The level of equity has improved in Norway since 2003, when 12% of the variation in student performance in mathematics was attributed to differences in students' socio-economic status.
- The other Nordic countries also show high levels of equity, except Denmark, where the variation in student performance explained by students' socio-economic status is around the average level among OECD countries.
- While Norway has high levels of equity and student performance is around average, some countries and economies, including Australia, Canada, Estonia, Finland, Hong Kong-China, Japan, Korea, Liechtenstein and Macao-China, achieve both high levels of equity and high performance.

Resilient students

While many of the students who perform poorly are from socio-economically disadvantaged backgrounds, a large number of disadvantaged students beat the odds against them and excel at school. These students, known as "resilient" students, and their school systems show that overcoming socio-economic barriers to achievement is possible.

- In Norway, 22% of disadvantaged students are "resilient", meaning that they beat the socio-economic odds against them and perform much higher than would be predicted by their background.
- Across OECD countries, some 26% of disadvantaged students are resilient. The highest shares of resilient students are found in Hong Kong-China, Korea, Macao-China, Shanghai-China, Singapore and Vietnam, where more than half of disadvantaged students are resilient.
- Among the Nordic countries, the largest share of resilient students is found in Finland, where 33% of disadvantaged students beat the odds against them and show high performance.

Immigrant students

- The share of 15-year-old students in Norway with an immigrant background (first- or second-generation immigrants) increased from 5.6% in 2003 to 9.4% in 2012. The difference in mathematics performance between immigrant and other students is 46 points, around the same level as in 2003.

Students' engagement, drive and self-beliefs

Students' engagement with school, the belief that they can achieve at high levels, and their ability and willingness to do what it takes to reach their goals not only play a central role shaping students' ability to master academic subjects, they are also valuable attributes that will enable students to lead full lives, meeting challenges and making the most of available opportunities along the way. In other words, much more is required of students – and adults – than just cognitive proficiency.

Engagement with and at school

Students who arrive late or play truant miss learning opportunities. They also disrupt class, creating a disciplinary climate that is not conducive to learning for their fellow students.

- In Norway, 29.2% of students reported that they had arrived late for school in the two weeks prior to the PISA test, 11.8% had skipped at least a class over the same period, and 7.1% had skipped a day of school.
- These figures are relatively low compared with the average across OECD countries, where 35.3% had arrived late for school, 17.8% had skipped some classes, and 14.5% had skipped an entire day of school or more over the previous two weeks.
- Lack of punctuality and truancy are negatively associated with student performance, and more so in Norway than on the average across OECD countries. Students who reported that they had arrived late for school have a performance disadvantage equal to 38 score points in Norway compared with 27 points on average across OECD countries. Students who reported skipping classes or days of school show a performance disadvantage of 55 score points in Norway, compared with 37 points on average in OECD countries.

For the first time, PISA 2012 asked students to evaluate their happiness at, and satisfaction with, school and to reflect on whether their school environment approaches their idea of an ideal situation. As schools are a, if not *the*, primary social environment for 15-year-olds, these subjective evaluations provide a good indication of whether education systems are able to foster or hinder overall student well-being.

- In Norway, 87% of students feel happy at school compared with 80% on average across OECD countries. In the other Nordic countries, students in Denmark and Sweden feel happy at school at a similar level as in Norway, whereas in Finland only 67% of students feel happy at school. In Iceland, the share of students feeling happy at school is one of the largest among OECD countries, with 90% of students reporting that they feel happy at school.
- A relatively large share of students in Norway – 71% -- feels that things are ideal in their school, compared with 61% on average across OECD countries. Some 74% of students in Norway reported that they are satisfied with their school, compared with 78% on average across OECD countries.

Motivation

Motivation is often regarded as the driving force behind learning. Intrinsic motivation refers to the drive to perform an activity because of the pleasure and interest in the activity itself.

- Across OECD countries, large proportions of students reported low levels of enjoyment of mathematics; in Norway these proportions are close to the average. For example, 53% of students in OECD countries agreed or strongly agreed that they are interested in the things they learn in mathematics. In Norway, 50% of students agreed or strongly agreed with this statement.
- While in general students who participated in PISA 2012 have low levels of enjoyment of mathematics and intrinsic motivation to learn mathematics, girls tend to have particularly low levels. On average across OECD countries, 58% of boys but only 49% of girls reported that they are interested in the things they learn in mathematics. In Norway, 54% of boys and 47% of girls agreed with that statement.

Resources, policies and practices

The learning environment

- Teacher-student relations, as reported by students, are less positive in Norway than on average across OECD countries, but relations improved between 2003 and 2012. While in 2003, 55% of students in Norway reported that most of their teachers really listen to what the students have to say, 67% of students report so in 2012. The correlation between teacher-student relations and mathematics performance is relatively strong in Norway compared with the average across other countries.
- The disciplinary climate in the classroom, as reported by students, also improved in Norway between 2003 and 2012. While in 2003, 64% of students reported that it never or only in some lessons happened that the teacher has to wait a long time for students to quiet down, 76% of students report so in 2012. In Norway, as in all other OECD countries, a positive disciplinary climate is associated with better mathematics performance.
- School principals' views on how student-related factors affect the school climate have improved in Norway since 2003. Most notably, the percentage of students in schools whose principals reported that disruption of classes by students does not or only slightly hinders learning increased from 26% in 2003 to 50% in 2012.
- The share of students in schools where principals reported that a lack of qualified teachers hinders student learning is higher in Norway than on average across OECD countries. While on average across OECD countries the share of students in schools with teacher shortages declined since 2003, this trend towards better-staffed schools is not seen in Norway. The share of students in schools where the principal reported teacher shortages remained stable since 2003 in Norway.

Expenditure on education

- Norway has the third highest spending on education among OECD countries, with a cumulative expenditure per student between 6 and 15 years at USD 123 591. Luxembourg and Switzerland have the highest levels of expenditure on education. The OECD average is USD 83 382.
- Expenditure per student explains 30% of the variation in mean performance between countries. However, moderate or high spending per student cannot automatically be equated with a poor or high performance. For example, the Slovak Republic, which spends USD 53 160 per student, performs at the same level as the United States, which spends USD 115 961 per student. Similarly, Korea, the highest-performing OECD country in mathematics, spends well below the average per-student expenditure.

Snapshot of performance in mathematics, reading and science

Countries/economies with a mean performance/share of top-performers above the OECD average Countries/economies with a share of low-achievers below the OECD average
Countries/economies with a mean performance/share of low-achievers/share of top-performers not statistically significantly different from the OECD average
Countries/economies with a mean performance/share of top-performers below the OECD average Countries/economies with a share of low-achievers above the OECD average
Countries/economies in which the annualised change in performance is statistically significant are marked in **bold**.

	Mathematics				Reading		Science	
	Mean score in PISA 2012	Share of low-achievers (Below Level 2)	Share of top-performers in mathematics (Level 5 or 6)	Annualised change	Mean score in PISA 2012	Annualised change	Mean score in PISA 2012	Annualised change
OECD average	494	23.1	12.6	**-0.3**	496	**0.3**	501	**0.5**
Shanghai-China	613	3.8	55.4	**4.2**	570	**4.6**	580	1.8
Singapore	573	8.3	40.0	**3.8**	542	**5.4**	551	**3.3**
Hong Kong-China	561	8.5	33.7	**1.3**	545	**2.3**	555	**2.1**
Chinese Taipei	560	12.8	37.2	1.7	523	**4.5**	523	-1.5
Korea	554	9.1	30.9	1.1	536	**0.9**	538	**2.6**
Macao-China	538	10.8	24.3	**1.0**	509	**0.8**	521	**1.6**
Japan	536	11.1	23.7	0.4	538	**1.5**	547	**2.6**
Liechtenstein	535	14.1	24.8	0.3	516	**1.3**	525	0.4
Switzerland	531	12.4	21.4	0.6	509	**1.0**	515	0.6
Netherlands	523	14.8	19.3	**-1.6**	511	-0.1	522	-0.5
Estonia	521	10.5	14.6	0.9	516	**2.4**	541	1.5
Finland	519	12.3	15.3	**-2.8**	524	**-1.7**	545	**-3.0**
Canada	518	13.8	16.4	**-1.4**	523	**-0.9**	525	**-1.5**
Poland	518	14.4	16.7	**2.6**	518	**2.8**	526	**4.6**
Belgium	515	18.9	19.4	**-1.6**	509	0.1	505	-0.8
Germany	514	17.7	17.5	**1.4**	508	**1.8**	524	1.4
Viet Nam	511	14.2	13.3	m	508	m	528	m
Austria	506	18.7	14.3	0.0	490	-0.2	506	-0.8
Australia	504	19.7	14.8	**-2.2**	512	**-1.4**	521	-0.9
Ireland	501	16.9	10.7	-0.6	523	**-0.9**	522	**2.3**
Slovenia	501	20.1	13.7	**-0.6**	481	**-2.2**	514	-0.8
Denmark	500	16.8	10.0	**-1.8**	496	0.1	498	0.4
NewZealand	500	22.6	15.0	**-2.5**	512	**-1.1**	516	**-2.5**
Czech Republic	499	21.0	12.9	**-2.5**	493	-0.5	508	-1.0
France	495	22.4	12.9	**-1.5**	505	0.0	499	0.6
United Kingdom	494	21.8	11.8	-0.3	499	0.7	514	-0.1
Iceland	493	21.5	11.2	**-2.2**	483	**-1.3**	478	**-2.0**
Latvia	491	19.9	8.0	0.5	489	**1.9**	502	**2.0**
Luxembourg	490	24.3	11.2	**-0.3**	488	**0.7**	491	0.9
Norway	489	22.3	9.4	-0.3	504	0.1	495	1.3
Portugal	487	24.9	10.6	**2.8**	488	**1.6**	489	**2.5**
Italy	485	24.7	9.9	**2.7**	490	0.5	494	**3.0**
Spain	484	23.6	8.0	0.1	488	-0.3	496	1.3
Russian Federation	482	24.0	7.8	1.1	475	**1.1**	486	1.0
Slovak Republic	482	27.5	11.0	**-1.4**	463	-0.1	471	**-2.7**
United States	481	25.8	8.8	0.3	498	-0.3	497	1.4
Lithuania	479	26.0	8.1	-1.4	477	1.1	496	1.3
Sweden	478	27.1	8.0	**-3.3**	483	**-2.8**	485	**-3.1**
Hungary	477	28.1	9.3	**-1.3**	488	**1.0**	494	-1.6
Croatia	471	29.9	7.0	0.6	485	1.2	491	-0.3
Israel	466	33.5	9.4	**4.2**	486	**3.7**	470	**2.8**
Greece	453	35.7	3.9	**1.1**	477	0.5	467	-1.1
Serbia	449	38.9	4.6	**2.2**	446	**7.6**	445	1.5
Turkey	448	42.0	5.9	**3.2**	475	**4.1**	463	**6.4**
Romania	445	40.8	3.2	**4.9**	438	1.1	439	**3.4**
Cyprus[1,2]	440	42.0	3.7	m	449	m	438	m
Bulgaria	439	43.8	4.1	**4.2**	436	0.4	446	2.0
United Arab Emirates	434	46.3	3.5	m	442	m	448	m
Kazakhstan	432	45.2	0.9	**9.0**	393	0.8	425	**8.1**
Thailand	427	49.7	2.6	**1.0**	441	**1.1**	444	**3.9**
Chile	423	51.5	1.6	**1.9**	441	**3.1**	445	1.1
Malaysia	421	51.8	1.3	**8.1**	398	**-7.8**	420	-1.4
Mexico	413	54.7	0.6	**3.1**	424	**1.1**	415	0.9
Montenegro	410	56.6	1.0	**1.7**	422	**5.0**	410	-0.3
Uruguay	409	55.8	1.4	**-1.4**	411	**-1.8**	416	**-2.1**
Costa Rica	407	59.9	0.6	-1.2	441	-1.0	429	-0.6
Albania	394	60.7	0.8	**5.6**	394	**4.1**	397	2.2
Brazil	391	67.1	0.8	**4.1**	410	**1.2**	405	**2.3**
Argentina	388	66.5	0.3	1.2	396	-1.6	406	2.4
Tunisia	388	67.7	0.8	**3.1**	404	**3.8**	398	**2.2**
Jordan	386	68.6	0.6	0.2	399	-0.3	409	**-2.1**
Colombia	376	73.8	0.3	1.1	403	**3.0**	399	1.8
Qatar	376	69.6	2.0	**9.2**	388	**12.0**	384	**5.4**
Indonesia	375	75.7	0.3	0.7	396	**2.3**	382	-1.9
Peru	368	74.6	0.6	1.0	384	**5.2**	373	1.3

Countries and economies are ranked in descending order of the mathematics mean score in PISA 2012.

Source: OECD PISA 2012 database, Tables I.2.1a, I.2.1b, I.2.3a, I.2.3b, I.4.3a, I.4.3b, I.5.3a and I.5.3b.

1. Footnote by Turkey: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

2. Footnote by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

What is PISA?

The Programme for International Student Assessment (PISA) is an ongoing triennial survey that assesses the extent to which 15-year-olds students near the end of compulsory education have acquired key knowledge and skills that are essential for full participation in modern societies. The assessment does not just ascertain whether students can reproduce knowledge; it also examines how well students can extrapolate from what they have learned and apply that knowledge in unfamiliar settings, both in and outside of school. This approach reflects the fact that modern economies reward individuals not for what they know, but for what they can do with what they know.

PISA offers insights for education policy and practice, and helps monitor trends in students' acquisition of knowledge and skills across countries and in different demographic subgroups within each country. The findings allow policy makers around the world to gauge the knowledge and skills of students in their own countries in comparison with those in other countries, set policy targets against measurable goals achieved by other education systems, and learn from policies and practices applied elsewhere.

Key features of PISA 2012

The content

- The PISA 2012 survey focused on mathematics, with reading, science and problem-solving minor areas of assessment. For the first time, PISA 2012 also included an assessment of the financial literacy of young people, which was optional for countries.

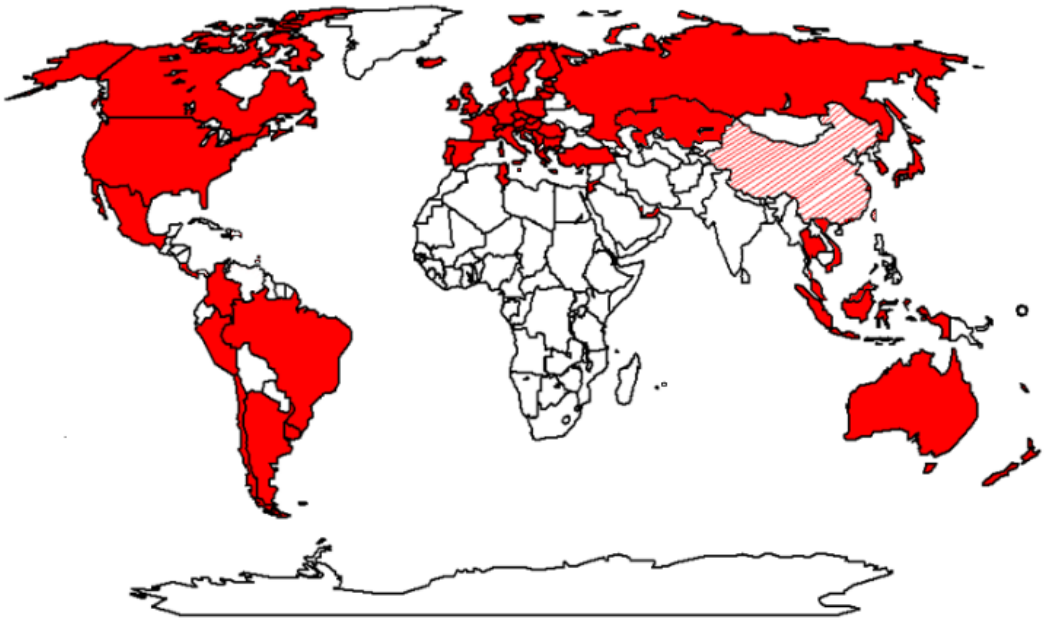
The students

- Around 510 000 students completed the assessment in 2012, representing about 28 million 15-year-olds in the schools of the 65 participating countries and economies.
- In Norway, 4 686 15-year-old students in 197 schools participated in PISA 2012.

The assessment

- Paper-based tests were used, with assessments lasting a total of two hours for each student. In a range of countries and economies, an additional 40 minutes were devoted to the computer-based assessment of mathematics, reading and problem solving.
- Test items were a mixture of multiple-choice items and questions requiring students to construct their own responses. The items were organised in groups based on a passage setting out a real-life situation. A total of about 390 minutes of test items were covered, with different students taking different combinations of test items.
- Students answered a background questionnaire, which took 30 minutes to complete, that sought information about themselves, their homes and their school and learning experiences. School principals were given a questionnaire, to complete in 30 minutes, that covered the school system and the learning environment. In some countries and economies, optional questionnaires were distributed to parents, who were asked to provide information on their perceptions of and involvement in their child's school, their support for learning in the home, and their child's career expectations, particularly in mathematics. Countries could choose two other optional questionnaires for students: one asked students about their familiarity with and use of information and communication technologies, and the second sought information about their education to date, including any interruptions in their schooling and whether and how they are preparing for a future career.

Map of PISA 2012 countries and economies



OECD countries

Australia
Austria
Belgium
Canada
Chile
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Japan
Korea
Luxembourg
Mexico
Netherlands
New Zealand
Norway
Poland
Portugal
Slovak Republic
Slovenia
Spain
Sweden
Switzerland
Turkey
United Kingdom
United States

Partner countries and economies in PISA 2012

Albania
Argentina
Brazil
Bulgaria
Colombia
Costa Rica
Croatia
Cyprus[1,2]
Hong Kong-China
Indonesia
Jordan
Kazakhstan
Latvia
Liechtenstein
Lithuania
Macao-China
Malaysia
Montenegro
Peru
Qatar
Romania
Russian Federation
Serbia
Shanghai-China
Singapore
Chinese Taipei
Thailand
Tunisia
United Arab Emirates
Uruguay
Vietnam

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For more information on
the Programme for International Student Assessment
and to access the full set of PISA 2012 results, visit:

www.oecd.org/pisa