

Average Performance of U.S. Students Relative to International Peers on the Most Recent International Assessments in Reading, Mathematics, and Science: Results from PIRLS 2011, TIMSS 2011 and PISA 2012

The most recent U.S. results on international assessments of reading, mathematics, and science are those from the 2011 PIRLS (Progress in International Reading Literacy Study), the 2011 TIMSS (Trends in International Mathematics and Science Study), and the 2012 PISA (Program for International Student Assessment).

NCES used the International Data Explorer to compare the average scores of students in the United States and other participating nations (and sub-national or non-national education systems) in reading, mathematics, and science at grades 4 and 8 and age 15. The results below are based on comparisons of the average scores of different nations with the international average on each assessment. For more information about the calculation of the international averages, see About This Analysis.

Results:

At grade 4, U.S. students performed above the international average in all three subjects, and at grade 8, U.S. students performed above the international average in both mathematics and science (reading is not assessed internationally at grade 8). However, at age 15, U.S. students performed below the international average in mathematics literacy and not measurably different from the international average in reading and science literacy.

>Other education systems with average scores above the international average in at least one subject at grade 4 but below the international average at age 15 in the same subject included Austria, Bulgaria, Croatia, Florida, Hungary, Israel, Italy, Lithuania, Portugal, the Russian Federation, Serbia, Slovak Republic, Slovenia, Spain, and Sweden.

Education systems that scored above the international average in all subjects and age/grade levels included Chinese Taipei, Finland, Hong Kong-China, and Singapore, as well as Japan and Korea, each of which administered all assessments except grade 4 reading.

Several U.S. states participated in the 2011 and 2012 international assessments:

>Florida participated in all assessments, and was above the international average in reading, mathematics, and science at grade 4, and mathematics and science at grade 8. At age 15, Florida was not measurably different from the OECD average in reading, and below the OECD average in mathematics and science.

>Massachusetts participated in all assessments except those at grade 4, and was above the international average in each one.

>Connecticut participated in all assessments except those at grade 4, and was above the international average in both mathematics and science at grade 8 and above the OECD average in reading and science at age 15. It was not measurably different from the OECD average in mathematics at age 15.

>North Carolina was above average in mathematics and science at grades 4 and 8 (and did not participate in grade 4 reading or at age 15 in any subject).

>Colorado, Indiana, and Minnesota were all above the international average in both mathematics and science at grade 8, the only grade and subjects in which they participated.

>California's average scores were not measurably different from the international average in mathematics and science at grade 8, the only grade and subjects in which it participated.

>Alabama's average scores were below the international average in both mathematics and science at grade 8, the only grade and subjects in which it participated.

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To download the International Data Explorer output on which this page is based, please click here.



About the NCES International Data Explorer

This analysis was produced using the NCES International Data Explorer, a web-based data tool that allows users to quickly and easily produce tables, charts, and maps comparing the performance and educational contexts of students in the United States and nations (and sub-national or non-national education systems) around the world. The International Data Explorer is available at: <http://nces.ed.gov/surveys/international/IDE>

About This Analysis

This analysis compares the average scores of participating education systems (in most cases countries, but in some cases sub-national or non-national entities) with the international average score.

- For reading at grade 4, the international average is the PIRLS Scale Average, set originally as the mean score of the participating countries in the first round of PIRLS (2001). Successive PIRLS assessments since then have scaled the achievement data so that scores are equivalent from assessment to assessment.
- For mathematics and science at grades 4 and 8, the international average is the TIMSS Scale Average, set originally as the mean score of participating countries in the first round of TIMSS (1995). Successive TIMSS assessments since then have scaled the achievement data so that scores are equivalent from assessment to assessment.
- For mathematics, reading, and science literacy at age 15, the international average is the PISA 2012 mean score of the OECD (Organization for Economic Cooperation and Development) countries, which is a group of 34 industrialized countries.

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About the Data Sources

PIRLS: The Progress in International Reading Literacy Study is an international comparative study of the reading literacy of fourth-grade students. The most recent PIRLS data are from 2011, when 53 education systems (including 8 benchmarking systems) participated. For more information on PIRLS, please visit: <http://nces.ed.gov/surveys/PIRLS>

TIMSS: The Trends in International Mathematics and Science Study is an international comparative study of the mathematics and science achievement of fourth- and eighth-grade students. The most recent TIMSS data are from 2011, when 57 education systems (including 7 benchmarking systems) participated at grade 4 and 56 education systems (including 14 benchmarking systems) participated at grade 8. For more information on TIMSS, please visit: <http://nces.ed.gov/TIMSS>

PISA: The Program for International Student Assessment is an international comparative study of the capabilities of 15-year-old students in reading, mathematics, and science literacy. The most recent PISA data are from 2012, when 65 education systems participated. For more information on PISA, please visit: <http://nces.ed.gov/surveys/PISA>

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READING

Scale score	Grade 4 (PIRLS 2011)	Age 15 (PISA 2012)
Above 600		
600		
590		
580		
570	Hong Kong-Ch. (571) FL-USA (569) , Russian Fed., Finland (568) Singapore (567)	Shanghai-Ch. (570)
560	Northern Ireland-GBR (558) USA (556) , Denmark (554), Croatia, Ch. Taipei (553) Ontario-Ca., Ireland, England-GBR (552)	
550	Canada, Alberta-Ca. (548) Netherlands (546), Czech Rep. (545) Sweden (542), Italy, Germany, Israel, Portugal (541)	Hong Kong-Ch. (545), Singapore (542)
540	Hungary (539), Quebec-Ca. (538) Slovak Rep. (535) Bulgaria (532), New Zealand (531)	Japan (538) Korea, Rep. of (536)
530	Slovenia (530), Austria (529), Lithuania (528) Australia (527), Poland (526)	MA-USA (527) Finland (524) Ireland, Ch. Taipei, Canada (523), CT-USA (521)
520	France (520) Andalusia-Spain (515) Spain (513)	Poland (518) Estonia, Liechtenstein (516) New Zealand, Australia (512), Netherlands (511)
510	Norway (507), Belgium (French) (506) Romania (502)	Belgium, Switzerland, Macao-Ch. (509) Vietnam, Germany (508), France (505), Norway (504)
500	Int'l Avg. (500)	UK (499), USA (498) OECD Avg. (496) , Denmark (496) Czech Rep. (493), FL-USA (492)
490	Georgia (488)	Italy, Austria (480), Latvia (489), Hungary, Spain, Luxembourg, Portugal (488), Israel (486), Croatia (485) Sweden, Iceland (483), Slovenia (481)
480	Malta (477), Dubai-UAE (476) Trinidad and Tobago (471)	Lithuania, Greece (477) Turkey, Russian Fed. (475)
470		
460		
450		
440		
430		
420		
410		
400 and below		
	Oman (391), Morocco (310)	Jordan (399), Malaysia (398), Indonesia, Argentina (396) Albania (394), Kazakhstan (393), Qatar (388), Peru (384)

■ = Above the Int'l Avg./OECD Avg. ■ = Not measurably different from the Int'l Avg./OECD Avg. ■ = Below the Int'l Avg./OECD Avg.

NOTE: Countries are listed by average scores. Figure is not a scaled representation of countries' scores. International/OECD average scores and U.S. scores are presented in bold font. While the formulation and construction of assessment scales are the same across TIMSS, PIRLS, and PISA, the subject matter and the level of difficulty of items necessarily differ across subjects and grades. Therefore, direct comparisons of scores across subjects and grades should not be made.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Progress in International Reading Literacy Study (PIRLS) 2011; Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA) 2012.

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MATHEMATICS

Scale score	Grade 4 (TIMSS 2011)	Grade 8 (TIMSS 2011)	Age 15 (PISA 2012)
Above 600	Singapore (606), Korea, Rep. of (605) Hong Kong-Ch. (602)	Korea, Rep. of (613), Singapore (611) Ch. Taipei (609)	Shanghai-Ch. (613)
600	Ch. Taipei (591)		
590	Japan (585)	Hong Kong-Ch. (586)	
580			Singapore (573)
570	Northern Ireland-GBR (562)	Japan (570) MA-USA (561)	Hong Kong-Ch. (561)
560	NC-USA (554)		Ch. Taipei (560) Korea, Rep. of (554)
550	Belgium (Flemish) (549) Finland, FL-USA (545) , England-GBR, Russian Fed. (542), USA (541)	MN-USA (545)	
540	Netherlands (540) Denmark (537), Lithuania (534) Quebec-Ca. (533), Portugal (532)	Russian Fed. (539) NC-USA (537) Quebec-Ca. (532)	Macao-Ch. (538) Japan (536), Liechtenstein (535) Switzerland (531)
530	Germany (528) Ireland (527)	IN-USA (522)	Netherlands (523) Estonia (521)
520	Ontario-Ca. (518) Serbia, Rep. of, Australia (516), Hungary (515) Slovenia (513), Czech Rep. (511)	CO-USA, CT-USA (518) Israel (516), Finland (514) FL-USA (513) , Ontario-Ca. (512)	Finland (519), Canada, Poland (518) Belgium (515), Germany, MA-USA (514) Vietnam (511)
510	Austria, Italy (508), Slovak Rep., Alberta-Ca. (507), Sweden (504), Kazakhstan (501)	USA (509) , England-GBR (507), Slovenia, Alberta-Ca., Hungary, Australia (505) Lithuania (502)	CT-USA (506) Austria (506), Australia (504) Ireland, Slovenia (501)
500	Int'l Avg. (500) , Malta (496), Norway (495)	Int'l Avg. (500) , Italy (498) CA-USA (493)	Denmark, New Zealand (500) Czech Rep. (499), France (495), OECD Avg. , UK (494), Iceland (493) Latvia (491)
490	Croatia (490) New Zealand (486) Spain, Romania (482), Poland (481)	New Zealand (488) Kazakhstan (487), Sweden (484)	Luxembourg (490), Norway (489) Portugal (487), Italy (485), Spain (484) Russian Fed., Slovak Rep. (482), USA (481)
480		Ukraine (479), Dubai-UAE (478) Norway (475)	Lithuania (479), Sweden (478) Hungary (477) Croatia (471)
470	Turkey (469), Dubai-UAE (468) Azerbaijan (463), Chile (462)	Armenia (467), AL-USA (466)	FL-USA (467) , Israel (466)
460	Thailand (458) Armenia (452)	Romania (458) United Arab Emirates (456) Turkey (452)	Greece (453)
450	Georgia (450)	Lebanon, Abu Dhabi-UAE (449)	Serbia, Rep. of (449), Turkey (448) Romania (445)
440	Bahrain (436), United Arab Emirates (434) Iran, Islamic Rep. of (431)	Malaysia (440) Georgia (431)	Cyprus (440), Bulgaria (439) United Arab Emirates (434) Kazakhstan (432)
430		Thailand (427), Macedonia, Rep. of (426) Tunisia (425)	Thailand (427) Chile (423), Malaysia (421)
420	Abu Dhabi-UAE (417) Qatar (413)	Chile (416), Iran, Islamic Rep. of (415)	Mexico (413)
410	Saudi Arabia (410)	Qatar (410), Bahrain (409) Jordan (406), Palestinian Nat'l Auth. (404)	Montenegro, Rep. of (410), Uruguay (409) Costa Rica (407)
400 and below	Oman (385), Tunisia (359), Kuwait (342) Morocco (335), Yemen (248)	Saudi Arabia (394), Indonesia (386) Syrian Arab Rep. (380), Morocco (371) Oman (366), Ghana (331)	Albania (394), Brazil (391), Argentina (388) Tunisia (388), Jordan (386), Colombia (376) Qatar (376), Indonesia (375), Peru (368)

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SCIENCE

Scale score	Grade 4 (TIMSS 2011)	Grade 8 (TIMSS 2011)	Age 15 (PISA 2012)
Above 600			
600			
590	Korea, Rep. of (587) Singapore (583)	Singapore (590)	
580			Shanghai-Ch. (580)
570	Finland (570)	MA-USA (567) , Ch. Taipei (564)	
560	Japan (559) Russian Fed., Ch. Taipei (552)	Korea, Rep. of (560), Japan (558) MN-USA (553) , Finland (552)	Hong Kong-Ch. (555) Singapore (551)
550	FL-USA (545) , USA (544) Alberta-Ca. (541)	Alberta-Ca. (546), Slovenia (543) Russian Fed., CO-USA (542)	Japan (547) Finland (545) Estonia (541)
540	NC-USA (538) , Czech Rep. (536), Hong Kong-Ch. (535), Hungary (534) Sweden (533), Slovak Rep., Austria (532) Netherlands (531)	Hong Kong-Ch. (535), England-GBR, IN-USA (533) , CT-USA , NC-USA (532)	Korea, Rep. of (538)
530	England-GBR (529), Denmark, Germany, Ontario-Ca. (528) Italy (524) Portugal (522)	FL-USA (530) USA (525) Hungary (522), Ontario-Ca. (521)	Vietnam (528), MA-USA (527) , Poland (526) Canada, Liechtenstein (525), Germany (524) Ch. Taipei (523), Netherlands, Ireland (522) Australia, CT-USA , Macao-Ch. (521)
520	Slovenia (520), N.Ireland-GBR (517) Quebec-Ca., Ireland, Croatia, Australia, Serbia (516), Lithuania (515)	Quebec-Ca. (520), Australia (519) Israel (516), Lithuania (514) New Zealand (512)	New Zealand (516) Switzerland (515), Slovenia, UK (514)
510	Belgium (Flemish) (509) Romania, Spain, Poland (505)	Sweden (509) Italy, Ukraine (501)	Czech Rep. (508) Austria (506), Belgium (505) Latvia (502), OECD avg. (501)
500	Int'l Avg. (500) New Zealand (497), Kazakhstan (495) Norway (494)	Int'l Avg. (500) , CA-USA (499) Norway (494)	France (499), Denmark (498), USA (497) Spain, Lithuania (496), Norway (495) Hungary, Italy (494), Croatia, Luxembourg (491)
490		Kazakhstan (490) AL-USA , Dubai-UAE (485) Turkey (483)	Portugal (489) Russian Fed. (486), FL-USA , Sweden (485)
480	Chile (480) Thailand (472)	Iran, Islamic Rep. of (474)	Iceland (478) Slovak Rep. (471)
470		Romania, United Arab Emirates (465) Chile, Abu Dhabi-UAE (461)	Israel (470) Greece (467) Turkey (463)
460	Georgia (455) Iran, Islamic Rep. of (453)	Bahrain (452), Thailand (451)	
450	Bahrain (449) Malta (446)	Jordan (449)	United Arab Emirates (448) Bulgaria (446), Chile, Serbia, Rep. of (445) Thailand (444)
440	Azerbaijan (438)	Tunisia (439) Armenia (437), Saudi Arabia (436)	Romania (439), Cyprus (438)
430	Saudi Arabia (429) United Arab Emirates (428)	Malaysia, Syrian Arab Rep. (426)	Costa Rica (429) Kazakhstan (425)
420	Armenia (416) Abu Dhabi-UAE (411)	Palestinian Nat'l Auth., Georgia, Oman (420), Qatar (419)	Malaysia (420) Uruguay (416), Mexico (415)
410		Macedonia, Rep. of (407), Lebanon, Indonesia (406)	Montenegro, Rep. of (410), Jordan (409) Argentina (406), Brazil (405)
400 and below	Qatar (394), Oman (377), Kuwait (347) Tunisia (346), Morocco (264), Yemen (209)	Morocco (376), Ghana (306)	Colombia (399), Tunisia (398), Albania (397) Qatar (384), Indonesia (382), Peru (373)

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