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**Exhibit M1. Description of PISA proficiency levels on mathematics literacy scale: 2012**

Proficiency level and lower cut score	Task descriptions
Level 6 669	At level 6, students can conceptualize, generalize, and utilize information based on their investigations and modeling of complex problem situations, and can use their knowledge in relatively non-standard contexts. They can link different information sources and representations and flexibly translate among them. Students at this level are capable of advanced mathematical thinking and reasoning. These students can apply this insight and understanding, along with a mastery of symbolic and formal mathematical operations and relationships, to develop new approaches and strategies for attacking novel situations. Students at this level can reflect on their actions, and can formulate and precisely communicate their actions and reflections regarding their findings, interpretations, arguments and the appropriateness of these to the original situations.
Level 5 607	At level 5, students can develop and work with models for complex situations, identifying constraints and specifying assumptions. They can select, compare, and evaluate appropriate problem-solving strategies for dealing with complex problems related to these models. Students at this level can work strategically using broad, well-developed thinking and reasoning skills, appropriate linked representations, symbolic and formal characterizations, and insight pertaining to these situations. They begin to reflect on their work and can formulate and communicate their interpretations and reasoning.
Level 4 545	At level 4, students can work effectively with explicit models for complex concrete situations that may involve constraints or call for making assumptions. They can select and integrate different representations, including symbolic, linking them directly to aspects of real-world situations. Students at this level can utilize their limited range of skills and can reason with some insight, in straightforward contexts. They can construct and communicate explanations and arguments based on their interpretations, arguments, and actions.
Level 3 482	At level 3, students can execute clearly described procedures, including those that require sequential decisions. Their interpretations are sufficiently sound to be a base for building a simple model or for selecting and applying simple problem-solving strategies. Students at this level can interpret and use representations based on different information sources and reason directly from them. They typically show some ability to handle percentages, fractions and decimal numbers, and to work with proportional relationships. Their solutions reflect that they have engaged in basic interpretation and reasoning.
Level 2 420	At level 2, students can interpret and recognize situations in contexts that require no more than direct inference. They can extract relevant information from a single source and make use of a single representational mode. Students at this level can employ basic algorithms, formulae, procedures, or conventions to solve problems involving whole numbers. They are capable of making literal interpretations of the results.
Level 1 358	At level 1, students can answer questions involving familiar contexts where all relevant information is present and the questions are clearly defined. They are able to identify information and to carry out routine procedures according to direct instructions in explicit situations. They can perform actions that are almost always obvious and follow immediately from the given stimuli.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into mathematics literacy levels according to their scores. Cut scores in the exhibit are rounded; exact cut scores are provided in table AA1. Scores are reported on a scale from 0 to 1,000.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Table M1. Percentage distribution of 15-year-old students on PISA mathematics literacy scale, by proficiency level and education system: 2012

Education system	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
OECD average	8.0	0.12	15.0	0.13	22.5	0.15	23.7	0.15	18.2	0.14	9.3	0.11	3.3	0.08
<i>Albania</i>	32.5	1.03	28.1	0.97	22.9	0.91	12.0	0.92	3.6	0.35	0.8	0.20	‡	†
<i>Argentina</i>	34.9	1.95	31.6	1.22	22.2	1.36	9.2	0.88	1.8	0.35	0.3	0.10	‡	†
Australia	6.1	0.35	13.5	0.57	21.9	0.76	24.6	0.65	19.0	0.50	10.5	0.43	4.3	0.36
Austria	5.7	0.59	13.0	0.74	21.9	0.87	24.2	0.84	21.0	0.90	11.0	0.75	3.3	0.41
Belgium	7.0	0.56	11.9	0.61	18.4	0.60	22.6	0.72	20.7	0.62	13.4	0.52	6.1	0.38
<i>Brazil</i>	35.2	0.93	31.9	0.70	20.4	0.67	8.9	0.47	2.9	0.35	0.7	0.19	‡	†
<i>Bulgaria</i>	20.0	1.45	23.8	0.95	24.4	1.12	17.9	0.91	9.9	0.83	3.4	0.50	0.7	0.19
Canada	3.6	0.29	10.2	0.45	21.0	0.64	26.4	0.63	22.4	0.49	12.1	0.47	4.3	0.29
Chile	22.0	1.35	29.5	1.01	25.3	1.00	15.4	0.78	6.2	0.60	1.5	0.21	0.1	0.04
<i>Chinese Taipei</i>	4.5	0.53	8.3	0.61	13.1	0.61	17.1	0.65	19.7	0.75	19.2	0.89	18.0	1.00
<i>Colombia</i>	41.6	1.71	32.2	1.05	17.8	0.90	6.4	0.61	1.6	0.28	0.3	0.10	‡	†
<i>Costa Rica</i>	23.6	1.45	36.2	1.22	26.8	1.29	10.1	0.99	2.6	0.46	0.5	0.16	‡	†
<i>Croatia</i>	9.5	0.74	20.4	1.02	26.7	0.95	22.9	1.12	13.5	0.80	5.4	0.76	1.6	0.51
<i>Cyprus</i>	19.0	0.58	23.0	0.65	25.5	0.62	19.2	0.58	9.6	0.44	3.1	0.25	0.6	0.20
Czech Republic	6.8	0.76	14.2	0.97	21.7	0.83	24.8	1.07	19.7	0.90	9.6	0.66	3.2	0.31
Denmark	4.4	0.49	12.5	0.70	24.4	0.97	29.0	1.03	19.8	0.69	8.3	0.57	1.7	0.32
Estonia	2.0	0.26	8.6	0.57	22.0	0.84	29.4	0.79	23.4	0.91	11.0	0.67	3.6	0.37
Finland	3.3	0.39	8.9	0.49	20.5	0.66	28.8	0.78	23.2	0.78	11.7	0.60	3.5	0.30
France	8.7	0.72	13.6	0.76	22.1	0.95	23.8	0.82	18.9	0.79	9.8	0.55	3.1	0.40
Germany	5.5	0.65	12.2	0.81	19.4	0.81	23.7	0.79	21.7	0.73	12.8	0.71	4.7	0.49
Greece	14.5	0.92	21.2	0.85	27.2	1.02	22.1	0.86	11.2	0.79	3.3	0.43	0.6	0.15
<i>Hong Kong-China</i>	2.6	0.36	5.9	0.61	12.0	0.77	19.7	0.97	26.1	1.09	21.4	0.96	12.3	0.95
Hungary	9.9	0.77	18.2	1.04	25.3	1.21	23.0	1.02	14.4	0.86	7.1	0.73	2.1	0.51
Iceland	7.5	0.54	14.0	0.83	23.6	0.89	25.7	0.95	18.1	0.79	8.9	0.61	2.3	0.35
<i>Indonesia</i>	42.3	2.14	33.4	1.59	16.8	1.12	5.7	0.90	1.5	0.54	‡	†	‡	†
Ireland	4.8	0.55	12.1	0.70	23.9	0.72	28.2	0.87	20.3	0.76	8.5	0.51	2.2	0.23
Israel	15.9	1.23	17.6	0.93	21.6	0.93	21.0	0.87	14.6	0.88	7.2	0.74	2.2	0.39
Italy	8.5	0.39	16.1	0.51	24.1	0.55	24.6	0.62	16.7	0.48	7.8	0.44	2.2	0.25
Japan	3.2	0.49	7.9	0.69	16.9	0.85	24.7	1.00	23.7	0.89	16.0	0.89	7.6	0.84
<i>Jordan</i>	36.5	1.59	32.1	0.95	21.0	1.04	8.1	0.63	1.8	0.33	‡	†	‡	†
<i>Kazakhstan</i>	14.5	0.90	30.7	1.40	31.5	0.95	16.9	1.11	5.4	0.79	0.9	0.27	‡	†
Korea, Republic of	2.7	0.46	6.4	0.62	14.7	0.85	21.4	0.99	23.9	1.23	18.8	0.92	12.1	1.26
Latvia	4.8	0.53	15.1	0.96	26.6	1.29	27.8	0.92	17.6	0.90	6.5	0.65	1.5	0.28
<i>Liechtenstein</i>	3.5	1.31	10.6	1.81	15.2	2.52	22.7	2.81	23.2	3.01	17.4	3.17	7.4	1.86
<i>Lithuania</i>	8.7	0.68	17.3	0.89	25.9	0.80	24.6	1.01	15.4	0.70	6.6	0.49	1.4	0.24
Luxembourg	8.8	0.54	15.5	0.54	22.3	0.72	23.6	0.72	18.5	0.58	8.6	0.38	2.6	0.25
<i>Macao-China</i>	3.2	0.29	7.6	0.53	16.4	0.71	24.0	0.69	24.4	0.87	16.8	0.63	7.6	0.35
<i>Malaysia</i>	23.0	1.19	28.8	1.12	26.0	0.95	14.9	0.93	6.0	0.69	1.2	0.28	0.1	0.05
Mexico	22.8	0.68	31.9	0.58	27.8	0.53	13.1	0.41	3.7	0.23	0.6	0.07	‡	†
<i>Montenegro, Republic of</i>	27.5	0.64	29.1	1.14	24.2	1.06	13.1	0.73	4.9	0.48	0.9	0.20	‡	†
Netherlands	3.8	0.57	11.0	0.93	17.9	1.08	24.2	1.19	23.8	1.11	14.9	0.99	4.4	0.56
New Zealand	7.5	0.58	15.1	0.66	21.6	0.83	22.7	0.76	18.1	0.84	10.5	0.75	4.5	0.40
Norway	7.2	0.78	15.1	0.88	24.3	0.84	25.7	1.01	18.3	0.96	7.3	0.56	2.1	0.30
<i>Peru</i>	47.0	1.79	27.6	0.88	16.1	1.00	6.7	0.68	2.1	0.38	0.5	0.20	‡	†
Poland	3.3	0.38	11.1	0.77	22.1	0.93	25.5	0.94	21.3	1.12	11.7	0.78	5.0	0.80
Portugal	8.9	0.79	16.0	0.98	22.8	0.88	24.0	0.84	17.7	0.88	8.5	0.73	2.1	0.33
<i>Qatar</i>	47.0	0.42	22.6	0.53	15.2	0.39	8.8	0.34	4.5	0.28	1.7	0.20	0.3	0.07
<i>Romania</i>	14.0	1.15	26.8	1.23	28.3	1.09	19.2	1.07	8.4	0.81	2.6	0.45	0.6	0.27
<i>Russian Federation</i>	7.5	0.70	16.5	0.80	26.6	0.99	26.0	0.97	15.7	0.78	6.3	0.64	1.5	0.31
<i>Serbia, Republic of</i>	15.5	1.16	23.4	0.93	26.5	1.12	19.5	1.03	10.5	0.69	3.5	0.52	1.1	0.31
<i>Shanghai-China</i>	0.8	0.21	2.9	0.46	7.5	0.64	13.1	0.77	20.2	0.83	24.6	1.04	30.8	1.24
<i>Singapore</i>	2.2	0.23	6.1	0.40	12.2	0.68	17.5	0.66	22.0	0.62	21.0	0.58	19.0	0.51
Slovak Republic	11.1	1.03	16.4	0.94	23.1	1.10	22.1	1.09	16.4	1.08	7.8	0.64	3.1	0.55
Slovenia	5.1	0.48	15.0	0.69	23.6	0.95	23.9	0.96	18.7	0.80	10.3	0.64	3.4	0.43
Spain	7.8	0.50	15.8	0.57	24.9	0.65	26.0	0.59	17.6	0.56	6.7	0.42	1.3	0.15
Sweden	9.5	0.68	17.5	0.76	24.7	0.92	23.9	0.78	16.3	0.69	6.5	0.49	1.6	0.25
Switzerland	3.6	0.35	8.9	0.59	17.8	1.06	24.5	1.02	23.9	0.80	14.6	0.78	6.8	0.69
<i>Thailand</i>	19.1	1.07	30.6	1.20	27.3	1.00	14.5	1.15	5.8	0.74	2.0	0.38	0.5	0.19
<i>Tunisia</i>	36.5	1.88	31.3	1.09	21.1	1.17	8.0	0.79	2.3	0.68	0.7	0.32	‡	†
Turkey	15.5	1.08	26.5	1.28	25.5	1.16	16.5	1.05	10.1	1.09	4.7	0.81	1.2	0.46
<i>United Arab Emirates</i>	20.5	0.92	25.8	0.81	24.9	0.69	16.9	0.64	8.5	0.54	2.9	0.25	0.5	0.11
United Kingdom	7.8	0.77	14.0	0.76	23.2	0.81	24.8	0.85	18.4	0.78	9.0	0.63	2.9	0.42
<b>United States</b>	<b>8.0</b>	<b>0.73</b>	<b>17.9</b>	<b>0.98</b>	<b>26.3</b>	<b>0.84</b>	<b>23.3</b>	<b>0.93</b>	<b>15.8</b>	<b>0.91</b>	<b>6.6</b>	<b>0.61</b>	<b>2.2</b>	<b>0.34</b>
<i>Uruguay</i>	29.2	1.20	26.5	0.76	23.0	0.93	14.4	0.87	5.4	0.60	1.3	0.28	‡	†
<i>Vietnam</i>	3.6	0.80	10.6	1.26	22.8	1.28	28.4	1.52	21.3	1.22	9.8	0.99	3.5	0.75
<b>U.S. state education systems</b>														
<i>Connecticut</i>	6.8	1.18	13.8	1.33	20.0	1.28	24.3	1.36	18.6	1.79	11.5	1.46	4.9	0.83
<i>Florida</i>	9.7	1.44	20.6	1.87	27.9	1.42	23.0	1.64	13.0	1.34	4.9	1.04	0.9	0.39
<i>Massachusetts</i>	5.3	0.83	12.5	1.17	20.4	1.61	24.3	1.49	18.9	1.18	12.7	1.61	5.8	1.11

† Not applicable.

# Rounds to zero.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

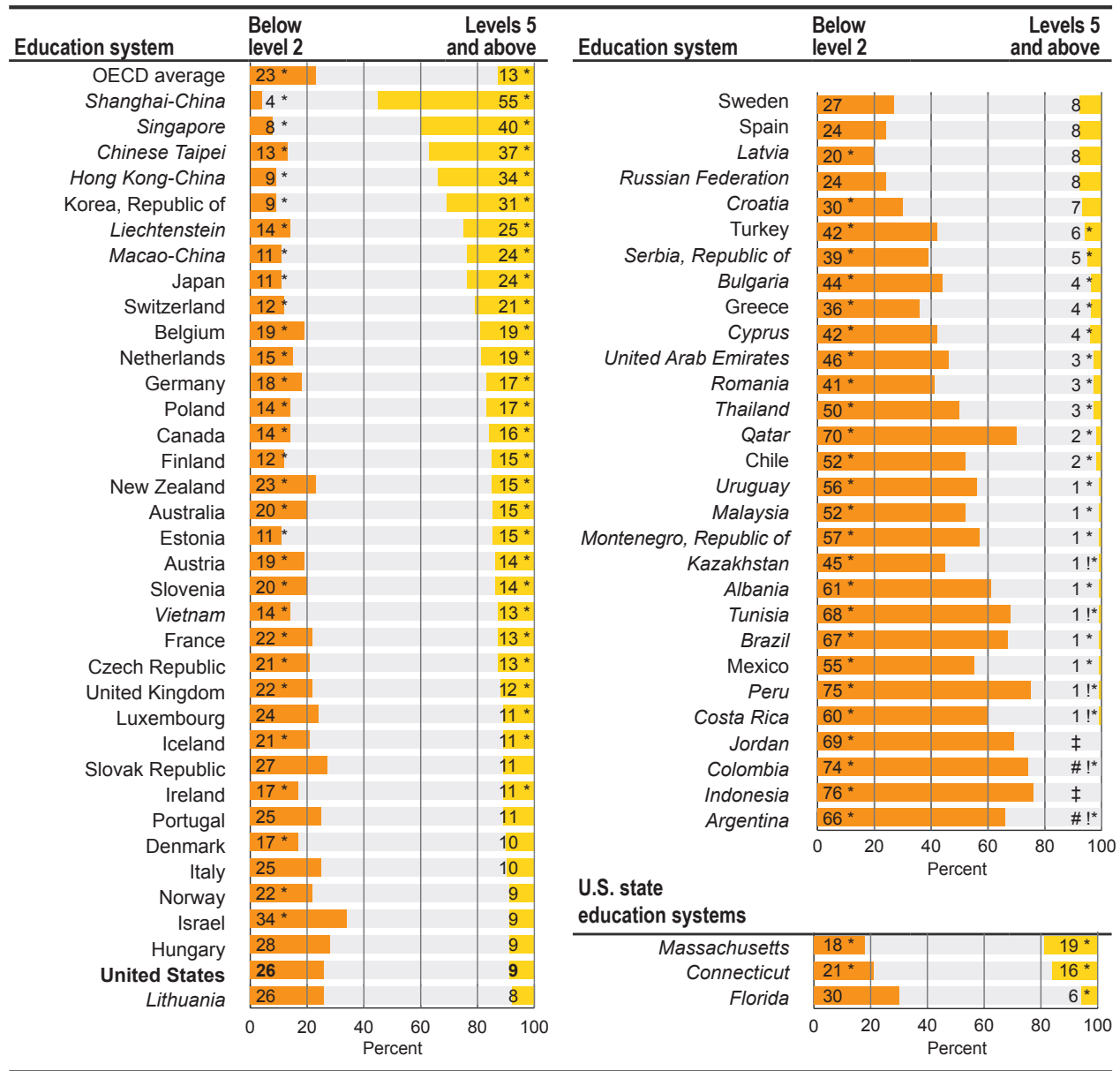
‡ Reporting standards not met.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into mathematics literacy levels according to their scores. Exact cut scores are as follows: below level 1 (a score less than or equal to 357.77); level 1 (a score greater than 357.77 and less than or equal to 420.07); level 2 (a score greater than 420.07 and less than or equal to 482.38); level 3 (a score greater than 482.38 and less than or equal to 544.68); level 4 (a score greater than 544.68 and less than or equal to 606.99); level 5 (a score greater than 606.99 and less than or equal to 669.30); and level 6 (a score greater than 669.30). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Detail may not sum to totals because of rounding. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Figure M1a. Percentage of 15-year-old students performing at PISA mathematics literacy proficiency levels 5 and above and below level 2, by education system: 2012



Below level 2  
Levels 5 and above

# Rounds to zero.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

‡ Reporting standards not met.

\*  $p < .05$ . Significantly different from the U.S. percentage at the .05 level of statistical significance.

NOTE: Education systems are ordered by 2012 percentages of 15-year-olds in levels 5 and above. To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into mathematics proficiency levels according to their scores. Exact cut scores are as follows: below level 1 (a score less than or equal to 357.77); level 1 (a score greater than 357.77 and less than or equal to 420.07); level 2 (a score greater than 420.07 and less than or equal to 482.38); level 3 (a score greater than 482.38 and less than or equal to 544.68); level 4 (a score greater than 544.68 and less than or equal to 606.99); level 5 (a score greater than 606.99 and less than or equal to 669.30); and level 6 (a score greater than 669.30). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only. This figure corresponds to figure 1 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.



# National Center for Education Statistics

Table M1b. Percentage of 15-year-old students performing at PISA mathematics literacy proficiency levels 5 and above and below level 2, by education system: 2012

Education system	Below level 2		Levels 5 and above		Education system	Below level 2		Levels 5 and above	
	Percent	s.e.	Percent	s.e.		Percent	s.e.	Percent	s.e.
OECD average	23.0 *	0.19	12.6 *	0.15					
Shanghai-China	3.8 *	0.55	55.4 *	1.37	Sweden	27.1	1.12	8.0	0.52
Singapore	8.3 *	0.48	40.0 *	0.71	Spain	23.6	0.85	8.0	0.43
Chinese Taipei	12.8 *	0.84	37.2 *	1.24	Latvia	19.9 *	1.13	8.0	0.78
Hong Kong-China	8.5 *	0.79	33.7 *	1.35	Russian Federation	24.0	1.13	7.8	0.85
Korea, Republic of	9.1 *	0.95	30.9 *	1.83	Croatia	29.9 *	1.36	7.0	1.15
Liechtenstein	14.1 *	2.02	24.8 *	2.55	Turkey	42.0 *	1.93	5.9 *	1.13
Macao-China	10.8 *	0.49	24.3 *	0.56	Serbia, Republic of	38.9 *	1.54	4.6 *	0.71
Japan	11.1 *	0.98	23.7 *	1.46	Bulgaria	43.8 *	1.78	4.1 *	0.62
Switzerland	12.4 *	0.70	21.4 *	1.19	Greece	35.7 *	1.34	3.9 *	0.43
Belgium	18.9 *	0.83	19.4 *	0.73	Cyprus	42.0 *	0.63	3.7 *	0.27
Netherlands	14.8 *	1.28	19.3 *	1.21	United Arab Emirates	46.3 *	1.22	3.5 *	0.29
Germany	17.7 *	1.03	17.5 *	0.94	Romania	40.8 *	1.93	3.2 *	0.61
Poland	14.4 *	0.89	16.7 *	1.33	Thailand	49.7 *	1.74	2.6 *	0.51
Canada	13.8 *	0.55	16.4 *	0.64	Qatar	69.6 *	0.46	2.0 *	0.21
Finland	12.3 *	0.67	15.3 *	0.74	Chile	51.5 *	1.67	1.6 *	0.22
New Zealand	22.6 *	0.80	15.0 *	0.88	Uruguay	55.8 *	1.31	1.4 *	0.32
Australia	19.7 *	0.60	14.8 *	0.64	Malaysia	51.8 *	1.68	1.3 *	0.30
Estonia	10.5 *	0.63	14.6 *	0.76	Montenegro, Republic of	56.6 *	1.02	1.0 *	0.20
Austria	18.7 *	0.96	14.3 *	0.95	Kazakhstan	45.2 *	1.70	0.9 !*	0.29
Slovenia	20.1 *	0.65	13.7 *	0.55	Albania	60.7 *	0.95	0.8 *	0.19
Vietnam	14.2 *	1.75	13.3 *	1.47	Tunisia	67.7 *	1.83	0.8 !*	0.37
France	22.4 *	0.87	12.9 *	0.77	Brazil	67.1 *	1.03	0.8 *	0.20
Czech Republic	21.0 *	1.20	12.9 *	0.82	Mexico	54.7 *	0.82	0.6 *	0.08
United Kingdom	21.8 *	1.30	11.8 *	0.81	Peru	74.6 *	1.75	0.6 !*	0.21
Luxembourg	24.3	0.54	11.2 *	0.42	Costa Rica	59.9 *	1.87	0.6 *	0.19
Iceland	21.5 *	0.74	11.2 *	0.69	Jordan	68.6 *	1.50	‡	†
Slovak Republic	27.5	1.28	11.0	0.94	Colombia	73.8 *	1.43	0.3 !*	0.11
Ireland	16.9 *	0.99	10.7 *	0.54	Indonesia	75.7 *	2.05	‡	†
Portugal	24.9	1.52	10.6	0.79	Argentina	66.5 *	2.03	0.3 !*	0.10
Denmark	16.8 *	0.98	10.0	0.66					
Italy	24.7	0.76	9.9	0.57					
Norway	22.3 *	1.06	9.4	0.67	<b>U.S. state education systems</b>				
Israel	33.5 *	1.68	9.4	0.99	Massachusetts	17.8 *	1.46	18.5 *	2.47
Hungary	28.1	1.31	9.3	1.12	Connecticut	20.6 *	2.14	16.4 *	1.91
<b>United States</b>	<b>25.8</b>	<b>1.39</b>	<b>8.8</b>	<b>0.78</b>	Florida	30.4	2.65	5.8 *	1.18
Lithuania	26.0	1.18	8.1	0.60					

† Not applicable.

# Rounds to zero.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

‡ Reporting standards not met.

\*  $p < .05$ . Significantly different from the U.S. percentage at the .05 level of statistical significance.

NOTE: Education systems are ordered by 2012 percentages of 15-year-olds in levels 5 and above. To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into mathematics proficiency levels according to their scores. Exact cut scores are as follows: below level 1 (a score less than or equal to 357.77); level 1 (a score greater than 357.77 and less than or equal to 420.07); level 2 (a score greater than 420.07 and less than or equal to 482.38); level 3 (a score greater than 482.38 and less than or equal to 544.68); level 4 (a score greater than 544.68 and less than or equal to 606.99); level 5 (a score greater than 606.99 and less than or equal to 669.30); and level 6 (a score greater than 669.30). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only. This table corresponds to figure 1 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

**National Center for Education Statistics**

**Table M2. Percentage distribution of 15-year-old students on PISA mathematics literacy content subscales, by proficiency level and education system: 2012**

Education system	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
OECD average	9.2	0.13	14.3	0.14	21.1	0.14	22.9	0.15	18.5	0.14	10.1	0.11	3.9	0.08
Albania	36.4	1.22	26.2	0.98	21.2	0.90	11.4	0.65	3.9	0.43	0.8	0.18	‡	†
Argentina	34.0	2.00	29.4	1.38	22.9	1.22	10.5	0.90	2.6	0.36	0.5	0.15	‡	†
Australia	8.4	0.35	13.8	0.45	21.2	0.60	22.8	0.60	18.3	0.49	10.5	0.47	4.9	0.39
Austria	5.0	0.54	12.4	0.90	20.9	0.98	24.6	0.83	22.3	0.97	11.3	0.78	3.5	0.49
Belgium	6.9	0.51	11.2	0.68	17.9	0.69	21.8	0.69	21.2	0.62	14.5	0.60	6.6	0.38
Brazil	36.5	1.13	27.0	0.81	20.2	0.60	10.5	0.53	4.3	0.42	1.3	0.27	0.2	0.08
Bulgaria	20.2	1.39	21.7	0.99	23.4	1.00	18.2	0.93	10.9	0.80	4.3	0.62	1.2	0.28
Canada	5.9	0.32	11.0	0.40	19.7	0.71	24.2	0.60	20.9	0.59	12.6	0.51	5.8	0.40
Chile	24.6	1.44	26.7	0.95	23.9	0.93	15.5	0.80	7.1	0.60	1.9	0.28	0.3	0.06
Chinese Taipei	5.1	0.57	9.2	0.57	14.0	0.65	19.3	0.77	22.1	0.83	18.7	0.98	11.6	0.71
Colombia	43.1	1.43	27.2	0.98	18.0	0.85	8.3	0.58	2.7	0.39	0.6	0.15	0.1	0.05
Costa Rica	27.2	1.64	30.8	1.14	25.8	1.10	11.3	0.84	3.9	0.57	0.9	0.29	‡	†
Croatia	9.1	0.70	18.0	0.78	24.9	1.27	23.4	1.27	15.3	0.91	7.0	0.80	2.3	0.57
Cyprus	21.6	0.54	21.2	0.67	23.8	0.72	18.5	0.64	10.3	0.51	3.7	0.29	0.9	0.18
Czech Republic	7.7	0.77	12.4	0.84	20.6	1.02	23.5	1.07	19.8	0.92	11.0	0.71	4.9	0.51
Denmark	5.5	0.47	13.0	0.72	22.8	0.75	25.9	0.89	20.2	0.79	9.8	0.64	2.8	0.29
Estonia	2.7	0.40	8.5	0.57	19.8	0.78	27.8	0.91	24.0	0.89	12.4	0.84	4.7	0.50
Finland	2.9	0.36	8.1	0.45	19.3	0.90	27.7	0.68	24.3	0.74	12.7	0.68	5.0	0.51
France	9.4	0.80	14.1	0.78	20.7	0.81	22.3	0.76	18.9	0.76	10.7	0.72	4.0	0.47
Germany	6.1	0.71	11.6	0.69	17.7	0.76	23.4	1.01	22.1	0.85	13.5	0.79	5.6	0.59
Greece	16.4	1.00	19.3	1.23	24.4	1.10	21.5	0.81	12.7	0.78	4.5	0.39	1.1	0.20
Hong Kong-China	3.3	0.44	5.3	0.50	11.4	0.72	18.6	0.72	24.6	0.89	22.1	0.97	14.6	0.85
Hungary	11.7	0.88	18.1	0.99	23.5	0.95	21.6	1.11	15.3	0.89	7.5	0.76	2.4	0.43
Iceland	9.3	0.62	13.3	0.69	20.8	0.85	24.1	0.79	18.5	0.67	10.2	0.58	3.9	0.35
Indonesia	50.0	2.14	27.1	1.57	14.8	1.18	5.8	0.86	2.0	0.64	‡	†	‡	†
Ireland	5.9	0.56	12.0	0.68	21.8	0.86	26.0	0.72	20.6	0.72	10.4	0.58	3.3	0.34
Israel	15.6	1.22	15.2	0.86	19.1	0.95	19.8	0.81	16.2	0.80	9.4	0.76	4.8	0.61
Italy	9.6	0.44	14.6	0.47	21.7	0.47	23.6	0.54	18.0	0.49	9.2	0.39	3.3	0.23
Japan	4.9	0.64	10.3	0.75	19.5	0.80	25.2	1.02	22.3	0.93	12.7	0.83	5.1	0.62
Jordan	47.2	1.63	26.0	0.76	16.7	0.95	7.4	0.58	2.1	0.39	0.6	0.29	‡	†
Kazakhstan	18.5	1.01	29.5	1.22	28.1	1.05	16.1	1.09	6.2	0.84	1.4	0.38	0.2	0.09
Korea, Republic of	3.4	0.50	7.4	0.85	16.2	0.96	23.9	1.14	25.1	0.90	17.1	0.91	6.8	0.86
Latvia	5.9	0.61	15.4	0.99	26.5	1.34	26.6	0.98	17.8	0.96	6.5	0.65	1.2	0.25
Liechtenstein	4.6	1.19	8.2	1.70	16.6	2.55	19.1	2.78	23.1	2.60	19.9	2.14	8.4	1.53
Lithuania	9.1	0.66	16.1	1.01	25.1	1.24	24.1	0.93	16.0	0.78	7.4	0.52	2.2	0.35
Luxembourg	9.2	0.48	14.5	0.76	20.8	0.61	22.8	0.79	19.3	0.76	9.8	0.64	3.6	0.36
Macao-China	3.4	0.24	8.4	0.43	17.7	0.62	24.6	0.65	25.0	0.78	15.0	0.81	5.8	0.43
Malaysia	30.4	1.39	26.0	0.97	21.9	0.94	13.1	0.90	6.4	0.69	1.9	0.34	0.3	0.13
Mexico	25.9	0.67	27.5	0.53	25.3	0.42	14.5	0.52	5.4	0.28	1.3	0.11	0.2	0.04
Montenegro, Republic of	28.5	0.73	27.5	0.76	23.8	0.98	13.7	0.81	4.9	0.51	1.3	0.26	‡	†
Netherlands	4.2	0.69	10.3	0.82	16.4	0.97	21.3	1.28	24.0	1.08	16.9	1.06	6.9	0.70
New Zealand	8.8	0.64	14.6	0.79	21.0	0.76	21.9	0.83	18.0	0.86	10.8	0.57	4.8	0.40
Norway	7.8	0.73	14.2	0.64	23.3	0.79	25.6	0.84	18.0	0.69	8.1	0.54	3.0	0.37
Peru	47.9	1.74	24.8	0.84	15.9	0.88	7.5	0.75	2.9	0.59	0.9	0.26	‡	†
Poland	3.1	0.40	10.5	0.80	21.1	1.00	26.9	1.33	21.6	0.95	12.2	0.91	4.4	0.68
Portugal	10.4	0.94	16.4	0.91	23.0	0.76	23.5	0.94	17.2	0.96	7.5	0.70	2.0	0.38
Qatar	48.5	0.43	21.6	0.46	14.8	0.45	8.8	0.35	4.4	0.22	1.6	0.13	0.3	0.06
Romania	18.5	1.44	24.1	1.05	24.8	0.94	18.3	1.04	9.5	0.86	3.7	0.59	1.1	0.37
Russian Federation	9.6	0.67	16.7	1.01	25.9	1.18	24.4	0.89	15.0	0.94	6.6	0.67	1.9	0.35
Serbia, Republic of	15.4	1.26	21.2	0.99	25.2	1.14	19.9	1.13	11.8	0.74	4.8	0.54	1.6	0.45
Shanghai-China	1.3	0.25	3.7	0.48	8.8	0.55	16.3	0.80	23.7	0.92	25.3	1.05	20.9	1.00
Singapore	2.5	0.24	6.3	0.37	11.9	0.55	18.5	0.59	23.3	0.57	20.5	0.70	16.9	0.45
Slovak Republic	11.4	1.14	15.5	1.08	21.6	0.99	21.6	1.04	17.0	0.91	9.0	0.57	3.9	0.45
Slovenia	6.0	0.58	13.3	0.94	22.7	0.64	24.1	0.87	19.2	0.84	10.7	0.63	4.1	0.41
Spain	9.7	0.64	14.3	0.59	21.4	0.55	23.7	0.62	18.5	0.66	9.2	0.39	3.2	0.25
Sweden	10.2	0.68	15.9	0.78	23.5	0.76	23.9	0.88	16.6	0.83	7.5	0.56	2.4	0.26
Switzerland	4.0	0.36	8.9	0.52	17.3	0.86	23.7	0.75	23.9	0.89	15.0	0.79	7.1	0.72
Thailand	24.6	1.33	28.5	1.11	24.9	0.96	13.8	0.93	5.8	0.69	2.0	0.41	0.4	0.16
Tunisia	42.4	2.09	26.4	1.14	19.0	1.18	8.4	0.67	2.8	0.67	0.7	0.34	‡	†
Turkey	19.6	1.32	24.8	1.22	23.3	1.12	16.4	1.08	10.1	1.09	4.8	0.81	1.0	0.34
United Arab Emirates	24.3	0.96	22.9	0.83	22.3	0.70	16.4	0.58	9.4	0.68	3.6	0.31	1.0	0.18
United Kingdom	9.4	0.95	14.3	0.96	21.2	0.78	23.0	0.91	18.4	0.79	9.8	0.60	3.8	0.41
<b>United States</b>	<b>10.7</b>	<b>1.02</b>	<b>18.5</b>	<b>0.99</b>	<b>24.1</b>	<b>0.81</b>	<b>21.6</b>	<b>0.84</b>	<b>14.6</b>	<b>0.84</b>	<b>7.5</b>	<b>0.65</b>	<b>3.0</b>	<b>0.38</b>
Uruguay	29.9	1.27	24.0	0.95	22.3	0.81	14.7	0.77	6.8	0.56	2.0	0.30	0.3	0.11
Vietnam	5.4	1.04	11.2	1.09	22.4	1.40	26.1	1.38	20.3	1.20	10.5	1.03	4.2	0.85
<b>U.S. state education system</b>														
Connecticut	9.4	1.43	13.5	1.29	19.2	1.24	22.0	1.18	19.4	1.59	11.5	1.47	5.1	1.01
Florida	14.6	1.83	20.8	1.73	25.1	1.31	21.4	1.78	12.1	1.12	4.9	0.96	1.1	0.38
Massachusetts	7.9	1.00	12.6	1.12	19.9	1.89	23.7	1.45	18.5	1.14	11.8	1.59	5.6	1.08

See notes at end of table.

## National Center for Education Statistics

Table M2. Percentage distribution of 15-year-old students on PISA mathematics literacy content subscales, by proficiency level and education system: 2012--Continued

Education system	Uncertainty and data														
	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6		
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	
OECD average	8.3	0.12	14.8	0.13	22.5	0.15	23.8	0.15	18.1	0.14	9.2	0.11	3.2	0.07	
Albania	36.3	1.06	27.0	1.00	21.6	1.04	10.9	0.62	3.5	0.44	0.7	0.17	‡	†	
Argentina	35.0	1.87	30.0	1.21	22.8	1.26	9.7	0.93	2.2	0.40	0.4	0.10	‡	†	
Australia	6.0	0.33	12.5	0.38	21.4	0.50	24.6	0.66	19.8	0.62	11.1	0.43	4.6	0.34	
Austria	7.3	0.81	13.8	0.85	21.4	0.87	24.1	0.90	20.9	0.88	9.7	0.64	2.8	0.34	
Belgium	8.8	0.76	12.0	0.54	19.1	0.68	21.8	0.75	19.2	0.65	12.5	0.47	6.5	0.48	
Brazil	26.5	1.01	35.1	1.00	25.5	0.79	10.0	0.52	2.5	0.38	0.3	0.12	‡	†	
Bulgaria	20.7	1.51	24.8	0.98	25.8	1.02	18.0	0.92	8.1	0.72	2.3	0.42	0.3	† 0.13	
Canada	4.1	0.28	10.1	0.51	20.9	0.73	26.8	0.61	21.9	0.61	12.1	0.51	4.0	0.29	
Chile	16.8	1.17	29.4	0.97	29.3	1.05	17.1	0.88	6.2	0.56	1.1	0.18	0.1	† 0.05	
Chinese Taipei	4.4	0.50	8.6	0.55	14.4	0.65	19.2	0.93	21.5	0.81	18.7	0.90	13.1	1.01	
Colombia	32.4	1.39	36.8	1.11	23.0	1.16	6.6	0.67	1.2	0.23	0.1	0.06	‡	†	
Costa Rica	17.8	1.51	37.1	1.33	31.1	1.39	11.8	1.11	2.1	0.37	‡	†	‡	†	
Croatia	10.8	0.83	19.8	0.92	26.4	1.02	22.6	1.00	13.6	0.86	5.3	0.68	1.4	0.41	
Cyprus	17.5	0.57	22.2	0.82	26.9	0.86	20.8	0.67	9.5	0.48	2.7	0.26	0.4	† 0.17	
Czech Republic	7.7	0.78	15.1	0.87	24.5	0.84	25.2	0.98	17.5	0.90	7.7	0.56	2.2	0.26	
Denmark	4.4	0.49	11.6	0.81	23.2	0.82	28.2	0.86	21.2	0.80	9.3	0.69	2.2	0.34	
Estonia	2.9	0.34	10.1	0.60	23.8	1.14	29.7	0.94	21.7	0.95	9.3	0.57	2.5	0.35	
Finland	4.2	0.46	9.5	0.50	19.7	0.67	27.4	0.73	22.9	0.79	11.9	0.62	4.4	0.39	
France	10.5	0.71	14.1	0.78	20.3	0.88	22.6	0.87	19.5	0.68	9.8	0.59	3.2	0.37	
Germany	7.2	0.59	12.3	0.70	19.9	0.85	22.9	0.93	20.4	0.83	12.4	0.86	5.0	0.61	
Greece	12.3	0.90	19.4	0.80	27.5	0.88	24.2	0.87	12.2	0.69	3.8	0.36	0.7	0.15	
Hong Kong-China	2.3	0.34	6.0	0.63	13.2	0.73	22.5	0.91	26.9	1.00	20.0	0.88	9.2	0.81	
Hungary	10.9	0.92	16.9	0.97	25.2	1.10	23.1	1.25	15.4	0.88	6.9	0.83	1.7	0.43	
Iceland	8.8	0.58	13.2	0.66	21.2	0.75	24.5	0.90	19.5	0.82	9.8	0.57	3.1	0.38	
Indonesia	35.7	2.08	36.1	1.61	20.4	1.26	6.2	0.90	1.3	0.56	‡	†	‡	†	
Ireland	4.7	0.55	11.1	0.61	21.3	0.85	27.7	0.90	22.2	0.80	10.1	0.60	2.8	0.31	
Israel	16.7	1.21	16.9	0.88	21.4	0.95	20.9	0.78	14.3	1.07	7.1	0.81	2.6	0.41	
Italy	9.8	0.48	15.9	0.57	23.5	0.59	24.3	0.60	16.8	0.53	7.5	0.40	2.1	0.19	
Japan	3.2	0.52	8.7	0.67	18.0	0.93	26.2	0.97	24.2	0.96	14.5	0.95	5.2	0.67	
Jordan	30.3	1.52	33.6	0.92	24.3	1.10	9.4	0.65	1.8	0.34	‡	†	‡	†	
Kazakhstan	17.1	1.28	37.4	1.50	33.1	1.17	11.1	1.21	1.3	0.32	‡	†	‡	†	
Korea, Republic of	3.6	0.49	7.6	0.74	16.7	0.82	23.6	0.99	23.8	0.86	16.4	0.87	8.3	0.93	
Latvia	6.1	0.63	17.5	0.97	28.3	1.29	27.6	0.98	15.4	1.15	4.3	0.55	0.7	0.17	
Liechtenstein	5.0	1.31	9.9	2.15	18.1	2.05	22.2	3.11	18.1	2.05	15.4	2.32	6.7	1.42	
Lithuania	10.1	0.66	17.9	0.91	26.2	0.81	23.8	0.96	14.6	0.66	6.1	0.50	1.4	0.27	
Luxembourg	11.2	0.55	16.7	0.53	21.6	0.67	22.0	1.04	17.4	0.72	8.4	0.46	2.7	0.25	
Macao-China	3.5	0.25	8.5	0.53	18.7	0.55	26.3	0.68	24.8	0.79	13.7	0.60	4.5	0.28	
Malaysia	21.6	1.16	27.6	0.95	28.4	1.02	15.8	0.74	5.5	0.67	1.1	0.25	‡	†	
Mexico	20.2	0.64	34.4	0.58	30.4	0.58	12.3	0.42	2.4	0.15	0.2	0.04	‡	†	
Montenegro, Republic of	25.3	0.75	28.3	1.00	25.5	0.94	14.0	0.92	5.5	0.55	1.2	0.22	‡	†	
Netherlands	4.1	0.74	10.2	0.84	17.3	1.11	21.7	1.48	22.0	1.03	16.7	1.17	8.0	0.82	
New Zealand	8.0	0.64	13.5	0.79	20.5	0.80	21.8	0.84	18.6	0.90	11.4	0.72	6.2	0.51	
Norway	6.5	0.59	12.8	0.75	23.7	0.98	26.7	0.99	19.3	0.85	8.5	0.61	2.6	0.30	
Peru	42.2	1.75	32.1	1.04	18.1	0.99	5.9	0.66	1.4	0.36	‡	†	‡	†	
Poland	3.3	0.37	10.7	0.89	21.4	0.85	26.9	0.96	22.2	0.93	11.6	0.93	4.0	0.74	
Portugal	8.4	0.75	15.9	1.04	23.5	0.88	25.1	0.90	17.7	0.97	7.9	0.69	1.5	0.30	
Qatar	44.4	0.60	23.3	0.76	16.0	0.43	9.4	0.37	4.7	0.21	1.9	0.16	0.3	0.06	
Romania	15.0	1.20	27.3	1.33	30.6	1.28	18.9	1.00	6.7	0.76	1.4	0.35	‡	†	
Russian Federation	10.5	0.94	20.2	0.86	28.4	0.84	24.0	1.06	12.6	0.76	3.9	0.49	0.5	† 0.18	
Serbia, Republic of	14.3	1.26	23.2	1.33	28.6	1.31	20.6	0.96	9.8	0.73	2.9	0.42	0.6	† 0.19	
Shanghai-China	1.0	0.20	3.4	0.42	9.0	0.66	17.0	0.71	23.6	0.78	24.3	0.92	21.7	1.06	
Singapore	2.7	0.23	7.0	0.45	14.2	0.58	19.4	0.68	22.7	0.73	18.9	0.79	15.1	0.56	
Slovak Republic	12.7	1.12	17.1	0.99	24.3	1.00	22.2	1.02	15.0	0.80	6.6	0.56	2.1	0.41	
Slovenia	6.4	0.40	15.2	0.62	23.4	0.76	24.2	0.75	18.3	0.75	9.9	0.58	2.6	0.40	
Spain	8.5	0.53	15.0	0.55	23.3	0.64	25.4	0.60	18.3	0.60	7.7	0.44	1.9	0.18	
Sweden	9.1	0.65	15.8	0.67	24.9	1.00	24.6	0.81	16.5	0.84	7.0	0.54	2.1	0.29	
Switzerland	5.0	0.46	9.9	0.58	18.9	0.89	24.4	0.71	22.4	0.99	13.4	0.87	6.0	0.60	
Thailand	15.3	0.93	29.1	1.25	31.4	0.85	16.5	0.92	5.8	0.69	1.6	0.38	0.3	† 0.15	
Tunisia	27.8	1.76	35.3	1.27	25.2	1.30	8.8	0.85	2.4	0.71	‡	†	‡	†	
Turkey	15.8	1.01	25.0	1.18	26.3	0.99	17.8	1.21	9.6	1.16	4.5	0.78	0.9	† 0.31	
United Arab Emirates	19.6	0.86	26.9	0.94	26.0	0.67	17.3	0.73	7.5	0.49	2.2	0.30	0.5	0.12	
United Kingdom	6.9	0.62	13.1	0.77	21.4	1.03	24.6	0.89	19.9	0.68	10.2	0.67	3.8	0.44	
<b>United States</b>	<b>7.0</b>	<b>0.74</b>	<b>16.2</b>	<b>0.96</b>	<b>24.9</b>	<b>0.84</b>	<b>25.0</b>	<b>0.90</b>	<b>17.6</b>	<b>1.02</b>	<b>7.4</b>	<b>0.72</b>	<b>2.0</b>	<b>0.31</b>	
Uruguay	27.8	1.34	30.3	0.95	24.1	0.96	12.4	0.88	4.5	0.59	0.8	0.23	‡	†	
Vietnam	2.5	0.57	8.4	1.11	20.4	1.32	29.8	1.26	25.9	1.39	10.5	1.10	2.5	0.54	
<b>U.S. state education system</b>															
Connecticut	5.8	1.08	12.6	1.25	20.2	1.34	24.1	1.75	19.9	1.77	12.2	1.37	5.3	1.12	
Florida	7.5	1.32	19.1	1.61	28.1	1.57	25.2	1.60	14.2	1.44	4.6	0.92	1.3	† 0.48	
Massachusetts	3.9	0.73	10.2	1.26	20.1	1.68	25.1	1.33	21.1	1.22	13.3	1.65	6.3	1.21	

See notes at end of table.

# National Center for Education Statistics

Table M2. Percentage distribution of 15-year-old students on PISA mathematics literacy content subscales, by proficiency level and education system: 2012—Continued

Education system	Change and relationships													
	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
OECD average	10.4	0.14	14.5	0.13	20.9	0.15	22.2	0.15	17.5	0.14	9.9	0.12	4.5	0.10
Albania	36.0	1.04	26.6	0.75	21.2	0.80	11.4	0.60	3.8	0.34	0.9	0.25	‡	†
Argentina	40.8	2.11	26.9	0.94	19.5	1.19	9.8	0.85	2.5	0.42	0.5	0.15	‡	†
Australia	7.3	0.34	12.8	0.48	20.3	0.46	22.8	0.56	18.9	0.56	11.7	0.44	6.2	0.41
Austria	8.8	0.83	12.6	0.82	19.2	0.84	21.3	0.89	19.8	1.09	12.3	0.86	5.9	0.69
Belgium	9.5	0.70	10.2	0.49	16.7	0.58	21.1	0.58	21.0	0.66	14.6	0.58	7.0	0.46
Brazil	46.3	1.14	24.0	0.71	16.5	0.76	8.4	0.61	3.3	0.40	1.1	0.22	0.3	0.11
Bulgaria	24.9	1.53	21.8	0.92	21.1	0.80	15.9	0.75	9.7	0.80	4.7	0.55	1.8	0.39
Canada	4.1	0.30	9.4	0.55	18.9	0.66	25.6	0.63	22.1	0.62	13.7	0.49	6.2	0.38
Chile	29.7	1.48	26.0	1.02	21.6	0.87	14.0	0.85	6.5	0.60	2.0	0.27	0.3	0.09
Chinese Taipei	5.2	0.52	8.5	0.59	12.8	0.59	17.3	0.71	18.8	0.78	18.1	1.25	19.4	1.09
Colombia	52.2	1.67	24.7	0.92	14.4	0.90	6.1	0.62	2.0	0.31	0.6	0.15	‡	†
Costa Rica	29.3	1.81	31.0	1.37	24.1	1.35	11.3	1.04	3.6	0.49	0.7	0.19	‡	†
Croatia	14.7	1.11	18.4	0.80	22.7	0.93	20.9	0.99	14.1	0.86	6.7	0.86	2.5	0.66
Cyprus	21.0	0.63	21.6	0.91	23.4	0.73	18.1	0.67	10.8	0.69	4.0	0.31	1.1	0.22
Czech Republic	9.1	0.84	12.6	0.95	20.4	1.13	22.9	0.99	18.8	0.89	10.7	0.79	5.5	0.41
Denmark	6.6	0.64	14.5	0.67	23.9	0.71	25.8	0.91	18.0	0.71	8.7	0.68	2.5	0.34
Estonia	1.9	0.31	7.5	0.58	19.6	0.86	28.0	0.79	24.7	1.01	13.2	0.67	5.1	0.48
Finland	4.5	0.52	9.7	0.65	19.6	0.79	26.2	0.80	21.9	0.80	12.1	0.55	6.0	0.47
France	10.4	0.93	13.1	0.73	19.6	0.88	22.8	0.82	18.9	0.73	10.4	0.71	4.7	0.55
Germany	8.6	0.80	10.6	0.71	17.2	0.74	21.4	0.88	20.3	0.99	14.4	0.93	7.6	0.76
Greece	18.9	1.16	20.9	0.81	23.7	0.82	19.8	1.04	11.4	0.72	4.2	0.39	1.0	0.21
Hong Kong-China	3.3	0.45	5.9	0.71	11.9	0.82	18.8	0.88	24.1	0.90	21.0	0.94	15.0	0.94
Hungary	11.1	1.09	16.7	0.97	22.9	1.21	22.6	1.01	15.4	0.87	8.1	0.77	3.2	0.69
Iceland	10.5	0.71	14.5	0.70	22.7	1.06	23.4	1.15	17.4	1.03	8.6	0.66	2.9	0.33
Indonesia	48.1	2.10	29.0	1.45	15.5	1.23	5.8	1.00	1.4	0.54	‡	†	‡	†
Ireland	5.3	0.64	12.3	0.73	23.2	0.97	28.0	0.88	19.8	0.75	9.0	0.54	2.4	0.27
Israel	19.2	1.42	16.8	0.88	19.7	1.13	19.2	0.90	14.1	0.88	7.5	0.73	3.5	0.50
Italy	11.8	0.52	16.4	0.54	23.3	0.54	23.1	0.51	15.9	0.47	7.2	0.39	2.3	0.24
Japan	4.7	0.58	8.1	0.60	15.9	0.73	21.7	0.95	21.3	0.85	16.4	0.82	11.9	1.10
Jordan	37.2	1.65	27.8	0.82	21.4	0.98	10.4	0.73	2.5	0.36	‡	†	‡	†
Kazakhstan	18.4	0.96	26.5	1.12	27.6	0.98	18.2	0.97	7.1	0.81	1.8	0.35	0.4	0.13
Korea, Republic of	3.2	0.54	6.4	0.71	13.8	0.83	20.9	0.94	22.3	0.98	18.6	1.00	14.8	1.41
Latvia	6.2	0.76	13.9	1.07	23.7	0.97	25.9	0.99	19.1	1.00	8.8	0.70	2.4	0.39
Liechtenstein	4.7	1.24	9.2	2.07	15.0	2.19	19.9	2.69	20.3	2.90	20.1	2.63	10.8	1.85
Lithuania	8.9	0.74	17.2	0.93	25.5	0.90	24.3	1.10	15.6	0.78	6.7	0.56	1.8	0.31
Luxembourg	11.2	0.53	15.3	0.57	21.1	0.78	21.8	0.77	18.1	0.68	9.4	0.51	3.2	0.29
Macao-China	3.5	0.23	7.6	0.38	15.4	0.61	22.9	0.66	23.8	0.86	17.3	0.70	9.5	0.53
Malaysia	33.3	1.65	26.3	0.96	21.4	0.97	12.0	0.82	5.4	0.59	1.4	0.31	0.2	0.10
Mexico	29.4	0.80	28.1	0.51	24.2	0.50	12.7	0.44	4.4	0.23	1.0	0.10	0.1	0.04
Montenegro, Republic of	34.7	0.65	25.4	0.82	20.5	0.82	12.9	0.55	4.9	0.52	1.3	0.27	‡	†
Netherlands	6.0	0.82	10.4	0.90	18.0	1.13	22.6	1.08	23.0	1.16	15.0	1.02	5.0	0.59
New Zealand	10.3	0.67	14.1	0.71	19.5	0.71	20.7	0.77	17.6	0.79	11.1	0.81	6.7	0.49
Norway	12.1	0.77	16.5	0.87	22.3	0.92	23.4	0.83	15.6	0.84	7.2	0.51	3.0	0.34
Peru	55.3	1.88	21.0	0.79	13.6	0.90	6.5	0.81	2.6	0.44	0.8	0.26	‡	†
Poland	6.4	0.58	12.8	0.82	21.1	0.91	23.8	0.90	19.0	0.91	11.2	0.76	5.7	0.92
Portugal	10.3	0.92	15.5	0.98	22.6	0.79	22.7	1.03	17.2	1.00	9.1	0.67	2.6	0.36
Qatar	52.0	0.47	19.6	0.51	13.7	0.32	8.2	0.28	4.5	0.27	1.7	0.15	0.4	0.08
Romania	16.1	1.21	25.3	1.06	26.0	0.97	18.7	1.03	9.5	0.86	3.4	0.56	1.1	0.33
Russian Federation	7.6	0.74	14.7	0.94	23.2	0.91	26.3	1.03	17.5	0.87	8.0	0.64	2.7	0.38
Serbia, Republic of	21.1	1.45	21.4	0.87	23.3	0.93	17.9	1.02	10.2	0.71	4.4	0.59	1.7	0.42
Shanghai-China	1.0	0.22	3.0	0.40	7.4	0.55	12.8	0.62	17.7	0.78	21.8	0.83	36.2	1.30
Singapore	2.7	0.25	6.3	0.45	11.4	0.49	16.5	0.64	20.7	0.65	19.5	0.64	22.9	0.64
Slovak Republic	15.2	1.12	15.0	0.92	21.3	1.00	21.3	1.05	15.5	0.99	8.1	0.64	3.6	0.57
Slovenia	7.4	0.52	14.8	1.04	22.3	1.07	22.6	0.86	17.7	0.68	10.4	0.64	4.8	0.42
Spain	9.4	0.54	15.8	0.70	24.2	0.61	24.8	0.53	17.3	0.51	6.9	0.31	1.6	0.17
Sweden	14.9	0.84	17.5	0.69	22.3	1.07	20.6	0.83	14.8	0.69	7.3	0.61	2.6	0.31
Switzerland	4.9	0.41	9.9	0.57	17.5	0.82	22.7	0.64	21.7	0.80	14.9	0.86	8.5	0.87
Thailand	27.7	1.43	27.1	0.95	23.5	0.85	13.2	0.89	5.7	0.61	2.2	0.42	0.7	0.22
Tunisia	41.6	2.05	26.8	1.14	19.1	1.04	8.7	0.78	2.8	0.64	0.9	0.37	‡	†
Turkey	16.2	1.29	25.0	1.22	25.6	1.15	17.3	1.11	10.4	1.14	4.3	0.77	1.2	0.50
United Arab Emirates	18.6	0.89	24.0	0.91	24.9	0.62	18.3	0.77	9.3	0.58	3.9	0.40	1.1	0.20
United Kingdom	8.4	0.86	13.9	0.78	22.2	0.71	23.9	0.83	17.7	0.73	9.9	0.74	3.9	0.47
<b>United States</b>	<b>8.0</b>	<b>0.74</b>	<b>16.8</b>	<b>1.00</b>	<b>24.2</b>	<b>0.89</b>	<b>23.9</b>	<b>0.80</b>	<b>15.8</b>	<b>0.77</b>	<b>8.1</b>	<b>0.71</b>	<b>3.3</b>	<b>0.45</b>
Uruguay	33.9	1.29	23.5	0.82	20.4	0.90	13.2	0.72	6.5	0.58	1.9	0.31	0.5	0.20
Vietnam	5.3	1.00	11.7	1.14	21.7	1.28	26.2	1.19	20.1	1.07	10.7	0.93	4.4	0.73
<b>U.S. state education system</b>														
Connecticut	7.0	1.31	12.5	1.40	19.7	1.46	22.3	1.43	18.2	1.33	12.8	1.39	7.6	1.12
Florida	9.1	1.35	18.8	1.49	26.3	1.48	23.4	1.27	14.2	1.50	6.3	1.18	2.0	0.66
Massachusetts	6.2	0.94	11.9	1.06	19.4	1.59	22.0	1.42	20.1	1.29	12.5	1.34	8.0	1.42

See notes at end of table.

# National Center for Education Statistics

**Table M2. Percentage distribution of 15-year-old students on PISA mathematics literacy content subscales, by proficiency level and education system: 2012–Continued**

Education system	Space and shape													
	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
OECD average	10.0	0.13	15.8	0.14	22.3	0.15	22.2	0.16	16.3	0.14	8.9	0.11	4.5	0.10
<i>Albania</i>	27.0	0.98	23.9	1.06	22.8	0.86	15.3	0.85	7.3	0.54	2.6	0.28	1.0	0.21
<i>Argentina</i>	36.5	2.04	31.6	1.10	21.4	1.29	8.4	0.75	1.9	0.30	0.3	0.09	‡	†
Australia	8.1	0.39	15.3	0.50	21.9	0.55	23.5	0.49	16.9	0.53	9.3	0.46	5.0	0.42
Austria	7.3	0.69	13.7	0.85	21.8	0.88	23.7	0.98	19.0	0.85	10.2	0.69	4.3	0.68
Belgium	8.4	0.67	12.7	0.71	19.4	0.90	21.7	0.99	18.4	0.75	12.4	0.48	6.9	0.42
<i>Brazil</i>	40.3	1.02	30.6	0.71	18.8	0.63	7.3	0.42	2.4	0.34	0.6	0.18	0.1	0.05
<i>Bulgaria</i>	19.1	1.46	23.2	1.00	24.9	1.00	18.0	0.95	10.1	0.79	3.8	0.52	0.9	0.24
Canada	5.3	0.33	12.0	0.50	22.0	0.57	24.7	0.58	19.9	0.61	11.0	0.49	5.1	0.38
Chile	25.0	1.35	28.4	0.90	24.1	0.97	14.3	0.80	6.2	0.53	1.7	0.23	0.3	0.08
<i>Chinese Taipei</i>	4.6	0.47	7.2	0.50	10.9	0.57	13.3	0.72	16.0	0.66	16.9	0.68	31.1	1.14
<i>Colombia</i>	45.7	1.79	29.3	0.92	16.5	1.13	6.3	0.70	1.8	0.27	0.2	0.11	‡	†
<i>Costa Rica</i>	29.9	1.75	34.9	1.04	23.4	1.22	8.5	0.91	2.5	0.58	0.6	0.23	‡	†
Croatia	11.2	0.81	23.2	0.97	28.2	0.95	20.8	0.97	10.9	0.68	4.1	0.66	1.7	0.67
<i>Cyprus</i>	19.8	0.88	24.4	1.03	25.8	0.73	17.9	0.65	8.7	0.71	2.9	0.32	0.6	0.15
Czech Republic	8.3	0.77	14.2	1.04	21.4	1.06	23.2	1.01	18.1	0.93	10.2	0.77	4.7	0.48
Denmark	5.0	0.52	13.1	0.68	24.3	0.73	29.2	0.81	19.1	0.69	7.5	0.68	1.8	0.27
Estonia	4.3	0.44	11.6	0.79	22.0	0.87	25.9	0.99	20.1	1.13	10.8	0.80	5.2	0.48
Finland	4.7	0.44	12.0	0.59	23.1	0.69	27.1	0.75	19.5	0.65	10.0	0.50	3.8	0.35
France	9.5	0.67	15.9	0.98	22.1	0.92	23.1	0.89	17.0	0.91	8.8	0.56	3.4	0.49
Germany	6.5	0.66	12.6	0.73	20.8	0.96	24.2	1.01	20.1	0.78	11.2	0.70	4.7	0.52
Greece	18.9	1.04	24.2	1.02	26.6	0.82	18.7	0.71	8.7	0.62	2.5	0.32	0.4	0.11
<i>Hong Kong-China</i>	3.2	0.47	6.4	0.65	12.2	0.80	18.1	1.13	22.6	0.97	20.3	0.86	17.1	1.23
Hungary	10.8	0.91	19.2	1.25	25.7	1.24	21.9	1.09	13.0	0.81	6.5	0.80	2.9	0.67
Iceland	7.4	0.50	14.4	0.76	24.8	0.90	26.9	0.96	17.3	0.91	7.7	0.66	1.6	0.32
<i>Indonesia</i>	38.8	1.92	30.4	1.26	19.8	1.00	7.8	0.89	2.8	0.69	0.4	0.18	‡	†
Ireland	10.2	0.79	16.5	0.66	24.7	1.03	24.5	0.99	15.7	0.73	6.5	0.46	1.8	0.27
Israel	19.4	1.39	20.1	0.93	22.4	0.84	19.5	0.85	11.8	0.86	5.1	0.54	1.6	0.34
Italy	10.7	0.46	15.9	0.50	22.4	0.58	21.7	0.65	15.7	0.51	9.0	0.45	4.6	0.37
Japan	2.3	0.40	6.1	0.58	14.4	0.90	22.4	0.94	23.1	0.90	17.9	0.86	13.8	1.14
<i>Jordan</i>	37.4	1.43	30.8	0.92	20.6	1.00	8.5	0.68	2.1	0.44	‡	†	‡	†
<i>Kazakhstan</i>	13.6	1.02	24.2	1.27	28.6	1.15	19.8	0.96	10.0	1.12	3.1	0.58	0.7	0.33
<i>Korea, Republic of</i>	2.8	0.46	5.9	0.54	12.7	0.81	18.6	1.03	20.9	0.90	18.5	0.89	20.6	1.62
Latvia	5.2	0.63	13.7	0.95	25.4	1.18	26.7	0.89	18.2	1.06	8.0	0.72	2.8	0.39
<i>Liechtenstein</i>	3.9	1.22	7.6	1.83	16.2	2.12	23.9	2.71	21.7	2.69	16.9	2.25	9.8	2.40
<i>Lithuania</i>	12.2	0.85	18.3	0.89	24.1	1.09	22.0	0.89	14.6	0.78	6.5	0.53	2.2	0.37
Luxembourg	8.7	0.49	16.9	0.50	23.5	0.78	22.9	0.79	17.0	0.59	8.2	0.42	2.7	0.24
<i>Macao-China</i>	3.7	0.28	7.0	0.35	13.8	0.60	19.9	0.76	21.8	0.67	18.2	0.59	15.6	0.56
<i>Malaysia</i>	19.1	1.26	26.4	1.04	26.1	0.85	17.5	0.94	8.2	0.75	2.4	0.36	0.3	0.15
Mexico	25.0	0.72	29.4	0.51	26.2	0.49	13.7	0.50	4.6	0.25	1.0	0.10	0.1	0.02
<i>Montenegro, Republic of</i>	25.2	0.71	30.8	1.04	25.2	0.92	13.0	0.68	4.8	0.46	0.9	0.17	‡	†
Netherlands	5.8	0.76	12.5	0.82	20.9	1.14	25.1	1.39	21.1	1.41	10.6	0.90	4.1	0.66
New Zealand	8.5	0.73	16.3	0.78	23.4	1.00	22.8	1.06	15.8	1.07	8.6	0.94	4.4	0.44
Norway	11.1	0.79	16.5	0.73	23.4	0.69	23.0	1.06	15.4	0.85	7.5	0.51	3.2	0.42
<i>Peru</i>	45.4	1.87	26.5	0.98	17.0	0.95	7.5	0.71	2.7	0.46	0.8	0.26	‡	†
Poland	3.7	0.50	11.7	0.82	21.1	0.91	23.2	0.78	19.0	0.74	12.9	0.86	8.5	1.06
Portugal	11.1	0.98	15.9	0.91	20.7	0.83	20.2	1.05	17.2	0.81	10.0	0.71	5.0	0.50
<i>Qatar</i>	44.7	0.52	23.4	0.41	16.0	0.53	9.2	0.36	4.5	0.20	1.8	0.14	0.3	0.08
<i>Romania</i>	16.2	1.19	24.0	1.12	26.9	1.01	18.5	1.15	9.4	0.94	3.8	0.57	1.2	0.39
<i>Russian Federation</i>	6.9	0.60	14.8	0.89	23.9	0.82	24.2	1.24	17.3	1.01	9.0	0.72	3.8	0.70
<i>Serbia, Republic of</i>	18.6	1.32	22.7	1.08	24.4	1.08	18.3	1.04	10.1	1.08	4.2	0.62	1.7	0.41
<i>Shanghai-China</i>	0.7	0.18	2.4	0.36	5.5	0.55	9.8	0.72	14.9	0.79	20.8	0.87	45.9	1.37
<i>Singapore</i>	3.2	0.30	6.4	0.36	11.2	0.48	16.7	0.59	19.7	0.63	19.4	0.90	23.4	0.74
Slovak Republic	11.2	1.01	15.1	0.89	21.6	1.00	21.4	0.94	16.0	1.01	9.6	0.74	5.1	0.70
Slovenia	6.5	0.45	14.0	0.70	22.8	0.96	22.8	0.97	17.9	0.79	10.7	0.62	5.2	0.42
Spain	10.1	0.52	17.7	0.65	24.7	0.75	23.4	0.80	15.6	0.54	6.6	0.36	2.0	0.16
Sweden	12.0	0.73	18.4	0.86	25.4	1.01	22.8	0.75	14.3	0.81	5.4	0.50	1.6	0.25
Switzerland	3.5	0.44	7.9	0.64	16.0	0.76	22.3	0.79	23.1	0.76	16.1	0.80	11.1	0.86
<i>Thailand</i>	21.7	1.20	25.8	1.10	25.1	1.05	15.5	1.02	7.4	0.76	3.3	0.49	1.4	0.36
<i>Tunisia</i>	40.8	1.84	28.4	1.19	18.9	1.01	8.2	0.67	2.6	0.59	0.8	0.35	‡	†
Turkey	22.5	1.32	23.0	1.18	21.6	1.15	14.9	1.02	9.4	0.84	5.7	0.84	2.9	0.74
<i>United Arab Emirates</i>	25.5	0.99	24.7	0.62	22.5	0.68	15.9	0.68	7.9	0.48	2.8	0.28	0.7	0.13
United Kingdom	12.0	0.95	17.5	0.75	23.8	0.65	22.5	0.95	14.5	0.79	7.0	0.64	2.7	0.41
<b>United States</b>	<b>13.5</b>	<b>1.05</b>	<b>20.9</b>	<b>0.99</b>	<b>25.1</b>	<b>0.96</b>	<b>20.5</b>	<b>0.98</b>	<b>12.4</b>	<b>0.83</b>	<b>5.4</b>	<b>0.53</b>	<b>2.2</b>	<b>0.35</b>
<i>Uruguay</i>	28.5	1.24	25.5	1.08	22.6	0.86	14.8	0.81	6.7	0.60	1.6	0.32	‡	†
<i>Vietnam</i>	6.4	0.94	12.8	1.02	21.8	1.10	24.2	1.14	18.6	0.99	10.7	0.89	5.5	0.87
<b>U.S. state education systems</b>														
<i>Connecticut</i>	11.6	1.55	16.7	1.31	20.4	1.42	21.1	1.48	15.8	1.21	9.6	1.19	4.7	0.83
<i>Florida</i>	16.4	1.90	22.5	2.02	26.5	1.38	20.5	1.62	9.6	1.07	3.9	0.88	‡	†
<i>Massachusetts</i>	9.2	0.90	15.3	1.44	21.2	1.54	21.4	1.57	16.4	1.31	10.5	1.69	6.0	1.43

† Not applicable.

‡ Interpret data with caution. Estimate is unstable due to high coefficient of variation.

‡ Reporting standards not met.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into mathematics literacy levels according to their content subscale scores. Exact cut scores are as follows: below level 1 (a score less than or equal to 357.77); level 1 (a score greater than 357.77 and less than or equal to 420.07); level 2 (a score greater than 420.07 and less than or equal to 482.38); level 3 (a score greater than 482.38 and less than or equal to 544.68); level 4 (a score greater than 544.68 and less than or equal to 606.99); level 5 (a score greater than 606.99 and less than or equal to 669.30); and level 6 (a score greater than 669.30). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Detail may not sum to totals because of rounding. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

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Table M3. Percentage distribution of 15-year-old students on PISA mathematics literacy process subscales, by proficiency level and education system: 2012

Education system	Formulating													
	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
OECD average	10.3	0.13	15.6	0.13	21.3	0.15	21.6	0.15	16.6	0.14	9.5	0.11	5.0	0.10
Albania	31.5	1.03	27.6	0.85	23.3	1.03	12.3	0.87	4.2	0.37	0.9	0.20	‡	†
Argentina	37.2	1.87	30.7	1.13	21.3	1.35	8.5	0.81	1.9	0.33	0.3	0.11	‡	†
Australia	9.7	0.47	15.1	0.51	20.7	0.42	21.2	0.45	16.7	0.59	10.1	0.53	6.4	0.48
Austria	8.7	0.72	14.7	0.79	20.7	0.80	21.3	0.80	18.5	0.74	11.1	0.67	4.9	0.62
Belgium	8.6	0.57	12.6	0.60	18.3	0.56	20.9	0.62	19.1	0.77	12.8	0.59	7.9	0.46
Brazil	43.1	1.04	28.1	0.64	17.6	0.59	7.5	0.45	2.7	0.33	0.8	0.22	0.2	0.06
Bulgaria	21.8	1.43	23.3	1.02	23.3	0.91	17.4	1.06	9.2	0.78	3.8	0.58	1.2	0.31
Canada	5.9	0.33	11.7	0.47	20.3	0.73	23.1	0.71	19.8	0.53	12.4	0.46	6.8	0.41
Chile	24.6	1.37	27.9	0.85	24.3	0.92	14.7	0.79	6.3	0.60	1.8	0.24	0.4	0.10
Chinese Taipei	6.1	0.56	7.8	0.54	11.1	0.61	14.2	0.59	16.4	0.73	17.1	1.00	27.3	1.13
Colombia	43.1	1.76	29.7	1.06	17.6	0.90	7.0	0.65	2.1	0.33	0.4	0.12	‡	†
Costa Rica	30.0	1.63	33.0	1.20	23.3	1.18	9.9	0.91	3.0	0.54	0.7	0.24	‡	†
Croatia	16.5	0.96	22.3	1.01	24.5	1.04	19.9	0.92	10.3	0.73	4.5	0.64	1.9	0.63
Cyprus	20.2	0.62	24.0	0.86	25.6	1.20	17.4	0.72	8.9	0.43	3.3	0.28	0.7	0.15
Czech Republic	8.7	0.86	14.6	0.83	21.7	0.88	22.9	1.02	18.2	1.06	9.5	0.75	4.3	0.43
Denmark	5.3	0.55	13.1	0.63	22.8	0.93	26.3	0.83	20.2	0.73	9.6	0.66	2.8	0.36
Estonia	3.6	0.41	10.4	0.66	22.0	0.83	26.7	0.70	20.7	0.92	11.2	0.62	5.4	0.41
Finland	4.9	0.52	10.7	0.57	19.8	0.78	25.1	0.92	21.1	0.92	12.5	0.80	6.1	0.47
France	12.1	0.77	15.8	0.72	21.8	0.95	21.3	0.96	16.6	0.69	8.6	0.62	3.8	0.47
Germany	7.7	0.66	12.7	0.70	19.5	0.81	21.9	1.17	19.4	0.76	12.4	0.74	6.5	0.59
Greece	15.7	0.94	22.3	0.97	27.7	1.32	20.6	0.83	10.0	0.69	3.1	0.30	0.7	0.15
Hong Kong-China	4.2	0.51	6.5	0.59	11.9	0.70	16.8	0.81	21.5	1.02	19.9	0.79	19.2	1.07
Hungary	12.9	0.89	19.9	1.08	24.4	1.07	20.2	0.92	12.8	0.73	6.7	0.70	3.1	0.68
Iceland	6.7	0.50	13.3	0.64	22.1	0.79	25.8	0.95	18.7	0.79	9.9	0.68	3.4	0.44
Indonesia	46.8	2.09	27.5	1.24	15.9	1.08	6.9	0.86	2.3	0.61	0.5	0.24	‡	†
Ireland	7.9	0.71	14.8	0.88	22.8	1.17	25.2	1.07	17.8	0.66	8.6	0.55	3.0	0.34
Israel	17.1	1.27	17.4	0.81	20.9	0.81	20.7	0.85	14.3	0.86	6.8	0.67	2.8	0.47
Italy	12.5	0.52	17.1	0.51	23.6	0.60	21.9	0.55	14.8	0.42	7.3	0.39	2.9	0.25
Japan	4.0	0.58	7.6	0.66	13.6	0.83	20.7	0.91	21.5	1.02	17.1	0.90	15.3	1.27
Jordan	34.8	1.69	32.4	1.19	21.0	1.09	8.8	0.65	2.1	0.30	‡	†	‡	†
Kazakhstan	14.9	1.11	26.0	1.13	28.9	1.08	19.5	1.16	8.0	0.85	2.3	0.44	0.5	0.24
Korea, Republic of	3.5	0.53	7.1	0.81	13.4	0.88	19.2	0.92	21.5	0.88	18.1	0.74	17.4	1.55
Latvia	7.3	0.85	15.6	1.16	25.7	1.13	25.0	1.08	16.7	1.08	7.1	0.80	2.6	0.32
Liechtenstein	4.5	1.86	9.5	2.06	16.9	2.52	21.1	2.58	23.1	2.87	15.7	2.49	9.2	1.66
Lithuania	11.9	0.83	17.5	0.81	23.4	0.82	21.5	0.84	14.7	0.80	7.7	0.50	3.3	0.45
Luxembourg	11.7	0.49	17.0	0.84	21.8	0.69	21.5	0.62	16.5	0.58	8.2	0.41	3.3	0.25
Macao-China	4.8	0.27	8.7	0.47	14.9	0.53	20.3	0.62	21.3	0.66	16.9	0.67	13.0	0.43
Malaysia	32.4	1.46	25.4	0.98	20.7	0.77	12.9	0.82	6.4	0.59	1.8	0.32	0.4	0.13
Mexico	27.6	0.77	28.2	0.58	24.5	0.60	13.4	0.48	4.9	0.25	1.2	0.12	0.2	0.04
Montenegro, Republic of	30.9	0.77	28.2	1.00	22.2	0.81	12.7	0.69	4.6	0.38	1.2	0.22	‡	†
Netherlands	4.9	0.67	10.7	0.81	17.4	0.97	22.5	1.19	21.6	0.89	15.1	1.09	7.6	0.81
New Zealand	9.9	0.71	16.0	0.70	20.8	0.92	20.6	0.88	16.3	0.85	10.1	0.70	6.3	0.60
Norway	9.2	0.71	15.6	0.82	22.8	0.82	23.3	1.11	16.9	0.79	8.6	0.52	3.7	0.43
Peru	45.9	1.68	26.6	0.83	16.5	0.94	7.5	0.81	2.7	0.40	0.6	0.19	‡	†
Poland	5.5	0.53	12.5	0.84	20.9	0.94	23.0	0.82	19.0	0.93	12.1	0.95	7.1	0.94
Portugal	13.5	0.96	17.1	0.96	20.5	0.92	20.9	0.83	15.8	0.99	8.5	0.60	3.6	0.40
Qatar	45.8	0.48	23.1	0.52	15.3	0.40	8.8	0.36	4.6	0.27	1.9	0.17	0.5	0.10
Romania	17.4	1.22	23.7	1.05	26.2	0.98	18.2	1.15	9.8	0.82	3.6	0.56	1.2	0.40
Russian Federation	9.9	0.66	16.4	0.90	24.3	0.93	24.0	0.80	15.8	0.85	7.0	0.68	2.5	0.53
Serbia, Republic of	17.9	1.20	23.1	1.29	24.7	1.33	18.4	0.96	9.9	0.77	4.2	0.48	1.8	0.41
Shanghai-China	1.8	0.32	3.7	0.47	7.0	0.56	11.9	0.65	17.2	0.78	20.5	0.98	37.9	1.29
Singapore	3.7	0.29	6.5	0.38	11.6	0.53	15.6	0.51	18.5	0.64	18.8	0.61	25.3	0.63
Slovak Republic	13.0	1.14	17.0	0.91	21.5	1.03	20.5	1.14	15.3	0.98	8.3	0.64	4.5	0.59
Slovenia	9.5	0.58	16.2	0.69	21.8	1.11	21.6	0.87	16.4	0.62	9.7	0.54	4.8	0.42
Spain	12.0	0.62	16.8	0.60	22.6	0.63	22.8	0.58	15.9	0.48	7.5	0.45	2.5	0.19
Sweden	11.8	0.80	17.3	0.91	22.3	0.74	21.9	0.89	15.9	0.93	8.0	0.69	3.0	0.33
Switzerland	4.7	0.41	8.5	0.48	16.0	0.76	22.1	0.86	22.5	0.75	15.6	0.80	10.5	0.83
Thailand	28.2	1.27	26.6	1.12	22.1	0.79	13.0	0.87	6.1	0.74	2.8	0.45	1.1	0.30
Tunisia	45.7	1.71	26.9	1.06	16.9	0.97	6.9	0.68	2.5	0.53	0.8	0.38	‡	†
Turkey	16.7	1.24	24.8	1.34	24.5	1.09	16.6	1.13	10.6	1.14	5.1	0.93	1.5	0.50
United Arab Emirates	26.1	1.04	23.8	0.62	21.7	0.72	15.9	0.66	8.3	0.57	3.2	0.29	1.1	0.18
United Kingdom	10.6	1.11	15.5	0.70	22.3	0.84	22.0	0.73	16.2	0.78	9.2	0.66	4.3	0.50
United States	11.1	1.09	19.1	1.03	24.6	1.06	21.6	1.22	13.7	1.12	7.0	0.69	3.0	0.42
Uruguay	31.4	1.28	25.0	0.85	21.8	1.14	13.6	0.82	6.1	0.55	1.8	0.33	0.3	0.13
Vietnam	7.6	1.10	13.7	1.03	22.6	1.13	25.3	1.33	17.6	1.18	8.9	0.82	4.2	0.74
<b>U.S. state education system</b>														
Connecticut	9.6	1.40	14.6	1.37	19.0	1.25	21.0	1.18	17.1	1.19	11.5	1.45	7.2	1.06
Florida	14.5	1.79	21.1	1.77	25.4	1.77	21.5	2.13	11.5	1.50	4.9	0.86	1.1	0.32
Massachusetts	8.0	1.04	12.3	1.25	19.7	1.96	22.1	1.56	17.9	1.71	12.1	1.30	8.0	1.84

See notes at end of table.

# National Center for Education Statistics

Table M3. Percentage distribution of 15-year-old students on PISA mathematics literacy process subscales, by proficiency level and education system: 2012–Continued

Education system	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
OECD average	8.1	0.12	14.6	0.14	22.4	0.15	24.1	0.16	18.6	0.14	9.3	0.12	2.8	0.07
Albania	31.6	1.06	27.5	0.95	23.3	0.79	12.3	0.66	4.4	0.45	0.9	0.17	‡	‡
Argentina	35.0	1.87	31.2	1.08	22.3	1.21	9.3	0.81	1.9	0.27	0.3	0.12	‡	‡
Australia	6.6	0.34	13.5	0.39	22.7	0.52	24.5	0.56	19.1	0.60	10.2	0.45	3.5	0.36
Austria	4.2	0.53	11.6	0.73	22.5	0.98	25.8	0.92	22.6	0.97	10.8	0.74	2.6	0.36
Belgium	6.7	0.56	11.5	0.59	18.5	0.67	22.3	0.67	21.6	0.73	13.8	0.59	5.6	0.36
Brazil	37.5	0.93	30.1	0.64	19.8	0.64	8.8	0.42	3.0	0.38	0.8	0.20	0.1	0.04
Bulgaria	20.5	1.57	23.4	1.25	23.3	1.06	18.3	0.93	9.9	0.83	3.7	0.56	0.8	0.21
Canada	3.8	0.28	10.2	0.47	21.1	0.67	26.8	0.65	22.6	0.57	12.1	0.61	3.5	0.31
Chile	25.8	1.49	28.1	0.96	23.7	1.18	14.7	0.89	6.2	0.65	1.4	0.22	0.1	0.05
Chinese Taipei	4.9	0.48	8.9	0.61	13.7	0.94	18.2	0.96	21.6	0.76	19.5	0.83	13.3	0.84
Colombia	46.9	1.70	28.4	1.00	16.2	0.97	6.3	0.69	1.8	0.33	0.4	0.11	‡	‡
Costa Rica	28.1	1.87	34.1	1.55	25.1	1.32	9.4	0.92	2.9	0.51	0.5	0.17	‡	‡
Croatia	8.9	0.76	18.7	0.99	25.5	0.98	23.9	1.13	14.8	0.97	6.4	0.78	1.8	0.55
Cyprus	17.6	0.48	22.6	0.98	26.7	0.96	19.5	0.80	9.9	0.47	3.2	0.33	0.5	0.14
Czech Republic	5.9	0.71	13.0	0.99	22.4	0.96	24.8	1.16	20.3	0.90	10.1	0.68	3.5	0.34
Denmark	4.7	0.51	13.7	0.74	25.4	0.93	28.6	0.93	19.4	0.78	7.1	0.55	1.2	0.23
Estonia	1.9	0.30	7.5	0.54	20.3	0.85	30.4	0.91	24.6	0.92	11.9	0.66	3.4	0.40
Finland	2.8	0.37	9.1	0.49	21.4	0.68	30.5	0.95	23.1	0.86	10.7	0.57	2.4	0.29
France	8.4	0.71	13.9	0.64	21.1	0.96	23.9	0.94	19.8	0.84	9.9	0.62	3.0	0.37
Germany	5.3	0.66	11.3	0.72	18.9	0.77	24.6	0.79	22.1	0.73	13.6	0.78	4.2	0.43
Greece	16.2	1.01	21.5	0.84	26.4	1.17	21.1	1.03	10.9	0.64	3.4	0.35	0.5	0.13
Hong Kong-China	2.0	0.38	5.5	0.62	11.8	0.89	21.0	0.83	28.5	0.91	21.9	0.93	9.2	0.80
Hungary	9.7	0.80	17.0	1.15	24.3	1.15	23.3	1.07	15.6	0.80	7.9	0.80	2.2	0.48
Iceland	7.4	0.59	14.7	0.79	23.5	0.90	26.4	1.25	18.5	0.88	7.8	0.62	1.6	0.28
Indonesia	45.2	2.01	31.2	1.30	16.5	1.07	5.3	0.90	1.5	0.62	‡	‡	‡	‡
Ireland	4.6	0.53	11.5	0.69	24.0	0.78	28.1	0.94	21.5	0.84	8.7	0.64	1.7	0.22
Israel	15.4	1.28	16.7	0.92	21.6	0.72	21.8	0.94	15.2	0.89	7.3	0.68	2.0	0.31
Italy	8.7	0.43	15.7	0.49	24.1	0.59	24.6	0.56	17.2	0.52	7.7	0.42	2.0	0.21
Japan	3.3	0.52	8.1	0.62	17.8	0.87	25.6	1.07	24.4	0.99	15.3	1.05	5.5	0.66
Jordan	38.5	1.66	29.2	0.96	20.4	1.06	8.9	0.76	2.3	0.36	‡	‡	‡	‡
Kazakhstan	17.1	1.02	28.0	0.99	28.8	1.25	17.7	0.95	6.7	0.85	1.5	0.34	0.2	0.10
Korea, Republic of	2.3	0.41	6.0	0.62	14.5	0.86	22.4	0.99	25.0	0.92	19.2	1.07	10.5	1.20
Latvia	4.3	0.53	13.1	0.87	26.0	1.20	29.3	1.08	19.1	0.96	7.1	0.65	1.1	0.24
Liechtenstein	3.0	0.99	10.3	1.84	16.6	3.25	20.9	2.56	23.6	3.24	18.3	2.39	7.4	1.53
Lithuania	7.5	0.68	16.5	0.89	26.1	0.82	26.0	0.89	16.4	0.91	6.4	0.64	1.1	0.23
Luxembourg	7.8	0.44	15.2	0.54	22.4	1.15	24.2	0.85	19.0	0.57	9.0	0.52	2.4	0.24
Macao-China	2.7	0.23	7.1	0.48	16.7	0.88	25.3	1.05	26.4	0.67	16.2	0.61	5.5	0.34
Malaysia	23.3	1.20	26.7	1.00	25.3	0.96	15.9	0.95	6.9	0.69	1.7	0.34	‡	‡
Mexico	23.8	0.68	30.4	0.60	27.2	0.53	13.6	0.41	4.1	0.21	0.7	0.08	0.1	0.02
Montenegro, Republic of	27.9	0.65	28.7	0.80	24.0	0.67	13.4	0.59	4.8	0.49	1.1	0.22	‡	‡
Netherlands	4.0	0.66	10.5	0.91	19.2	1.14	24.2	1.38	25.5	1.36	13.9	1.11	2.6	0.44
New Zealand	8.3	0.59	15.4	0.73	22.0	0.72	22.7	0.75	17.7	0.74	9.8	0.65	4.1	0.36
Norway	7.3	0.66	15.5	0.94	25.3	1.00	25.4	0.89	17.5	0.79	7.0	0.55	1.9	0.27
Peru	47.1	1.83	26.4	0.83	16.0	0.89	7.3	0.79	2.5	0.45	0.6	0.21	‡	‡
Poland	2.8	0.40	10.8	0.75	21.8	0.88	26.7	0.92	21.2	0.90	12.1	0.80	4.7	0.71
Portugal	8.8	0.80	15.5	1.01	22.2	0.82	24.0	0.98	18.8	0.95	8.6	0.74	2.1	0.38
Qatar	48.2	0.55	22.0	0.46	15.0	0.47	8.5	0.35	4.5	0.28	1.6	0.14	0.3	0.07
Romania	15.8	1.26	25.2	1.17	26.3	1.01	19.0	1.07	9.7	0.90	3.2	0.53	0.8	0.26
Russian Federation	7.1	0.60	15.2	0.75	25.4	0.95	26.8	0.99	17.2	0.85	6.8	0.70	1.6	0.32
Serbia, Republic of	15.5	1.15	23.0	1.01	25.7	1.32	20.0	1.10	10.6	0.77	3.9	0.51	1.3	0.32
Shanghai-China	0.6	0.17	2.2	0.38	6.7	0.72	13.3	0.79	21.1	0.74	26.9	1.21	29.3	1.20
Singapore	1.7	0.17	5.2	0.32	11.4	0.57	18.3	0.61	23.8	0.73	22.4	0.71	17.2	0.50
Slovak Republic	10.5	0.99	15.2	0.98	22.6	0.95	22.6	0.99	17.6	0.93	8.7	0.61	2.7	0.44
Slovenia	4.6	0.41	13.9	0.76	23.1	1.13	25.3	0.80	19.0	0.65	10.6	0.59	3.5	0.42
Spain	8.1	0.53	16.2	0.68	24.7	0.56	26.3	0.61	17.7	0.51	6.0	0.38	0.9	0.13
Sweden	10.1	0.79	17.6	0.74	25.8	0.79	24.2	0.93	15.4	0.75	5.9	0.56	1.1	0.27
Switzerland	3.2	0.35	8.5	0.58	18.4	0.90	25.2	0.77	24.6	0.92	14.4	0.87	5.7	0.63
Thailand	20.4	1.17	29.0	1.26	27.5	1.09	14.5	0.94	6.3	0.73	1.9	0.38	0.4	0.14
Tunisia	36.0	1.93	29.1	1.04	21.4	1.15	9.6	0.84	3.0	0.68	0.8	0.35	‡	‡
Turkey	17.0	1.27	24.7	1.37	24.7	1.23	16.9	1.08	10.4	1.08	4.9	0.89	1.2	0.41
United Arab Emirates	19.1	0.84	24.5	0.73	25.0	0.63	17.8	0.75	9.8	0.64	3.2	0.34	0.7	0.13
United Kingdom	8.1	0.75	14.8	0.89	22.8	0.82	25.0	0.92	18.1	0.76	8.7	0.57	2.5	0.30
<b>United States</b>	<b>8.6</b>	<b>0.84</b>	<b>17.8</b>	<b>1.11</b>	<b>26.0</b>	<b>1.06</b>	<b>23.7</b>	<b>0.86</b>	<b>15.2</b>	<b>0.81</b>	<b>6.8</b>	<b>0.66</b>	<b>2.0</b>	<b>0.36</b>
Uruguay	30.5	1.27	25.4	0.96	22.2	1.07	14.1	0.74	6.2	0.53	1.4	0.32	‡	‡
Vietnam	3.2	0.74	9.0	1.03	20.1	1.20	27.1	1.23	23.4	1.24	12.3	1.06	4.8	0.93
<b>U.S. state education system</b>														
Connecticut	7.5	1.35	14.1	1.32	19.9	1.52	23.8	1.66	19.5	1.62	11.3	1.40	3.8	0.73
Florida	10.2	1.28	20.5	1.64	26.9	1.29	23.5	1.63	13.7	1.42	4.4	0.90	0.9	0.30
Massachusetts	5.3	0.86	12.7	1.25	21.2	1.61	24.2	1.47	20.5	1.59	12.1	1.75	4.0	0.89

See notes at end of table.

# National Center for Education Statistics

Table M3. Percentage distribution of 15-year-old students on PISA mathematics literacy process subscales, by proficiency level and education system: 2012–Continued

Education system	Interpreting													
	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
OECD average	8.8	0.12	14.3	0.13	21.1	0.15	22.9	0.15	18.5	0.14	10.2	0.11	4.2	0.08
Albania	39.5	1.18	26.6	1.33	19.3	1.05	10.4	0.95	3.3	0.49	0.7	0.18	‡	†
Argentina	35.3	2.02	28.9	1.37	22.4	1.29	10.2	0.92	2.6	0.44	0.5 !	0.17	‡	†
Australia	6.0	0.38	11.8	0.49	20.2	0.68	23.5	0.62	20.4	0.43	11.9	0.39	6.3	0.40
Austria	8.3	0.76	13.0	0.81	19.1	0.79	20.6	0.80	20.0	0.82	12.9	0.75	6.0	0.62
Belgium	7.6	0.65	12.4	0.59	18.4	0.58	21.4	0.65	20.4	0.65	13.2	0.49	6.6	0.41
Brazil	30.0	0.95	31.0	0.74	23.3	0.77	11.3	0.56	3.6	0.44	0.7	0.16	0.1 !	0.03
Bulgaria	20.6	1.54	21.7	0.99	23.1	1.02	19.3	0.85	10.6	0.79	3.9	0.51	0.8 !	0.24
Canada	4.2	0.28	9.8	0.41	19.7	0.60	26.0	0.58	22.2	0.51	12.8	0.69	5.3	0.39
Chile	17.9	1.24	28.0	0.93	27.2	1.02	17.7	0.88	7.3	0.67	1.8	0.26	0.2 !	0.06
Chinese Taipei	4.2	0.46	7.9	0.62	14.2	0.70	19.6	0.69	22.9	0.76	18.9	0.92	12.3	0.90
Colombia	34.7	1.40	33.4	1.09	22.3	0.97	7.4	0.63	1.9	0.30	0.2 !	0.09	‡	†
Costa Rica	19.7	1.41	32.3	1.13	30.5	1.18	13.7	1.01	3.3	0.50	0.5 !	0.14	‡	†
Croatia	9.9	0.78	18.1	1.03	25.1	1.02	23.1	0.98	14.9	0.81	6.8	0.69	2.1	0.47
Cyprus	22.4	0.63	21.2	0.81	23.4	0.69	18.8	0.74	9.8	0.51	3.5	0.28	0.9	0.16
Czech Republic	8.6	0.78	14.3	0.83	21.4	0.92	24.1	1.02	18.4	1.00	9.5	0.66	3.7	0.34
Denmark	4.8	0.49	11.9	0.71	22.1	0.80	26.7	0.81	20.4	0.86	10.8	0.69	3.3	0.42
Estonia	3.5	0.38	10.8	0.68	22.3	0.83	28.0	0.95	21.4	1.04	10.3	0.62	3.7	0.36
Finland	3.2	0.34	7.7	0.53	18.2	0.71	27.8	0.79	24.5	0.67	13.6	0.59	5.0	0.44
France	8.2	0.73	11.7	0.89	18.7	0.90	22.0	0.87	20.0	1.11	13.1	0.87	6.2	0.58
Germany	7.1	0.74	11.6	0.78	17.6	1.07	21.8	0.86	21.7	0.91	13.5	0.88	6.7	0.65
Greece	13.3	1.02	18.6	0.76	23.6	0.85	22.5	0.91	14.4	0.93	6.0	0.59	1.6	0.24
Hong Kong-China	2.7	0.39	6.4	0.70	13.2	0.83	21.7	0.94	27.4	1.10	19.2	0.90	9.4	0.91
Hungary	12.4	0.93	15.9	0.94	23.5	0.93	22.6	0.94	16.0	0.83	7.3	0.66	2.2	0.40
Iceland	9.7	0.53	14.1	0.77	20.7	0.99	24.2	1.18	18.6	0.84	9.3	0.72	3.4	0.34
Indonesia	39.3	2.07	34.0	1.45	19.2	1.29	6.0	0.94	1.3 !	0.47	‡	†	‡	†
Ireland	5.5	0.61	11.3	0.76	22.2	0.96	26.3	0.87	21.2	0.79	10.0	0.56	3.5	0.32
Israel	19.3	1.32	17.1	0.78	19.9	1.14	19.2	0.87	13.9	0.77	7.4	0.70	3.2	0.62
Italy	9.7	0.45	13.6	0.52	20.3	0.47	22.3	0.54	18.2	0.48	10.6	0.42	5.2	0.34
Japan	3.4	0.49	8.5	0.71	17.6	0.95	25.1	1.07	24.3	1.06	15.0	0.83	6.1	0.70
Jordan	36.6	1.53	32.3	0.84	21.8	1.14	7.3	0.58	1.7	0.43	‡	†	‡	†
Kazakhstan	16.1	0.96	34.7	1.26	32.3	1.00	14.0	1.27	2.7	0.49	‡	†	‡	†
Korea, Republic of	3.7	0.49	7.6	0.64	15.7	0.82	22.9	0.88	24.6	0.87	17.0	0.93	8.6	0.97
Latvia	7.0	0.70	16.0	0.89	25.2	1.12	26.0	0.99	17.1	0.84	6.9	0.62	1.8	0.37
Liechtenstein	5.2	1.47	9.4	2.00	15.1	2.72	19.3	3.40	21.2	2.78	19.1	2.48	10.6	1.72
Lithuania	10.7	0.73	18.6	0.86	26.1	1.02	23.3	0.84	14.3	0.82	5.7	0.50	1.3	0.27
Luxembourg	10.4	0.52	14.7	0.70	19.9	0.70	21.6	0.61	18.2	0.57	10.7	0.49	4.6	0.27
Macao-China	3.6	0.40	8.4	0.63	17.7	0.70	25.1	0.87	25.0	0.66	14.7	0.72	5.6	0.36
Malaysia	21.5	1.33	30.2	1.06	28.6	0.98	14.8	0.92	4.4	0.65	0.5 !	0.18	‡	†
Mexico	22.0	0.66	32.1	0.62	29.2	0.55	13.1	0.46	3.2	0.21	0.4	0.07	‡	†
Montenegro, Republic of	27.7	0.88	26.6	1.08	23.5	1.19	14.4	0.87	5.9	0.55	1.5	0.37	0.3 !	0.10
Netherlands	5.1	0.83	11.1	0.83	17.2	1.01	21.8	1.23	22.8	1.21	15.2	1.00	6.9	0.62
New Zealand	7.9	0.58	13.0	0.65	19.2	0.96	21.1	0.93	19.3	0.68	12.5	0.76	7.0	0.52
Norway	7.6	0.65	13.3	0.84	21.7	0.82	24.8	0.94	19.2	0.78	9.3	0.63	3.9	0.44
Peru	46.6	1.82	27.4	1.04	16.2	1.09	7.1	0.83	2.1	0.36	0.5 !	0.16	‡	†
Poland	3.9	0.36	10.9	0.74	21.5	0.90	26.2	0.78	22.2	0.84	11.1	0.72	4.2	0.75
Portugal	8.2	0.90	15.1	0.97	23.0	0.86	24.4	1.00	18.4	0.89	8.7	0.59	2.3	0.32
Qatar	46.7	0.45	22.0	0.54	15.3	0.48	9.2	0.32	4.6	0.23	1.8	0.13	0.4	0.08
Romania	13.9	1.29	27.3	1.40	31.8	1.06	19.1	1.07	6.6	0.78	1.2	0.30	‡	†
Russian Federation	10.1	0.78	18.1	0.90	26.9	0.97	24.2	1.04	14.2	0.83	5.2	0.47	1.2	0.20
Serbia, Republic of	17.0	1.34	22.7	1.14	26.4	0.97	19.6	1.08	10.3	0.84	3.3	0.51	0.8	0.22
Shanghai-China	1.5	0.30	4.3	0.48	10.9	0.64	18.4	1.01	24.4	1.44	22.8	0.96	17.7	1.02
Singapore	3.3	0.28	7.7	0.46	14.0	0.62	19.8	0.75	22.7	0.97	18.6	0.99	14.0	0.55
Slovak Republic	13.6	0.98	16.8	0.88	22.3	1.08	22.0	0.87	15.4	0.86	7.3	0.54	2.5	0.40
Slovenia	6.6	0.47	14.9	0.64	23.5	1.02	23.0	0.96	18.6	0.73	10.2	0.55	3.3	0.42
Spain	8.5	0.43	13.6	0.63	21.8	0.83	24.4	0.65	18.9	0.60	9.6	0.41	3.1	0.22
Sweden	10.1	0.71	15.7	0.63	22.7	0.78	23.6	0.98	17.0	0.88	8.2	0.51	2.8	0.34
Switzerland	5.0	0.43	9.4	0.58	16.8	0.82	23.3	0.76	22.8	0.65	15.2	0.80	7.5	0.81
Thailand	16.9	1.11	28.5	1.11	30.0	1.04	16.3	0.97	6.0	0.66	1.9	0.38	0.4 !	0.15
Tunisia	36.8	1.90	31.5	1.26	21.3	1.37	7.7	0.78	2.2	0.58	‡	†	‡	†
Turkey	17.1	1.08	25.2	1.30	25.4	1.15	16.6	1.00	9.9	1.17	4.2	0.73	1.7 !	0.54
United Arab Emirates	22.3	0.90	26.3	0.84	24.7	0.63	16.2	0.71	7.5	0.48	2.5	0.28	0.5	0.13
United Kingdom	8.2	0.82	13.2	0.80	20.7	0.76	23.6	0.99	19.2	0.82	10.4	0.62	4.7	0.45
United States	8.3	0.89	16.1	0.86	23.9	0.86	22.9	0.85	16.9	0.99	8.7	0.64	3.1	0.41
Uruguay	28.5	1.19	27.4	0.83	24.0	1.13	13.2	0.73	5.6	0.58	1.3	0.34	‡	†
Vietnam	4.5	0.82	13.0	1.28	25.3	1.18	29.7	1.22	18.8	1.21	7.0	0.82	1.8	0.43
<b>U.S. state education systems</b>														
Connecticut	7.2	1.29	11.6	1.18	18.2	1.35	23.1	1.64	20.4	1.73	12.7	1.39	6.7	1.05
Florida	10.0	1.43	18.8	1.59	25.1	1.70	23.7	1.84	13.9	1.29	6.3	1.09	2.2 !	0.81
Massachusetts	5.7	0.73	11.2	0.97	18.7	1.53	22.0	1.59	20.3	1.49	13.6	1.39	8.6	1.54

† Not applicable.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

‡ Reporting standards not met.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into mathematics literacy levels according to their process subscale scores. Exact cut scores are as follows: below level 1 (a score less than or equal to 357.77); level 1 (a score greater than 357.77 and less than or equal to 420.07); level 2 (a score greater than 420.07 and less than or equal to 482.38); level 3 (a score greater than 482.38 and less than or equal to 544.68); level 4 (a score greater than 544.68 and less than or equal to 606.99); level 5 (a score greater than 606.99 and less than or equal to 669.30); and level 6 (a score greater than 669.30). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Detail may not sum to totals because of rounding. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.



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**Table M4. Average scores of 15-year-old students on PISA mathematics literacy scale, by education system: 2012**

Education system	Average score	s.e.	Education system	Average score	s.e.
OECD average	494 ▲	0.5			
<i>Shanghai-China</i>	613 ▲	3.3	<i>Lithuania</i>	479	2.6
<i>Singapore</i>	573 ▲	1.3	Sweden	478	2.3
<i>Hong Kong-China</i>	561 ▲	3.2	Hungary	477	3.2
<i>Chinese Taipei</i>	560 ▲	3.3	<i>Croatia</i>	471 ▼	3.5
Korea, Republic of	554 ▲	4.6	Israel	466 ▼	4.7
<i>Macao-China</i>	538 ▲	1.0	Greece	453 ▼	2.5
Japan	536 ▲	3.6	<i>Serbia, Republic of</i>	449 ▼	3.4
<i>Liechtenstein</i>	535 ▲	4.0	Turkey	448 ▼	4.8
Switzerland	531 ▲	3.0	<i>Romania</i>	445 ▼	3.8
Netherlands	523 ▲	3.5	<i>Cyprus</i>	440 ▼	1.1
Estonia	521 ▲	2.0	<i>Bulgaria</i>	439 ▼	4.0
Finland	519 ▲	1.9	<i>United Arab Emirates</i>	434 ▼	2.4
Canada	518 ▲	1.8	<i>Kazakhstan</i>	432 ▼	3.0
Poland	518 ▲	3.6	<i>Thailand</i>	427 ▼	3.4
Belgium	515 ▲	2.1	Chile	423 ▼	3.1
Germany	514 ▲	2.9	<i>Malaysia</i>	421 ▼	3.2
<i>Vietnam</i>	511 ▲	4.8	Mexico	413 ▼	1.4
Austria	506 ▲	2.7	<i>Montenegro, Republic of</i>	410 ▼	1.1
Australia	504 ▲	1.6	<i>Uruguay</i>	409 ▼	2.8
Ireland	501 ▲	2.2	<i>Costa Rica</i>	407 ▼	3.0
Slovenia	501 ▲	1.2	<i>Albania</i>	394 ▼	2.0
Denmark	500 ▲	2.3	<i>Brazil</i>	391 ▼	2.1
New Zealand	500 ▲	2.2	<i>Argentina</i>	388 ▼	3.5
Czech Republic	499 ▲	2.9	<i>Tunisia</i>	388 ▼	3.9
France	495 ▲	2.5	<i>Jordan</i>	386 ▼	3.1
United Kingdom	494 ▲	3.3	<i>Colombia</i>	376 ▼	2.9
Iceland	493 ▲	1.7	<i>Qatar</i>	376 ▼	0.8
<i>Latvia</i>	491 ▲	2.8	<i>Indonesia</i>	375 ▼	4.0
Luxembourg	490 ▲	1.1	<i>Peru</i>	368 ▼	3.7
Norway	489	2.7			
Portugal	487	3.8			
Italy	485	2.0	<b>U.S. state education systems</b>		
Spain	484	1.9	<i>Massachusetts</i>	514 ▲	6.2
<i>Russian Federation</i>	482	3.0	<i>Connecticut</i>	506 ▲	6.2
Slovak Republic	482	3.4	<i>Florida</i>	467 ▼	5.8
<b>United States</b>	<b>481</b>	<b>3.6</b>			

▲ Average score is higher than U.S. average score.

▼ Average score is lower than U.S. average score.

NOTE: Education systems are ordered by 2012 average score. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Scores are reported on a scale from 0 to 1,000. All average scores reported as higher or lower than the U.S. average score are different at the .05 level of statistical significance. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only. This table corresponds to table 1 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

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Table M5. Average scores of 15-year-old students on PISA mathematics literacy content subscales, by education system: 2012

Education system	Quantity		Uncertainty and data		Change and relationships		Space and shape	
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.
OECD average	495	0.5	OECD average	493	0.5	OECD average	493	0.6
Shanghai-China	591	3.2	Shanghai-China	592	3.0	Shanghai-China	624	3.6
Singapore	569	1.2	Singapore	559	1.5	Singapore	580	1.5
Hong Kong-China	566	3.4	Hong Kong-China	553	3.0	Hong Kong-China	564	3.6
Chinese Taipei	543	3.1	Chinese Taipei	549	3.2	Chinese Taipei	561	3.5
Liechtenstein	538	4.1	Korea, Republic of	538	4.2	Korea, Republic of	559	5.2
Korea, Republic of	537	4.1	Netherlands	532	3.8	Macao-China	542	1.2
Netherlands	532	3.6	Japan	528	3.5	Japan	542	4.0
Switzerland	531	3.1	Liechtenstein	526	3.9	Liechtenstein	542	4.0
Macao-China	531	1.1	Macao-China	525	1.1	Estonia	530	2.3
Finland	527	1.9	Switzerland	522	3.2	Switzerland	530	3.4
Estonia	525	2.2	Vietnam	519	4.5	Canada	525	2.0
Belgium	519	2.0	Finland	519	2.4	Finland	520	2.6
Poland	519	3.5	Poland	517	3.5	Netherlands	518	3.9
Japan	518	3.6	Canada	516	1.8	Germany	516	3.8
Germany	517	3.1	Estonia	510	2.0	Belgium	513	2.6
Canada	515	2.2	Germany	509	3.0	Vietnam	509	5.1
Austria	510	2.9	Ireland	509	2.5	Poland	509	4.1
Vietnam	509	5.5	Belgium	508	2.5	Australia	509	1.7
Ireland	505	2.6	Australia	508	1.5	Austria	506	3.4
Czech Republic	505	3.0	New Zealand	506	2.6	Ireland	501	2.6
Slovenia	504	1.2	Denmark	505	2.4	New Zealand	501	2.5
Denmark	502	2.4	United Kingdom	502	3.0	Czech Republic	499	3.5
Australia	500	1.9	Austria	499	2.7	Slovenia	499	1.1
New Zealand	499	2.4	Norway	497	3.0	France	497	2.7
Iceland	496	1.9	Slovenia	496	1.2	Latvia	496	3.4
France	496	2.6	Iceland	496	1.8	United Kingdom	496	3.4
Luxembourg	495	1.0	France	492	2.7	Denmark	494	2.7
United Kingdom	494	3.8	Czech Republic	488	2.8	Russian Federation	491	3.4
Norway	492	2.9	United States	488	3.5	United States	488	3.5
Spain	491	2.3	Spain	487	2.3	Luxembourg	488	1.0
Italy	491	2.0	Portugal	486	3.8	Iceland	487	1.9
Latvia	487	2.9	Luxembourg	483	1.0	Portugal	486	4.1
Slovak Republic	486	3.5	Sweden	483	2.5	Spain	482	2.0
Lithuania	483	2.8	Italy	482	2.0	Hungary	481	3.5
Sweden	482	2.5	Latvia	478	2.8	Lithuania	479	3.2
Portugal	481	4.0	Hungary	476	3.3	Norway	478	3.1
Croatia	480	3.7	Lithuania	474	2.7	Italy	477	2.7
Israel	480	5.2	Slovak Republic	472	3.6	Slovak Republic	474	3.4
Russian Federation	478	3.0	Croatia	468	3.5	Sweden	469	2.8
United States	478	3.9	Israel	465	4.7	Croatia	468	4.2
Hungary	476	3.4	Russian Federation	463	3.3	Israel	462	5.3
Serbia, Republic of	456	3.7	Greece	460	2.6	Turkey	448	5.0
Greece	455	3.0	Serbia, Republic of	448	3.3	Greece	446	3.2
Romania	443	4.5	Turkey	447	4.6	Romania	446	3.9
Bulgaria	443	4.3	Cyprus	442	1.1	United Arab Emirates	442	2.6
Turkey	442	5.0	Romania	437	3.3	Serbia, Republic of	442	4.1
Cyprus	439	1.1	Thailand	433	3.1	Cyprus	440	1.2
United Arab Emirates	431	2.7	United Arab Emirates	432	2.4	Bulgaria	434	4.5
Kazakhstan	428	3.5	Bulgaria	432	3.9	Kazakhstan	433	3.2
Chile	421	3.3	Chile	430	2.9	Thailand	414	3.9
Thailand	419	3.7	Malaysia	422	3.0	Chile	411	3.5
Mexico	414	1.5	Montenegro, Republic of	415	1.0	Mexico	405	1.6
Uruguay	411	3.2	Costa Rica	414	2.9	Costa Rica	402	3.5
Malaysia	409	3.6	Kazakhstan	414	2.6	Uruguay	401	3.2
Montenegro, Republic of	409	1.2	Mexico	413	1.2	Malaysia	401	4.0
Costa Rica	406	3.6	Uruguay	407	2.7	Montenegro, Republic of	399	1.3
Brazil	393	2.5	Brazil	402	2.0	Albania	388	2.1
Argentina	391	3.7	Tunisia	399	3.6	Jordan	387	3.7
Albania	386	2.7	Jordan	384	3.2	Tunisia	379	4.5
Tunisia	378	4.6	Argentina	389	3.5	Argentina	379	4.2
Colombia	375	3.4	Colombia	388	2.4	Brazil	372	2.7
Qatar	371	0.9	Albania	386	2.4	Indonesia	364	4.3
Jordan	367	3.4	Indonesia	384	3.9	Qatar	363	0.9
Peru	365	4.1	Qatar	382	0.8	Colombia	357	3.7
Indonesia	362	4.7	Peru	373	3.3	Peru	349	4.5
Indonesia	362	4.7	Peru	373	3.3	Peru	349	4.5
Colombia	369	3.5	Colombia	369	3.5	Colombia	369	3.5
<b>U.S. state education systems</b>			<b>U.S. state education systems</b>			<b>U.S. state education systems</b>		
Massachusetts	506	6.0	Massachusetts	523	6.4	Massachusetts	518	6.7
Connecticut	502	6.5	Connecticut	512	5.8	Connecticut	515	7.0
Florida	458	6.4	Florida	475	5.9	Florida	476	5.6

▲ Average score is higher than U.S. score.

▼ Average score is lower than U.S. score.

NOTE: Education systems are ordered by 2012 average subscale score. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Scores are reported on a scale from 0 to 1,000. All average scores reported as higher or lower than the U.S. average score are different at the .05 significance level of statistical significance. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

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Table M6. Average scores of 15-year-old students on PISA mathematics literacy process subscales, by education system: 2012

Formulating			Employing			Interpreting		
Education system	Average score	s.e.	Education system	Average score	s.e.	Education system	Average score	s.e.
OECD average	492 ▲	0.5	OECD average	493 ▲	0.5	OECD average	497 ▲	0.5
<i>Shanghai-China</i>	624 ▲	4.1	<i>Shanghai-China</i>	613 ▲	3.0	<i>Shanghai-China</i>	579 ▲	2.9
<i>Singapore</i>	582 ▲	1.6	<i>Singapore</i>	574 ▲	1.2	<i>Singapore</i>	555 ▲	1.4
<i>Chinese Taipei</i>	578 ▲	4.0	<i>Hong Kong-China</i>	558 ▲	3.1	<i>Hong Kong-China</i>	551 ▲	3.4
<i>Hong Kong-China</i>	568 ▲	3.7	Korea, Republic of	553 ▲	4.3	<i>Chinese Taipei</i>	549 ▲	3.0
Korea, Republic of	562 ▲	5.1	<i>Chinese Taipei</i>	549 ▲	3.1	<i>Liechtenstein</i>	540 ▲	4.1
Japan	554 ▲	4.2	<i>Liechtenstein</i>	536 ▲	3.7	Korea, Republic of	540 ▲	4.2
<i>Macao-China</i>	545 ▲	1.4	<i>Macao-China</i>	536 ▲	1.1	Japan	531 ▲	3.5
Switzerland	538 ▲	3.1	Japan	530 ▲	3.5	<i>Macao-China</i>	530 ▲	1.0
<i>Liechtenstein</i>	535 ▲	4.4	Switzerland	529 ▲	2.9	Switzerland	529 ▲	3.4
Netherlands	527 ▲	3.8	Estonia	524 ▲	2.1	Finland	528 ▲	2.2
Finland	519 ▲	2.4	<i>Vietnam</i>	523 ▲	5.1	Netherlands	526 ▲	3.6
Estonia	517 ▲	2.3	Poland	519 ▲	3.5	Canada	521 ▲	2.0
Canada	516 ▲	2.2	Netherlands	518 ▲	3.4	Germany	517 ▲	3.2
Poland	516 ▲	4.2	Canada	517 ▲	1.9	Poland	515 ▲	3.5
Belgium	512 ▲	2.4	Germany	516 ▲	2.8	Australia	514 ▲	1.7
Germany	511 ▲	3.4	Belgium	516 ▲	2.1	Belgium	513 ▲	2.4
Denmark	502 ▲	2.4	Finland	516 ▲	1.8	Estonia	513 ▲	2.1
Iceland	500 ▲	1.7	Austria	510 ▲	2.5	New Zealand	511 ▲	2.5
Austria	499 ▲	3.2	Slovenia	505 ▲	1.2	France	511 ▲	2.5
Australia	498 ▲	1.9	Czech Republic	504 ▲	2.9	Austria	509 ▲	3.3
<i>Vietnam</i>	497 ▲	5.1	Ireland	502 ▲	2.4	Denmark	508 ▲	2.5
New Zealand	496 ▲	2.5	Australia	500 ▲	1.7	Ireland	507 ▲	2.5
Czech Republic	495 ▲	3.4	France	496 ▲	2.3	United Kingdom	501 ▲	3.5
Ireland	492 ▲	2.4	<i>Latvia</i>	495 ▲	2.8	Norway	499	3.1
Slovenia	492 ▲	1.5	New Zealand	495 ▲	2.2	Italy	498 ▲	2.1
Norway	489 ▲	3.1	Denmark	495 ▲	2.4	Slovenia	498 ▲	1.4
United Kingdom	489 ▲	3.7	Luxembourg	493 ▲	0.9	<i>Vietnam</i>	497	4.5
<i>Latvia</i>	488 ▲	3.0	United Kingdom	492 ▲	3.1	Spain	495	2.2
France	483	2.8	Iceland	490 ▲	1.6	Luxembourg	495	1.1
Luxembourg	482	1.0	Portugal	489	3.7	Czech Republic	494	3.0
<i>Russian Federation</i>	481	3.6	<i>Russian Federation</i>	487	3.1	Iceland	492	1.9
Slovak Republic	480	4.1	Norway	486	2.7	Portugal	490	4.0
Sweden	479	2.7	Italy	485	2.1	<b>United States</b>	<b>489</b>	<b>3.9</b>
Portugal	479	4.3	Slovak Republic	485	3.4	<i>Latvia</i>	486	3.0
<i>Lithuania</i>	477	3.1	<i>Lithuania</i>	482	2.7	Sweden	485	2.4
Spain	477	2.2	Spain	481	2.0	<i>Croatia</i>	477 ▼	3.5
<b>United States</b>	<b>475</b>	<b>4.1</b>	Hungary	481	3.2	Hungary	477 ▼	3.1
Italy	475	2.2	<b>United States</b>	<b>480</b>	<b>3.5</b>	Slovak Republic	473 ▼	3.3
Hungary	469	3.6	<i>Croatia</i>	478	3.7	<i>Russian Federation</i>	471 ▼	2.9
Israel	465	4.7	Sweden	474	2.5	<i>Lithuania</i>	471 ▼	2.8
<i>Croatia</i>	453 ▼	4.0	Israel	469	4.6	Greece	467 ▼	3.1
Turkey	449 ▼	5.2	<i>Serbia, Republic of</i>	451 ▼	3.4	Israel	462 ▼	5.2
Greece	448 ▼	2.3	Greece	449 ▼	2.7	Turkey	446 ▼	4.6
<i>Serbia, Republic of</i>	447 ▼	3.8	Turkey	448 ▼	5.0	<i>Serbia, Republic of</i>	445 ▼	3.4
<i>Romania</i>	445 ▼	4.1	<i>Romania</i>	446 ▼	4.1	<i>Bulgaria</i>	441 ▼	4.2
<i>Kazakhstan</i>	442 ▼	3.8	Cyprus	443 ▼	1.1	<i>Romania</i>	438 ▼	3.1
<i>Bulgaria</i>	437 ▼	4.2	<i>United Arab Emirates</i>	440 ▼	2.4	Cyprus	436 ▼	1.3
Cyprus	437 ▼	1.2	<i>Bulgaria</i>	439 ▼	4.1	Chile	433 ▼	3.1
<i>United Arab Emirates</i>	426 ▼	2.7	<i>Kazakhstan</i>	433 ▼	3.2	<i>Thailand</i>	432 ▼	3.4
Chile	420 ▼	3.2	<i>Thailand</i>	426 ▼	3.5	<i>United Arab Emirates</i>	428 ▼	2.4
<i>Thailand</i>	416 ▼	4.0	<i>Malaysia</i>	423 ▼	3.3	<i>Kazakhstan</i>	420 ▼	2.6
Mexico	409 ▼	1.7	Chile	416 ▼	3.3	<i>Malaysia</i>	418 ▼	3.1
<i>Uruguay</i>	406 ▼	3.2	Mexico	413 ▼	1.4	<i>Costa Rica</i>	418 ▼	2.9
<i>Malaysia</i>	406 ▼	3.6	<i>Montenegro, Republic of</i>	409 ▼	1.1	<i>Montenegro, Republic of</i>	413 ▼	1.4
<i>Montenegro, Republic of</i>	404 ▼	1.3	<i>Uruguay</i>	408 ▼	2.9	Mexico	413 ▼	1.3
<i>Costa Rica</i>	399 ▼	3.5	<i>Costa Rica</i>	401 ▼	3.4	<i>Uruguay</i>	409 ▼	2.7
Albania	398 ▼	1.9	Albania	397 ▼	2.2	<i>Brazil</i>	401 ▼	2.1
<i>Jordan</i>	390 ▼	3.4	<i>Tunisia</i>	390 ▼	4.3	<i>Argentina</i>	390 ▼	4.1
<i>Argentina</i>	383 ▼	3.5	<i>Brazil</i>	388 ▼	2.1	<i>Colombia</i>	387 ▼	2.5
<i>Qatar</i>	378 ▼	0.9	<i>Argentina</i>	387 ▼	3.4	<i>Tunisia</i>	385 ▼	3.9
<i>Brazil</i>	376 ▼	2.5	<i>Jordan</i>	383 ▼	3.4	<i>Jordan</i>	383 ▼	3.0
<i>Colombia</i>	375 ▼	3.3	<i>Qatar</i>	373 ▼	0.8	<i>Indonesia</i>	379 ▼	4.0
<i>Tunisia</i>	373 ▼	4.1	<i>Indonesia</i>	369 ▼	4.2	<i>Albania</i>	379 ▼	2.4
<i>Peru</i>	370 ▼	3.7	<i>Peru</i>	368 ▼	3.9	<i>Qatar</i>	375 ▼	0.8
<i>Indonesia</i>	368 ▼	4.6	<i>Colombia</i>	367 ▼	3.3	<i>Peru</i>	368 ▼	3.8
<b>U.S. state education systems</b>			<b>U.S. state education systems</b>			<b>U.S. state education systems</b>		
<i>Massachusetts</i>	512 ▲	7.4	<i>Massachusetts</i>	509 ▲	5.8	<i>Massachusetts</i>	524 ▲	6.4
<i>Connecticut</i>	504 ▲	7.3	<i>Connecticut</i>	502 ▲	6.1	<i>Connecticut</i>	515 ▲	6.4
<i>Florida</i>	458 ▼	6.5	<i>Florida</i>	466 ▼	5.4	<i>Florida</i>	475	6.5

▲ Average score is higher than U.S. score.

▼ Average score is lower than U.S. score.

NOTE: Education systems are ordered by 2012 average subscale score. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. All average scores reported as higher or lower than the U.S. average score are different at the .05 significance level of statistical significance. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Table M7. Cut scores of 15-year-old students on PISA mathematics literacy scale at selected percentiles and percentile cut score gaps, by education system: 2012

Education system	Percentile											
	10th		25th		50th		75th		90th		90th to 10th	
	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.	Cut score gap	s.e.
OECD average	375	0.7	430	0.6	494	0.6	558	0.6	614	0.7	239	1.0
<i>Costa Rica</i>	323	3.8	361	3.6	403	3.1	449	3.9	496	5.1	172	6.4
<i>Indonesia</i>	288	4.2	327	3.8	370	3.6	418	5.2	469	7.8	181	8.8
<i>Kazakhstan</i>	343	2.5	383	2.8	429	3.1	478	4.4	527	5.7	183	6.2
<i>Colombia</i>	285	4.0	326	2.8	373	2.9	423	3.6	474	4.8	189	6.3
<i>Mexico</i>	320	1.9	362	1.6	411	1.6	462	1.7	510	2.0	191	2.7
<i>Jordan</i>	290	4.0	335	3.2	383	3.1	435	3.3	485	4.3	195	5.8
<i>Argentina</i>	292	4.6	337	3.8	388	4.2	440	4.5	488	4.1	196	6.2
<i>Tunisia</i>	292	4.3	334	3.7	384	3.8	437	4.5	488	7.3	196	8.5
<i>Brazil</i>	298	2.0	337	1.9	385	2.0	440	2.7	495	4.5	197	4.9
<i>Thailand</i>	328	3.1	372	2.6	421	3.3	476	4.8	535	7.3	207	7.9
<i>Estonia</i>	417	3.0	465	2.7	519	2.6	576	2.7	626	3.2	209	4.4
<i>Romania</i>	344	3.5	386	3.8	439	4.0	497	4.8	553	6.1	209	7.1
<i>Chile</i>	323	3.7	365	3.5	417	3.4	476	4.2	532	4.2	209	5.6
<i>Malaysia</i>	319	3.2	363	3.1	417	3.4	474	4.3	530	4.9	211	5.9
<i>Latvia</i>	387	4.4	434	3.3	489	3.4	546	3.8	597	3.7	211	5.8
<i>Denmark</i>	393	4.0	444	3.3	501	2.7	556	2.7	607	3.1	214	5.1
<i>Montenegro, Republic of</i>	306	2.0	352	1.7	406	2.1	465	2.0	520	2.7	214	3.4
<i>Peru</i>	264	3.4	311	3.6	364	3.8	421	4.9	478	6.7	214	7.5
<i>Ireland</i>	391	3.6	445	3.2	503	2.9	559	2.4	610	2.5	219	4.4
<i>Finland</i>	409	3.3	463	2.5	520	2.4	577	2.4	629	3.1	219	4.5
<i>Vietnam</i>	401	7.4	454	5.3	510	5.0	568	5.5	623	6.8	222	10.1
<i>Russian Federation</i>	371	3.9	423	3.1	481	3.3	540	3.6	595	4.7	224	6.1
<i>Spain</i>	370	3.1	424	2.6	486	2.3	546	2.1	597	2.4	228	3.9
<i>Greece</i>	338	3.8	393	3.6	453	3.2	513	2.8	567	3.1	228	4.9
<i>Uruguay</i>	297	4.1	347	3.0	407	3.2	470	3.6	526	3.8	228	5.6
<i>Croatia</i>	360	3.3	408	3.6	468	3.5	531	4.5	589	7.3	229	8.0
<i>Norway</i>	373	3.9	428	2.9	490	2.9	552	3.3	604	3.4	231	5.2
<i>Canada</i>	402	2.4	457	2.1	518	2.2	580	2.3	633	2.3	231	3.3
<i>Albania</i>	278	4.8	338	3.0	397	2.3	454	2.4	510	3.5	231	5.9
<i>United Arab Emirates</i>	323	2.5	370	2.9	429	2.8	494	2.9	555	3.9	232	4.6
<i>Lithuania</i>	364	3.5	418	3.1	478	3.2	540	3.3	596	3.5	232	4.9
<i>Serbia, Republic of</i>	335	4.1	386	3.7	445	3.6	508	4.4	567	5.8	233	7.1
<b>United States</b>	<b>368</b>	<b>3.9</b>	<b>418</b>	<b>3.7</b>	<b>477</b>	<b>4.0</b>	<b>543</b>	<b>4.4</b>	<b>600</b>	<b>4.3</b>	<b>233</b>	<b>5.8</b>
<i>Poland</i>	402	2.8	454	3.3	514	3.8	580	4.9	636	6.0	234	6.7
<i>Sweden</i>	360	3.5	415	2.9	478	2.6	543	2.7	596	2.9	236	4.6
<i>Turkey</i>	339	3.3	382	3.6	438	4.8	507	8.0	577	9.7	238	10.3
<i>Iceland</i>	372	2.8	431	2.6	494	2.3	557	3.0	612	3.3	239	4.3
<i>Austria</i>	384	3.9	440	3.2	506	3.3	572	3.5	624	3.8	240	5.5
<i>Cyprus</i>	320	2.6	376	1.6	439	1.7	503	2.0	561	2.1	240	3.3
<i>Slovenia</i>	384	2.5	434	2.0	498	2.2	566	2.1	624	2.9	240	3.8
<i>Italy</i>	366	2.2	421	2.3	485	2.4	550	2.7	607	3.0	241	3.7
<i>Macao-China</i>	415	2.8	476	1.7	542	1.7	605	1.7	657	2.3	242	3.7
<i>Netherlands</i>	397	5.5	457	5.1	529	4.7	591	4.3	638	3.7	242	6.6
<i>Japan</i>	415	5.1	473	4.2	538	3.9	603	4.4	657	5.1	242	7.2
<i>Switzerland</i>	408	3.3	466	3.4	534	3.5	597	3.6	651	4.3	243	5.4
<i>Czech Republic</i>	377	4.9	432	3.9	500	3.4	566	3.3	621	3.6	244	6.1
<i>Hungary</i>	358	4.2	411	3.3	474	3.6	540	4.8	603	6.4	245	7.6
<i>United Kingdom</i>	371	5.0	429	4.2	495	3.5	560	3.7	616	4.1	245	6.5
<i>Bulgaria</i>	320	4.8	372	4.7	436	4.4	503	5.2	565	5.6	245	7.4
<i>Portugal</i>	363	4.2	421	5.0	488	4.7	554	4.3	610	3.9	247	5.8
<i>Australia</i>	382	2.3	437	2.0	503	1.9	571	2.3	630	3.0	249	3.8
<i>Hong Kong-China</i>	430	6.2	499	4.7	569	3.8	629	3.5	679	4.2	249	7.5
<i>Luxembourg</i>	363	3.0	422	1.5	491	1.7	558	1.6	613	2.2	250	3.7
<i>Germany</i>	385	4.7	447	3.6	516	3.3	583	3.6	637	3.8	252	6.0
<i>Liechtenstein</i>	403	11.2	470	8.0	540	5.9	606	5.0	666	9.2	253	14.5
<i>Korea, Republic of</i>	425	5.8	486	4.8	557	4.8	624	5.1	679	6.0	254	8.3
<i>France</i>	365	4.7	429	2.7	497	2.9	565	3.4	621	3.5	256	5.8
<i>Qatar</i>	257	1.7	306	1.3	365	1.1	440	1.7	514	1.9	257	2.5
<i>New Zealand</i>	371	3.6	428	3.2	499	2.8	570	2.8	632	3.0	261	4.7
<i>Slovak Republic</i>	352	6.2	413	4.2	481	3.8	553	4.7	613	5.3	261	8.1
<i>Shanghai-China</i>	475	5.8	546	4.4	622	3.7	685	3.5	737	3.5	262	6.7
<i>Belgium</i>	378	4.0	444	3.1	518	2.6	589	2.4	646	2.7	268	4.9
<i>Israel</i>	328	5.7	393	5.1	468	5.2	541	5.3	603	6.0	275	8.2
<i>Singapore</i>	432	3.6	501	2.7	579	2.5	650	1.9	707	2.3	275	4.3
<i>Chinese Taipei</i>	402	4.8	478	4.8	567	4.2	645	3.4	703	4.9	301	6.9
<b>U.S. state education systems</b>												
<i>Florida</i>	359	7.3	406	6.2	464	7.0	524	6.8	581	8.9	222	11.5
<i>Massachusetts</i>	387	4.8	445	6.3	512	7.1	583	9.7	643	9.4	255	10.6
<i>Connecticut</i>	376	7.1	435	9.0	506	6.8	577	8.0	636	8.3	260	10.9

▲ Cut score gap is larger than the U.S. percentile cut score gap.

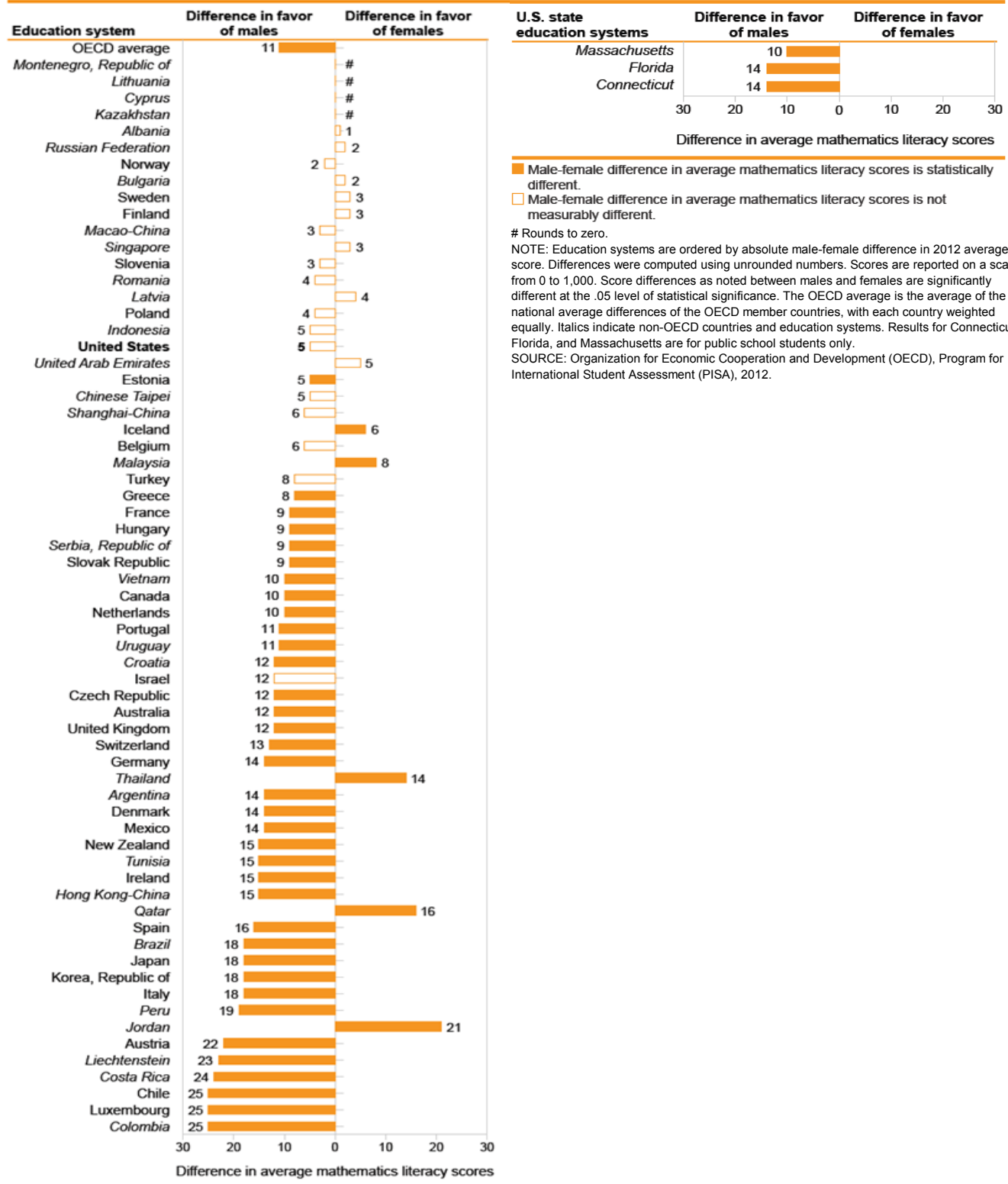
▼ Cut score gap is smaller than the U.S. percentile cut score gap.

NOTE: This table shows the threshold (or cut) scores for the following: (a) 10th percentile- the bottom 10 percent of students; (b) 25th percentile- the bottom 25 percent of students; (c) 50th percentile- the median (half the students scored below the cut score and half scored above it); (d) 75th percentile- the top 25 percent of students; (e) 90th percentile- the top 10 percent of students. The percentile ranges are specific to each education system's distribution of scores, enabling users to compare cut scores across education systems. Education systems are ordered by cut score gap. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Scores are reported on a scale from 0 to 1,000. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Figure M2a. Difference in average scores of 15-year-old female and male students on PISA mathematics literacy scale, by education system: 2012



## National Center for Education Statistics

Table M2b. Difference in average scores of 15-year-old female and male students on PISA mathematics literacy scale, by education system: 2012

Education system	Male-female difference	s.e.
OECD average	11 *	0.6
<i>Montenegro, Republic of</i>	#	†
<i>Lithuania</i>	#	†
<i>Cyprus</i>	#	†
<i>Kazakhstan</i>	#	†
<i>Albania</i>	-1	3.3
<i>Russian Federation</i>	-2	3.0
Norway	2	3.0
<i>Bulgaria</i>	-2	4.1
Sweden	-3	3.0
Finland	-3	2.9
<i>Macao-China</i>	3	1.9
<i>Singapore</i>	-3	2.5
<i>Slovenia</i>	3	3.1
<i>Romania</i>	4	3.6
<i>Latvia</i>	-4	3.6
Poland	4	3.4
<i>Indonesia</i>	5	3.4
<b>United States</b>	<b>5</b>	<b>2.8</b>
<i>United Arab Emirates</i>	-5	4.7
Estonia	5 *	2.6
<i>Chinese Taipei</i>	5	8.9
<i>Shanghai-China</i>	6	3.3
Iceland	-6 *	3.0
Belgium	6	3.4
<i>Malaysia</i>	-8 *	3.8
Turkey	8	4.7
Greece	8 *	3.2
France	9 *	3.4
Hungary	9 *	3.7
<i>Serbia, Republic of</i>	9 *	3.9
Slovak Republic	9 *	4.5
<i>Vietnam</i>	10 *	3.0
Canada	10 *	2.0
Netherlands	10 *	2.8
Portugal	11 *	2.5
<i>Uruguay</i>	11 *	3.1
<i>Croatia</i>	12 *	4.1
Israel	12	7.6
Czech Republic	12 *	4.6
Australia	12 *	3.1
United Kingdom	12 *	4.7
Switzerland	13 *	2.7
Germany	14 *	2.8
<i>Thailand</i>	-14 *	3.6
<i>Argentina</i>	14 *	2.9
Denmark	14 *	2.3
Mexico	14 *	1.2
New Zealand	15 *	4.3
<i>Tunisia</i>	15 *	2.7
Ireland	15 *	3.8
<i>Hong Kong-China</i>	15 *	5.7
<i>Qatar</i>	-16 *	1.4
Spain	16 *	2.2
<i>Brazil</i>	18 *	1.8
Japan	18 *	4.3
Korea, Republic of	18 *	6.2
Italy	18 *	2.5
<i>Peru</i>	19 *	3.9
<i>Jordan</i>	-21 *	6.3
Austria	22 *	4.9
<i>Liechtenstein</i>	23 *	8.8
<i>Costa Rica</i>	24 *	2.4
Chile	25 *	3.6
Luxembourg	25 *	2.0
<i>Colombia</i>	25 *	3.2
<b>U.S. state education systems</b>		
<i>Massachusetts</i>	10 *	4.9
<i>Florida</i>	14 *	4.1
<i>Connecticut</i>	14 *	4.4

† Not applicable.

# Rounds to zero.

\*  $p < .05$ . All differences between males and females are significantly different at the .05 level of statistical significance.

NOTE: Education systems are ordered by absolute male-female difference in 2012 average score.

Differences were computed using unrounded numbers. Scores are reported on a scale from 0 to 1,000.

The OECD average is the average of the national average differences of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Table M8. Average scores of 15-year-old students on PISA mathematics literacy scale, by national quarters of the PISA index of economic, social and cultural status (ESCS) and education system: 2012

Education system	National quarters of the ESCS index									
	Bottom quarter		Second quarter		Third quarter		Top quarter		All students	
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.
OECD average	452	0.7	482	0.6	506	0.7	542	0.8	494	0.5
Albania	—	†	—	†	—	†	—	†	394	2.0
Argentina	355	4.1	379	4.4	394	4.6	433	4.3	388	3.5
Australia	463	2.2	492	2.0	521	2.9	550	2.6	504	1.6
Austria	458	4.2	495	4.2	519	3.8	552	4.2	506	2.7
Belgium	468	4.0	497	3.2	534	3.0	567	2.9	515	2.1
Brazil	360	2.0	377	2.1	395	2.9	437	5.2	391	2.1
Bulgaria	384	5.1	424	4.1	449	6.1	501	5.9	439	4.0
Canada	486	2.3	509	2.5	529	2.5	558	2.9	518	1.8
Chile	378	4.0	409	3.8	429	3.6	477	5.4	423	3.1
Chinese Taipei	497	5.2	546	4.5	572	4.0	626	5.2	560	3.3
Colombia	343	4.1	365	3.7	382	3.2	417	5.2	376	2.9
Costa Rica	373	4.0	394	3.7	412	3.8	450	5.4	407	3.0
Croatia	438	3.5	459	3.9	471	4.9	517	5.9	471	3.5
Cyprus	398	2.5	428	2.5	448	2.8	492	2.8	440	1.1
Czech Republic	450	4.4	486	4.6	508	4.3	552	4.0	499	2.9
Denmark	460	3.4	489	3.5	513	2.9	545	3.4	500	2.3
Estonia	496	3.0	508	3.2	523	3.6	559	2.9	521	2.0
Finland	488	3.1	509	2.5	529	3.2	555	2.6	519	1.9
France	442	3.5	476	3.1	511	4.1	561	4.0	495	2.5
Germany	467	5.1	502	3.9	540	3.8	569	4.3	514	2.9
Greece	413	4.0	439	3.9	460	3.5	502	3.7	453	2.5
Hong Kong-China	532	4.8	554	3.7	567	4.4	600	5.8	561	3.2
Hungary	422	4.8	464	3.6	486	4.6	539	6.6	477	3.2
Iceland	464	2.9	481	3.1	508	3.2	526	3.7	493	1.7
Indonesia	356	4.3	363	3.9	374	4.5	408	9.7	375	4.0
Ireland	462	4.3	489	3.1	512	2.9	545	3.3	501	2.2
Israel	409	5.3	452	5.6	490	6.3	524	5.7	466	4.7
Italy	447	2.4	475	2.7	498	2.6	522	2.8	485	2.0
Japan	500	5.2	528	4.1	551	4.3	575	5.9	536	3.6
Jordan	361	3.0	375	2.9	395	3.9	419	5.8	386	3.1
Kazakhstan	405	4.0	427	3.4	437	3.7	458	5.2	432	3.0
Korea, Republic of	516	4.9	538	4.8	567	6.2	595	6.6	554	4.6
Latvia	453	4.5	472	3.4	508	4.6	532	4.8	491	2.8
Liechtenstein	490	9.6	552	11.7	542	12.0	564	11.5	535	4.0
Lithuania	439	3.8	465	3.6	491	4.2	522	3.4	479	2.6
Luxembourg	438	2.9	470	2.7	508	2.5	546	2.7	490	1.1
Macao-China	521	2.6	535	2.6	543	2.3	558	2.4	538	1.0
Malaysia	388	3.1	406	3.7	425	4.7	465	5.4	421	3.2
Mexico	385	1.9	407	1.9	417	1.9	447	2.4	413	1.4
Montenegro, Republic of	375	2.0	401	2.8	413	2.6	453	2.8	410	1.1
Netherlands	484	5.3	513	3.8	537	4.8	565	5.1	523	3.5
New Zealand	444	3.2	493	4.0	514	3.9	559	3.6	500	2.2
Norway	459	4.2	479	3.7	504	3.9	522	3.6	489	2.7
Peru	317	3.3	352	3.8	382	5.3	421	7.4	368	3.7
Poland	473	3.6	501	4.2	526	5.3	571	6.3	518	3.6
Portugal	441	4.5	474	5.0	495	4.8	548	5.2	487	3.8
Qatar	338	1.8	377	1.8	399	2.1	401	2.2	376	0.8
Romania	407	4.5	428	3.9	444	4.0	501	7.8	445	3.8
Russian Federation	445	4.9	468	4.3	496	3.6	521	5.1	482	3.0
Serbia, Republic of	416	4.4	436	3.8	450	4.7	495	5.0	449	3.4
Shanghai-China	562	6.3	602	4.8	627	3.8	660	5.3	613	3.3
Singapore	523	2.9	557	3.3	588	3.2	627	2.8	573	1.3
Slovak Republic	416	6.5	473	3.7	496	4.3	545	6.2	482	3.4
Slovenia	458	2.6	486	3.1	511	3.1	552	3.2	501	1.2
Spain	442	2.8	471	2.4	495	2.8	533	2.5	484	1.9
Sweden	443	2.9	470	4.0	495	3.4	518	3.9	478	2.3
Switzerland	488	4.0	519	4.0	543	3.9	576	4.6	531	3.0
Thailand	407	4.7	412	3.0	421	3.9	468	7.1	427	3.4
Tunisia	362	3.8	370	4.7	393	4.1	430	8.9	388	3.9
Turkey	412	4.5	436	4.2	447	6.0	498	8.3	448	4.8
United Arab Emirates	391	3.2	427	2.4	454	3.6	466	4.2	434	2.4
United Kingdom	458	4.1	477	4.1	508	4.1	545	4.0	494	3.3
<b>United States</b>	<b>442</b>	<b>3.9</b>	<b>462</b>	<b>4.6</b>	<b>494</b>	<b>5.4</b>	<b>532</b>	<b>4.6</b>	<b>481</b>	<b>3.6</b>
Uruguay	364	3.3	390	3.8	414	4.1	472	5.5	409	2.8
Vietnam	473	6.1	499	4.9	518	5.8	555	8.2	511	4.8
<b>U.S. state education systems</b>										
Connecticut	450	6.1	482	6.5	529	5.6	570	5.6	506	6.2
Florida	430	4.8	455	6.7	465	7.0	521	7.1	467	5.8
Massachusetts	459	6.0	491	5.3	533	6.6	576	8.8	514	6.2

— Not available.

† Not applicable.

NOTE: The PISA index of economic, social and cultural status (ESCS) was created using student reports on parental occupation, the highest level of parental education, and an index of home possessions related to family wealth, home educational resources and possessions related to "classical" culture in the family home. The home possessions relating to "classical" culture in the family home included possessions such as works of classical literature, books of poetry, and works of art (e.g. paintings). The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

## National Center for Education Statistics

Table M9. Percentage distribution of U.S. 15-year-old public school students on PISA mathematics literacy scale, by proficiency level and percentage of students in enrolled schools eligible for free or reduced-price lunch, based on principals' reports: 2012

Percent of students eligible for free or reduced-price lunch	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
<b>U.S. average</b>	<b>8.0</b>	<b>0.73</b>	<b>17.9</b> **	<b>0.98</b>	<b>26.3</b> **	<b>0.84</b>	<b>23.3</b>	<b>0.93</b>	<b>15.8</b> **	<b>0.91</b>	<b>6.6</b> **	<b>0.61</b>	<b>2.2</b> **	<b>0.34</b>
Less than 10 percent	‡	†	4.8 !*	2.01	18.9	3.92	27.2	4.07	25.8 *	3.20	15.3 *	3.01	6.4 !	2.69
10 to 24.9 percent	3.1 !*	0.96	11.6 *	1.59	22.3 ***	1.86	26.0	2.31	23.2 *	1.97	10.2 ***	1.48	3.6	0.98
25 to 49.9 percent	3.9 *	0.87	12.8 ***	1.46	23.9	1.87	26.1	1.55	19.7 ***	2.10	10.1 ***	1.31	3.6	0.94
50 to 74.9 percent	9.3	1.30	22.2 *	1.69	28.8 *	1.47	22.3	1.68	13.0 *	1.38	3.5 *	0.96	‡	†
75 percent or more	17.9 *	2.43	28.0 *	2.48	28.9 **	2.36	16.8 *	2.07	6.4 *	1.34	1.6 !*	0.78	‡	†
<b>OECD average</b>	<b>8.0</b>	<b>0.12</b>	<b>15.0</b> ***	<b>0.13</b>	<b>22.5</b> ***	<b>0.15</b>	<b>23.7</b>	<b>0.15</b>	<b>18.2</b> ***	<b>0.14</b>	<b>9.3</b> ***	<b>0.11</b>	<b>3.3</b> ***	<b>0.08</b>

† Not applicable.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

‡ Reporting standards not met.

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

\*\*\*  $p < .05$ . Significantly different from the U.S. average at the .05 level of statistical significance.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into mathematics literacy levels according to their scores. Exact cut scores are as follows: below level 1 (a score less than or equal to 357.77); level 1 (a score greater than 357.77 and less than or equal to 420.07); level 2 (a score greater than 420.07 and less than or equal to 482.38); level 3 (a score greater than 482.38 and less than or equal to 544.68); level 4 (a score greater than 544.68 and less than or equal to 606.99); level 5 (a score greater than 606.99 and less than or equal to 669.30); and level 6 (a score greater than 669.30). Scores are reported on a scale from 0 to 1,000. The National School Lunch Program provides free or reduced-price lunch for students meeting certain income guidelines. The percentage of students receiving such lunch is an indicator of the socioeconomic level of families served by the school. Data in this table are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Free or reduced price-lunch data are for public schools only. Detail may not sum to totals because of rounding.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.



# National Center for Education Statistics

**Table M10. Average scores of U.S. 15-year-old public school students on PISA mathematics literacy scale, by percentage of students in enrolled schools eligible for free or reduced-price lunch, based on principals' reports: 2012**

<b>Percent of students eligible for free or reduced-price lunch</b>	<b>Average score</b>	<b>s.e.</b>
<b>U.S. average</b>	<b>481 **</b>	<b>3.6</b>
Less than 10 percent	540 *	7.8
10 to 24.9 percent	513 *	5.7
25 to 49.9 percent	506 ***	6.4
50 to 74.9 percent	464 *	4.6
75 percent or more	432 *	7.2
<b>OECD average</b>	<b>494 ***</b>	<b>0.5</b>

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

\*\*\*  $p < .05$ . Significantly different from the U.S. average at the .05 level of statistical significance.

NOTE: Scores are reported on a scale from 0 to 1,000. The National School Lunch Program provides free or reduced-price lunch for students meeting certain income guidelines. The percentage of students receiving such lunch is an indicator of the socioeconomic level of families served by the school. Data in this table are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Free or reduced-price lunch data are for public schools only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table M11. Percentage distribution of U.S. 15-year-old students on PISA mathematics literacy scale, by proficiency level and race/ethnicity: 2012**

Race/ethnicity	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
<b>U.S. average</b>	<b>8.0</b>	<b>0.73</b>	<b>17.9</b> **	<b>0.98</b>	<b>26.3</b> **	<b>0.84</b>	<b>23.3</b>	<b>0.93</b>	<b>15.8</b> **	<b>0.91</b>	<b>6.6</b> **	<b>0.61</b>	<b>2.2</b> **	<b>0.34</b>
White	3.6 *	0.65	11.5 *	1.06	25.0 **	1.29	27.8 *	1.22	20.3 ***	1.21	8.8 ***	0.90	3.0 ***	0.57
Black	21.0 *	2.21	32.0 *	2.37	25.3	2.04	14.0 *	1.99	6.7 !*	2.04	1.0 !*	0.47	‡	†
Hispanic	10.8	1.87	24.2 *	1.93	30.2 *	1.59	20.3	1.97	10.2 *	1.28	3.5 *	0.86	0.7 !*	0.31
Asian	‡	†	5.4 !*	2.20	15.6 ***	4.16	23.6	4.12	28.1 *	3.76	16.1 *	3.03	9.0 *	2.47
Multiracial	‡	†	17.1	3.23	29.6	4.33	23.3	4.08	16.4	3.66	7.7	2.25	‡	†
<b>OECD average</b>	<b>8.0</b>	<b>0.12</b>	<b>15.0</b> ***	<b>0.13</b>	<b>22.5</b> ***	<b>0.15</b>	<b>23.7</b>	<b>0.15</b>	<b>18.2</b> ***	<b>0.14</b>	<b>9.3</b> ***	<b>0.11</b>	<b>3.3</b> ***	<b>0.08</b>

† Not applicable.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

‡ Reporting standards not met.

# Rounds to zero.

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

\*\*\*  $p < .05$ . Significantly different from the U.S. average at the .05 level of statistical significance.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into mathematics literacy levels according to their scores. Exact cut scores are as follows: below level 1 (a score less than or equal to 357.77); level 1 (a score greater than 357.77 and less than or equal to 420.07); level 2 (a score greater than 420.07 and less than or equal to 482.38); level 3 (a score greater than 482.38 and less than or equal to 544.68); level 4 (a score greater than 544.68 and less than or equal to 606.99); level 5 (a score greater than 606.99 and less than or equal to 669.30); and level 6 (a score greater than 669.30). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. Standard error is noted by s.e. Detail may not sum to totals because of rounding.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table M12. Average scores of U.S. 15-year-old students on PISA mathematics literacy scale, by race/ethnicity: 2012**

Race/ethnicity	Average score	s.e.
<b>U.S. average</b>	<b>481 **</b>	<b>3.6</b>
White	506 *	3.7
Black	421 *	6.2
Hispanic	455 *	4.8
Asian	549 *	9.0
Multiracial	492	7.4
<b>OECD average</b>	<b>494 ***</b>	<b>0.5</b>

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

\*\*\*  $p < .05$ . Significantly different from the U.S. average at the .05 level of statistical significance.

NOTE: Scores are reported on a scale from 0 to 1,000. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

**Exhibit S1. Description of PISA proficiency levels on science literacy scale: 2012**

Proficiency level and lower cut score	Task descriptions
Level 6 708	At level 6, students can consistently identify, explain, and apply scientific knowledge and knowledge about science in a variety of complex life situations. They can link different information sources and explanations and use evidence from those sources to justify decisions. They clearly and consistently demonstrate advanced scientific thinking and reasoning, and they use their scientific understanding in support of solutions to unfamiliar scientific and technological situations. Students at this level can use scientific knowledge and develop arguments in support of recommendations and decisions that center on personal, social, or global situations.
Level 5 633	At level 5, students can identify the scientific components of many complex life situations, apply both scientific concepts and knowledge about science to these situations, and can compare, select and evaluate appropriate scientific evidence for responding to life situations. Students at this level can use well-developed inquiry abilities, link knowledge appropriately, and bring critical insights to situations. They can construct explanations based on evidence and arguments based on their critical analysis.
Level 4 559	At level 4, students can work effectively with situations and issues that may involve explicit phenomena requiring them to make inferences about the role of science or technology. They can select and integrate explanations from different disciplines of science or technology and link those explanations directly to aspects of life situations. Students at this level can reflect on their actions and they can communicate decisions using scientific knowledge and evidence.
Level 3 484	At level 3, students can identify clearly described scientific issues in a range of contexts. They can select facts and knowledge to explain phenomena and apply simple models or inquiry strategies. Students at this level can interpret and use scientific concepts from different disciplines and can apply them directly. They can develop short statements using facts and make decisions based on scientific knowledge.
Level 2 410	At level 2, students have adequate scientific knowledge to provide possible explanations in familiar contexts or draw conclusions based on simple investigations. They are capable of direct reasoning and making literal interpretations of the results of scientific inquiry or technological problem solving.
Level 1 335	At level 1, students have such a limited scientific knowledge that it can only be applied to a few, familiar situations. They can present scientific explanations that are obvious and follow explicitly from given evidence.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into science literacy levels according to their scores. Cut scores in the exhibit are rounded; exact cut scores are provided in table AA1. Scores are reported on a scale from 0 to 1,000.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

## National Center for Education Statistics

Table S1. Percentage distribution of 15-year-old students on PISA science literacy scale, by proficiency level and education system: 2012

Education system	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
OECD average	4.8	0.09	13.0	0.14	24.5	0.16	28.8	0.17	20.5	0.15	7.2	0.10	1.2	0.04
Albania	23.5	1.04	29.6	0.94	28.5	1.19	14.4	0.78	3.6	0.41	0.4	0.14	‡	†
Argentina	19.8	1.39	31.0	1.46	31.1	1.33	14.8	1.20	3.0	0.43	0.2	0.10	‡	†
Australia	3.4	0.25	10.2	0.41	21.5	0.47	28.5	0.68	22.8	0.63	10.9	0.47	2.6	0.25
Austria	3.6	0.54	12.2	0.92	24.3	1.05	30.1	0.85	21.9	0.81	7.0	0.62	0.8	0.20
Belgium	5.8	0.47	11.8	0.61	21.5	0.69	28.7	0.72	22.9	0.61	8.3	0.41	1.0	0.13
Brazil	18.6	0.78	35.1	0.79	30.7	0.78	12.5	0.68	2.8	0.37	0.3	0.10	‡	†
Bulgaria	14.4	1.34	22.5	1.15	26.3	1.07	22.5	1.09	11.2	0.84	2.8	0.50	0.3	0.12
Canada	2.4	0.24	8.0	0.38	21.0	0.65	32.0	0.54	25.3	0.58	9.5	0.47	1.8	0.20
Chile	8.1	0.80	26.3	1.11	34.6	1.06	22.4	0.96	7.5	0.60	1.0	0.15	#	! †
Chinese Taipei	1.6	0.25	8.2	0.64	20.8	0.89	33.7	0.97	27.3	1.00	7.8	0.56	0.6	0.13
Colombia	19.8	1.36	36.3	1.10	30.8	1.08	11.0	0.83	1.9	0.25	‡	†	‡	†
Costa Rica	8.6	0.79	30.7	1.30	39.2	1.25	17.8	1.12	3.4	0.57	0.2	0.11	‡	†
Croatia	3.2	0.38	14.0	0.74	29.1	0.99	31.4	1.19	17.6	1.16	4.3	0.75	‡	†
Cyprus	14.4	0.47	23.7	0.66	30.3	0.89	21.3	0.73	8.4	0.43	1.8	0.29	0.2	0.08
Czech Republic	3.3	0.62	10.5	1.03	24.7	0.99	31.7	1.23	22.2	0.96	6.7	0.53	0.9	0.18
Denmark	4.7	0.55	12.0	0.69	25.7	0.80	31.3	0.90	19.6	0.79	6.1	0.67	0.7	0.17
Estonia	0.5	0.14	4.5	0.43	19.0	0.87	34.5	0.87	28.7	0.96	11.1	0.66	1.7	0.25
Finland	1.8	0.28	5.9	0.48	16.8	0.69	29.6	0.77	28.8	0.73	13.9	0.62	3.2	0.38
France	6.1	0.67	12.6	0.71	22.9	1.08	29.2	1.12	21.3	0.87	6.9	0.68	1.0	0.21
Germany	2.9	0.46	9.3	0.73	20.5	0.82	28.9	0.89	26.2	1.05	10.6	0.80	1.6	0.28
Greece	7.4	0.70	18.1	1.14	31.0	1.10	28.8	1.02	12.2	0.81	2.3	0.40	‡	†
Hong Kong-China	1.2	0.23	4.4	0.52	13.0	0.72	29.8	1.06	34.9	0.99	14.9	0.91	1.8	0.36
Hungary	4.1	0.61	14.0	1.04	26.4	1.08	30.9	1.16	18.7	0.98	5.5	0.73	0.5	0.18
Iceland	8.0	0.56	16.0	0.72	27.5	0.87	27.2	0.86	16.2	0.74	4.6	0.60	0.6	0.17
Indonesia	24.7	1.96	41.9	1.42	26.3	1.54	6.5	1.02	‡	†	‡	†	‡	†
Ireland	2.6	0.40	8.5	0.76	22.0	1.15	31.1	1.03	25.0	0.94	9.3	0.63	1.5	0.25
Israel	11.2	1.08	17.7	0.93	24.8	0.93	24.4	1.19	16.1	1.12	5.2	0.58	0.6	0.22
Italy	4.9	0.35	13.8	0.52	26.0	0.58	30.1	0.66	19.1	0.59	5.5	0.37	0.6	0.08
Japan	2.0	0.39	6.4	0.61	16.3	0.79	27.5	0.92	29.5	1.06	14.8	0.93	3.4	0.49
Jordan	18.2	1.21	31.4	0.96	32.2	1.04	15.0	0.86	3.0	0.57	‡	†	‡	†
Kazakhstan	11.3	0.99	30.7	1.49	36.8	1.16	17.8	1.19	3.3	0.45	0.2	0.09	‡	†
Korea, Republic of	1.2	0.25	5.5	0.60	18.0	1.02	33.6	1.11	30.1	1.24	10.6	0.93	1.1	0.39
Latvia	1.8	0.39	10.5	0.90	28.2	1.20	35.1	1.02	20.0	1.05	4.0	0.47	0.3	0.13
Liechtenstein	‡	†	9.6	1.94	22.0	3.94	30.8	3.79	26.7	2.58	9.1	1.47	‡	†
Lithuania	3.4	0.48	12.7	0.84	27.6	1.00	32.9	1.08	18.3	0.88	4.7	0.47	0.4	0.09
Luxembourg	7.2	0.42	15.1	0.67	24.2	0.63	26.2	0.60	19.2	0.53	7.0	0.49	1.2	0.17
Macao-China	1.4	0.20	7.4	0.49	22.2	0.60	36.2	0.81	26.2	0.73	6.2	0.35	0.4	0.10
Malaysia	14.5	1.13	31.0	1.21	33.9	1.10	16.5	1.07	3.7	0.54	0.3	0.13	‡	†
Mexico	12.6	0.52	34.4	0.58	37.0	0.59	13.8	0.52	2.1	0.16	0.1	0.04	‡	†
Montenegro, Republic of	18.7	0.74	32.0	0.98	29.7	0.94	15.4	0.76	3.8	0.47	0.4	0.14	‡	†
Netherlands	3.1	0.53	10.1	0.83	20.1	1.35	29.1	1.28	25.8	1.24	10.5	0.98	1.3	0.28
New Zealand	4.7	0.39	11.6	0.76	21.7	0.94	26.4	0.95	22.3	0.85	10.7	0.62	2.7	0.25
Norway	6.0	0.63	13.6	0.71	24.8	0.80	28.9	0.91	19.0	0.79	6.4	0.56	1.1	0.24
Peru	31.5	1.61	37.0	1.26	23.5	1.29	7.0	0.85	1.0	0.28	‡	†	‡	†
Poland	1.3	0.32	7.7	0.70	22.5	0.98	33.1	0.92	24.5	0.96	9.1	0.76	1.7	0.35
Portugal	4.7	0.66	14.3	1.09	27.3	0.96	31.4	1.25	17.8	1.06	4.2	0.55	0.3	0.11
Qatar	34.6	0.38	28.0	0.58	19.6	0.71	11.2	0.39	5.1	0.40	1.3	0.11	0.1	0.04
Romania	8.7	0.77	28.7	1.32	34.6	1.23	21.0	1.12	6.2	0.77	0.9	0.26	‡	†
Russian Federation	3.6	0.39	15.1	0.96	30.1	1.08	31.2	0.89	15.7	0.98	3.9	0.51	0.3	0.16
Serbia, Republic of	10.3	0.99	24.7	1.15	32.4	1.21	22.8	1.06	8.1	0.63	1.6	0.35	‡	†
Shanghai-China	0.3	0.11	2.4	0.36	10.0	0.86	24.6	0.87	35.5	1.11	23.0	1.09	4.2	0.57
Singapore	2.2	0.27	7.4	0.48	16.7	0.73	24.0	0.73	27.0	0.87	16.9	0.94	5.8	0.41
Slovak Republic	9.2	0.95	17.6	1.14	27.0	1.30	26.2	1.62	15.0	1.02	4.3	0.58	0.6	0.25
Slovenia	2.4	0.19	10.4	0.55	24.5	1.00	30.0	1.02	23.0	0.92	8.4	0.71	1.2	0.24
Spain	3.7	0.33	12.0	0.51	27.3	0.64	32.8	0.60	19.4	0.53	4.5	0.26	0.3	0.08
Sweden	7.3	0.62	15.0	0.80	26.2	0.84	28.0	0.84	17.2	0.77	5.6	0.45	0.7	0.14
Switzerland	3.0	0.31	9.8	0.62	22.8	0.82	31.3	0.74	23.7	0.86	8.3	0.70	1.0	0.22
Thailand	7.0	0.64	26.6	1.33	37.5	1.07	21.6	1.14	6.4	0.74	0.9	0.27	‡	†
Tunisia	21.3	1.45	34.0	1.07	31.1	1.36	11.7	1.00	1.8	0.49	‡	†	‡	†
Turkey	4.4	0.50	21.9	1.27	35.4	1.43	25.1	1.28	11.3	1.28	1.8	0.34	‡	†
United Arab Emirates	11.3	0.76	23.8	0.99	29.9	0.83	22.3	0.88	10.1	0.60	2.3	0.25	0.3	0.07
United Kingdom	4.3	0.48	10.7	0.86	22.4	1.00	28.4	0.98	23.0	0.91	9.3	0.70	1.8	0.34
<b>United States</b>	<b>4.2</b>	<b>0.54</b>	<b>14.0</b>	<b>1.08</b>	<b>26.7</b>	<b>1.08</b>	<b>28.9</b>	<b>1.07</b>	<b>18.8</b>	<b>1.07</b>	<b>6.3</b>	<b>0.64</b>	<b>1.1</b>	<b>0.20</b>
Uruguay	19.7	1.06	27.2	0.92	29.3	1.00	17.1	0.95	5.6	0.53	1.0	0.24	‡	†
Vietnam	0.9	0.26	5.8	0.90	20.7	1.40	37.5	1.48	27.0	1.50	7.1	0.90	1.0	0.32
<b>U.S. state education systems</b>														
Connecticut	3.3	0.82	10.2	1.36	21.4	1.58	29.4	1.69	22.8	1.46	10.7	1.13	2.2	0.60
Florida	5.1	0.96	16.1	1.61	28.4	1.61	28.2	2.00	16.6	1.64	4.9	1.01	‡	†
Massachusetts	2.6	0.65	8.9	1.03	21.2	1.96	29.4	1.50	23.8	1.84	11.3	1.48	2.9	0.73

† Not applicable.

# Rounds to zero.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

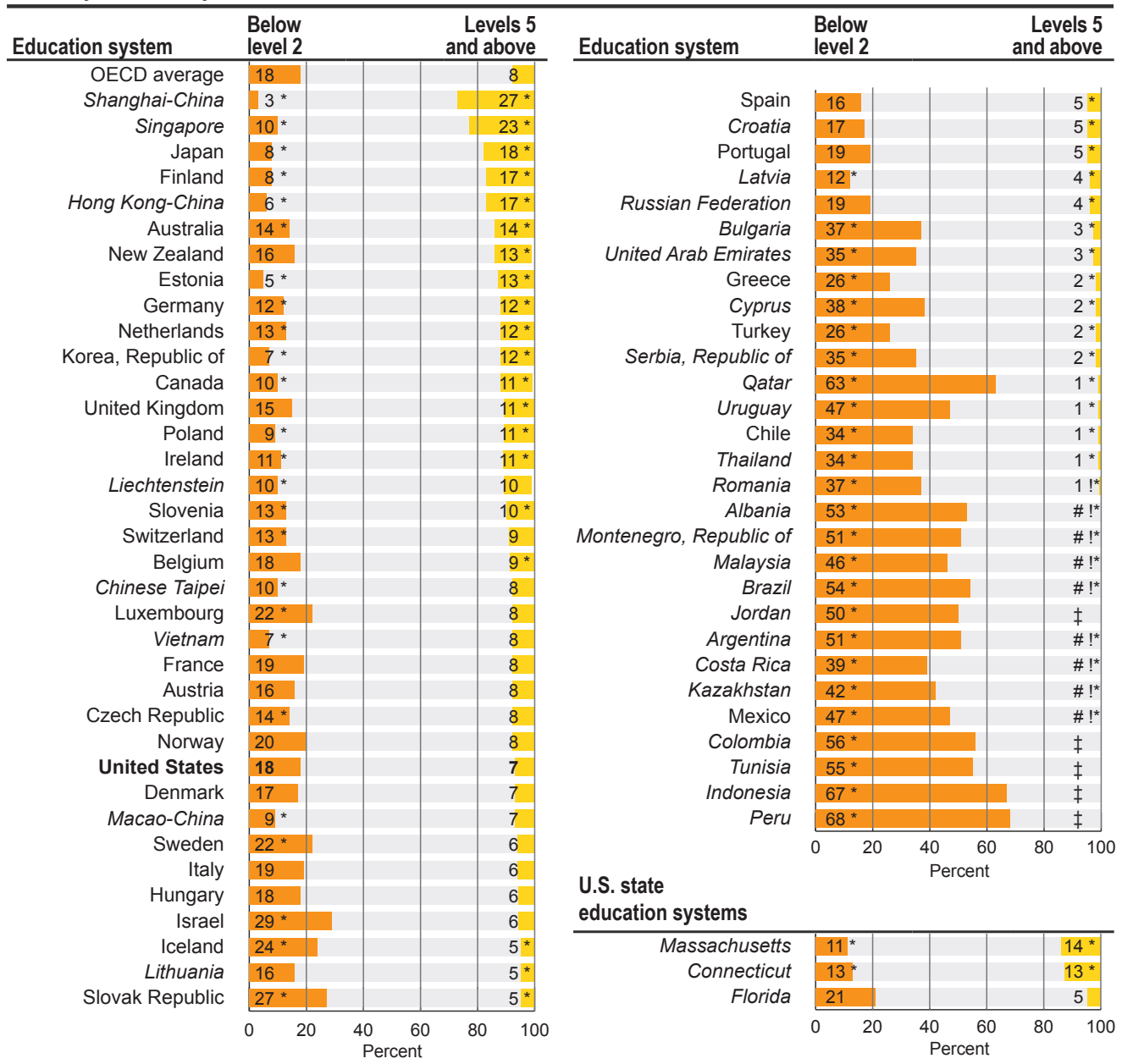
‡ Reporting standards not met.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into science literacy levels according to their scores. Exact cut scores are as follows: below level 1 (a score less than or equal to 334.94); level 1 (a score greater than 334.94 and less than or equal to 409.54); level 2 (a score greater than 409.54 and less than or equal to 484.14); level 3 (a score greater than 484.14 and less than or equal to 558.73); level 4 (a score greater than 558.73 and less than or equal to 633.33); level 5 (a score greater than 633.33 and less than or equal to 707.93); and level 6 (a score greater than 707.93). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Detail may not sum to totals because of rounding. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Figure S1a. Percentage of 15-year-old students performing at PISA science literacy proficiency levels 5 and above and below level 2, by education system: 2012



Below level 2

Levels 5 and above

# Rounds to zero.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

‡ Reporting standards not met.

\*  $p < .05$ . Significantly different from the U.S. percentage at the .05 level of statistical significance.

NOTE: Education systems are ordered by 2012 percentages of 15-year-olds in levels 5 and above. To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into science proficiency levels according to their scores. Exact cut scores are as follows: below level 1 (a score less than or equal to 334.94); level 1 (a score greater than 334.94 and less than or equal to 409.54); level 2 (a score greater than 409.54 and less than or equal to 484.14); level 3 (a score greater than 484.14 and less than or equal to 558.73); level 4 (a score greater than 558.73 and less than or equal to 633.33); level 5 (a score greater than 633.33 and less than or equal to 707.93); and level 6 (a score greater than 707.93). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only. This figure corresponds to figure 2 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Table S1b. Percentage of 15-year-old students performing at PISA science literacy proficiency levels 5 and above and below level 2, by education system: 2012

Education system	Below level 2		Levels 5 and above		Education system	Below level 2		Levels 5 and above	
	Percent	s.e.	Percent	s.e.		Percent	s.e.	Percent	s.e.
OECD average	17.8	0.18	8.4	0.12					
<i>Shanghai-China</i>	2.7 *	0.41	27.2 *	1.32	Spain	15.7	0.71	4.8 *	0.29
<i>Singapore</i>	9.6 *	0.51	22.7 *	0.81	<i>Croatia</i>	17.3	0.93	4.6 *	0.79
Japan	8.5 *	0.88	18.2 *	1.21	Portugal	19.0	1.44	4.5 *	0.55
Finland	7.7 *	0.58	17.1 *	0.66	<i>Latvia</i>	12.4 *	0.96	4.4 *	0.51
<i>Hong Kong-China</i>	5.6 *	0.62	16.7 *	1.05	<i>Russian Federation</i>	18.8	1.15	4.3 *	0.59
Australia	13.6 *	0.48	13.6 *	0.55	<i>Bulgaria</i>	36.9 *	2.02	3.1 *	0.58
New Zealand	16.3	0.86	13.4 *	0.69	<i>United Arab Emirates</i>	35.2 *	1.30	2.5 *	0.27
Estonia	5.0 *	0.45	12.8 *	0.73	Greece	25.5 *	1.47	2.5 *	0.40
Germany	12.2 *	0.90	12.2 *	0.95	<i>Cyprus</i>	38.0 *	0.67	2.0 *	0.29
Netherlands	13.1 *	1.12	11.8 *	1.06	Turkey	26.4 *	1.50	1.8 *	0.36
Korea, Republic of	6.6 *	0.77	11.7 *	1.13	<i>Serbia, Republic of</i>	35.0 *	1.81	1.7 *	0.36
Canada	10.4 *	0.47	11.3 *	0.55	<i>Qatar</i>	62.6 *	0.53	1.5 *	0.12
United Kingdom	15.0	1.07	11.2 *	0.79	<i>Uruguay</i>	46.9 *	1.25	1.0 *	0.25
Poland	9.0 *	0.75	10.8 *	1.01	Chile	34.5 *	1.58	1.0 *	0.15
Ireland	11.1 *	0.88	10.7 *	0.58	<i>Thailand</i>	33.6 *	1.56	0.9 *	0.27
<i>Liechtenstein</i>	10.4 *	1.96	10.1	1.80	<i>Romania</i>	37.3 *	1.64	0.9 !*	0.29
Slovenia	12.9 *	0.56	9.6 *	0.72	<i>Albania</i>	53.1 *	1.20	1.8 *	0.13
Switzerland	12.8 *	0.72	9.3	0.77	<i>Montenegro, Republic of</i>	50.7 *	0.72	0.4 !*	0.14
Belgium	17.6	0.84	9.3 *	0.46	<i>Malaysia</i>	45.5 *	1.55	0.3 !*	0.12
<i>Chinese Taipei</i>	9.8 *	0.77	8.3	0.61	<i>Brazil</i>	53.7 *	1.14	0.3 !*	0.10
Luxembourg	22.2 *	0.63	8.2	0.54	<i>Jordan</i>	49.6 *	1.55	‡	‡
<i>Vietnam</i>	6.7 *	1.09	8.1	1.09	<i>Argentina</i>	50.9 *	2.21	0.2 !*	0.10
France	18.7	1.01	7.9	0.77	<i>Costa Rica</i>	39.3 *	1.75	0.2 !*	0.10
Austria	15.8	1.00	7.9	0.70	<i>Kazakhstan</i>	41.9 *	1.83	0.2 !*	0.09
Czech Republic	13.8 *	1.13	7.6	0.58	Mexico	47.0 *	0.81	0.1 !*	0.04
Norway	19.6	1.10	7.5	0.57	<i>Colombia</i>	56.2 *	1.61	‡	‡
<b>United States</b>	<b>18.1</b>	<b>1.33</b>	<b>7.5</b>	<b>0.74</b>	<i>Tunisia</i>	55.3 *	1.87	‡	‡
Denmark	16.7	0.97	6.8	0.70	<i>Indonesia</i>	66.6 *	2.20	‡	‡
<i>Macao-China</i>	8.8 *	0.46	6.7	0.36	<i>Peru</i>	68.5 *	1.95	‡	‡
Sweden	22.2 *	1.11	6.3	0.50					
Italy	18.7	0.68	6.1	0.41					
Hungary	18.0	1.14	5.9	0.75					
Israel	28.9 *	1.67	5.8	0.65	<b>U.S. state education systems</b>				
Iceland	24.0 *	0.78	5.2 *	0.61	<i>Massachusetts</i>	11.5 *	1.18	14.2 *	1.94
<i>Lithuania</i>	16.1	1.08	5.1 *	0.49	<i>Connecticut</i>	13.5 *	1.70	12.9 *	1.34
Slovak Republic	26.9 *	1.58	4.9 *	0.72	<i>Florida</i>	21.3	2.15	5.5	1.05

† Not applicable.

‡ Interpret data with caution. Estimate is unstable due to high coefficient of variation.

‡ Reporting standards not met.

\*  $p < .05$ . Significantly different from the U.S. percentage at the .05 level of statistical significance.

NOTE: Education systems are ordered by 2012 percentages of 15-year-olds in levels 5 and above. To reach a particular proficiency level, a student must correctly answer a majority of items at that level.

Students were classified into science proficiency levels according to their scores. Exact cut scores are as follows: below level 1 (a score less than or equal to 334.94); level 1 (a score greater than 334.94 and less than or equal to 409.54); level 2 (a score greater than 409.54 and less than or equal to 484.14); level 3 (a score greater than 484.14 and less than or equal to 558.73); level 4 (a score greater than 558.73 and less than or equal to 633.33); level 5 (a score greater than 633.33 and less than or equal to 707.93); and level 6 (a score greater than 707.93). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only. This table corresponds to figure 2 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table S2. Average scores of 15-year-old students on PISA science literacy scale, by education system: 2012**

Education system	Average score	s.e.	Education system	Average score	s.e.
OECD average	501	0.5			
<i>Shanghai-China</i>	580 ▲	3.0	<i>Russian Federation</i>	486 ▼	2.9
<i>Hong Kong-China</i>	555 ▲	2.6	Sweden	485 ▼	3.0
<i>Singapore</i>	551 ▲	1.5	Iceland	478 ▼	2.1
Japan	547 ▲	3.6	Slovak Republic	471 ▼	3.6
Finland	545 ▲	2.2	Israel	470 ▼	5.0
Estonia	541 ▲	1.9	Greece	467 ▼	3.1
Korea, Republic of	538 ▲	3.7	Turkey	463 ▼	3.9
<i>Vietnam</i>	528 ▲	4.3	<i>United Arab Emirates</i>	448 ▼	2.8
Poland	526 ▲	3.1	<i>Bulgaria</i>	446 ▼	4.8
Canada	525 ▲	1.9	Chile	445 ▼	2.9
<i>Liechtenstein</i>	525 ▲	3.5	<i>Serbia, Republic of</i>	445 ▼	3.4
Germany	524 ▲	3.0	<i>Thailand</i>	444 ▼	2.9
<i>Chinese Taipei</i>	523 ▲	2.3	<i>Romania</i>	439 ▼	3.3
Netherlands	522 ▲	3.5	<i>Cyprus</i>	438 ▼	1.2
Ireland	522 ▲	2.5	<i>Costa Rica</i>	429 ▼	2.9
Australia	521 ▲	1.8	<i>Kazakhstan</i>	425 ▼	3.0
<i>Macao-China</i>	521 ▲	0.8	<i>Malaysia</i>	420 ▼	3.0
New Zealand	516 ▲	2.1	<i>Uruguay</i>	416 ▼	2.8
Switzerland	515 ▲	2.7	Mexico	415 ▼	1.3
Slovenia	514 ▲	1.3	<i>Montenegro, Republic of</i>	410 ▼	1.1
United Kingdom	514 ▲	3.4	<i>Jordan</i>	409 ▼	3.1
Czech Republic	508 ▲	3.0	<i>Argentina</i>	406 ▼	3.9
Austria	506	2.7	<i>Brazil</i>	405 ▼	2.1
Belgium	505	2.1	<i>Colombia</i>	399 ▼	3.1
<i>Latvia</i>	502	2.8	<i>Tunisia</i>	398 ▼	3.5
France	499	2.6	<i>Albania</i>	397 ▼	2.4
Denmark	498	2.7	<i>Qatar</i>	384 ▼	0.7
<b>United States</b>	<b>497</b>	<b>3.8</b>	<i>Indonesia</i>	382 ▼	3.8
Spain	496	1.8	<i>Peru</i>	373 ▼	3.6
<i>Lithuania</i>	496	2.6			
Norway	495	3.1			
Hungary	494	2.9	<b>U.S. state education systems</b>		
Italy	494	1.9	<i>Massachusetts</i>	527 ▲	6.0
<i>Croatia</i>	491	3.1	<i>Connecticut</i>	521 ▲	5.7
Luxembourg	491	1.3	<i>Florida</i>	485	6.4
Portugal	489	3.7			

▲ Average score is higher than U.S. average score.

▼ Average score is lower than U.S. average score.

NOTE: Education systems are ordered by 2012 average score. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Scores are reported on a scale from 0 to 1,000. All average scores reported as higher or lower than the U.S. average score are different at the .05 level of statistical significance. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only. This table corresponds to table 2 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.



# National Center for Education Statistics

Table S3. Cut scores of 15-year-old students on PISA science literacy scale at selected percentiles and percentile cut score gaps, by education system: 2012

Education system	Percentile											
	10th		25th		50th		75th		90th		90th to 10th	
	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.	Cut score gap	s.e.
OECD average	380	0.8	439	0.6	504	0.6	566	0.6	619	0.6	239	1.0
Indonesia	297	4.9	336	3.8	380	3.7	427	4.7	471	6.0	174	7.7
Costa Rica	341	3.3	382	3.6	428	3.2	476	3.6	520	4.9	180	5.9
Mexico	325	2.1	368	1.6	415	1.4	462	1.5	505	1.9	180	2.8
Kazakhstan	330	3.6	375	3.4	425	3.4	475	3.5	521	3.8	190	5.2
Thailand	349	3.4	392	2.6	441	3.2	494	3.8	544	5.4	195	6.4
Colombia	302	4.6	347	3.4	398	3.2	449	3.5	497	4.0	196	6.1
Vietnam	428	7.0	478	5.2	531	4.2	580	4.0	625	5.5	197	8.9
Peru	275	3.8	321	3.4	372	3.8	425	4.4	475	5.4	200	6.6
Brazil	306	2.3	351	2.0	402	2.3	456	2.8	507	3.7	201	4.3
Tunisia	296	4.6	345	4.1	399	3.8	452	4.1	497	5.1	201	6.9
Malaysia	319	3.4	365	3.4	419	3.1	473	3.6	521	4.3	202	5.5
Romania	340	3.2	383	3.4	435	3.6	492	4.6	543	5.1	202	6.0
Macao-China	416	2.7	469	1.9	524	1.6	575	1.7	619	1.8	203	3.2
Latvia	400	4.5	449	3.2	504	3.3	557	3.6	603	3.2	203	5.6
Estonia	439	3.3	487	2.7	541	2.3	597	2.6	645	3.1	206	4.6
Korea, Republic of	431	4.9	485	4.0	542	3.8	595	4.1	639	4.3	208	6.5
Chile	343	3.8	388	3.3	442	3.4	500	3.6	552	3.7	209	5.3
Shanghai-China	472	5.4	527	3.7	587	3.3	639	3.2	681	3.2	209	6.3
Hong Kong-China	446	5.1	505	3.8	562	2.8	613	3.0	655	3.4	210	6.1
Turkey	363	3.5	407	3.5	458	4.3	518	5.8	573	6.3	210	7.2
Jordan	303	4.4	355	3.6	410	3.2	466	3.4	514	4.2	211	6.1
Chinese Taipei	411	4.3	469	3.8	529	2.9	582	2.4	626	2.2	215	4.8
Argentina	297	5.1	350	4.6	407	4.8	464	4.7	513	4.7	216	6.9
Russian Federation	377	4.1	428	3.6	487	3.1	544	3.3	596	4.9	218	6.4
Montenegro, Republic of	302	2.9	352	1.4	408	1.6	468	2.2	522	2.3	220	3.7
Lithuania	383	4.0	438	3.2	498	2.9	555	3.0	605	3.6	221	5.4
Spain	384	3.1	440	2.3	500	2.2	557	1.8	605	2.0	221	3.7
Croatia	380	4.0	433	3.3	492	3.5	551	4.2	602	5.2	222	6.5
Poland	415	4.0	467	3.3	526	3.3	584	4.0	637	5.0	222	6.4
Serbia, Republic of	333	5.2	385	4.5	443	3.8	504	3.5	558	3.9	224	6.5
Greece	352	5.1	408	4.5	469	3.7	528	3.5	578	3.6	225	6.2
Liechtenstein	408	10.0	464	8.4	526	8.8	588	8.2	635	9.3	227	13.6
Czech Republic	392	5.5	449	4.0	512	3.2	572	3.2	622	3.7	230	6.6
Portugal	372	5.6	430	4.8	492	4.1	551	3.6	602	3.6	231	6.7
Canada	407	2.7	467	2.1	528	2.4	588	2.4	639	2.5	232	3.7
Ireland	404	4.8	462	3.1	525	2.6	586	2.4	637	2.6	233	5.4
Hungary	376	4.6	432	4.3	497	3.2	558	3.5	610	4.7	233	6.6
Slovenia	397	3.5	451	2.2	515	1.9	578	2.0	631	3.2	235	4.8
Switzerland	394	3.4	455	3.8	519	3.3	579	3.1	630	3.3	236	4.7
Denmark	378	4.3	438	3.8	502	3.0	563	3.2	615	4.1	238	6.0
Norway	365	5.2	429	3.7	498	3.5	564	3.3	620	3.4	238	4.9
United Kingdom	384	4.9	448	4.6	518	3.6	584	3.5	639	3.9	239	6.3
Iceland	348	3.4	413	2.5	481	2.8	548	3.2	603	3.7	255	5.0
France	366	6.0	433	3.4	506	3.1	570	3.0	622	4.1	256	7.3
Sweden	354	4.7	419	4.1	488	3.4	554	3.2	611	3.4	257	5.8
Australia	391	2.6	453	2.1	524	1.9	592	2.5	650	2.7	259	3.7
Slovak Republic	339	5.7	403	5.2	474	4.8	542	4.0	599	4.9	260	7.5
Belgium	369	4.5	439	3.1	514	2.3	579	2.0	630	2.1	261	5.0
Bulgaria	315	5.3	374	5.6	447	5.6	519	5.1	580	6.1	265	8.1
Singapore	412	3.2	480	2.6	558	2.2	627	2.6	681	3.4	269	4.6
Luxembourg	355	3.1	419	2.2	494	1.6	566	1.9	624	2.9	269	4.2
New Zealand	377	4.5	444	3.0	518	3.0	591	3.1	649	3.0	272	5.4
Qatar	254	1.4	309	1.3	374	1.1	453	1.6	530	2.4	275	2.8
Israel	328	6.4	396	5.7	473	6.1	548	5.7	608	5.4	281	8.3
<b>U.S. state education systems</b>												
Florida	366	7.2	421	7.5	485	7.1	549	8.2	604	7.3	239	10.2
Massachusetts	403	5.6	460	6.5	528	7.5	594	7.9	654	9.4	251	11.0
Connecticut	389	9.5	455	8.5	523	6.6	588	5.7	647	6.0	258	11.2

▲ Cut score gap is larger than the U.S. percentile cut score gap.

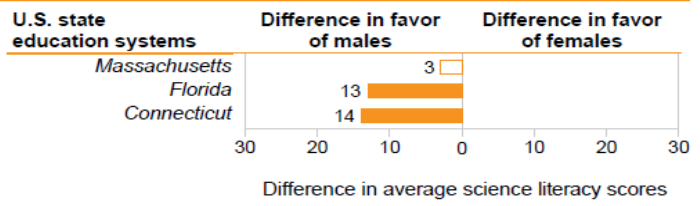
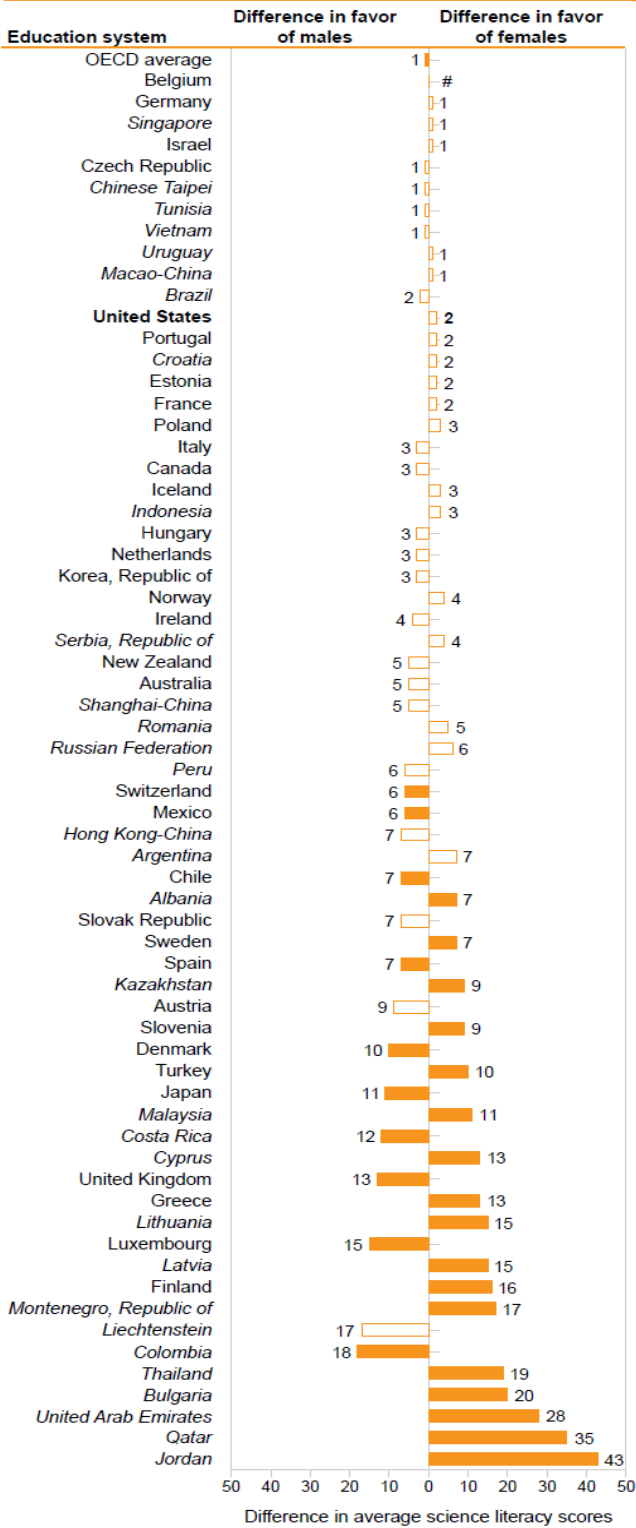
▼ Cut score gap is smaller than the U.S. percentile cut score gap.

NOTE: This table shows the threshold (or cut) scores for the following: (a) 10th percentile- the bottom 10 percent of students; (b) 25th percentile- the bottom 25 percent of students; (c) 50th percentile- the median (half the students scored below the cut score and half scored above it); (d) 75th percentile- the top 25 percent of students; (e) 90th percentile- the top 10 percent of students. The percentile ranges are specific to each education system's distribution of scores, enabling users to compare cut scores across education systems. Education systems are ordered by cut score gap. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Scores are reported on a scale from 0 to 1,000. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Figure S2a. Difference in average scores of 15-year-old female and male students on PISA science literacy scale, by education system: 2012



■ Male-female difference in average science literacy scores is statistically different.  
□ Male-female difference in average science literacy scores is not measurably different.

NOTE: Education systems are ordered by absolute male-female difference in 2012 average score. Differences were computed using unrounded numbers. Scores are reported on a scale from 0 to 1,000. Score differences as noted between males and females are significantly different at the .05 level of statistical significance. The OECD average is the average of the national average differences of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

## National Center for Education Statistics

Table S2b. Difference in average scores of 15-year-old female and male students on PISA science literacy scale, by education system: 2012

Education system	Male-female difference	s.e.
OECD average	1 *	0.6
Belgium	#	†
Germany	-1	3.0
<i>Singapore</i>	-1	2.6
Israel	-1	7.6
Czech Republic	1	4.0
<i>Chinese Taipei</i>	1	6.4
<i>Tunisia</i>	1	2.9
<i>Vietnam</i>	1	2.8
<i>Uruguay</i>	-1	3.4
<i>Macao-China</i>	-1	1.7
<i>Brazil</i>	2	1.7
<b>United States</b>	<b>-2</b>	<b>2.7</b>
Portugal	-2	2.6
<i>Croatia</i>	-2	3.8
Estonia	-2	2.7
France	-2	3.7
Poland	-3	3.0
Italy	3	2.5
Canada	3	2.1
Iceland	-3	3.6
<i>Indonesia</i>	-3	3.1
Hungary	3	3.3
Netherlands	3	2.9
Korea, Republic of	3	5.1
Norway	-4	3.2
Ireland	4	4.4
<i>Serbia, Republic of</i>	-4	3.9
New Zealand	5	4.9
Australia	5	3.0
<i>Shanghai-China</i>	5	2.7
<i>Romania</i>	-5	3.2
<i>Russian Federation</i>	-6	2.9
<i>Peru</i>	6	4.0
Switzerland	6 *	2.6
Mexico	6 *	1.1
<i>Hong Kong-China</i>	7	4.2
<i>Argentina</i>	-7	3.4
Chile	7 *	3.3
<i>Albania</i>	-7 *	3.2
Slovak Republic	7	4.5
Sweden	-7 *	3.3
Spain	7 *	2.1
<i>Kazakhstan</i>	-9 *	2.9
Austria	9	5.0
Slovenia	-9 *	2.8
Denmark	10 *	2.7
Turkey	-10 *	4.2
Japan	11 *	4.3
<i>Malaysia</i>	-11 *	3.5
<i>Costa Rica</i>	12 *	3.2
<i>Cyprus</i>	-13 *	2.5
United Kingdom	13 *	4.7
Greece	-13 *	3.1
<i>Lithuania</i>	-15 *	2.3
Luxembourg	15 *	2.2
<i>Latvia</i>	-15 *	3.6
Finland	-16 *	3.0
<i>Montenegro, Republic of</i>	-17 *	2.4
<i>Liechtenstein</i>	17	9.1
<i>Colombia</i>	18 *	3.4
<i>Thailand</i>	-19 *	3.4
<i>Bulgaria</i>	-20 *	4.5
<i>United Arab Emirates</i>	-28 *	5.1
<i>Qatar</i>	-35 *	1.7
<i>Jordan</i>	-43 *	6.4

### U.S. state education systems

<i>Massachusetts</i>	3	4.6
<i>Florida</i>	13 *	4.8
<i>Connecticut</i>	14 *	4.5

† Not applicable.

# Rounds to zero.

\*  $p < .05$ . All differences between males and females are significantly different at the .05 level of statistical significance.

NOTE: Education systems are ordered by absolute male-female difference in 2012 average score.

Differences were computed using unrounded numbers. Scores are reported on a scale from 0 to 1,000.

The OECD average is the average of the national average differences of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

## National Center for Education Statistics

**Table S4. Percentage distribution of U.S. 15-year-old public school students on PISA science literacy scale, by proficiency level and percentage of students in enrolled schools eligible for free or reduced-price lunch, based on principals' reports: 2012**

Percent of students eligible for free or reduced-price lunch	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
<b>U.S. average</b>	<b>4.2</b>	<b>0.54</b>	<b>14.0</b>	<b>1.08</b>	<b>26.7</b>	<b>1.08</b>	<b>28.9</b>	<b>1.07</b>	<b>18.8</b>	<b>1.07</b>	<b>6.3</b>	<b>0.64</b>	<b>1.1</b>	<b>0.20</b>
Less than 10 percent	‡	†	3.2 !*	1.45	16.1 *	3.01	31.7	2.89	30.0 *	3.54	15.7 *	3.39	2.9 !	1.26
10 to 24.9 percent	2.0 !*	0.71	8.7 *	1.56	20.1 *	1.46	30.8	2.26	26.5 *	2.25	10.0	1.99	1.9 !	0.76
25 to 49.9 percent	1.5 !*	0.57	8.5 *	1.25	24.4	1.80	30.6	1.69	24.2 ***	2.03	9.1 ****	1.28	1.7 !	0.55
50 to 74.9 percent	4.6	0.94	16.0	1.85	30.0 *	2.13	30.0	1.78	15.5 *	1.65	3.3 *	0.60	‡	†
75 percent or more	10.2 *	1.98	26.4 *	2.97	33.2 *	2.20	21.5 *	2.99	6.7 *	1.38	‡	†	‡	†
<b>OECD average</b>	<b>4.8</b>	<b>0.09</b>	<b>13.0</b>	<b>0.14</b>	<b>24.5</b>	<b>0.16</b>	<b>28.8</b>	<b>0.17</b>	<b>20.5</b>	<b>0.15</b>	<b>7.2</b>	<b>0.10</b>	<b>1.2</b>	<b>0.04</b>

† Not applicable.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

‡ Reporting standards not met.

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

\*\*\*  $p < .05$ . Significantly different from the U.S. average at the .05 level of statistical significance.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into science literacy levels according to their scores. Exact cut scores are as follows: below level 1 (a score less than or equal to 334.94); level 1 (a score greater than 334.94 and less than or equal to 409.54); level 2 (a score greater than 409.54 and less than or equal to 484.14); level 3 (a score greater than 484.14 and less than or equal to 558.73); level 4 (a score greater than 558.73 and less than or equal to 633.33); level 5 (a score greater than 633.33 and less than or equal to 707.93); and level 6 (a score greater than 707.93). Scores are reported on a scale from 0 to 1,000. The National School Lunch Program provides free or reduced-price lunch for students meeting certain income guidelines. The percentage of students receiving such lunch is an indicator of the socioeconomic level of families served by the school. Data in this table are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Free or reduced-price lunch data are for public schools only. Detail may not sum to totals because of rounding.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table S5. Average scores of U.S. 15-year-old public school students on PISA science literacy scale, by percentage of students in enrolled schools eligible for free or reduced-price lunch, based on principals' reports: 2012**

<b>Percent of students eligible for free or reduced-price lunch</b>	<b>Average score</b>	<b>s.e.</b>
<b>U.S. average</b>	<b>497</b>	<b>3.8</b>
Less than 10 percent	556 *	7.0
10 to 24.9 percent	528 *	6.5
25 to 49.9 percent	523 *	5.6
50 to 74.9 percent	483 *	5.0
75 percent or more	442 *	8.1
<b>OECD average</b>	<b>501</b>	<b>0.5</b>

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

NOTE: Scores are reported on a scale from 0 to 1,000. The National School Lunch Program provides free or reduced-price lunch for students meeting certain income guidelines. The percentage of students receiving such lunch is an indicator of the socioeconomic level of families served by the school. Data in this table are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Free or reduced-price lunch data are for public schools only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table S6. Percentage distribution of U.S. 15-year-old students on PISA science literacy scale, by proficiency level and race/ethnicity: 2012**

Race/ethnicity	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
<b>U.S. average</b>	<b>4.2</b>	<b>0.54</b>	<b>14.0</b>	<b>1.08</b>	<b>26.7</b>	<b>1.08</b>	<b>28.9</b>	<b>1.07</b>	<b>18.8</b>	<b>1.07</b>	<b>6.3</b>	<b>0.64</b>	<b>1.1</b>	<b>0.20</b>
White	1.2 !*	0.41	7.5 *	0.84	21.9 *	1.19	33.0 *	1.23	25.6 *	1.28	9.1 *	0.93	1.6 ***	0.35
Black	11.6 *	1.82	26.4 *	2.41	33.3 *	2.67	18.5 *	2.21	9.0 *	1.97	‡	†	‡	†
Hispanic	6.4 ***	1.14	20.7 *	1.96	34.5 *	1.66	26.0 ***	2.00	9.9 *	1.13	2.2 !*	0.75	‡	†
Asian	‡	†	5.7 *	1.67	15.6 *	3.50	31.8	4.32	29.1 ***	5.21	12.3	3.55	3.8 !	1.85
Multiracial	2.0 !*	0.94	11.1 !	3.65	25.0	4.60	33.1	4.02	18.7	3.52	9.4	2.22	‡	†
<b>OECD average</b>	<b>4.8</b>	<b>0.09</b>	<b>13.0</b>	<b>0.14</b>	<b>24.5</b>	<b>0.16</b>	<b>28.8</b>	<b>0.17</b>	<b>20.5</b>	<b>0.15</b>	<b>7.2</b>	<b>0.10</b>	<b>1.2</b>	<b>0.04</b>

† Not applicable.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

‡ Reporting standards not met.

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

\*\*\*  $p < .05$ . Significantly different from the U.S. average at the .05 level of statistical significance.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into science literacy levels according to their scores. Exact cut scores are as follows: below level 1 (a score less than or equal to 334.94); level 1 (a score greater than 334.94 and less than or equal to 409.54); level 2 (a score greater than 409.54 and less than or equal to 484.14); level 3 (a score greater than 484.14 and less than or equal to 558.73); level 4 (a score greater than 558.73 and less than or equal to 633.33); level 5 (a score greater than 633.33 and less than or equal to 707.93); and level 6 (a score greater than 707.93). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. Standard error is noted by s.e. Detail may not sum to totals because of rounding. SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table S7. Average scores of U.S. 15-year-old students on PISA science literacy scale, by race/ethnicity: 2012**

<b>Race/ethnicity</b>	<b>Average score</b>	<b>s.e.</b>
<b>U.S. average</b>	<b>497</b>	<b>3.8</b>
White	528 *	3.7
Black	439 *	6.8
Hispanic	462 *	4.7
Asian	546 *	8.6
Multiracial	511 ***	7.8
<b>OECD average</b>	<b>501</b>	<b>0.5</b>

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*\*  $p < .05$ . Significantly different from the U.S. average at the .05 level of statistical significance.

NOTE: Scores are reported on a scale from 0 to 1,000. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

## Exhibit R1. Description of PISA proficiency levels on reading literacy scale: 2012

Proficiency level and lower cut score	Task descriptions
Level 6 698	At level 6, tasks typically require the reader to make multiple inferences, comparisons, and contrasts that are both detailed and precise. They require demonstration of a full and detailed understanding of one or more texts and may involve integrating information from more than one text. Tasks may require the reader to deal with unfamiliar ideas, in the presence of prominent competing information, and to generate abstract categories for interpretations. <i>Reflect and evaluate</i> tasks may require the reader to hypothesize about or critically evaluate a complex text on an unfamiliar topic, taking into account multiple criteria or perspectives, and applying sophisticated understandings from beyond the text. A salient condition for <i>access and retrieve</i> tasks at this level is precision of analysis and fine attention to detail that is inconspicuous in the texts.
Level 5 626	At level 5, tasks that involve retrieving information require the reader to locate and organize several pieces of deeply embedded information, inferring which information in the text is relevant. Reflective tasks require critical evaluation or hypothesis, drawing on specialized knowledge. Both interpretative and reflective tasks require a full and detailed understanding of a text whose content or form is unfamiliar. For all aspects of reading, tasks at this level typically involve dealing with concepts that are contrary to expectations.
Level 4 553	At level 4, tasks that involve retrieving information require the reader to locate and organize several pieces of embedded information. Some tasks at this level require interpreting the meaning of nuances of language in a section of text by taking into account the text as a whole. Other interpretative tasks require understanding and applying categories in an unfamiliar context. Reflective tasks at this level require readers to use formal or public knowledge to hypothesize about or critically evaluate a text. Readers must demonstrate an accurate understanding of long or complex texts whose content or form may be unfamiliar.
Level 3 480	At level 3, tasks require the reader to locate, and in some cases recognize the relationship between, several pieces of information that must meet multiple conditions. Interpretative tasks at this level require the reader to integrate several parts of a text in order to identify a main idea, understand a relationship, or construe the meaning of a word or phrase. They need to take into account many features in comparing, contrasting or categorizing. Often the required information is not prominent or there is much competing information; or there are other text obstacles, such as ideas that are contrary to expectation or negatively worded. Reflective tasks at this level may require connections, comparisons, and explanations, or they may require the reader to evaluate a feature of the text. Some reflective tasks require readers to demonstrate a fine understanding of the text in relation to familiar, everyday knowledge. Other tasks do not require detailed text comprehension but require the reader to draw on less common knowledge.
Level 2 407	At level 2, some tasks require the reader to locate one or more pieces of information, which may need to be inferred and may need to meet several conditions. Others require recognizing the main idea in a text, understanding relationships, or construing meaning within a limited part of the text when the information is not prominent and the reader must make low level inferences. Tasks at this level may involve comparisons or contrasts based on a single feature in the text. Typical reflective tasks at this level require readers to make a comparison or several connections between the text and outside knowledge, by drawing on personal experience and attitudes.
Level 1a 335	At level 1a, tasks require the reader to locate one or more independent pieces of explicitly stated information; to recognize the main theme or author's purpose in a text about a familiar topic, or to make a simple connection between information in the text and common, everyday knowledge. Typically, the required information in the text is prominent and there is little, if any, competing information. The reader is explicitly directed to consider relevant factors in the task and in the text.
Level 1b 262	At level 1b, tasks require the reader to locate a single piece of explicitly stated information in a prominent position in a short, syntactically simple text with a familiar context and text type, such as a narrative or a simple list. The text typically provides support to the reader, such as repetition of information, pictures, or familiar symbols. There is minimal competing information. In tasks requiring interpretation the reader may need to make simple connections between adjacent pieces of information.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into reading literacy levels according to their scores. Cut scores in the exhibit are rounded; exact cut scores are provided in table AA1. Scores are reported on a scale from 0 to 1,000.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.



# National Center for Education Statistics

**Table R1. Percentage distribution of 15-year-old students on PISA reading literacy scale, by proficiency level and education system: 2012**

Education system	Below level 1b		Level 1b		Level 1a		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
OECD average	1.3	0.05	4.4	0.08	12.3	0.13	23.5	0.16	29.1	0.17	21.0	0.16	7.3	0.10	1.1	0.04
Albania	12.0	0.84	15.9	1.00	24.4	1.23	24.7	1.01	15.9	0.73	5.9	0.61	1.1	0.24	‡	†
Argentina	8.1	0.80	17.7	1.20	27.7	1.34	27.3	1.12	14.6	0.91	4.0	0.57	0.5	0.15	‡	†
Australia	0.9	0.11	3.1	0.21	10.2	0.42	21.6	0.47	29.1	0.53	23.3	0.51	9.8	0.46	1.9	0.19
Austria	0.8	0.24	4.8	0.64	13.8	0.84	24.2	0.89	29.6	0.92	21.2	0.94	5.2	0.59	0.3	0.10
Belgium	1.6	0.33	4.1	0.38	10.5	0.57	20.2	0.60	27.3	0.72	24.0	0.61	10.7	0.51	1.6	0.19
Brazil	4.0	0.36	14.8	0.64	30.4	0.79	30.1	0.77	15.8	0.63	4.4	0.37	0.5	0.12	‡	†
Bulgaria	8.0	1.07	12.8	1.15	18.6	1.10	22.2	1.16	21.4	1.10	12.7	1.03	3.8	0.56	0.5	0.18
Canada	0.5	0.09	2.4	0.19	8.0	0.36	19.4	0.55	31.0	0.72	25.8	0.59	10.8	0.53	2.1	0.22
Chile	1.0	0.19	8.1	0.79	23.9	1.08	35.1	1.08	24.3	1.06	6.9	0.62	0.6	0.11	‡	†
Chinese Taipei	0.6	0.15	2.5	0.32	8.4	0.65	18.1	0.83	29.9	0.92	28.7	1.01	10.4	0.73	1.4	0.32
Colombia	5.0	0.76	15.4	0.98	31.0	1.29	30.5	1.22	14.5	0.91	3.2	0.50	0.3	0.12	‡	†
Costa Rica	0.8	0.24	7.3	1.02	24.3	1.25	38.1	1.40	22.9	1.42	6.0	0.78	0.6	0.19	‡	†
Croatia	0.7	0.25	4.0	0.59	13.9	0.97	27.8	1.07	31.2	1.24	17.8	1.09	4.2	0.66	0.2	0.11
Cyprus	6.1	0.32	9.7	0.44	17.0	0.61	25.1	0.78	24.9	0.75	13.2	0.64	3.5	0.34	0.5	0.12
Czech Republic	0.6	0.27	3.5	0.56	12.7	0.94	26.4	1.30	31.3	1.23	19.4	1.13	5.3	0.49	0.8	0.16
Denmark	0.8	0.30	3.1	0.39	10.7	0.77	25.8	0.92	33.6	0.85	20.5	0.86	5.1	0.58	0.4	0.12
Estonia	‡	†	1.3	0.28	7.7	0.61	22.7	0.94	35.0	1.06	24.9	1.08	7.5	0.71	0.9	0.18
Finland	0.7	0.16	2.4	0.38	8.2	0.57	19.1	0.81	29.3	0.70	26.8	0.84	11.3	0.60	2.2	0.26
France	2.1	0.40	4.9	0.43	11.9	0.70	18.9	0.85	26.3	0.84	23.0	0.67	10.6	0.62	2.3	0.41
Germany	0.5	0.18	3.3	0.40	10.7	0.67	22.1	0.93	29.9	0.86	24.6	0.88	8.3	0.64	0.7	0.23
Greece	2.6	0.40	5.9	0.60	14.2	0.83	25.1	1.06	30.0	1.02	17.2	1.19	4.6	0.59	0.5	0.13
Hong Kong-China	0.2	0.09	1.3	0.24	5.3	0.61	14.3	0.79	29.2	1.21	32.9	1.39	14.9	1.00	1.9	0.39
Hungary	0.7	0.24	5.2	0.64	13.8	0.88	24.3	1.17	29.9	1.00	20.4	1.05	5.3	0.68	0.4	0.13
Iceland	2.3	0.33	5.4	0.47	13.3	0.63	24.7	0.92	29.9	1.09	18.6	1.12	5.2	0.41	0.6	0.21
Indonesia	4.1	0.81	16.3	1.28	34.8	1.56	31.6	1.54	11.5	1.28	1.5	0.53	‡	†	‡	†
Ireland	0.3	0.13	1.9	0.35	7.5	0.69	19.6	1.19	33.4	1.17	26.0	0.90	10.1	0.67	1.3	0.35
Israel	3.8	0.59	6.9	0.74	12.9	0.96	20.8	0.87	25.3	0.81	20.6	1.03	8.1	0.77	1.5	0.30
Italy	1.6	0.15	5.2	0.29	12.7	0.48	23.7	0.57	29.7	0.53	20.5	0.62	6.1	0.33	0.6	0.07
Japan	0.6	0.16	2.4	0.37	6.7	0.67	16.6	0.89	26.7	0.98	28.4	1.08	14.6	0.99	3.9	0.59
Jordan	7.5	0.84	14.9	0.79	28.3	1.01	30.8	1.14	15.5	0.83	2.9	0.63	‡	†	‡	†
Kazakhstan	4.2	0.47	17.3	1.24	35.6	1.15	31.3	1.12	10.4	0.87	1.2	0.24	‡	†	‡	†
Korea, Republic of	0.4	0.13	1.7	0.39	5.5	0.60	16.4	0.94	30.8	1.00	31.0	1.06	12.6	1.05	1.6	0.32
Latvia	0.7	0.24	3.7	0.54	12.6	0.96	26.7	1.31	33.1	1.05	19.1	0.88	3.9	0.56	0.3	0.11
Liechtenstein	#	†	‡	†	10.5	1.85	22.4	3.44	28.6	4.53	25.7	2.44	10.4	2.44	‡	†
Lithuania	1.0	0.19	4.6	0.49	15.6	1.06	28.1	1.13	31.1	0.94	16.3	0.78	3.1	0.35	0.2	0.07
Luxembourg	2.0	0.21	6.3	0.33	13.8	0.81	23.4	0.71	25.8	0.64	19.7	0.64	7.5	0.35	1.4	0.20
Macao-China	0.3	0.11	2.1	0.22	9.0	0.42	23.3	0.58	34.3	0.67	24.0	0.60	6.4	0.48	0.6	0.21
Malaysia	5.8	0.59	16.4	1.03	30.5	0.99	31.0	1.09	13.6	1.11	2.5	0.45	‡	†	‡	†
Mexico	2.6	0.22	11.0	0.53	27.5	0.70	34.5	0.62	19.6	0.54	4.5	0.25	0.4	0.08	‡	†
Montenegro, Republic of	4.4	0.53	13.2	0.62	25.7	0.94	29.2	0.77	19.9	0.76	6.6	0.53	0.9	0.19	‡	†
Netherlands	‡	†	2.8	0.49	10.3	0.93	21.0	1.27	29.2	1.32	26.1	1.36	9.0	0.72	0.8	0.19
New Zealand	1.3	0.28	4.0	0.46	11.0	0.67	20.8	0.76	26.3	1.06	22.7	1.06	10.9	0.62	3.0	0.37
Norway	1.7	0.31	3.7	0.36	10.8	0.69	21.9	1.03	29.4	1.35	22.3	1.21	8.5	0.61	1.7	0.31
Peru	9.8	0.87	20.6	1.11	29.5	0.98	24.9	1.02	11.4	0.96	3.3	0.61	0.5	0.21	‡	†
Poland	0.3	0.11	2.1	0.35	8.1	0.74	21.4	0.90	32.0	0.89	26.0	0.96	8.6	0.76	1.4	0.37
Portugal	1.3	0.30	5.1	0.53	12.3	0.98	25.5	1.16	30.2	1.46	19.7	1.07	5.3	0.57	0.5	0.15
Qatar	13.6	0.32	18.9	0.48	24.6	0.44	21.9	0.50	13.5	0.43	5.8	0.21	1.4	0.13	0.2	0.05
Romania	2.5	0.38	10.3	0.82	24.4	1.28	30.6	1.12	21.8	1.17	8.7	0.88	1.5	0.35	‡	†
Russian Federation	1.1	0.18	5.2	0.49	16.0	1.03	29.5	1.08	28.3	1.05	15.3	0.93	4.2	0.51	0.5	0.12
Serbia, Republic of	2.6	0.40	9.3	0.73	21.3	1.09	30.8	1.20	23.3	1.15	10.5	0.81	2.0	0.39	0.2	0.08
Shanghai-China	‡	†	0.3	0.11	2.5	0.34	11.0	0.85	25.3	0.85	35.7	1.07	21.3	0.98	3.8	0.65
Singapore	0.5	0.12	1.9	0.27	7.5	0.41	16.7	0.65	25.4	0.66	26.8	0.79	16.2	0.73	5.0	0.43
Slovak Republic	4.1	0.77	7.9	0.80	16.2	1.06	25.0	1.08	26.8	1.38	15.7	0.96	4.1	0.60	‡	†
Slovenia	1.2	0.14	4.9	0.37	15.0	0.71	27.2	0.77	28.4	0.94	18.2	0.63	4.7	0.45	0.3	0.12
Spain	1.3	0.17	4.4	0.38	12.6	0.47	25.8	0.81	31.2	0.68	19.2	0.62	5.0	0.30	0.5	0.10
Sweden	2.9	0.39	6.0	0.64	13.9	0.72	23.5	0.88	27.3	0.73	18.6	0.93	6.7	0.53	1.2	0.20
Switzerland	0.5	0.14	2.9	0.34	10.3	0.59	21.9	0.86	31.5	0.71	23.8	0.84	8.2	0.60	1.0	0.25
Thailand	1.2	0.29	7.7	0.77	24.1	0.98	36.0	1.12	23.5	1.13	6.7	0.79	0.8	0.21	‡	†
Tunisia	6.2	0.91	15.5	1.20	27.6	1.31	31.4	1.43	15.6	1.15	3.5	0.69	‡	†	‡	†
Turkey	0.6	0.15	4.5	0.57	16.6	1.07	30.8	1.39	28.7	1.34	14.5	1.39	4.1	0.79	0.3	0.13
United Arab Emirates	3.3	0.34	10.4	0.65	21.8	0.72	28.6	0.72	24.0	0.77	9.7	0.58	2.1	0.28	0.2	0.06
United Kingdom	1.5	0.27	4.0	0.54	11.2	0.79	23.5	1.01	29.9	1.08	21.3	1.14	7.5	0.59	1.3	0.24
<b>United States</b>	<b>0.8</b>	<b>0.24</b>	<b>3.6</b>	<b>0.49</b>	<b>12.3</b>	<b>0.89</b>	<b>24.9</b>	<b>0.99</b>	<b>30.5</b>	<b>0.88</b>	<b>20.1</b>	<b>1.08</b>	<b>6.9</b>	<b>0.59</b>	<b>1.0</b>	<b>0.22</b>
Uruguay	6.4	0.70	14.7	0.84	25.9	0.88	28.9	1.00	17.4	0.71	5.7	0.62	0.9	0.26	‡	†
Vietnam	‡	†	1.5	0.48	7.8	1.10	23.7	1.40	39.0	1.47	23.4	1.47	4.2	0.71	0.4	0.16

**U.S. state education systems**

Connecticut	‡	†	3.2	0.87	9.7	1.26	19.6	1.49	28.2	1.32	24.4	1.83	11.7	1.38	2.9	0.54
Florida	0.7	0.31	3.6	0.75	13.2	1.46	25.8	1.56	30.9	1.50	20.4	2.06	4.9	1.00	‡	†
Massachusetts	‡	†	2.3	0.55	8.6	1.19	18.5	1.76	29.8	1.52	24.2	1.82	12.9	1.59	3.2	0.86

† Not applicable.

# Rounds to zero.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

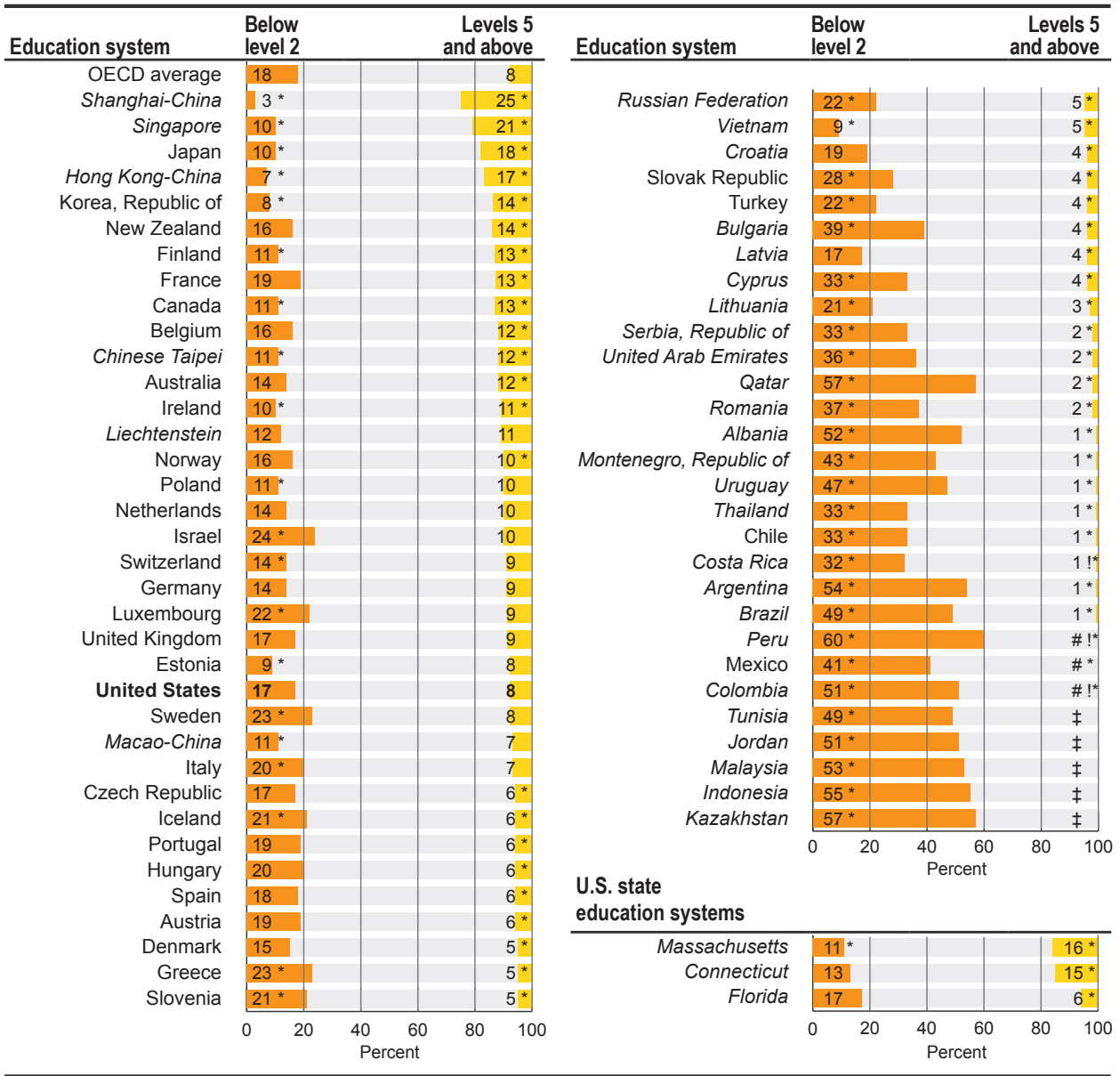
‡ Reporting standards not met.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into reading literacy levels according to their scores. Exact cut scores are as follows: below level 1b (a score less than or equal to 262.04); level 1b (a score greater than 262.04 and less than or equal to 334.75); level 1a (a score greater than 334.75 and less than or equal to 407.47); level 2 (a score greater than 407.47 and less than or equal to 480.18); level 3 (a score greater than 480.18 and less than or equal to 552.89); level 4 (a score greater than 552.89 and less than or equal to 625.61); level 5 (a score greater than 625.61 and less than or equal to 698.32); and level 6 (a score greater than 698.32). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Detail may not sum to totals because of rounding. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Figure R1a. Percentage of 15-year-old students performing at PISA reading literacy proficiency levels 5 and above and below level 2, by education system: 2012



Below level 2  
Levels 5 and above

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

# Rounds to zero.

‡ Reporting standards not met.

\*  $p < .05$ . Significantly different from the U.S. percentage at the .05 level of statistical significance.

NOTE: Education systems are ordered by 2012 percentages of 15-year-olds in levels 5 and above. To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into reading proficiency levels according to their scores. Exact cut scores are as follows: below level 1b (a score less than or equal to 262.04); level 1b (a score greater than 262.04 and less than or equal to 334.75); level 1a (a score greater than 334.75 and less than or equal to 407.47); level 2 (a score greater than 407.47 and less than or equal to 480.18); level 3 (a score greater than 480.18 and less than or equal to 552.89); level 4 (a score greater than 552.89 and less than or equal to 625.61); level 5 (a score greater than 625.61 and less than or equal to 698.32); and level 6 (a score greater than 698.32). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only. This figure corresponds to figure 3 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Table R1b. Percentage of 15-year-old students performing at PISA reading literacy proficiency levels 5 and above and below level 2, by education system: 2012

Education system	Below level 2		Levels 5 and above		Education system	Below level 2		Levels 5 and above	
	Percent	s.e.	Percent	s.e.		Percent	s.e.	Percent	s.e.
OECD average	18.0	0.18	8.4	0.12					
Shanghai-China	2.9 *	0.39	25.1 *	1.19	Russian Federation	22.3 *	1.29	4.6 *	0.58
Singapore	9.9 *	0.42	21.2 *	0.60	Vietnam	9.4 *	1.43	4.5 *	0.81
Japan	9.8 *	0.92	18.5 *	1.27	Croatia	18.7	1.29	4.4 *	0.69
Hong Kong-China	6.8 *	0.72	16.8 *	1.16	Slovak Republic	28.2 *	1.78	4.4 *	0.68
Korea, Republic of	7.6 *	0.89	14.1 *	1.24	Turkey	21.6 *	1.43	4.3 *	0.85
New Zealand	16.3	0.83	14.0 *	0.77	Bulgaria	39.4 *	2.21	4.3 *	0.64
Finland	11.3 *	0.71	13.5 *	0.64	Latvia	17.0	1.14	4.2 *	0.55
France	18.9	0.98	12.9 *	0.85	Cyprus	32.8 *	0.67	4.0 *	0.32
Canada	10.9 *	0.45	12.9 *	0.62	Lithuania	21.2 *	1.18	3.3 *	0.37
Belgium	16.2	0.77	12.3 *	0.55	Serbia, Republic of	33.1 *	1.66	2.2 *	0.41
Chinese Taipei	11.5 *	0.87	11.8 *	0.84	United Arab Emirates	35.5 *	1.08	2.2 *	0.29
Australia	14.2	0.46	11.7 *	0.54	Qatar	57.1 *	0.42	1.6 *	0.14
Ireland	9.6 *	0.88	11.4 *	0.65	Romania	37.3 *	1.87	1.6 *	0.38
Liechtenstein	12.4	1.88	10.9	2.89	Albania	52.3 *	1.28	1.2 *	0.25
Norway	16.2	1.03	10.2 *	0.74	Montenegro, Republic of	43.3 *	0.75	1.0 *	0.19
Poland	10.6 *	0.80	10.0	0.93	Uruguay	47.0 *	1.42	0.9 *	0.27
Netherlands	14.0	1.23	9.8	0.82	Thailand	33.0 *	1.40	0.8 *	0.22
Israel	23.6 *	1.64	9.6	0.84	Chile	33.0 *	1.67	0.6 *	0.10
Switzerland	13.7 *	0.76	9.1	0.68	Costa Rica	32.4 *	1.81	0.6 !*	0.19
Germany	14.5	0.91	8.9	0.70	Argentina	53.6 *	1.73	0.5 *	0.14
Luxembourg	22.2 *	0.74	8.9	0.39	Brazil	49.2 *	1.13	0.5 *	0.12
United Kingdom	16.6	1.30	8.8	0.74	Peru	59.9 *	1.95	0.5 !*	0.21
Estonia	9.1 *	0.65	8.3	0.72	Mexico	41.1 *	0.90	0.4 *	0.09
United States	16.6	1.26	7.9	0.67	Colombia	51.4 *	1.78	0.3 !*	0.13
Sweden	22.7 *	1.15	7.9	0.64	Tunisia	49.3 *	2.24	‡	†
Macao-China	11.5 *	0.42	7.0	0.41	Jordan	50.7 *	1.57	‡	†
Italy	19.5 *	0.67	6.7	0.35	Malaysia	52.7 *	1.71	‡	†
Czech Republic	16.9	1.21	6.1 *	0.55	Indonesia	55.2 *	2.18	‡	†
Iceland	21.0 *	0.72	5.8 *	0.51	Kazakhstan	57.1 *	1.56	‡	†
Portugal	18.8	1.42	5.8 *	0.61					
Hungary	19.7	1.22	5.6 *	0.75					
Spain	18.3	0.76	5.5 *	0.30					
Austria	19.5	1.07	5.5 *	0.61					
Denmark	14.6	1.07	5.4 *	0.62	<b>U.S. state education systems</b>				
Greece	22.6 *	1.24	5.1 *	0.61	Massachusetts	11.5 *	1.37	16.1 *	1.98
Slovenia	21.1 *	0.68	5.0 *	0.43	Connecticut	13.2	1.76	14.5 *	1.68
					Florida	17.5	2.00	5.5 *	1.02

† Not applicable.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

‡ Reporting standards not met.

\*  $p < .05$ . Significantly different from the U.S. percentage at the .05 level of statistical significance.

NOTE: Education systems are ordered by 2012 percentages of 15-year-olds in levels 5 and above. To reach a particular proficiency level, a student must correctly answer a majority of items at that level.

Students were classified into reading proficiency levels according to their scores. Exact cut scores are as follows: below level 1b (a score less than or equal to 262.04); level 1b (a score greater than 262.04 and less than or equal to 334.75); level 1a (a score greater than 334.75 and less than or equal to 407.47); level 2 (a score greater than 407.47 and less than or equal to 480.18); level 3 (a score greater than 480.18 and less than or equal to 552.89); level 4 (a score greater than 552.89 and less than or equal to 625.61); level 5 (a score greater than 625.61 and less than or equal to 698.32); and level 6 (a score greater than 698.32). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally.

Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only. This table corresponds to figure 3 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Table R2. Average scores of 15-year-old students on PISA reading literacy scale, by education system: 2012

Education system	Average score	s.e.	Education system	Average score	s.e.
OECD average	496	0.5			
<i>Shanghai-China</i>	570 ▲	2.9	Iceland	483 ▼	1.8
<i>Hong Kong-China</i>	545 ▲	2.8	Slovenia	481 ▼	1.2
<i>Singapore</i>	542 ▲	1.4	<i>Lithuania</i>	477 ▼	2.5
Japan	538 ▲	3.7	Greece	477 ▼	3.3
Korea, Republic of	536 ▲	3.9	Turkey	475 ▼	4.2
Finland	524 ▲	2.4	<i>Russian Federation</i>	475 ▼	3.0
Ireland	523 ▲	2.6	Slovak Republic	463 ▼	4.2
<i>Chinese Taipei</i>	523 ▲	3.0	<i>Cyprus</i>	449 ▼	1.2
Canada	523 ▲	1.9	<i>Serbia, Republic of</i>	446 ▼	3.4
Poland	518 ▲	3.1	<i>United Arab Emirates</i>	442 ▼	2.5
Estonia	516 ▲	2.0	Chile	441 ▼	2.9
<i>Liechtenstein</i>	516 ▲	4.1	<i>Thailand</i>	441 ▼	3.1
New Zealand	512 ▲	2.4	<i>Costa Rica</i>	441 ▼	3.5
Australia	512 ▲	1.6	<i>Romania</i>	438 ▼	4.0
Netherlands	511 ▲	3.5	<i>Bulgaria</i>	436 ▼	6.0
Belgium	509 ▲	2.2	Mexico	424 ▼	1.5
Switzerland	509 ▲	2.6	<i>Montenegro, Republic of</i>	422 ▼	1.2
<i>Macao-China</i>	509 ▲	0.9	<i>Uruguay</i>	411 ▼	3.2
<i>Vietnam</i>	508	4.4	<i>Brazil</i>	410 ▼	2.1
Germany	508 ▲	2.8	<i>Tunisia</i>	404 ▼	4.5
France	505	2.8	<i>Colombia</i>	403 ▼	3.4
Norway	504	3.2	<i>Jordan</i>	399 ▼	3.6
United Kingdom	499	3.5	<i>Malaysia</i>	398 ▼	3.3
<b>United States</b>	<b>498</b>	<b>3.7</b>	<i>Indonesia</i>	396 ▼	4.2
Denmark	496	2.6	<i>Argentina</i>	396 ▼	3.7
Czech Republic	493	2.9	<i>Albania</i>	394 ▼	3.2
Italy	490	2.0	<i>Kazakhstan</i>	393 ▼	2.7
Austria	490	2.8	<i>Qatar</i>	388 ▼	0.8
<i>Latvia</i>	489 ▼	2.4	<i>Peru</i>	384 ▼	4.3
Hungary	488	3.2			
Spain	488 ▼	1.9			
Luxembourg	488 ▼	1.5	<b>U.S. state education</b>		
Portugal	488	3.8	<b>systems</b>		
Israel	486	5.0	<i>Massachusetts</i>	527 ▲	6.1
<i>Croatia</i>	485 ▼	3.3	<i>Connecticut</i>	521 ▲	6.5
Sweden	483 ▼	3.0	<i>Florida</i>	492	6.1

▲ Average score is higher than U.S. average score.

▼ Average score is lower than U.S. average score.

NOTE: Education systems are ordered by 2012 average score. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Scores are reported on a scale from 0 to 1,000. All average scores reported as higher or lower than the U.S. average score are different at the .05 level of statistical significance. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only. This table corresponds to table 3 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Table R3. Cut scores of 15-year-old students on PISA reading literacy scale at selected percentiles and percentile cut score gaps, by education system: 2012

Education system	Percentile											
	10th		25th		50th		75th		90th		90th to 10th	
	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.	Cut score gap	s.e.
OECD average	372	0.9	435	0.7	502	0.6	563	0.6	613	0.6	242	1.1
Vietnam	411	8.2	462	5.4	512	4.1	559	3.9	599	5.0	189▼	9.6
Kazakhstan	297	4.4	344	3.1	394	3.1	444	3.4	487	3.5	189▼	5.7
Costa Rica	344	5.4	391	4.3	441	3.8	490	4.2	536	5.0	191▼	7.4
Indonesia	299	6.1	346	4.7	397	4.4	447	4.6	492	6.1	193▼	8.6
Thailand	341	4.4	389	3.5	442	3.4	494	3.7	541	4.4	201▼	6.3
Chile	339	4.2	388	3.8	443	3.3	496	3.3	541	3.3	202▼	5.3
Shanghai-China	463	4.6	518	3.6	576	2.9	626	2.8	667	3.5	204▼	5.8
Mexico	319	2.5	370	1.9	425	1.8	479	1.8	525	1.9	206▼	3.1
Estonia	412	3.4	463	3.0	519	2.3	571	2.4	618	2.8	206▼	4.4
Macao-China	400	2.4	457	1.8	513	1.2	566	1.4	611	1.6	211▼	2.9
Colombia	295	5.4	348	4.0	404	3.7	460	3.7	509	4.5	215▼	7.0
Malaysia	288	4.4	343	3.7	402	3.6	457	3.9	503	4.3	215▼	6.1
Korea, Republic of	424	6.2	483	4.3	543	4.4	596	4.1	640	4.0	216▼	7.4
Denmark	385	5.1	442	3.5	501	2.5	555	2.4	602	2.8	216▼	5.8
Hong Kong-China	430	5.4	493	4.4	552	3.2	604	3.0	648	3.4	218▼	6.4
Brazil	302	2.8	353	2.4	409	2.4	468	2.7	520	3.0	218▼	4.1
Latvia	375	5.6	434	3.0	495	2.8	548	2.9	593	2.8	219	6.2
Ireland	410	5.7	469	3.6	526	2.9	582	2.7	631	3.2	221	6.5
Lithuania	363	4.0	419	3.9	482	2.8	538	2.8	585	3.1	222	5.1
Poland	404	4.6	461	3.2	522	3.5	579	3.6	626	4.8	222	6.6
Turkey	365	4.6	417	4.0	475	4.6	534	5.6	588	6.8	223	8.3
Croatia	370	5.1	427	4.4	487	3.6	546	3.8	593	4.9	223	7.1
Czech Republic	378	4.7	434	3.7	496	3.7	554	3.6	604	3.8	226	6.0
Tunisia	286	7.1	346	5.9	409	5.0	466	4.5	515	5.6	229	9.0
Jordan	280	6.4	343	4.5	406	3.4	462	3.2	510	4.6	230	7.9
Romania	322	4.4	375	4.4	437	4.6	501	5.5	555	5.3	232	6.9
Russian Federation	359	4.5	415	4.0	476	3.4	537	3.9	592	4.2	233	6.1
Switzerland	388	3.9	451	3.3	514	2.8	573	2.8	622	3.2	233	5.1
Spain	367	3.6	430	2.6	494	2.2	552	2.1	601	2.3	234	4.3
Chinese Taipei	399	5.2	467	4.4	532	3.3	587	2.8	633	3.6	235	6.3
Canada	403	2.8	464	2.3	528	2.2	587	2.2	638	2.6	235	3.8
<b>United States</b>	<b>378</b>	<b>4.8</b>	<b>436</b>	<b>4.5</b>	<b>500</b>	<b>3.9</b>	<b>561</b>	<b>3.9</b>	<b>614</b>	<b>4.0</b>	<b>235</b>	<b>6.3</b>
Slovenia	362	2.5	420	1.9	484	1.9	548	2.1	598	2.5	237	3.5
Germany	384	4.8	447	3.6	514	3.4	574	3.1	621	3.2	237	5.8
Montenegro, Republic of	301	3.0	360	2.5	423	2.2	487	1.8	540	3.4	238	4.5
Austria	365	5.1	427	3.9	496	3.4	557	3.0	603	2.5	238	5.7
Netherlands	386	6.6	451	5.1	519	4.3	579	3.7	625	3.6	239	7.5
Liechtenstein	391	9.5	452	7.8	518	5.5	584	6.9	630	10.6	239	14.2
Finland	399	4.3	463	3.5	530	3.1	590	2.3	639	2.5	240	5.0
Hungary	363	5.2	427	4.6	494	3.7	555	3.3	603	3.9	240	6.5
Serbia, Republic of	325	5.5	384	4.4	448	4.0	509	4.1	566	4.6	241	7.2
Peru	263	5.1	319	4.7	385	4.7	447	5.2	504	6.4	241	8.2
Portugal	362	6.0	429	4.9	493	4.2	554	3.5	604	3.5	242	6.9
Argentina	274	5.4	332	4.5	399	4.1	462	4.1	516	4.4	243	7.0
United Arab Emirates	316	3.7	376	3.1	445	3.1	508	2.8	562	3.1	246	4.8
United Kingdom	372	7.0	438	4.8	504	3.8	567	3.4	619	3.8	247	8.0
Uruguay	285	5.3	348	4.3	414	3.4	477	3.0	534	4.1	248	6.7
Australia	386	2.4	448	2.2	516	1.8	579	1.9	634	2.3	249	3.3
Japan	409	6.5	475	4.8	545	4.1	607	3.8	658	4.4	249	7.9
Italy	359	2.9	427	2.6	497	2.5	559	2.1	609	2.2	250	3.6
Iceland	352	4.1	422	2.9	490	2.0	551	2.9	602	2.4	250	4.7
Greece	346	6.0	416	4.5	486	3.4	545	3.4	597	3.9	251	7.1
Norway	375	4.8	442	4.0	510	3.4	573	3.4	627	3.9	252	6.2
Singapore	408	2.9	475	2.1	548	2.2	614	2.1	668	3.2	260▲	4.3
Belgium	372	4.3	444	3.2	517	2.6	583	2.7	635	2.3	264▲	4.9
Slovak Republic	321	8.4	396	6.8	472	4.5	538	4.1	591	5.2	270▲	9.9
New Zealand	374	4.9	443	3.2	516	2.9	586	3.1	645	4.0	271▲	6.3
Sweden	343	5.4	416	4.3	490	3.3	558	3.3	614	4.2	272▲	6.8
Luxembourg	347	2.7	418	2.4	492	2.2	564	2.2	620	2.3	273▲	3.6
France	358	5.4	435	4.3	515	2.9	584	3.6	639	3.9	281▲	6.6
Cyprus	297	3.3	378	2.4	459	2.1	528	2.1	583	2.6	286▲	4.2
Albania	247	7.2	325	4.8	402	3.4	473	3.2	536	3.4	289▲	7.9
Qatar	242	2.0	310	1.7	386	1.2	465	1.9	535	2.3	293▲	3.1
Israel	329	7.5	414	6.8	497	5.4	568	4.5	624	4.5	295▲	8.7
Bulgaria	275	8.0	353	8.2	443	7.2	523	6.0	585	6.1	310▲	10.0
<b>U.S. state education systems</b>												
Florida	377	7.2	433	7.1	496	6.6	555	7.0	602	7.4	225	10.4
Massachusetts	399	7.7	464	7.1	529	7.2	595	7.7	652	7.3	253	10.7
Connecticut	388	9.6	456	7.5	526	6.2	590	6.0	645	7.3	257	12.1

▲ Cut score gap is larger than the U.S. percentile cut score gap.

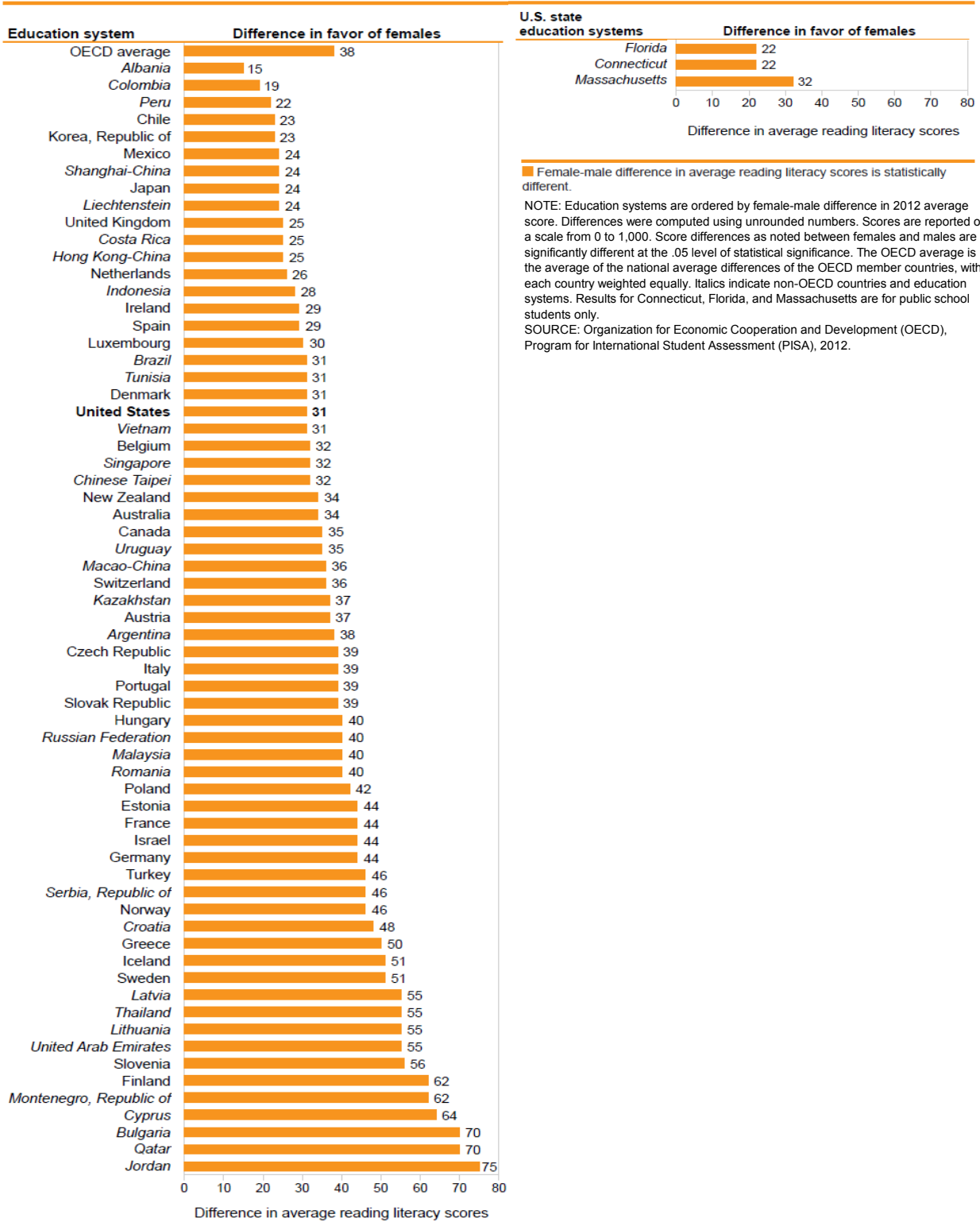
▼ Cut score gap is smaller than the U.S. percentile cut score gap.

NOTE: This table shows the threshold (or cut) scores for the following: (a) 10th percentile- the bottom 10 percent of students; (b) 25th percentile- the bottom 25 percent of students; (c) 50th percentile- the median (half the students scored below the cut score and half scored above it); (d) 75th percentile- the top 25 percent of students; (e) 90th percentile- the top 10 percent of students. The percentile ranges are specific to each education system's distribution of scores, enabling users to compare cut scores across education systems. Education systems are ordered by cut score gap. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Scores are reported on a scale from 0 to 1,000. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Figure R2a. Difference in average scores of 15-year-old female and male students on PISA reading literacy scale, by education system: 2012



## National Center for Education Statistics

Table R2b. Difference in average scores of 15-year-old female and male students on PISA reading literacy scale, by education system: 2012

Education system	Female-male difference	s.e.
OECD average	38 *	0.6
<i>Albania</i>	15 *	4.0
<i>Colombia</i>	19 *	3.5
<i>Peru</i>	22 *	4.3
Chile	23 *	3.3
Korea, Republic of	23 *	5.4
Mexico	24 *	1.4
<i>Shanghai-China</i>	24 *	2.5
Japan	24 *	4.1
<i>Liechtenstein</i>	24 *	8.7
United Kingdom	25 *	4.6
<i>Costa Rica</i>	25 *	2.6
<i>Hong Kong-China</i>	25 *	4.7
Netherlands	26 *	3.1
<i>Indonesia</i>	28 *	3.4
Ireland	29 *	4.2
Spain	29 *	2.0
Luxembourg	30 *	2.0
<i>Brazil</i>	31 *	1.9
<i>Tunisia</i>	31 *	3.1
Denmark	31 *	2.8
<b>United States</b>	<b>31 *</b>	<b>2.6</b>
<i>Vietnam</i>	31 *	2.6
Belgium	32 *	3.4
<i>Singapore</i>	32 *	2.6
<i>Chinese Taipei</i>	32 *	6.4
New Zealand	34 *	5.0
Australia	34 *	2.9
Canada	35 *	2.1
<i>Uruguay</i>	35 *	3.5
<i>Macao-China</i>	36 *	1.7
Switzerland	36 *	2.6
<i>Kazakhstan</i>	37 *	2.9
Austria	37 *	5.0
<i>Argentina</i>	38 *	3.6
Czech Republic	39 *	3.7
Italy	39 *	2.6
Portugal	39 *	2.7
Slovak Republic	39 *	4.6
Hungary	40 *	3.6
<i>Russian Federation</i>	40 *	3.0
<i>Malaysia</i>	40 *	3.1
<i>Romania</i>	40 *	4.1
Poland	42 *	2.9
Estonia	44 *	2.4
France	44 *	4.2
Israel	44 *	7.9
Germany	44 *	2.5
Turkey	46 *	4.0
<i>Serbia, Republic of</i>	46 *	3.8
Norway	46 *	3.3
<i>Croatia</i>	48 *	4.0
Greece	50 *	3.7
Iceland	51 *	3.3
Sweden	51 *	3.6
<i>Latvia</i>	55 *	4.0
<i>Thailand</i>	55 *	3.2
<i>Lithuania</i>	55 *	2.3
<i>United Arab Emirates</i>	55 *	4.8
Slovenia	56 *	2.7
Finland	62 *	3.1
<i>Montenegro, Republic of</i>	62 *	3.1
Cyprus	64 *	3.0
<i>Bulgaria</i>	70 *	5.2
<i>Qatar</i>	70 *	1.6
<i>Jordan</i>	75 *	6.3
<b>U.S. state education systems</b>		
<i>Florida</i>	22 *	4.1
<i>Connecticut</i>	22 *	5.0
<i>Massachusetts</i>	32 *	4.2

\*  $p < .05$ . All differences between females and males are significantly different at the .05 level of statistical significance.

NOTE: Education systems are ordered by female-male difference in 2012 average score. Differences were computed using unrounded numbers. Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national average differences of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

## National Center for Education Statistics

**Table R4. Percentage distribution of U.S. 15-year-old public school students on PISA reading literacy scale, by proficiency level and percentage of students in enrolled schools eligible for free or reduced-price lunch, based on principals' reports: 2012**

Percent of students eligible for free or reduced-price lunch	Below level 1b		Level 1b		Level 1a		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
<b>U.S. average</b>	<b>0.8</b> †**	<b>0.24</b>	<b>3.6</b>	<b>0.49</b>	<b>12.3</b>	<b>0.89</b>	<b>24.9</b>	<b>0.99</b>	<b>30.5</b>	<b>0.88</b>	<b>20.1</b>	<b>1.08</b>	<b>6.9</b>	<b>0.59</b>	<b>1.0</b>	<b>0.22</b>
Less than 10 percent	‡	†	‡	†	‡	†	12.9 *	2.64	29.2 ***	3.22	33.2 *	4.24	17.2 *	2.99	‡	†
10 to 24.9 percent	‡	†	2.1 †*	0.69	6.9 *	1.12	21.1 ***	2.22	32.2 ***	1.96	25.8 *	1.75	10.2 ***	1.50	1.7 †***	0.76
25 to 49.9 percent	‡	†	1.8 †*	0.57	8.7 *	1.34	22.1 ***	2.14	30.9 ***	1.60	24.9 ***	2.29	9.9 ***	1.34	1.4 †***	0.58
50 to 74.9 percent	0.8 †***	0.31	4.7 ***	1.04	15.0 ***	1.70	28.1 *	1.55	32.2 ***	1.71	15.7 *	1.60	3.1 *	0.62	‡	†
75 percent or more	2.4 †***	1.06	6.7 ***	1.32	21.1 *	2.59	31.8 *	2.51	25.6 ***	2.42	10.3 *	2.03	2.0 †*	0.98	‡	†
<b>OECD average</b>	<b>1.3</b> ***	<b>0.05</b>	<b>4.4</b>	<b>0.08</b>	<b>12.3</b>	<b>0.13</b>	<b>23.5</b>	<b>0.16</b>	<b>29.1</b>	<b>0.17</b>	<b>21.0</b>	<b>0.16</b>	<b>7.3</b>	<b>0.10</b>	<b>1.1</b>	<b>0.04</b>

† Not applicable.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

‡ Reporting standards not met.

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

\*\*\*  $p < .05$ . Significantly different from the U.S. average at the .05 level of statistical significance.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into reading literacy levels according to their scores. Exact cut scores are as follows: below level 1b (a score less than or equal to 262.04); level 1b (a score greater than 262.04 and less than or equal to 334.75); level 1a (a score greater than 334.75 and less than or equal to 407.47); level 2 (a score greater than 407.47 and less than or equal to 480.18); level 3 (a score greater than 480.18 and less than or equal to 552.89); level 4 (a score greater than 552.89 and less than or equal to 625.61); level 5 (a score greater than 625.61 and less than or equal to 698.32); and level 6 (a score greater than 698.32). Scores are reported on a scale from 0 to 1,000. The National School Lunch Program provides free or reduced-price lunch for students meeting certain income guidelines. The percentage of students receiving such lunch is an indicator of the socioeconomic level of families served by the school. Data in this table are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Free or reduced-price lunch data are for public schools only. Detail may not sum to totals because of rounding.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.



# National Center for Education Statistics

**Table R5. Average scores of U.S. 15-year-old public school students on PISA reading literacy scale, by percentage of students in enrolled schools eligible for free or reduced-price lunch, based on principals' reports: 2012**

Percent of students eligible for free or reduced-price lunch	Average score	s.e.
<b>U.S. average</b>	<b>498</b>	<b>3.7</b>
Less than 10 percent	559 *	8.6
10 to 24.9 percent	524 *	5.3
25 to 49.9 percent	519 *	6.7
50 to 74.9 percent	479 *	4.7
75 percent or more	452 *	8.5
<b>OECD average</b>	<b>496</b>	<b>0.5</b>

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

NOTE: Scores are reported on a scale from 0 to 1,000. The National School Lunch Program provides free or reduced-price lunch for students meeting certain income guidelines. The percentage of students receiving such lunch is an indicator of the socioeconomic level of families served by the school. Data in this table are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Free or reduced-price lunch data are for public schools only.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table R6. Percentage distribution of U.S. 15-year-old students on PISA reading literacy scale, by proficiency level and race/ethnicity: 2012**

Race/ethnicity	Below level 1b		Level 1b		Level 1a		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
<b>U.S. average</b>	<b>0.8 !**</b>	<b>0.24</b>	<b>3.6</b>	<b>0.49</b>	<b>12.3</b>	<b>0.89</b>	<b>24.9</b>	<b>0.99</b>	<b>30.5</b>	<b>0.88</b>	<b>20.1</b>	<b>1.08</b>	<b>6.9</b>	<b>0.59</b>	<b>1.0</b>	<b>0.22</b>
White	‡	†	1.7 *	0.47	7.8 *	0.96	21.4 ***	1.09	33.6 *	1.07	25.0 *	1.42	9.0 *	0.82	1.3	0.33
Black	2.8 †	1.35	9.2 *	1.54	23.5 *	2.44	30.8 *	2.40	20.7 *	2.50	10.5 *	2.09	2.4 !*	0.97	‡	†
Hispanic	0.5 !**	0.23	4.0	0.81	16.2 *	1.97	30.0 *	1.76	30.4	1.68	15.2 *	1.52	3.5 *	0.95	‡	†
Asian	‡	†	‡	†	‡	†	12.7 *	2.89	31.2	4.97	31.5 *	4.78	13.8 *	3.06	4.9 !*	1.80
Multiracial	‡	†	‡	†	7.3 †!	3.45	24.1	4.41	35.5	4.05	18.7	3.45	11.7	2.98	‡	†
<b>OECD average</b>	<b>1.3 ***</b>	<b>0.05</b>	<b>4.4</b>	<b>0.08</b>	<b>12.3</b>	<b>0.13</b>	<b>23.5</b>	<b>0.16</b>	<b>29.1</b>	<b>0.17</b>	<b>21.0</b>	<b>0.16</b>	<b>7.3</b>	<b>0.10</b>	<b>1.1</b>	<b>0.04</b>

† Not applicable.

‡ Interpret data with caution. Estimate is unstable due to high coefficient of variation.

† Reporting standards not met.

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

\*\*\*  $p < .05$ . Significantly different from the U.S. average at the .05 level of statistical significance.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into reading literacy levels according to their scores. Exact cut scores are as follows: below level 1b (a score less than or equal to 262.04); level 1b (a score greater than 262.04 and less than or equal to 334.75); level 1a (a score greater than 334.75 and less than or equal to 407.47); level 2 (a score greater than 407.47 and less than or equal to 480.18); level 3 (a score greater than 480.18 and less than or equal to 552.89); level 4 (a score greater than 552.89 and less than or equal to 625.61); level 5 (a score greater than 625.61 and less than or equal to 698.32); and level 6 (a score greater than 698.32). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. Standard error is noted by s.e. Detail may not sum to totals because of rounding.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Table R7. Average scores of U.S. 15-year-old students on PISA reading literacy scale, by race/ethnicity: 2012

Race/ethnicity	Average score	s.e.
<b>U.S. average</b>	<b>498</b>	<b>3.7</b>
White	519 *	4.1
Black	443 *	8.3
Hispanic	478 *	4.5
Asian	550 *	8.1
Multiracial	517 *	7.6
<b>OECD average</b>	<b>496</b>	<b>0.5</b>

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

NOTE: Scores are reported on a scale from 0 to 1,000. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Standard error is noted by *s.e.*

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table T1. Average scores and changes in average scores of U.S. 15-year-old students on PISA mathematics, science, and reading literacy scales: 2000, 2003, 2006, 2009, and 2012**

Subject	2000		2003		2006		2009		2012		Change in average score			
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	2000–2012	2003–2012	2006–2012	2009–2012
Mathematics	†	†	483	2.9	474	4.0	487	3.6	481	3.6	†	○	○	○
Science	†	†	†	†	489	4.2	502	3.6	497	3.8	†	†	○	○
Reading	504	7.0	495	3.2	—	†	500	3.7	498	3.7	○	○	—	○

○ Average score in 2012 is not measurably different than in comparison year.

— Not available. PISA 2006 reading literacy results are not reported for the United States because of an error in printing the test booklets and comparisons are not possible.

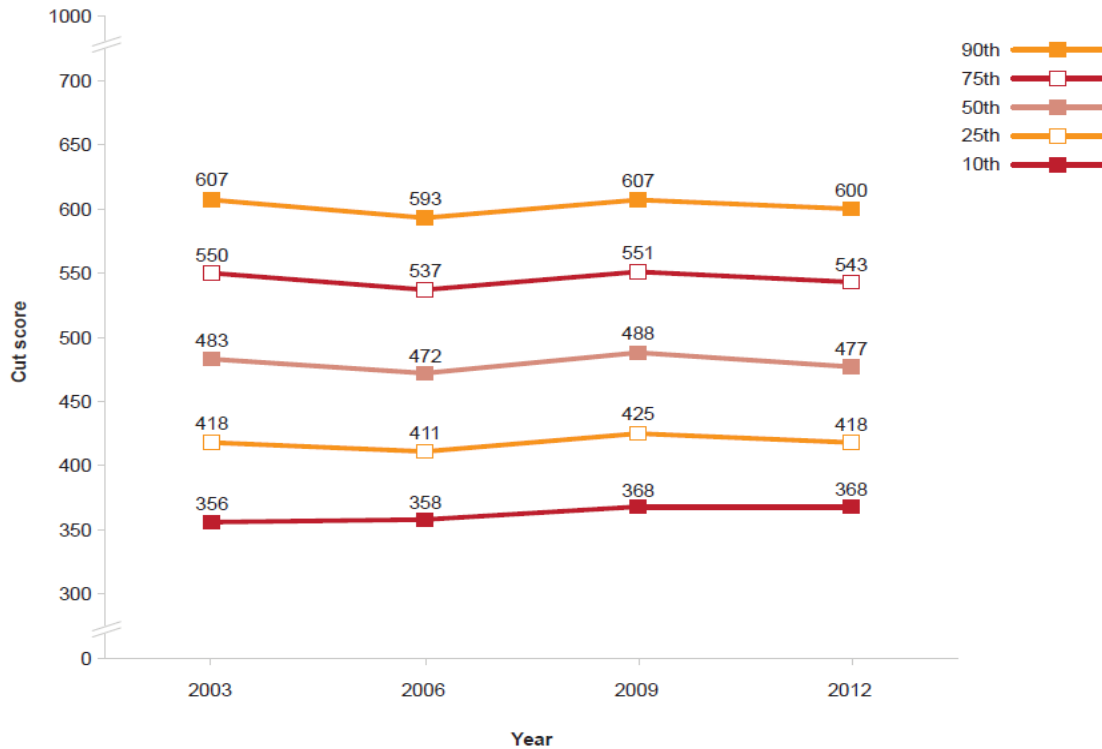
† Not applicable. Although mathematics was assessed in 2000 and science was assessed in 2000 and 2003, because the mathematics framework was revised for PISA 2003 and the science framework was revised for 2006, it is possible to look at changes in mathematics only from 2003 forward and in science only from 2006 forward.

NOTE: All average scores reported as higher or lower than the comparison year are different at the .05 level of statistical significance. Standard error is noted by s.e. This table corresponds to table 4 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2000, 2003, 2006, 2009, 2012.

# National Center for Education Statistics

Figure T1a. Cut scores of U.S. 15-year-old students on PISA mathematics literacy scale at selected percentiles: 2003, 2006, 2009, and 2012



NOTE: This table shows the threshold (or cut) score for the following: (a) 10th percentile- the bottom 10 percent of students; (b) 25th percentile- the bottom 25 percent of students; (c) 50th percentile- the median (half the students scored below the cut score and half scored above it); (d) 75th percentile- the top 25 percent of students; (e) 90th percentile- the top 10 percent of students. The percentile ranges are specific to each education system's distribution of scores and to each assessment administration, enabling users to compare scores at the cut scores across education systems and over time. The PISA mathematics framework was revised in 2003. Because of changes in the framework, it is not possible to compare mathematics learning outcomes from PISA 2000 with those from PISA 2003, 2006, 2009, and 2012. Scores are reported on a scale from 0 to 1,000.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2003, 2006, 2009, 2012.

## National Center for Education Statistics

**Table T1b. Cut scores of U.S. 15-year-old students on PISA mathematics literacy scale at selected percentiles: 2003, 2006, 2009, and 2012**

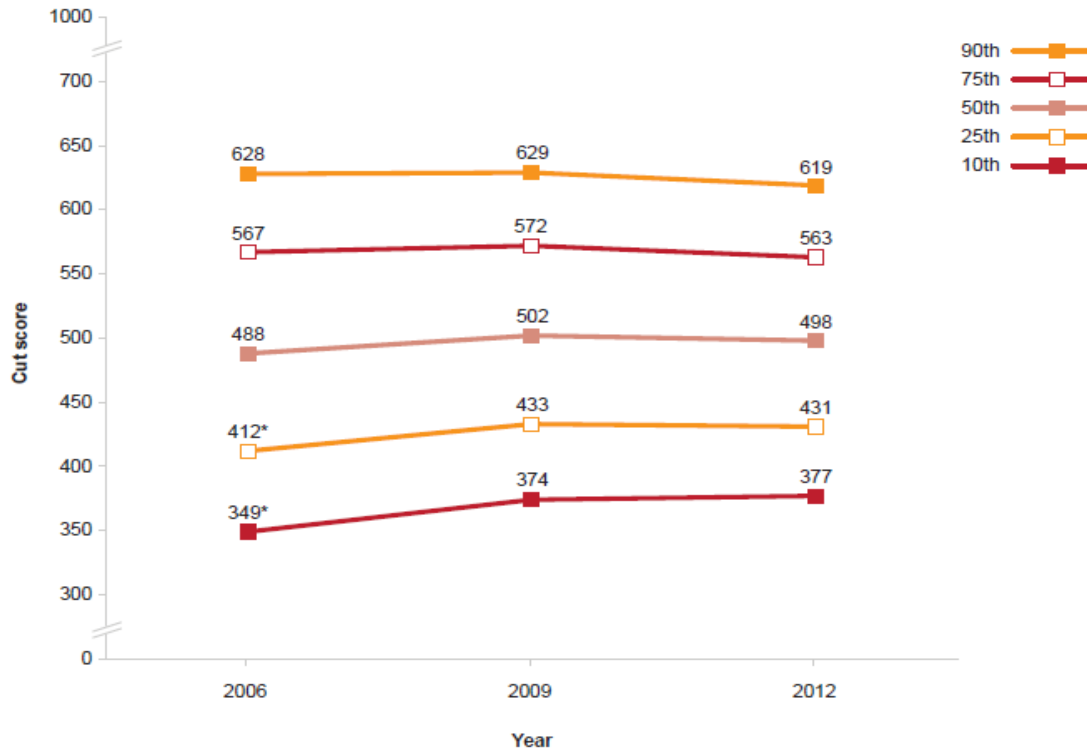
Selected percentiles	2003		2006		2009		2012	
	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.
90th percentile	607	3.9	593	4.8	607	4.6	600	4.3
75th percentile	550	3.4	537	5.0	551	4.9	543	4.4
50th percentile	483	3.1	472	4.4	488	3.8	477	4.0
25th percentile	418	3.7	411	4.8	425	3.9	418	3.7
10th percentile	356	4.5	358	5.8	368	4.3	368	3.9

NOTE: This table shows the threshold (or cut) score for the following: (a) 10th percentile- the bottom 10 percent of students; (b) 25th percentile- the bottom 25 percent of students; (c) 50th percentile- the median (half the students scored below the cut score and half scored above it); (d) 75th percentile- the top 25 percent of students; (e) 90th percentile- the top 10 percent of students. The percentile ranges are specific to each education system's distribution of scores and to each assessment administration, enabling users to compare scores at the cut scores across education systems and over time. The PISA mathematics framework was revised in 2003. Because of changes in the framework, it is not possible to compare mathematics learning outcomes from PISA 2000 with those from PISA 2003, 2006, 2009, and 2012. Scores are reported on a scale from 0 to 1,000. Standard error is noted by s.e.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2003, 2006, 2009, 2012.

# National Center for Education Statistics

Figure T2a. Cut scores of U.S. 15-year-old students on PISA science literacy scale at selected percentiles: 2006, 2009, and 2012



\*  $p < .05$ . Significantly different from the 2012 score at the .05 level of statistical significance.  
 NOTE: This table shows the threshold (or cut) score for the following: (a) 10th percentile- the bottom 10 percent of students; (b) 25th percentile- the bottom 25 percent of students; (c) 50th percentile- the median (half the students scored below the cut score and half scored above it); (d) 75th percentile- the top 25 percent of students; (e) 90th percentile- the top 10 percent of students. The percentile ranges are specific to each education system's distribution of scores and to each assessment administration, enabling users to compare scores at the cut scores across education systems and over time. The PISA science framework was revised in 2006. Because of changes in the framework, it is not possible to compare science learning outcomes from PISA 2000 and 2003 with those from PISA 2006, 2009, and 2012. Scores are reported on a scale from 0 to 1,000.  
 SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2006, 2009, 2012.

# National Center for Education Statistics

**Table T2b. Cut scores of U.S. 15-year-old students on PISA science literacy scale at selected percentiles: 2006, 2009, and 2012**

Selected percentiles	2006		2009		2012	
	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.
90th percentile	628	4.3	629	5.1	619	4.5
75th percentile	567	4.6	572	4.7	563	4.2
50th percentile	488	4.7	502	4.6	498	4.3
25th percentile	412 *	5.4	433	3.9	431	4.4
10th percentile	349 *	5.9	374	4.5	377	4.9

\*  $p < .05$ . Significantly different from the 2012 score at the .05 level of statistical significance.

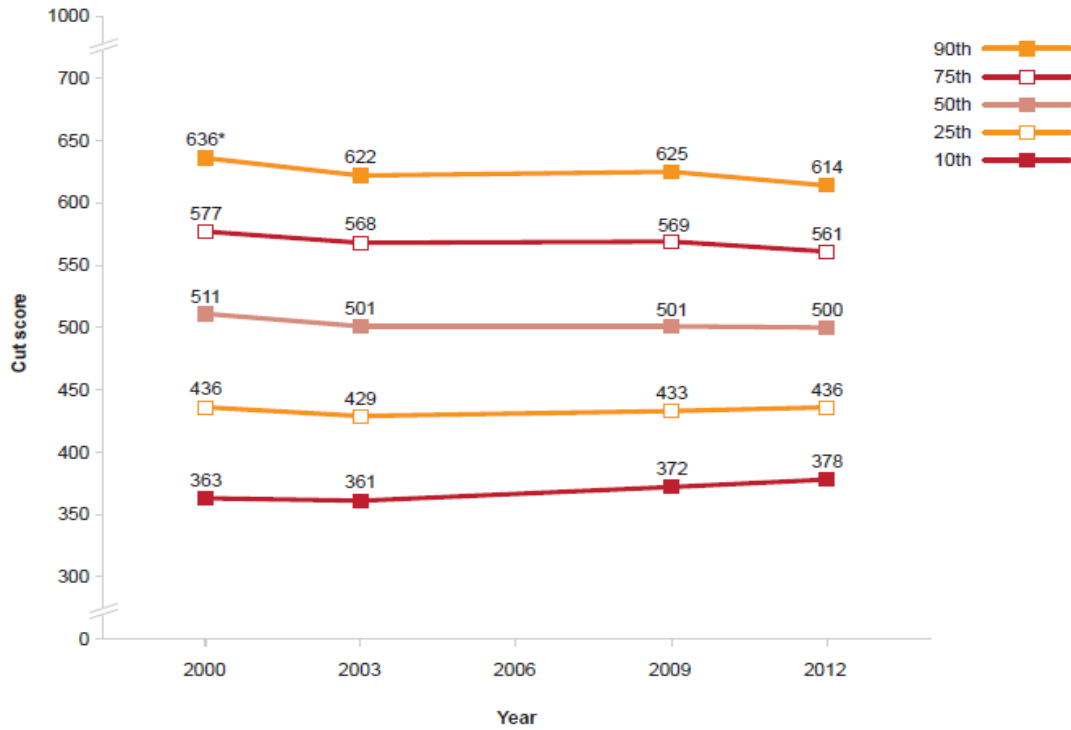
NOTE: This table shows the threshold (or cut) score for the following: (a) 10th percentile- the bottom 10 percent of students; (b) 25th percentile- the bottom 25 percent of students; (c) 50th percentile- the median (half the students scored below the cut score and half scored above it); (d) 75th percentile- the top 25 percent of students; (e) 90th percentile- the top 10 percent of students. The percentile ranges are specific to each education system's distribution of scores and to each assessment administration, enabling users to compare scores at the cut scores across education systems and over time. The PISA science framework was revised in 2006. Because of changes in the framework, it is not possible to compare science learning outcomes from PISA 2000 and 2003 with those from PISA 2006, 2009, and 2012. Scores are reported on a scale from 0 to 1,000. Standard error is noted by *s.e.*

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2006, 2009, 2012.



# National Center for Education Statistics

Figure T3a. Cut scores of U.S. 15-year-old students on PISA reading literacy scale at selected percentiles: 2000, 2003, 2006, 2009, and 2012



\*  $p < .05$ . Significantly different from the 2012 score at the .05 level of statistical significance.

NOTE: This table shows the threshold (or cut) score for the following: (a) 10th percentile- the bottom 10 percent of students; (b) 25th percentile- the bottom 25 percent of students; (c) 50th percentile- the median (half the students scored below the cut score and half scored above it); (d) 75th percentile- the top 25 percent of students; (e) 90th percentile- the top 10 percent of students. The percentile ranges are specific to each education system's distribution of scores and to each assessment administration, enabling users to compare scores at the cut scores across education systems and over time. The PISA 2006 reading literacy results are not reported for the United States because of an error in printing the test booklets. For more details, see Baldi et al. 2007 (available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2008016>). Scores are reported on a scale from 0 to 1,000. SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2000, 2003, 2009, 2012.

# National Center for Education Statistics

**Table T3b. Cut scores of U.S. 15-year-old students on PISA reading literacy scale at selected percentiles: 2000, 2003, 2009, and 2012**

Selected percentiles	2000		2003		2009		2012	
	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.	Cut score	s.e.
90th percentile	636 *	6.5	622	3.5	625	5.0	614	4.0
75th percentile	577	6.8	568	3.6	569	4.6	561	3.9
50th percentile	511	7.0	501	3.6	501	4.2	500	3.9
25th percentile	436	8.8	429	4.1	433	4.0	436	4.5
10th percentile	363	11.4	361	5.2	372	3.9	378	4.8

\*  $p < .05$ . Significantly different from the 2012 score at the .05 level of statistical significance.

NOTE: This table shows the threshold (or cut) score for the following: (a) 10th percentile- the bottom 10 percent of students; (b) 25th percentile- the bottom 25 percent of students; (c) 50th percentile- the median (half the students scored below the cut score and half scored above it); (d) 75th percentile- the top 25 percent of students; (e) 90th percentile- the top 10 percent of students. The percentile ranges are specific to each education system's distribution of scores and to each assessment administration, enabling users to compare scores at the cut scores across education systems and over time. The PISA 2006 reading literacy results are not reported for the United States because of an error in printing the test booklets. For more details, see Baldi et al. 2007 (available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2008016>). Scores are reported on a scale from 0 to 1,000. Standard error is noted by s.e. SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2000, 2003, 2009, 2012.

# National Center for Education Statistics

Table T2. Average scores and changes in average scores of 15-year-old students on PISA mathematics literacy scale, by education system: 2003, 2006, 2009, and 2012

Education system	Average score								Change in average score							
	2003		2006		2009		2012		2012-2003		2012-2006		2012-2009			
	Score	s.e.	Score	s.e.	Score	s.e.	Score	s.e.	Score	s.e.	Score	s.e.	Score	s.e.		
OECD trend score <sup>1</sup>	500	0.6	498	0.5	499	0.6	496	0.5	-3 *	0.9	-1	0.9	-3 *	0.9		
Shanghai-China	—	†	—	†	600	2.8	613	3.3	—	—	—	—	13 *▲	4.9		
Singapore	—	†	—	†	562	1.4	573	1.3	—	—	—	—	11 *▲	3.0		
Hong Kong-China	550	4.5	547	2.7	555	2.7	561	3.2	11	5.9	14 *	4.7	7	4.8		
Chinese Taipei	—	†	549	4.1	543	3.4	560	3.3	—	—	10	5.7	17 *▲	5.3		
Korea, Republic of	542	3.2	547	3.8	546	4.0	554	4.6	12	5.9	6	6.3	8	6.5		
Macao-China	527	2.9	525	1.3	525	0.9	538	1.0	11 *▲	3.6	13 *	2.6	13 *▲	2.7		
Japan	534	4.0	523	3.3	529	3.3	536	3.6	2	5.7	13 *	5.3	7	5.4		
Liechtenstein	536	4.1	525	4.2	536	4.1	535	4.0	-1	6.0	10	6.1	-1	6.1		
Switzerland	527	3.4	530	3.2	534	3.3	531	3.0	4	4.9	1	4.9	-3	5.0		
Netherlands	538	3.1	531	2.6	526	4.7	523	3.5	-15 *	5.1	-8	4.8	-3	6.3		
Estonia	—	†	515	2.7	512	2.6	521	2.0	—	—	6	4.0	8 *▲	4.0		
Finland	544	1.9	548	2.3	541	2.2	519	1.9	-26 *▼	3.3	-30 *▼	3.7	-22 *▼	3.7		
Canada	532	1.8	527	2.0	527	1.6	518	1.8	-14 *▼	3.2	-9 *▼	3.4	-9 *	3.4		
Poland	490	2.5	495	2.4	495	2.8	518	3.6	27 *▲	4.8	22 *▲	4.8	23 *▲	5.1		
Belgium	529	2.3	520	3.0	515	2.3	515	2.1	-15 *▼	3.6	-6	4.2	-1	3.8		
Germany	503	3.3	504	3.9	513	2.9	514	2.9	11 *	4.8	10	5.3	1	4.7		
Vietnam	—	†	—	†	—	†	511	4.8	—	—	—	—	—	†		
Austria	506	3.3	505	3.7	496	2.7	506	2.7	#	—	#	—	10 *▲	4.4		
Australia	524	2.1	520	2.2	514	2.5	504	1.6	-20 *▼	3.3	-16 *▼	3.5	-10 *	3.8		
Ireland	503	2.4	501	2.8	487	2.5	501	2.2	-1	3.8	#	—	14 *▲	4.1		
Slovenia	—	†	504	1.0	501	1.2	501	1.2	—	—	-3	2.6	#	—		
Denmark	514	2.7	513	2.6	503	2.6	500	2.3	-14 *▼	4.1	-13 *▼	4.1	-3	4.2		
New Zealand	523	2.3	522	2.4	519	2.3	500	2.2	-24 *▼	3.7	-22 *▼	3.9	-20 *▼	3.9		
Czech Republic	516	3.5	510	3.6	493	2.8	499	2.9	-17 *▼	4.9	-11 *▼	5.0	6	4.6		
France	511	2.5	496	3.2	497	3.1	495	2.5	-16 *▼	4.0	-1	4.5	-2	4.6		
United Kingdom <sup>2</sup>	—	†	495	2.1	492	2.4	494	3.3	—	—	-2	4.4	2	4.7		
Iceland	515	1.4	506	1.8	507	1.4	493	1.7	-22 *▼	2.9	-13 *▼	3.2	-14 *	3.2		
Latvia	483	3.7	486	3.0	482	3.1	491	2.8	7	5.0	4	4.6	9 ▲	4.7		
Luxembourg	493	1.0	490	1.1	489	1.2	490	1.1	-3	2.4	#	—	1	2.8		
Norway	495	2.4	490	2.6	498	2.4	489	2.7	-6	4.1	#	—	-9 *	4.3		
Portugal	466	3.4	466	3.1	487	2.9	487	3.8	21 *▲	5.5	21 *	5.3	#	—		
Italy	466	3.1	462	2.3	483	1.9	485	2.0	20 *▲	4.2	24 *▲	3.7	2	3.6		
Spain	485	2.4	480	2.3	483	2.1	484	1.9	-1	3.6	4	3.7	1	3.6		
Russian Federation	468	4.2	476	3.9	468	3.3	482	3.0	14 *▲	5.5	6	5.3	14 *▲	5.0		
Slovak Republic	498	3.3	492	2.8	497	3.1	482	3.4	-17 *▼	5.2	-10 *▼	4.9	-15 *	5.1		
<b>United States</b>	<b>483</b>	<b>2.9</b>	<b>474</b>	<b>4.0</b>	<b>487</b>	<b>3.6</b>	<b>481</b>	<b>3.6</b>	<b>-2</b>	<b>5.0</b>	<b>7</b>	<b>5.8</b>	<b>-6</b>	<b>5.6</b>		
Lithuania	—	†	486	2.9	477	2.6	479	2.6	—	—	-8 ▼	4.5	2	4.4		
Sweden	509	2.6	502	2.4	494	2.9	478	2.3	-31 *▼	3.9	-24 *▼	3.9	-16 *	4.3		
Hungary	490	2.8	491	2.9	490	3.5	477	3.2	-13 *	4.7	-14 *▼	4.8	-13 *	5.2		
Croatia	—	†	467	2.4	460	3.1	471	3.5	—	—	4	4.7	11 *▲	5.2		
Israel	—	†	442	4.3	447	3.3	466	4.7	—	—	25 *▲	6.7	20 *▲	6.2		
Greece	445	3.9	459	3.0	466	3.9	453	2.5	8	5.0	-6	4.4	-13 *	5.2		
Serbia, Republic of <sup>3</sup>	—	†	435	3.5	442	2.9	449	3.4	—	—	13 *	5.3	6	5.0		
Turkey	423	6.7	424	4.9	445	4.4	448	4.8	25 *▲	8.5	24 *	7.2	3	7.0		
Romania	—	†	415	4.2	427	3.4	445	3.8	—	—	30 *▲	6.0	17 *▲	5.6		
Cyprus	—	†	—	†	—	†	440	1.1	—	—	—	—	—	—		
Bulgaria	—	†	413	6.1	428	5.9	439	4.0	—	—	25 *	7.6	11	7.5		
United Arab Emirates	—	†	—	†	—	†	434	2.4	—	—	—	—	—	—		
Kazakhstan	—	†	—	†	405	3.0	432	3.0	—	—	—	—	27 *▲	4.9		
Thailand	417	3.0	417	2.3	419	3.2	427	3.4	10 *	5.0	10 *	4.7	8	5.3		
Chile	—	†	411	4.6	421	3.1	423	3.1	—	—	11	5.9	2	4.9		
Malaysia <sup>4</sup>	—	†	—	†	404	2.7	421	3.2	—	—	—	—	16 *▲	4.8		
Mexico	385	3.6	406	2.9	419	1.8	413	1.4	28 *▲	4.3	8 *	3.8	-5	3.2		
Montenegro, Republic of <sup>3</sup>	—	†	399	1.4	403	2.0	410	1.1	—	—	10 *	2.7	7 *▲	3.2		
Uruguay	422	3.3	427	2.6	427	2.6	409	2.8	-13 *	4.7	-18 *▼	4.3	-17 *	4.4		
Costa Rica <sup>4</sup>	—	†	—	†	409	3.0	407	3.0	—	—	—	—	-2	4.8		
Albania	—	†	—	†	377	4.0	394	2.0	—	—	—	—	17 *▲	5.0		
Brazil	356	4.8	370	2.9	386	2.4	391	2.1	35 *▲	5.6	22 *▲	4.1	6	3.9		
Argentina	—	†	381	6.2	388	4.1	388	3.5	—	—	7	7.5	#	—		
Tunisia	359	2.5	365	4.0	371	3.0	388	3.9	29 *▲	5.0	22 *	5.9	16 *▲	5.4		
Jordan	—	†	384	3.3	387	3.7	386	3.1	—	—	2	5.0	-1	5.4		
Colombia	—	†	370	3.8	381	3.2	376	2.9	—	—	7	5.2	-4	4.9		
Qatar	—	†	318	1.0	368	0.7	376	0.8	—	—	58 *▲	2.4	8 *▲	2.5		
Indonesia	360	3.9	391	5.6	371	3.7	375	4.0	15 *▲	5.9	-16 *▼	7.2	4	5.9		
Peru	—	†	—	†	365	4.0	368	3.7	—	—	—	—	3	5.9		

▲ Change in average score is greater than the U.S. change in average score.

▼ Change in average score is lower than the U.S. change in average score.

— Not available.

† Not applicable.

# Rounds to zero.

\*  $p < .05$ . Change in average score is significant at a .05 level of statistical significance.

<sup>1</sup>The OECD trend scores are based on the averages of the 29 OECD countries with comparable data for 2003 and 2012 and with each country weighted equally. The five current OECD members not included in the OECD averages used to report on trends in mathematics literacy include Chile, Estonia, Israel, and Slovenia, which did not participate in 2003; and the United Kingdom, which did not meet PISA response-rate standards for the 2003 assessment. The OECD excluded the data for Austria from the trend analysis in its report (OECD, *PISA 2009 Results: Learning Trends - Changes in Student Performance Since 2000 (Volume V)*, available at <http://www.pisa.oecd.org>) because of a concern over a data collection issue in 2009; however, after consultation with Austrian officials, NCES kept the Austrian data in the U.S. trend reporting.

<sup>2</sup>Because of low response rates, 2003 data for the United Kingdom are not presented.

<sup>3</sup>The Republics of Montenegro and Serbia were a united country under the PISA 2003 assessment.

<sup>4</sup>For Costa Rica and Malaysia the change between PISA 2009 and PISA 2012 represents change between 2010 and 2012 because these education systems implemented the PISA 2009 assessment in 2010 as part of PISA 2009.

NOTE: Education systems are ordered by 2012 average score. The PISA mathematics framework was revised in 2003. Because of changes in the framework, it is not possible to compare mathematics learning outcomes from PISA 2000 with those from PISA 2003, 2006, 2009, and 2012. Scores are reported on a scale from 0 to 1,000. All average scores reported as higher or lower than the comparison year are different at the .05 significance level of statistical significance. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2003, 2006, 2009, 2012.

# National Center for Education Statistics

Table T3. Average scores and changes in average scores of 15-year-old students on PISA science literacy scale, by education system: 2006, 2009, and 2012

Education system	Average score						Change in average score			
	2006		2009		2012		2012-2006		2012-2009	
	Score	s.e.	Score	s.e.	Score	s.e.	Score	s.e.	Score	s.e.
OECD trend score <sup>1</sup>	498	0.5	501	0.5	501	0.5	3 *	0.9	#	†
Shanghai-China	—	†	575	2.3	580	3.0	—	†	6	4.3
Hong Kong-China	542	2.5	549	2.8	555	2.6	13 *	5.0	6	4.3
Singapore	—	†	542	1.4	551	1.5	—	†	10 *▲	2.9
Japan	531	3.4	539	3.4	547	3.6	15 *	6.1	7	5.4
Finland	563	2.0	554	2.3	545	2.2	-18 *▼	4.6	-9 *	3.8
Estonia	531	2.5	528	2.7	541	1.9	10 *	4.7	14 *▲	3.9
Korea, Republic of	522	3.4	538	3.4	538	3.7	16 *	6.1	#	†
Vietnam	—	†	—	†	528	4.3	—	†	—	†
Poland	498	2.3	508	2.4	526	3.1	28 *▲	5.3	18 *▲	4.4
Canada	534	2.0	529	1.6	525	1.9	-9 *▼	4.5	-3	3.2
Liechtenstein	522	4.1	520	3.4	525	3.5	3	6.5	5	5.3
Germany	516	3.8	520	2.8	524	3.0	8	6.0	4	4.5
Chinese Taipei	532	3.6	520	2.6	523	2.3	-9 ▼	5.5	3	4.0
Netherlands	525	2.7	522	5.4	522	3.5	-3	5.7	#	†
Ireland	508	3.2	508	3.3	522	2.5	14 *	5.3	14 *▲	4.5
Australia	527	2.3	527	2.5	521	1.8	-5	4.5	-6	3.7
Macao-China	511	1.1	511	1.0	521	0.8	10 *	3.8	10 *▲	2.4
New Zealand	530	2.7	532	2.6	516	2.1	-15 *▼	4.9	-16 *	3.9
Switzerland	512	3.2	517	2.8	515	2.7	4	5.4	-1	4.4
Slovenia	519	1.1	512	1.1	514	1.3	-5	3.9	2	2.6
United Kingdom	515	2.3	514	2.5	514	3.4	-1	5.4	#	†
Czech Republic	513	3.5	500	3.0	508	3.0	-5	5.8	8	4.7
Austria	511	3.9	494	3.2	506	2.7	-5	5.9	11 *▲	4.7
Belgium	510	2.5	507	2.5	505	2.1	-5	4.8	-1	3.8
Latvia	490	3.0	494	3.1	502	2.8	13 *	5.4	8	4.6
France	495	3.4	498	3.6	499	2.6	4	5.5	1	4.9
Denmark	496	3.1	499	2.5	498	2.7	3	5.4	-1	4.2
<b>United States</b>	<b>489</b>	<b>4.2</b>	<b>502</b>	<b>3.6</b>	<b>497</b>	<b>3.8</b>	<b>9</b>	<b>6.7</b>	<b>-5</b>	<b>5.6</b>
Spain	488	2.6	488	2.1	496	1.8	8	4.7	8 *	3.4
Lithuania	488	2.8	491	2.9	496	2.6	8	5.1	4	4.4
Norway	487	3.1	500	2.6	495	3.1	8	5.6	-5	4.5
Hungary	504	2.7	503	3.1	494	2.9	-10 ▼	5.3	-8	4.8
Italy	475	2.0	489	1.8	494	1.9	18 *	4.5	5	3.3
Croatia	493	2.4	486	2.8	491	3.1	-2	5.3	5	4.7
Luxembourg	486	1.1	484	1.2	491	1.3	5	3.9	7 *	2.7
Portugal	474	3.0	493	2.9	489	3.7	15 *	6.0	-4	5.1
Russian Federation	479	3.7	478	3.3	486	2.9	7	5.8	8	4.8
Sweden	503	2.4	495	2.7	485	3.0	-19 *▼	5.2	-10 *	4.5
Iceland	491	1.6	496	1.4	478	2.1	-13 *▼	4.4	-17 *▼	3.2
Slovak Republic	488	2.6	490	3.0	471	3.6	-17 *▼	5.7	-19 *	5.1
Israel	454	3.7	455	3.1	470	5.0	16 *	7.1	15 *▲	6.2
Greece	473	3.2	470	4.0	467	3.1	-7	5.7	-3	5.5
Turkey	424	3.8	454	3.6	463	3.9	40 *▲	6.5	10	5.7
United Arab Emirates	—	†	—	†	448	2.8	—	†	—	†
Bulgaria	434	6.1	439	5.9	446	4.8	12	8.5	7	7.8
Chile	438	4.3	447	2.9	445	2.9	7	6.3	-3	4.6
Serbia, Republic of <sup>2</sup>	436	3.0	443	2.4	445	3.4	9	5.8	2	4.6
Thailand	421	2.1	425	3.0	444	2.9	23 *	5.1	19 *▲	4.6
Romania	418	4.2	428	3.4	439	3.3	20 *	6.4	11 *▲	5.1
Cyprus	—	†	—	†	438	1.2	—	†	—	†
Costa Rica <sup>3</sup>	—	†	430	2.8	429	2.9	—	†	-1	4.5
Kazakhstan	—	†	400	3.1	425	3.0	—	†	24 *▲	4.8
Malaysia <sup>3</sup>	—	†	422	2.7	420	3.0	—	†	-3	4.5
Uruguay	428	2.7	427	2.6	416	2.8	-12 *▼	5.2	-11 *	4.3
Mexico	410	2.7	416	1.8	415	1.3	5	4.6	-1	3.0
Montenegro, Republic of <sup>2</sup>	412	1.1	401	2.0	410	1.1	-2	3.8	9 *▲	3.0
Jordan	422	2.8	415	3.5	409	3.1	-13 *▼	5.5	-6	5.1
Argentina	391	6.1	401	4.6	406	3.9	14	8.0	5	6.3
Brazil	390	2.8	405	2.4	405	2.1	14 *	5.0	-1	3.8
Colombia	388	3.4	402	3.6	399	3.1	11	5.7	-3	5.2
Tunisia	386	3.0	401	2.7	398	3.5	13 *	5.7	-3	4.8
Albania	—	†	391	3.9	397	2.4	—	†	7	5.1
Qatar	349	0.9	379	0.9	384	0.7	34 *▲	3.7	4	2.3
Indonesia	393	5.7	383	3.8	382	3.8	-12 ▼	7.7	-1	5.7
Peru	—	†	369	3.5	373	3.6	—	†	4	5.4

▲ Change in average score is greater than the U.S. change in average score.

▼ Change in average score is lower than the U.S. change in average score.

— Not available.

† Not applicable.

# Rounds to zero.

\*  $p < .05$ . Change in average score is significant at a .05 level of statistical significance.

<sup>1</sup>The OECD trend scores are based on the averages of the 34 OECD countries with each country weighted equally. The OECD excluded the data for Austria from the trend analysis in its report (OECD, *PISA 2009 Results: Learning Trends - Changes in Student Performance Since 2000 (Volume V)*, available at <http://www.pisa.oecd.org>) because of a concern over a data collection issue in 2009; however, after consultation with Austrian officials, NCES kept the Austrian data in the U.S. trend reporting.

<sup>2</sup>The Republics of Montenegro and Serbia were a united country under the PISA 2003 assessment.

<sup>3</sup>For Costa Rica and Malaysia the change between PISA 2009 and PISA 2012 represents change between 2010 and 2012 because these education systems implemented the PISA 2009 assessment in 2010 as part of PISA 2009.

NOTE: Education systems are ordered by 2012 average score. The PISA science framework was revised in 2006. Because of changes in the framework, it is not possible to compare science learning outcomes from PISA 2000 and 2003 with those from PISA 2006, 2009, and 2012. Scores are reported on a scale from 0 to 1,000. All average scores reported as higher or lower than the comparison year are different at the .05 significance level of statistical significance. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2006, 2009, 2012.

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**Table T4. Average scores and changes in average scores of 15-year-old students on PISA reading literacy scale, by education system: 2000, 2003, 2006, 2009, and 2012**

Education system	Average score										Change in average score					
	2000		2003		2006		2009		2012		2012-2000		2012-2003		2012-2009	
	Score	s.e.	Score	s.e.	Score	s.e.	Score	s.e.	Score	s.e.	Score	s.e.	Score	s.e.	Score	s.e.
OECD trend score <sup>1</sup>	496	0.7	497	0.6	490	0.7	496	0.5	498	0.6	2	1.5	4.1 *	1.4	2 *	0.9
Shanghai-China	—	†	—	†	—	†	556	2.4	570	2.9	—	†	—	†	14 *	4.5
Hong Kong-China	525	2.9	510	3.7	536	2.4	533	2.1	545	2.8	19 *	7.2	35 *	7.3	11 *	4.4
Singapore	—	†	—	†	—	†	526	1.1	542	1.4	—	†	—	†	16 *	3.1
Japan	522	5.2	498	3.9	498	3.6	520	3.5	538	3.7	16	8.7	40 *	7.8	18 *	5.7
Korea, Republic of	525	2.4	534	3.1	556	3.8	539	3.5	536	3.9	11	7.5	2	7.5	-3	5.9
Finland	546	2.6	543	1.6	547	2.1	536	2.3	524	2.4	-22 *	6.9	-19 *	6.3	-12 *	4.2
Ireland	527	3.2	515	2.6	517	3.5	496	3.0	523	2.6	-3	7.2	8	6.7	28 *	4.7
Canada	534	1.6	528	1.7	527	2.4	524	1.5	523	1.9	-11	6.4	-5	6.2	-1	3.6
Chinese Taipei	—	†	—	†	496	3.4	495	2.6	523	3.0	—	†	—	†	28 *	4.8
Poland	479	4.5	497	2.9	508	2.8	500	2.6	518	3.1	39 *	8.0	22 *	7.0	18 *	4.8
Estonia	—	†	—	†	501	2.9	501	2.6	516	2.0	—	†	—	†	15 *	4.2
Liechtenstein	483	4.1	525	3.6	510	3.9	499	2.8	516	4.1	33 *	8.3	-10	7.8	16 *	5.6
New Zealand	529	2.8	522	2.5	521	3.0	521	2.4	512	2.4	-17 *	7.0	-9	6.6	-9 *	4.2
Australia	528	3.5	525	2.1	513	2.1	515	2.3	512	1.6	-16 *	7.1	-14 *	6.2	-3	3.8
Netherlands <sup>2</sup>	—	†	513	2.9	507	2.9	508	5.1	511	3.5	—	†	-2	7.2	3	6.7
Belgium	507	3.6	507	2.6	501	3.0	506	2.3	509	2.2	2	7.2	2	6.5	3	4.1
Switzerland	494	4.2	499	3.3	499	3.1	501	2.4	509	2.6	15	7.7	10	7.0	9	4.4
Macao-China	—	†	498	2.2	492	1.1	487	0.9	509	0.9	—	†	11	6.1	22 *	2.9
Vietnam	—	†	—	†	—	†	—	†	508	4.4	—	†	—	†	—	†
Germany	484	2.5	491	3.4	495	4.4	497	2.7	508	2.8	24 *	7.0	16 *	7.1	10 *	4.7
France	505	2.7	496	2.7	488	4.1	496	3.4	505	2.8	1	7.1	9	6.8	10	5.2
Norway	505	2.8	500	2.8	484	3.2	503	2.6	504	3.2	-1	7.3	4	7.0	1	4.9
United Kingdom <sup>3</sup>	—	†	—	†	495	2.3	494	2.3	499	3.5	—	†	—	†	5	4.9
United States <sup>4</sup>	<b>504</b>	<b>7.0</b>	<b>495</b>	<b>3.2</b>	—	†	<b>500</b>	<b>3.7</b>	<b>498</b>	<b>3.7</b>	<b>-7</b>	<b>9.9</b>	<b>2</b>	<b>7.5</b>	<b>-2</b>	<b>5.8</b>
Denmark	497	2.4	492	2.8	494	3.2	495	2.1	496	2.6	-1	6.9	4	6.8	1	4.3
Czech Republic	492	2.4	489	3.5	483	4.2	478	2.9	493	2.9	1	7.0	4	7.2	15 *	4.8
Italy	487	2.9	476	3.0	469	2.4	486	1.6	490	2.0	2	6.9	14 *	6.7	4	3.6
Austria	492	2.7	491	3.8	490	4.1	470	2.9	490	2.8	-2	7.1	-1	7.3	19 *	4.8
Latvia	458	5.3	491	3.7	479	3.7	484	3.0	489	2.4	31 *	8.3	-2	7.1	5	4.6
Hungary	480	4.0	482	2.5	482	3.3	494	3.2	488	3.2	8	7.8	7	6.9	-6	5.2
Spain	493	2.7	481	2.6	461	2.2	481	2.0	488	1.9	-5	6.8	7	6.5	7	3.8
Luxembourg	—	†	479	1.5	479	1.3	472	1.3	488	1.5	—	†	8	6.0	16 *	3.3
Portugal	470	4.5	478	3.7	472	3.6	489	3.1	488	3.8	18 *	8.3	10	7.7	-2	5.5
Israel	452	8.5	—	†	439	4.6	474	3.6	486	5.0	34 *	11.5	—	†	12	6.7
Croatia	—	†	—	†	477	2.8	476	2.9	485	3.3	—	†	—	†	9	5.1
Sweden	516	2.2	514	2.4	507	3.4	497	2.9	483	3.0	-33 *	7.0	-31 *	6.8	-14 *	4.9
Iceland	507	1.5	492	1.6	484	1.9	500	1.4	483	1.8	-24 *	6.4	-9	6.1	-18 *	3.5
Slovenia	—	†	—	†	494	1.0	483	1.0	481	1.2	—	†	—	†	-2	3.1
Lithuania	—	†	—	†	470	3.0	468	2.4	477	2.5	—	†	—	†	9 *	4.3
Greece	474	5.0	472	4.1	460	4.0	483	4.3	477	3.3	3	8.4	5	7.7	-6	6.0
Turkey	—	†	441	5.8	447	4.2	464	3.5	475	4.2	—	†	35 *	9.1	11	6.1
Russian Federation	462	4.2	442	3.9	440	4.3	459	3.3	475	3.0	13	7.8	33 *	7.5	16 *	5.2
Slovak Republic	—	†	469	3.1	466	3.1	477	2.5	463	4.2	—	†	-6	7.7	-15 *	5.5
Cyprus	—	†	—	†	—	†	—	†	449	1.2	—	†	—	†	—	†
Serbia, Republic of <sup>5</sup>	—	†	—	†	401	3.5	442	2.4	446	3.4	—	†	—	†	4	5.0
United Arab Emirates	—	†	—	†	—	†	—	†	442	2.5	—	†	—	†	—	†
Chile	410	3.6	—	†	442	5.0	449	3.1	441	2.9	32 *	7.5	—	†	-8	5.0
Thailand	431	3.2	420	2.8	417	2.6	421	2.6	441	3.1	11	7.4	21 *	7.0	20 *	4.8
Costa Rica <sup>6</sup>	—	†	—	†	—	†	443	3.2	441	3.5	—	†	—	†	-2	5.4
Romania <sup>7</sup>	428	3.5	—	†	396	4.7	424	4.1	438	4.0	10	7.9	—	†	13 *	6.3
Bulgaria	430	4.9	—	†	402	6.9	429	6.7	436	6.0	6	9.8	—	†	7	9.4
Mexico	422	3.3	400	4.1	410	3.1	425	2.0	424	1.5	2	7.0	24 *	7.1	-2	3.6
Montenegro, Republic of <sup>5</sup>	—	†	—	†	392	1.2	408	1.7	422	1.2	—	†	—	†	15 *	3.3
Uruguay	—	†	434	3.4	413	3.4	426	2.6	411	3.2	—	†	-23 *	7.3	-14 *	4.8
Brazil	396	3.1	403	4.6	393	3.7	412	2.7	410	2.1	14 *	7.0	7	7.5	-2	4.3
Tunisia	—	†	375	2.8	380	4.0	404	2.9	404	4.5	—	†	29 *	7.7	#	†
Colombia	—	†	—	†	385	5.1	413	3.7	403	3.4	—	†	—	†	-10	5.7
Jordan	—	†	—	†	401	3.3	405	3.3	399	3.6	—	†	—	†	-6	5.5
Malaysia <sup>6</sup>	—	†	—	†	—	†	414	2.9	398	3.3	—	†	—	†	-16 *	5.1
Indonesia	371	4.0	382	3.4	393	5.9	402	3.7	396	4.2	26 *	8.3	15	7.8	-6	6.2
Argentina	418	9.9	—	†	374	7.2	398	4.6	396	3.7	-22	12.1	—	†	-2	6.5
Albania	349	3.3	—	†	—	†	385	4.0	394	3.2	45 *	7.5	—	†	9	5.8
Kazakhstan	—	†	—	†	—	†	390	3.1	393	2.7	—	†	—	†	2	4.8
Qatar	—	†	—	†	312	1.2	372	0.8	388	0.8	—	†	—	†	16 *	2.8
Peru	327	4.4	—	†	—	†	370	4.0	384	4.3	57 *	8.6	—	†	14 *	6.4

▲ Change in average score is greater than the U.S. change in average score.

▼ Change in average score is lower than the U.S. change in average score.

— Not available.

† Not applicable.

# Rounds to zero.

\*  $p < .05$ . Change in average score is significant at a .05 level of statistical significance.

<sup>1</sup>The OECD trend scores for 2000, 2003, 2009, and 2012 are based on the averages of the 27 OECD countries with comparable data for 2000 and 2012 and with each country weighted equally. The seven current OECD members not included in the OECD averages used to report on trends in reading literacy include the Slovak Republic and Turkey, which joined PISA in 2003; Estonia and Slovenia, which joined PISA in 2006; Luxembourg, which experienced substantial changes in its assessment conditions between 2000 and 2003; and the Netherlands and the United Kingdom, which did not meet the PISA response-rate standards in 2000. The OECD excluded the data for Austria from the trend analysis in its report (OECD, PISA 2009 Results: Learning Trends - Changes in Student Performance Since 2000 (Volume V), available at <http://www.pisa.oecd.org>) because of a concern over a data collection issue in 2009; however, after consultation with Austrian officials, NCES kept the Austrian data in the U.S. trend reporting. The OECD trend score for 2006 is based on the averages of 26 OECD countries, as PISA 2006 reading literacy results were not reported for the United States.

<sup>2</sup>Although the Netherlands participated in PISA 2000, technical problems with its sample prevent its results from being included.

<sup>3</sup>Although the United Kingdom participated in PISA 2000, technical problems with its sample prevent its results from being included. Because of low response rates, 2003 data for the United Kingdom are not presented.

<sup>4</sup>PISA 2006 reading literacy results are not reported for the United States because of an error in printing the test booklets. PISA 2006 reading literacy results are therefore not compared to PISA 2012 reading literacy results. For more details, see Baldi et al. 2007 (available at <http://nces.ed.gov/pubsearch/pubinfo.asp?pubid=2008016>).

<sup>5</sup>The Republics of Montenegro and Serbia were a united country under the PISA 2000 and 2003 assessments.

<sup>6</sup>For Costa Rica and Malaysia the change between PISA 2009 and PISA 2012 represents change between 2010 and 2012 because these education systems implemented the PISA 2009 assessment in 2010 as part of PISA 2009.

<sup>7</sup>The 2000 results for Romania were not reported by OECD due to delayed submission of data. Romania did not participate in PISA in 2003.

NOTE: Education systems are ordered by 2012 average score. Scores are reported on a scale from 0 to 1,000. All average scores reported as higher or lower than the comparison year are different at the .05 significance level of statistical significance. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2000, 2003, 2006, 2009, 2012.

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Table CM1. Percentage distribution of 15-year-old students on PISA computer-based mathematics literacy scale, by proficiency level and education system: 2012

Education system	Below level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
OECD average	6.9	0.16	13.1	0.17	22.7	0.19	26.3	0.21	19.7	0.19	8.7	0.15	2.6	0.10
Australia	5.0	0.35	11.6	0.49	22.1	0.65	26.8	0.59	20.9	0.55	10.2	0.40	3.4	0.31
Austria	5.1	0.74	12.3	0.90	20.4	0.94	26.2	0.98	23.2	1.03	10.4	0.90	2.4	0.37
Belgium	7.2	0.52	11.1	0.54	18.8	0.67	24.5	0.74	21.3	0.67	12.4	0.66	4.7	0.40
Brazil	22.6	1.85	28.4	1.22	27.3	1.69	13.9	0.96	6.0	1.05	1.6	0.48	0.2 !	0.10
Canada	4.1	0.35	8.6	0.42	18.8	0.62	26.9	0.65	24.3	0.77	12.8	0.67	4.5	0.45
Chile	18.2	1.40	26.9	1.21	28.0	0.98	18.3	1.06	7.1	0.63	1.4	0.20	0.2 !	0.06
Chinese Taipei	2.8	0.42	7.5	0.63	16.2	0.89	25.0	0.88	26.4	0.96	16.1	0.88	6.0	0.64
Colombia	28.9	1.58	35.5	1.22	23.8	1.04	9.2	0.77	2.2	0.42	0.3 !	0.12	‡	‡
Denmark	6.0	0.61	13.0	0.77	23.4	0.97	27.5	1.18	20.8	0.86	7.7	0.56	1.6	0.26
Estonia	2.9	0.42	9.3	0.55	22.1	0.85	29.1	0.96	23.3	1.00	10.6	0.68	2.8	0.41
France	5.6	0.84	10.8	0.71	20.1	0.95	27.1	0.93	23.3	0.95	10.5	0.83	2.5	0.42
Germany	6.5	0.66	11.4	0.78	19.7	0.85	25.3	0.99	21.7	0.80	11.5	0.76	4.0	0.49
Hong Kong-China	2.6	0.48	5.2	0.76	12.1	0.81	24.5	1.01	30.3	1.14	18.7	1.02	6.7	0.65
Hungary	11.3	1.20	17.4	0.99	26.0	1.23	24.4	1.14	14.4	0.98	5.5	0.69	1.0	0.31
Ireland	5.3	0.66	12.5	0.83	25.2	0.85	30.3	1.11	19.5	0.99	6.1	0.50	0.9	0.20
Israel	20.7	1.60	18.0	1.13	21.9	0.95	20.1	0.89	13.0	0.99	5.3	0.77	1.1	0.26
Italy	4.8	0.81	12.8	1.05	24.1	1.28	28.8	1.24	20.3	1.14	7.5	0.95	1.8	0.42
Japan	2.4	0.44	6.6	0.61	16.3	0.85	26.5	1.17	26.9	1.07	14.8	0.89	6.6	0.87
Korea, Republic of	1.8	0.29	5.4	0.62	14.3	0.96	23.9	1.03	26.9	1.28	18.7	1.23	9.0	1.23
Macao-China	1.7	0.19	5.9	0.40	15.3	0.53	26.4	0.66	28.5	0.82	16.6	0.63	5.6	0.42
Norway	5.5	0.61	13.2	0.76	24.4	0.89	27.0	1.01	19.7	0.79	8.3	0.59	2.0	0.30
Poland	6.6	0.79	14.3	0.94	25.7	1.00	27.2	0.88	18.0	1.03	6.8	0.75	1.5	0.31
Portugal	6.4	0.64	14.9	0.94	25.2	0.93	27.2	1.04	18.4	0.97	6.5	0.65	1.5	0.25
Russian Federation	5.2	0.51	13.8	0.82	27.3	0.91	29.3	1.05	17.7	0.94	5.7	0.54	1.1	0.21
Shanghai-China	1.8	0.35	5.1	0.56	13.2	0.84	20.8	0.92	25.8	0.99	21.0	1.01	12.3	0.88
Singapore	2.0	0.27	5.7	0.40	12.4	0.53	19.7	0.60	24.7	1.00	21.2	0.86	14.4	0.62
Slovak Republic	6.1	0.83	11.8	0.88	23.0	1.06	29.1	1.27	20.9	1.06	7.6	0.76	1.5	0.39
Slovenia	7.1	0.40	15.8	0.67	25.3	0.85	25.3	0.99	17.9	0.79	7.4	0.47	1.3	0.31
Spain	8.5	0.92	16.4	0.85	27.1	0.98	27.7	1.02	15.9	0.91	4.0	0.43	0.4 !	0.13
Sweden	6.2	0.53	14.7	0.77	25.2	0.78	28.0	0.78	17.5	0.79	6.8	0.59	1.6	0.33
United Arab Emirates	18.2	0.88	25.5	0.80	28.5	0.83	18.3	0.69	7.3	0.48	2.0	0.28	0.2 !	0.08
<b>United States</b>	<b>5.9</b>	<b>0.84</b>	<b>12.4</b>	<b>0.99</b>	<b>24.7</b>	<b>1.09</b>	<b>26.9</b>	<b>0.89</b>	<b>19.3</b>	<b>1.05</b>	<b>8.2</b>	<b>0.78</b>	<b>2.5</b>	<b>0.51</b>

‡ Not applicable.

! Interpret data with caution. Estimate is unstable due to high coefficient of variation.

‡ Reporting standards not met.

NOTE: The computer-based mathematics literacy assessment was an optional assessment for education systems in 2012. To reach a particular proficiency level, a student must correctly answer a majority of items at that level.

Students were classified into mathematics literacy levels according to their scores. Exact cut scores are as follows: below level 1 (a score less than or equal to 357.77); level 1 (a score greater than 357.77 and less than or equal to 420.07); level 2 (a score greater than 420.07 and less than or equal to 482.38); level 3 (a score greater than 482.38 and less than or equal to 544.68); level 4 (a score greater than 544.68 and less than or equal to 606.99); level 5 (a score greater than 606.99 and less than or equal to 669.30); and level 6 (a score greater than 669.30). Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Detail may not sum to totals because of rounding. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table CM2. Average scores of 15-year-old students on PISA computer-based mathematics literacy scale, by education system: 2012**

Education system	Average score	s.e.	Education system	Average score	s.e.
OECD average	497	0.7			
<i>Singapore</i>	566 ▲	1.3	Norway	498	2.8
<i>Shanghai-China</i>	562 ▲	3.4	Slovak Republic	497	3.5
Korea, Republic of	553 ▲	4.5	Denmark	496	2.7
<i>Hong Kong-China</i>	550 ▲	3.4	Ireland	493	2.9
<i>Macao-China</i>	543 ▲	1.1	Sweden	490	2.9
Japan	539 ▲	3.3	<i>Russian Federation</i>	489	2.6
<i>Chinese Taipei</i>	537 ▲	2.8	Poland	489	4.0
Canada	523 ▲	2.2	Portugal	489	3.1
Estonia	516 ▲	2.2	Slovenia	487 ▼	1.2
Belgium	511 ▲	2.4	Spain	475 ▼	3.2
Germany	509 ▲	3.3	Hungary	470 ▼	3.9
France	508	3.3	Israel	447 ▼	5.6
Australia	508 ▲	1.6	<i>United Arab Emirates</i>	434 ▼	2.2
Austria	507	3.5	Chile	432 ▼	3.3
Italy	499	4.2	<i>Brazil</i>	421 ▼	4.7
<b>United States</b>	<b>498</b>	<b>4.1</b>	<i>Colombia</i>	397 ▼	3.2

▲ Average score is higher than U.S. average score.

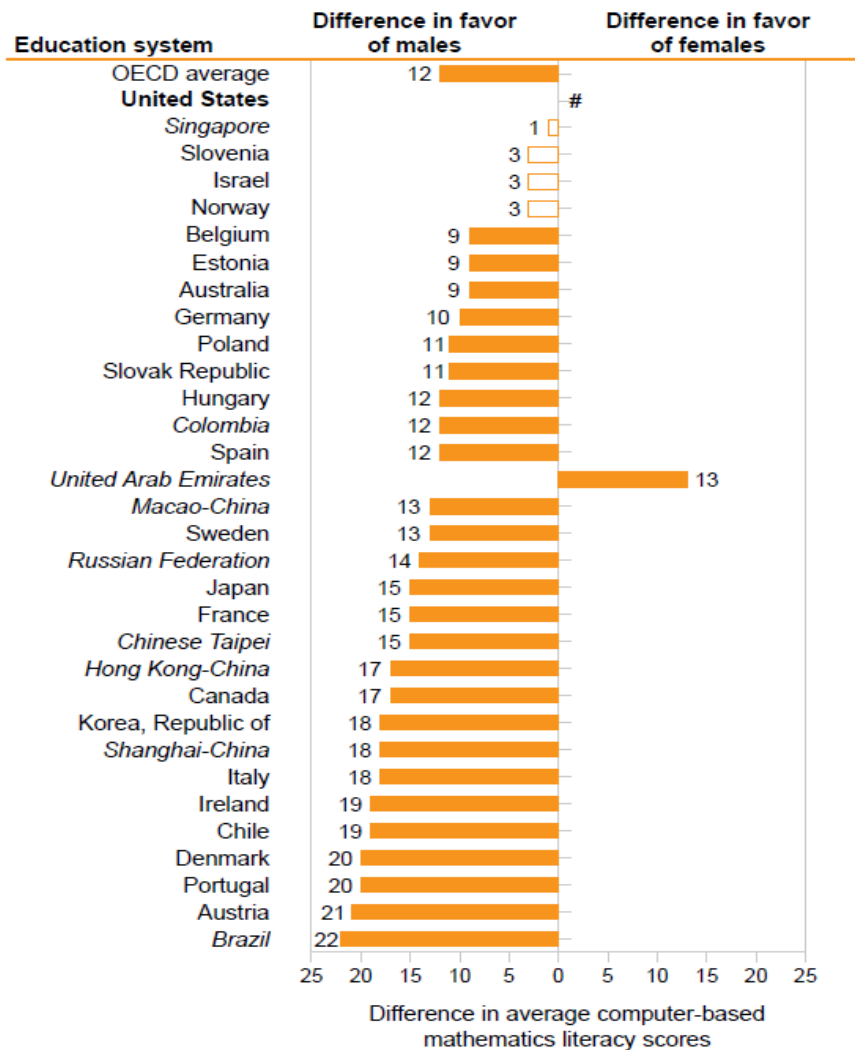
▼ Average score is lower than U.S. average score.

NOTE: The computer-based mathematics literacy assessment was an optional assessment for education systems in 2012. Education systems are ordered by 2012 average score. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Scores are reported on a scale from 0 to 1,000. All average scores reported as higher or lower than the U.S. average score are different at the .05 level of statistical significance. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. This table corresponds to table 5 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Figure CM1a. Difference in average scores of 15-year-old female and male students on PISA computer-based mathematics literacy scale, by education system: 2012



■ Male-female difference in average computer-based mathematics literacy scores is statistically different.

□ Male-female difference in average computer-based mathematics literacy scores is not measurably different.

NOTE: The computer-based mathematics literacy assessment was an optional assessment for education systems in 2012. Education systems are ordered by absolute male-female difference in 2012 average score. Differences were computed using unrounded numbers. Scores are reported on a scale from 0 to 1,000. Score differences as noted between males and females are significantly different at the .05 level of statistical significance. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.



# National Center for Education Statistics

**Table CM1b. Difference in average scores of 15-year-old female and male students on PISA computer-based mathematics literacy scale, by education system: 2012**

Education system	Male-female difference	s.e.
OECD average	12 *	0.8
<b>United States</b>	<b>#</b>	<b>†</b>
<i>Singapore</i>	1	2.3
Slovenia	3	3.0
Israel	3	8.9
Norway	3	2.8
Belgium	9 *	3.1
Estonia	9 *	2.5
Australia	9 *	2.8
Germany	10 *	2.7
Poland	11 *	3.2
Slovak Republic	11 *	3.9
Hungary	12 *	3.8
<i>Colombia</i>	12 *	3.3
Spain	12 *	2.5
<i>United Arab Emirates</i>	-13 *	4.4
<i>Macao-China</i>	13 *	2.0
Sweden	13 *	2.8
<i>Russian Federation</i>	14 *	2.8
Japan	15 *	3.8
France	15 *	3.0
<i>Chinese Taipei</i>	15 *	6.7
<i>Hong Kong-China</i>	17 *	4.3
Canada	17 *	1.9
Korea, Republic of	18 *	6.7
<i>Shanghai-China</i>	18 *	2.9
Italy	18 *	5.0
Ireland	19 *	3.7
Chile	19 *	3.9
Denmark	20 *	2.5
Portugal	20 *	2.3
Austria	21 *	4.9
<i>Brazil</i>	22 *	2.4

† Not applicable.

# Rounds to zero.

\*  $p < .05$ . Differences between males and females are significantly different at the .05 level of statistical significance.

NOTE: The computer-based mathematics literacy assessment was an optional assessment for education systems in 2012. Education systems are ordered by absolute male-female difference in 2012 average score. Differences were computed using unrounded numbers. Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

**Exhibit CR1. Description of PISA proficiency levels on computer-based reading literacy scale: 2012**

Proficiency level and lower cut score	Task descriptions
Level 5 or above 626	At level 5 or above, tasks typically require the reader to locate, analyze, and critically evaluate information, related to an unfamiliar context, in the presence of ambiguity. They require generating criteria to evaluate the text. Tasks may require navigation across multiple sites without explicit direction, and detailed interrogation of texts in a variety of formats.
Level 4 553	At level 4, tasks may require the reader to evaluate information from several sources, navigating across several sites comprising texts in a variety of formats, and generating criteria for evaluation in relation to a familiar, personal, or practical context. Other tasks at this level demand that the reader interpret complex information according to well-defined criteria in a scientific or technical context.
Level 3 480	At level 3, tasks require that the reader integrate information, either by navigating across several sites to find well-defined target information, or by generating simple categories when the task is not explicitly stated. Where evaluation is called for, only the information that is most directly accessible or only part of the available information is required.
Level 2 407	At level 2, tasks typically require the reader to locate and interpret information that is well-defined, usually relating to familiar contexts. They may require navigation across a limited number of sites and the application of web-based navigation tools such as drop-down menus, where explicit directions are provided or only low-level inference is called for. Tasks may require integrating information presented in different formats, recognizing examples that fit clearly defined categories.

NOTE: To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into reading literacy levels according to their scores. Cut scores in the exhibit are rounded; exact cut scores are provided in table AA1. Proficiency levels 1b and 1a have been omitted from this table, and levels 5 and 6 have been collapsed in order to provide descriptive and meaningful proficiency levels for the computer-based reading assessment. Scores are reported on a scale from 0 to 1,000.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

## National Center for Education Statistics

Table CR1. Percentage distribution of 15-year-old students on PISA computer-based reading literacy scale, by proficiency level and education system: 2012

Education system	Below level 2		Level 2		Level 3		Level 4		Above level 4	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
OECD average	17.6	<i>0.26</i>	22.5	<i>0.21</i>	29.9	<i>0.24</i>	22.1	<i>0.22</i>	8.0	<i>0.17</i>
Australia	12.5	<i>0.50</i>	19.8	<i>0.48</i>	29.4	<i>0.64</i>	24.9	<i>0.72</i>	13.4	<i>0.67</i>
Austria	20.2	<i>1.43</i>	26.3	<i>1.16</i>	30.0	<i>1.31</i>	18.4	<i>1.04</i>	5.1	<i>0.72</i>
Belgium	17.2	<i>0.84</i>	20.0	<i>0.77</i>	29.6	<i>0.89</i>	24.0	<i>0.79</i>	9.1	<i>0.70</i>
<i>Brazil</i>	37.2	<i>2.17</i>	30.4	<i>1.35</i>	22.8	<i>1.38</i>	8.3	<i>1.01</i>	1.4	<i>0.36</i>
Canada	8.5	<i>0.53</i>	17.3	<i>0.56</i>	31.3	<i>0.71</i>	29.4	<i>0.76</i>	13.6	<i>0.70</i>
Chile	29.3	<i>1.73</i>	32.9	<i>1.22</i>	27.1	<i>1.24</i>	9.6	<i>0.85</i>	1.1	<i>0.16</i>
<i>Chinese Taipei</i>	11.1	<i>0.85</i>	19.3	<i>0.80</i>	31.8	<i>0.98</i>	27.6	<i>1.06</i>	10.3	<i>0.92</i>
<i>Colombia</i>	54.9	<i>1.82</i>	27.5	<i>1.05</i>	13.4	<i>0.86</i>	3.7	<i>0.50</i>	0.5	<i>0.19</i>
Denmark	14.2	<i>0.98</i>	26.7	<i>0.94</i>	34.2	<i>1.02</i>	20.3	<i>1.27</i>	4.5	<i>0.62</i>
Estonia	11.4	<i>0.92</i>	19.8	<i>0.87</i>	30.0	<i>1.01</i>	25.7	<i>1.09</i>	13.1	<i>0.91</i>
France	13.8	<i>1.15</i>	19.6	<i>0.87</i>	30.6	<i>1.30</i>	26.3	<i>1.02</i>	9.7	<i>0.97</i>
Germany	19.1	<i>1.54</i>	21.7	<i>0.96</i>	29.9	<i>1.26</i>	21.9	<i>1.16</i>	7.4	<i>0.80</i>
<i>Hong Kong-China</i>	7.6	<i>0.81</i>	13.8	<i>0.82</i>	26.5	<i>1.15</i>	31.0	<i>1.16</i>	21.1	<i>1.31</i>
Hungary	32.5	<i>1.38</i>	24.6	<i>1.24</i>	24.8	<i>1.13</i>	14.1	<i>0.98</i>	4.0	<i>0.60</i>
Ireland	9.4	<i>0.86</i>	19.8	<i>0.92</i>	34.9	<i>0.85</i>	26.8	<i>0.96</i>	9.0	<i>0.75</i>
Israel	31.0	<i>1.84</i>	22.3	<i>1.19</i>	23.5	<i>1.21</i>	16.9	<i>1.30</i>	6.2	<i>0.93</i>
Italy	15.7	<i>1.42</i>	20.9	<i>1.32</i>	31.4	<i>1.34</i>	23.8	<i>1.26</i>	8.2	<i>0.87</i>
Japan	4.9	<i>0.76</i>	14.4	<i>0.96</i>	32.3	<i>1.18</i>	34.1	<i>1.18</i>	14.2	<i>1.14</i>
Korea, Republic of	3.9	<i>0.48</i>	11.7	<i>0.83</i>	30.8	<i>1.27</i>	35.3	<i>1.23</i>	18.3	<i>1.64</i>
<i>Macao-China</i>	7.0	<i>0.47</i>	22.8	<i>0.71</i>	39.8	<i>0.66</i>	25.3	<i>0.78</i>	5.1	<i>0.51</i>
Norway	16.6	<i>1.06</i>	22.0	<i>0.82</i>	29.9	<i>0.98</i>	22.8	<i>0.93</i>	8.6	<i>0.69</i>
Poland	22.4	<i>1.54</i>	26.3	<i>0.99</i>	29.4	<i>1.14</i>	17.4	<i>1.27</i>	4.5	<i>0.72</i>
Portugal	19.2	<i>1.62</i>	25.7	<i>1.06</i>	31.3	<i>1.39</i>	19.7	<i>1.31</i>	4.1	<i>0.62</i>
<i>Russian Federation</i>	24.6	<i>1.63</i>	31.2	<i>1.24</i>	28.5	<i>1.05</i>	13.0	<i>1.00</i>	2.6	<i>0.42</i>
<i>Shanghai-China</i>	7.9	<i>1.11</i>	18.1	<i>1.11</i>	32.6	<i>1.35</i>	28.9	<i>1.40</i>	12.5	<i>1.16</i>
<i>Singapore</i>	4.3	<i>0.31</i>	12.5	<i>0.49</i>	26.0	<i>0.75</i>	30.3	<i>0.72</i>	26.8	<i>0.68</i>
Slovak Republic	22.6	<i>1.50</i>	25.9	<i>1.09</i>	31.1	<i>1.45</i>	16.9	<i>0.99</i>	3.5	<i>0.61</i>
Slovenia	25.1	<i>0.66</i>	26.1	<i>1.01</i>	26.9	<i>1.16</i>	17.6	<i>0.80</i>	4.3	<i>0.53</i>
Spain	26.2	<i>1.52</i>	27.1	<i>1.06</i>	27.9	<i>1.12</i>	15.2	<i>0.90</i>	3.7	<i>0.43</i>
Sweden	16.7	<i>1.11</i>	23.2	<i>0.86</i>	30.2	<i>0.98</i>	21.8	<i>0.90</i>	8.1	<i>0.70</i>
<i>United Arab Emirates</i>	50.5	<i>1.35</i>	24.2	<i>0.82</i>	15.7	<i>0.75</i>	7.3	<i>0.49</i>	2.3	<i>0.28</i>
<b>United States</b>	<b>12.6</b>	<b>1.42</b>	<b>22.3</b>	<b>1.21</b>	<b>31.5</b>	<b>1.03</b>	<b>24.6</b>	<b>1.31</b>	<b>9.0</b>	<b>0.90</b>

† Interpret data with caution. Estimate is unstable due to high coefficient of variation.

NOTE: The computer-based reading literacy assessment was an optional assessment for education systems in 2012. To reach a particular proficiency level, a student must correctly answer a majority of items at that level. Students were classified into reading literacy levels according to their scores. Exact cut scores are as follows: below level 1b (a score less than or equal to 262.04); level 1b (a score greater than 262.04 and less than or equal to 334.75); level 1a (a score greater than 334.75 and less than or equal to 407.47); level 2 (a score greater than 407.47 and less than or equal to 480.18); level 3 (a score greater than 480.18 and less than or equal to 552.89); level 4 (a score greater than 552.89 and less than or equal to 625.61); level 5 (a score greater than 625.61 and less than or equal to 698.32); and level 6 (a score greater than 698.32). Proficiency levels below 1b, level 1b, and level 1a have been collapsed for this table, as have levels 5 and 6, in order to provide descriptive and meaningful proficiency levels for the computer-based reading assessment. Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national percentages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Detail may not sum to totals because of rounding. Italics indicate non-OECD countries and education systems. SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table CR2. Average scores of 15-year-old students on PISA computer-based reading literacy scale, by education system: 2012**

Education system	Average score	s.e.	Education system	Average score	s.e.
OECD average	497 ▼	0.7			
<i>Singapore</i>	567 ▲	1.2	Sweden	498 ▼	3.4
Korea, Republic of	555 ▲	3.6	Denmark	495 ▼	2.9
<i>Hong Kong-China</i>	550 ▲	3.6	Germany	494 ▼	4.0
Japan	545 ▲	3.3	Portugal	486 ▼	4.4
Canada	532 ▲	2.3	Austria	480 ▼	3.9
<i>Shanghai-China</i>	531 ▲	3.7	Poland	477 ▼	4.5
Estonia	523 ▲	2.8	Slovak Republic	474 ▼	3.5
Australia	521	1.7	Slovenia	471 ▼	1.3
Ireland	520	3.0	Spain	466 ▼	3.9
<i>Chinese Taipei</i>	519	3.0	<i>Russian Federation</i>	466 ▼	3.9
<i>Macao-China</i>	515	0.9	Israel	461 ▼	5.1
<b>United States</b>	<b>511</b>	<b>4.5</b>	Chile	452 ▼	3.6
France	511	3.6	Hungary	450 ▼	4.4
Italy	504	4.3	<i>Brazil</i>	436 ▼	4.9
Belgium	502	2.5	<i>United Arab Emirates</i>	407 ▼	3.3
Norway	500 ▼	3.5	<i>Colombia</i>	396 ▼	4.0

▲ Average score is higher than U.S. average score.

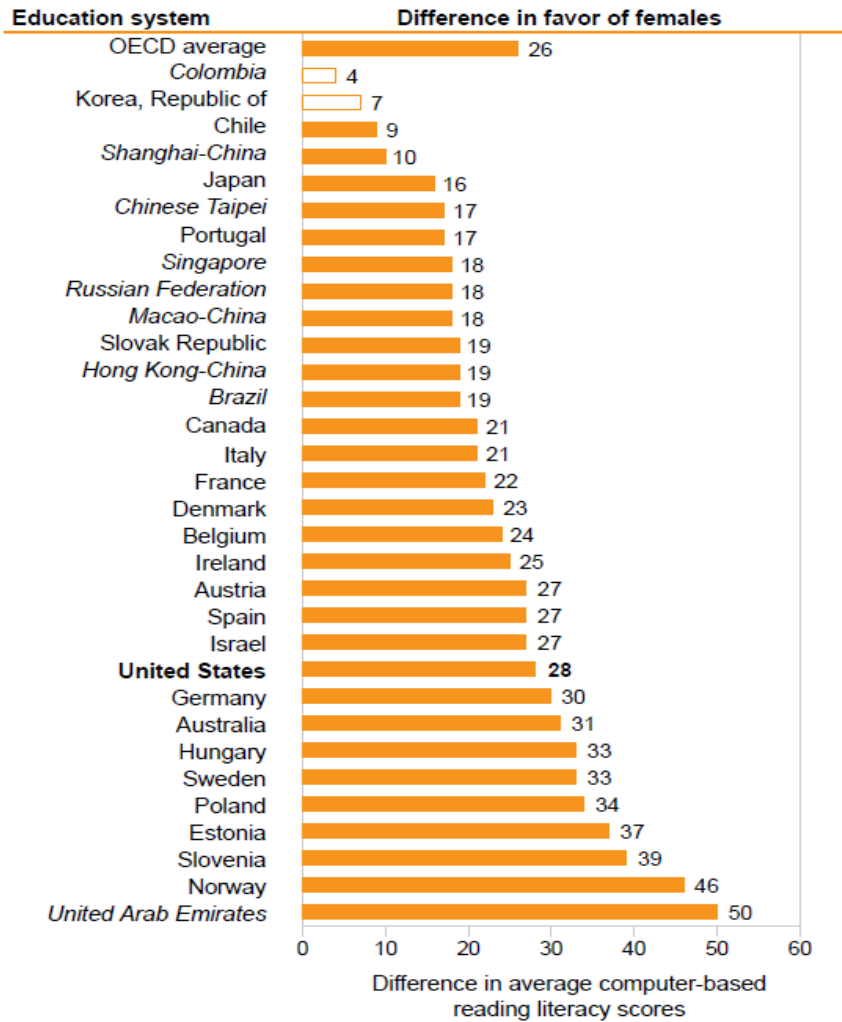
▼ Average score is lower than U.S. average score.

NOTE: The computer-based reading literacy assessment was an optional assessment for education systems in 2012. Education systems are ordered by 2012 average score. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Scores are reported on a scale from 0 to 1,000. All average scores reported as higher or lower than the U.S. average score are different at the .05 level of statistical significance. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems. This table corresponds to table 6 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Figure CR1a. Difference in average scores of 15-year-old female and male students on PISA computer-based reading literacy scale, by education system: 2012



■ Female-male difference in average computer-based reading literacy scores is statistically different.

□ Female-male difference in average computer-based reading literacy scores is not measurably different.

NOTE: The computer-based reading literacy assessment was an optional assessment for education systems in 2012. Education systems are ordered by female-male difference in 2012 average score. Differences were computed using unrounded numbers. Scores are reported on a scale from 0 to 1,000. Score differences as noted between males and females are significantly different at the .05 level of statistical significance. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table CR1b. Difference in average scores of 15-year-old female and male students on PISA computer-based reading literacy scale, by education system: 2012**

<b>Education system</b>	<b>Female-male difference</b>	<b>s.e.</b>
OECD average	26 *	0.8
<i>Colombia</i>	4	4.3
Korea, Republic of	7	5.1
Chile	9 *	4.4
<i>Shanghai-China</i>	10 *	2.8
Japan	16 *	3.8
<i>Chinese Taipei</i>	17 *	5.3
Portugal	17 *	3.0
<i>Singapore</i>	18 *	2.2
<i>Russian Federation</i>	18 *	3.0
<i>Macao-China</i>	18 *	1.7
Slovak Republic	19 *	4.3
<i>Hong Kong-China</i>	19 *	5.0
<i>Brazil</i>	19 *	3.2
Canada	21 *	1.8
Italy	21 *	6.0
France	22 *	3.6
Denmark	23 *	2.4
Belgium	24 *	4.0
Ireland	25 *	4.3
Austria	27 *	6.1
Spain	27 *	3.1
Israel	27 *	6.4
<b>United States</b>	<b>28 *</b>	<b>2.6</b>
Germany	30 *	3.0
Australia	31 *	2.9
Hungary	33 *	4.9
Sweden	33 *	3.3
Poland	34 *	3.4
Estonia	37 *	2.8
Slovenia	39 *	2.7
Norway	46 *	3.1
<i>United Arab Emirates</i>	50 *	6.5

\*  $p < .05$ . Differences between males and females are significantly different at the .05 level of statistical significance.

NOTE: The computer-based reading literacy assessment was an optional assessment for education systems in 2012. Education systems are ordered by female-male difference in 2012 average score. Differences were computed using unrounded numbers. Scores are reported on a scale from 0 to 1,000. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Standard error is noted by s.e. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A1. Average scores of 15-year-old students on PISA mathematics literacy scale in Connecticut public schools compared with other participating education systems: 2012**

Education systems higher than Connecticut	
<i>Shanghai-China</i>	Japan
<i>Singapore</i>	<i>Liechtenstein</i>
<i>Hong Kong-China</i>	Switzerland
<i>Chinese Taipei</i>	Netherlands
Korea, Republic of	Estonia
<i>Macao-China</i>	Finland
Education systems not measurably different from Connecticut	
Canada	Ireland
Poland	Slovenia
Belgium	Denmark
Germany	New Zealand
<i>Massachusetts</i>	Czech Republic
<i>Vietnam</i>	France
Austria	OECD average
Australia	United Kingdom
Education systems lower than Connecticut	
Iceland	<i>Cyprus</i>
<i>Latvia</i>	<i>Bulgaria</i>
Luxembourg	<i>United Arab Emirates</i>
Norway	<i>Kazakhstan</i>
Portugal	<i>Thailand</i>
Italy	Chile
Spain	<i>Malaysia</i>
<i>Russian Federation</i>	Mexico
Slovak Republic	<i>Montenegro, Republic of</i>
<b>United States</b>	<i>Uruguay</i>
<i>Lithuania</i>	<i>Costa Rica</i>
Sweden	<i>Albania</i>
Hungary	<i>Brazil</i>
<i>Croatia</i>	<i>Argentina</i>
<i>Florida</i>	<i>Tunisia</i>
Israel	<i>Jordan</i>
Greece	<i>Colombia</i>
<i>Serbia, Republic of</i>	<i>Qatar</i>
Turkey	<i>Indonesia</i>
<i>Romania</i>	<i>Peru</i>

NOTE: All average scores reported as higher or lower than the Connecticut average score are different at the .05 level of statistical significance. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A2. Average scores of 15-year-old students on PISA mathematics literacy scale in Connecticut public schools, by various subgroups: 2012**

Reporting groups	Average score	s.e.
Connecticut average	506 ***	6.2
U.S. average	481 **	3.6
OECD average	494 ***	0.5
Sex		
Female	499 ***	6.3
Male	513 *	6.9
Race/ethnicity		
White	534 *	5.5
Black	421 *	7.3
Hispanic	442 *	8.3
Asian	534 *	11.8
Multiracial	496	11.8
Percentage of students in enrolled schools eligible for free or reduced-price lunch		
Less than 10 percent	567 *	7.0
10 to 24.9 percent	526 *	6.7
25 to 49.9 percent	491	5.1
50 to 74.9 percent	440 *	15.0
75 percent or more	427 *	13.9

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

\*\*\*  $p < .05$ . Significantly different from the U.S. average at the .05 level of statistical significance.

NOTE: The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race.

Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. Data on free or reduced-price lunch are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. Standard error is noted by s.e.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.



# National Center for Education Statistics

**Table A3. Average scores of 15-year-old students on PISA science literacy scale in Connecticut public schools compared with other participating education systems: 2012**

Education systems higher than Connecticut	
<i>Shanghai-China</i>	Finland
<i>Hong Kong-China</i>	Estonia
<i>Singapore</i>	Korea, Republic of
Japan	
Education systems not measurably different from Connecticut	
<i>Vietnam</i>	Ireland
<i>Massachusetts</i>	Australia
Poland	<i>Macao-China</i>
Canada	New Zealand
<i>Liechtenstein</i>	Switzerland
Germany	Slovenia
<i>Chinese Taipei</i>	United Kingdom
Netherlands	Czech Republic
Education systems lower than Connecticut	
Austria	<i>United Arab Emirates</i>
Belgium	<i>Bulgaria</i>
<i>Latvia</i>	Chile
OECD average	<i>Serbia, Republic of</i>
France	<i>Thailand</i>
Denmark	<i>Romania</i>
<b>United States</b>	<i>Cyprus</i>
Spain	<i>Costa Rica</i>
<i>Lithuania</i>	<i>Kazakhstan</i>
Norway	<i>Malaysia</i>
Hungary	<i>Uruguay</i>
Italy	Mexico
<i>Croatia</i>	<i>Montenegro, Republic of</i>
Luxembourg	<i>Jordan</i>
Portugal	<i>Argentina</i>
<i>Russian Federation</i>	<i>Brazil</i>
<i>Florida</i>	<i>Colombia</i>
Sweden	<i>Tunisia</i>
Iceland	<i>Albania</i>
Slovak Republic	<i>Qatar</i>
Israel	<i>Indonesia</i>
Greece	<i>Peru</i>
Turkey	

NOTE: All average scores reported as higher or lower than the Connecticut average score are different at the .05 level of statistical significance. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A4. Average scores of 15-year-old students on PISA science literacy scale in Connecticut public schools, by various subgroups: 2012**

Reporting groups	Average score	s.e.
Connecticut average	521 *	5.7
U.S. average	497	3.8
OECD average	501	0.5
Sex		
Female	514 *	6.1
Male	528 *	6.2
Race/ethnicity		
White	547 *	4.5
Black	433 *	9.5
Hispanic	463 *	9.3
Asian	553 *	11.6
Multiracial	520	10.8
Percentage of students in enrolled schools eligible for free or reduced-price lunch		
Less than 10 percent	575 *	8.3
10 to 24.9 percent	539 *	7.1
25 to 49.9 percent	511	6.0
50 to 74.9 percent	465 **	16.7
75 percent or more	435 *	9.6

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

NOTE: The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. Data on free or reduced-price lunch are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. Standard error is noted by *s.e.*

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A5. Average scores of 15-year-old students on PISA reading literacy scale in Connecticut public schools compared with other participating education systems: 2012**

Education systems higher than Connecticut	
<i>Shanghai-China</i>	<i>Singapore</i>
<i>Hong Kong-China</i>	<i>Japan</i>
Education systems not measurably different from Connecticut	
Korea, Republic of	New Zealand
<i>Massachusetts</i>	Australia
Finland	Netherlands
Ireland	Belgium
<i>Chinese Taipei</i>	Switzerland
Canada	<i>Macao-China</i>
Poland	<i>Vietnam</i>
Estonia	Germany
<i>Liechtenstein</i>	
Education systems lower than Connecticut	
France	Slovak Republic
Norway	<i>Cyprus</i>
United Kingdom	<i>Serbia, Republic of</i>
<b>United States</b>	<i>United Arab Emirates</i>
OECD average	Chile
Denmark	<i>Thailand</i>
Czech Republic	<i>Costa Rica</i>
<i>Florida</i>	<i>Romania</i>
Italy	<i>Bulgaria</i>
Austria	Mexico
<i>Latvia</i>	<i>Montenegro, Republic of</i>
Hungary	<i>Uruguay</i>
Spain	<i>Brazil</i>
Luxembourg	<i>Tunisia</i>
Portugal	<i>Colombia</i>
Israel	<i>Jordan</i>
<i>Croatia</i>	<i>Malaysia</i>
Sweden	<i>Indonesia</i>
Iceland	<i>Argentina</i>
Slovenia	<i>Albania</i>
<i>Lithuania</i>	<i>Kazakhstan</i>
Greece	<i>Qatar</i>
Turkey	<i>Peru</i>
<i>Russian Federation</i>	

NOTE: All average scores reported as higher or lower than the Connecticut average score are different at the .05 level of statistical significance. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A6. Average scores of 15-year-old students on PISA reading literacy scale in Connecticut public schools, by various subgroups: 2012**

Reporting groups	Average score	s.e.
Connecticut average	521 *	6.5
U.S. average	498	3.7
OECD average	496	0.5
Sex		
Female	532 *	6.7
Male	510	7.1
Race/ethnicity		
White	546 *	5.5
Black	447 *	10.2
Hispanic	463 *	9.8
Asian	558 *	12.9
Multiracial	521 **	11.9
Percentage of students in enrolled schools eligible for free or reduced-price lunch		
Less than 10 percent	578 *	9.7
10 to 24.9 percent	542 *	7.1
25 to 49.9 percent	508	6.1
50 to 74.9 percent	459 *	13.7
75 percent or more	443 *	12.1

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

NOTE: The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. Data on free or reduced-price lunch are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. Standard error is noted by *s.e.*

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A7. Average scores of 15-year-old students on PISA mathematics literacy scale in Florida public schools compared with other participating education systems: 2012**

Education systems higher than Florida	
<i>Shanghai-China</i>	Australia
<i>Singapore</i>	Ireland
<i>Hong Kong-China</i>	Slovenia
<i>Chinese Taipei</i>	Denmark
Korea, Republic of	New Zealand
<i>Macao-China</i>	Czech Republic
Japan	France
<i>Liechtenstein</i>	OECD average
Switzerland	United Kingdom
Netherlands	Iceland
Estonia	<i>Latvia</i>
Finland	Luxembourg
Canada	Norway
Poland	Portugal
Belgium	Italy
Germany	Spain
<i>Massachusetts</i>	<i>Russian Federation</i>
<i>Vietnam</i>	Slovak Republic
<i>Connecticut</i>	<b>United States</b>
Austria	
Education systems not measurably different from Florida	
<i>Lithuania</i>	<i>Croatia</i>
Sweden	Israel
Hungary	
Education systems lower than Florida	
Greece	<i>Montenegro, Republic of</i>
<i>Serbia, Republic of</i>	<i>Uruguay</i>
Turkey	<i>Costa Rica</i>
<i>Romania</i>	<i>Albania</i>
<i>Cyprus</i>	<i>Brazil</i>
<i>Bulgaria</i>	<i>Argentina</i>
<i>United Arab Emirates</i>	<i>Tunisia</i>
<i>Kazakhstan</i>	<i>Jordan</i>
<i>Thailand</i>	<i>Colombia</i>
Chile	<i>Qatar</i>
<i>Malaysia</i>	<i>Indonesia</i>
Mexico	<i>Peru</i>

NOTE: All average scores reported as higher or lower than the Florida average score are different at the .05 level of statistical significance. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A8. Average scores of 15-year-old students on PISA mathematics literacy scale in Florida public schools, by various subgroups: 2012**

Reporting groups	Average score	s.e.
Florida average	467 *	5.8
U.S. average	481 **	3.6
OECD average	494 ***	0.5
Sex		
Female	460 *	6.0
Male	474 **	6.3
Race/ethnicity		
White	499 ***	5.7
Black	413 *	5.7
Hispanic	458 *	5.7
Asian	‡	†
Multiracial	467 **	6.4
Percentage of students in enrolled schools eligible for free or reduced-price lunch		
Less than 10 percent	548 *	23.9
10 to 24.9 percent	533 *	15.3
25 to 49.9 percent	481 **	6.0
50 to 74.9 percent	453 *	4.9
75 percent or more	417 *	9.0

‡ Reporting standards not met.

† Not applicable.

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

\*\*\*  $p < .05$ . Significantly different from the U.S. average at the .05 level of statistical significance.

NOTE: The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. Data on free or reduced-price lunch are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. Standard error is noted by *s.e.*

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A9. Average scores of 15-year-old students on PISA science literacy scale in Florida public schools compared with other participating education systems: 2012**

Education systems higher than Florida	
<i>Shanghai-China</i>	Ireland
<i>Hong Kong-China</i>	Australia
<i>Singapore</i>	<i>Connecticut</i>
Japan	<i>Macao-China</i>
Finland	New Zealand
Estonia	Switzerland
Korea, Republic of	Slovenia
<i>Vietnam</i>	United Kingdom
<i>Massachusetts</i>	Czech Republic
Poland	Austria
Canada	Belgium
<i>Liechtenstein</i>	<i>Latvia</i>
Germany	OECD average
<i>Chinese Taipei</i>	France
Netherlands	
Education systems not measurably different from Florida	
Denmark	Luxembourg
<b>United States</b>	Portugal
Spain	<i>Russian Federation</i>
<i>Lithuania</i>	Sweden
Norway	Iceland
Hungary	Slovak Republic
Italy	Israel
<i>Croatia</i>	
Education systems lower than Florida	
Greece	<i>Uruguay</i>
Turkey	Mexico
<i>United Arab Emirates</i>	<i>Montenegro, Republic of</i>
<i>Bulgaria</i>	<i>Jordan</i>
Chile	<i>Argentina</i>
<i>Serbia, Republic of</i>	<i>Brazil</i>
<i>Thailand</i>	<i>Colombia</i>
<i>Romania</i>	<i>Tunisia</i>
<i>Cyprus</i>	<i>Albania</i>
<i>Costa Rica</i>	<i>Qatar</i>
<i>Kazakhstan</i>	<i>Indonesia</i>
<i>Malaysia</i>	<i>Peru</i>

NOTE: All average scores reported as higher or lower than the Florida average score are different at the .05 level of statistical significance. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A10. Average scores of 15-year-old students on PISA science literacy scale in Florida public schools, by various subgroups: 2012**

Reporting groups	Average score	s.e.
Florida average	485 **	6.4
U.S. average	497	3.8
OECD average	501	0.5
Sex		
Female	478 *	6.2
Male	491	7.4
Race/ethnicity		
White	520 *	6.6
Black	425 *	5.9
Hispanic	475 *	6.3
Asian	‡	†
Multiracial	500	8.5
Percentage of students in enrolled schools eligible for free or reduced-price lunch		
Less than 10 percent	573 *	15.0
10 to 24.9 percent	545 *	19.1
25 to 49.9 percent	499	7.6
50 to 74.9 percent	474 *	5.2
75 percent or more	429 *	8.2

‡ Reporting standards not met.

† Not applicable.

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

NOTE: The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. Data on free or reduced-price lunch are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. Standard error is noted by s.e.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.



# National Center for Education Statistics

**Table A11. Average scores of 15-year-old students on PISA reading literacy scale in Florida public schools compared with other participating education systems: 2012**

Education systems higher than Florida	
<i>Shanghai-China</i>	Estonia
<i>Hong Kong-China</i>	<i>Liechtenstein</i>
<i>Singapore</i>	New Zealand
Japan	Australia
Korea, Republic of	Netherlands
<i>Massachusetts</i>	Belgium
Finland	Switzerland
Ireland	<i>Macao-China</i>
<i>Chinese Taipei</i>	<i>Vietnam</i>
Canada	Germany
<i>Connecticut</i>	France
Poland	
Education systems not measurably different from Florida	
Norway	Hungary
United Kingdom	Spain
<b>United States</b>	Luxembourg
OECD average	Portugal
Denmark	Israel
Czech Republic	<i>Croatia</i>
Italy	Sweden
Austria	Iceland
<i>Latvia</i>	Slovenia
Education systems lower than Florida	
<i>Lithuania</i>	<i>Montenegro, Republic of</i>
Greece	<i>Uruguay</i>
Turkey	<i>Brazil</i>
<i>Russian Federation</i>	<i>Tunisia</i>
Slovak Republic	<i>Colombia</i>
<i>Cyprus</i>	<i>Jordan</i>
<i>Serbia, Republic of</i>	<i>Malaysia</i>
<i>United Arab Emirates</i>	<i>Indonesia</i>
Chile	<i>Argentina</i>
<i>Thailand</i>	<i>Albania</i>
<i>Costa Rica</i>	<i>Kazakhstan</i>
<i>Romania</i>	<i>Qatar</i>
<i>Bulgaria</i>	<i>Peru</i>
Mexico	

NOTE: All average scores reported as higher or lower than the Florida average score are different at the .05 level of statistical significance. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A12. Average scores of 15-year-old students on PISA reading literacy scale in Florida public schools, by various subgroups: 2012**

Reporting groups	Average score	s.e.
Florida average	492	6.1
U.S. average	498	3.7
OECD average	496	0.5
Sex		
Female	503	5.9
Male	481 *	7.0
Race/ethnicity		
White	518 *	6.7
Black	449 *	6.7
Hispanic	489	7.2
Asian	‡	†
Multiracial	492	8.1
Percentage of students in enrolled schools eligible for free or reduced-price lunch		
Less than 10 percent	568 *	17.6
10 to 24.9 percent	555 *	25.6
25 to 49.9 percent	500	7.7
50 to 74.9 percent	484 *	5.4
75 percent or more	449 *	8.5

‡ Reporting standards not met.

† Not applicable.

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

NOTE: The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race.

Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. Data on free or reduced-price lunch are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. Standard error is noted by s.e.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A13. Average scores of 15-year-old students on PISA mathematics literacy scale in Massachusetts public schools compared with other participating education systems: 2012**

<b>Education systems higher than Massachusetts</b>	
<i>Shanghai-China</i>	<i>Macao-China</i>
<i>Singapore</i>	<i>Japan</i>
<i>Hong Kong-China</i>	<i>Liechtenstein</i>
<i>Chinese Taipei</i>	<i>Switzerland</i>
<i>Korea, Republic of</i>	
<b>Education systems not measurably different from Massachusetts</b>	
<i>Netherlands</i>	<i>Vietnam</i>
<i>Estonia</i>	<i>Connecticut</i>
<i>Finland</i>	<i>Austria</i>
<i>Canada</i>	<i>Australia</i>
<i>Poland</i>	<i>Ireland</i>
<i>Belgium</i>	<i>Slovenia</i>
<i>Germany</i>	
<b>Education systems lower than Massachusetts</b>	
<i>Denmark</i>	<i>Serbia, Republic of</i>
<i>New Zealand</i>	<i>Turkey</i>
<i>Czech Republic</i>	<i>Romania</i>
<i>France</i>	<i>Cyprus</i>
<i>OECD average</i>	<i>Bulgaria</i>
<i>United Kingdom</i>	<i>United Arab Emirates</i>
<i>Iceland</i>	<i>Kazakhstan</i>
<i>Latvia</i>	<i>Thailand</i>
<i>Luxembourg</i>	<i>Chile</i>
<i>Norway</i>	<i>Malaysia</i>
<i>Portugal</i>	<i>Mexico</i>
<i>Italy</i>	<i>Montenegro, Republic of</i>
<i>Spain</i>	<i>Uruguay</i>
<i>Russian Federation</i>	<i>Costa Rica</i>
<i>Slovak Republic</i>	<i>Albania</i>
<b>United States</b>	<i>Brazil</i>
<i>Lithuania</i>	<i>Argentina</i>
<i>Sweden</i>	<i>Tunisia</i>
<i>Hungary</i>	<i>Jordan</i>
<i>Croatia</i>	<i>Colombia</i>
<i>Florida</i>	<i>Qatar</i>
<i>Israel</i>	<i>Indonesia</i>
<i>Greece</i>	<i>Peru</i>

NOTE: All average scores reported as higher or lower than the Massachusetts average score are different at the .05 level of statistical significance. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A14. Average scores of 15-year-old students on PISA mathematics literacy scale in Massachusetts public schools, by various subgroups: 2012**

Reporting groups	Average score	s.e.
Massachusetts average	514 *	6.2
U.S. average	481 **	3.6
OECD average	494 ***	0.5
Sex		
Female	509 *	7.1
Male	518 *	6.3
Race/ethnicity		
White	530 *	6.7
Black	458 **	15.9
Hispanic	446 *	9.5
Asian	569 *	16.9
Multiracial	‡	†
Percentage of students in enrolled schools eligible for free or reduced-price lunch		
Less than 10 percent	583 *	11.0
10 to 24.9 percent	514 *	6.6
25 to 49.9 percent	493 ***	4.5
50 to 74.9 percent	465 **	11.9
75 percent or more	457 **	16.9

‡ Reporting standards not met.

† Not applicable.

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

\*\*\*  $p < .05$ . Significantly different from the U.S. average at the .05 level of statistical significance.

NOTE: The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. Data on free or reduced-price lunch are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. Standard error is noted by *s.e.*

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A15. Average scores of 15-year-old students on PISA science literacy scale in Massachusetts public schools compared with other participating education systems: 2012**

Education systems higher than Massachusetts	
<i>Shanghai-China</i>	Japan
<i>Hong Kong-China</i>	Finland
<i>Singapore</i>	Estonia
Education systems not measurably different from Massachusetts	
Korea, Republic of	Ireland
<i>Vietnam</i>	Australia
Poland	<i>Connecticut</i>
Canada	<i>Macao-China</i>
<i>Liechtenstein</i>	New Zealand
Germany	Switzerland
<i>Chinese Taipei</i>	United Kingdom
Netherlands	
Education systems lower than Massachusetts	
Slovenia	Turkey
Czech Republic	<i>United Arab Emirates</i>
Austria	<i>Bulgaria</i>
Belgium	Chile
<i>Latvia</i>	<i>Serbia, Republic of</i>
OECD average	<i>Thailand</i>
France	<i>Romania</i>
Denmark	<i>Cyprus</i>
<b>United States</b>	<i>Costa Rica</i>
Spain	<i>Kazakhstan</i>
<i>Lithuania</i>	<i>Malaysia</i>
Norway	<i>Uruguay</i>
Hungary	Mexico
Italy	<i>Montenegro, Republic of</i>
<i>Croatia</i>	<i>Jordan</i>
Luxembourg	<i>Argentina</i>
Portugal	<i>Brazil</i>
<i>Russian Federation</i>	<i>Colombia</i>
<i>Florida</i>	<i>Tunisia</i>
Sweden	<i>Albania</i>
Iceland	<i>Qatar</i>
Slovak Republic	<i>Indonesia</i>
Israel	<i>Peru</i>
Greece	

NOTE: All average scores reported as higher or lower than the Massachusetts average score are different at the .05 level of statistical significance. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A16. Average scores of 15-year-old students on PISA science literacy scale in Massachusetts public schools, by various subgroups: 2012**

Reporting groups	Average score	s.e.
Massachusetts average	527 *	6.0
U.S. average	497	3.8
OECD average	501	0.5
Sex		
Female	526 *	6.8
Male	529 *	6.1
Race/ethnicity		
White	545 *	6.5
Black	466 **	16.2
Hispanic	460 *	10.3
Asian	580 *	15.7
Multiracial	‡	†
Percentage of students in enrolled schools eligible for free or reduced-price lunch		
Less than 10 percent	596 *	9.4
10 to 24.9 percent	531 *	4.3
25 to 49.9 percent	510	6.2
50 to 74.9 percent	481	13.5
75 percent or more	461 *	17.9

‡ Reporting standards not met.

† Not applicable.

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

NOTE: The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. Data on free or reduced-price lunch are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. Standard error is noted by s.e.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A17. Average scores of 15-year-old students on PISA reading literacy scale in Massachusetts public schools compared with other participating education systems: 2012**

Education systems higher than Massachusetts	
<i>Shanghai-China</i>	<i>Singapore</i>
<i>Hong Kong-China</i>	
Education systems not measurably different from Massachusetts	
Japan	Canada
Korea, Republic of	<i>Connecticut</i>
Finland	Poland
Ireland	Estonia
<i>Chinese Taipei</i>	<i>Liechtenstein</i>
Education systems lower than Massachusetts	
New Zealand	<i>Lithuania</i>
Australia	Greece
Netherlands	Turkey
Belgium	<i>Russian Federation</i>
Switzerland	Slovak Republic
<i>Macao-China</i>	<i>Cyprus</i>
<i>Vietnam</i>	<i>Serbia, Republic of</i>
Germany	<i>United Arab Emirates</i>
France	Chile
Norway	<i>Thailand</i>
United Kingdom	<i>Costa Rica</i>
<b>United States</b>	<i>Romania</i>
OECD average	<i>Bulgaria</i>
Denmark	Mexico
Czech Republic	<i>Montenegro, Republic of</i>
<i>Florida</i>	<i>Uruguay</i>
Italy	<i>Brazil</i>
Austria	<i>Tunisia</i>
<i>Latvia</i>	<i>Colombia</i>
Hungary	<i>Jordan</i>
Spain	<i>Malaysia</i>
Luxembourg	<i>Indonesia</i>
Portugal	<i>Argentina</i>
Israel	<i>Albania</i>
<i>Croatia</i>	<i>Kazakhstan</i>
Sweden	<i>Qatar</i>
Iceland	<i>Peru</i>
Slovenia	

NOTE: All average scores reported as higher or lower than the Massachusetts average score are different at the .05 level of statistical significance. The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Italics indicate non-OECD countries and education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table A18. Average scores of 15-year-old students on PISA reading literacy scale in Massachusetts public schools, by various subgroups: 2012**

Reporting groups	Average score	s.e.
<b>Massachusetts average</b>	<b>527 *</b>	<b>6.1</b>
<b>U.S. average</b>	<b>498</b>	<b>3.7</b>
<b>OECD average</b>	<b>496</b>	<b>0.5</b>
Sex		
Female	542 *	6.6
Male	511 **	6.2
Race/ethnicity		
White	540 *	6.8
Black	476	16.7
Hispanic	475	12.1
Asian	584 *	13.5
Multiracial	‡	†
Percentage of students in enrolled schools eligible for free or reduced-price lunch		
Less than 10 percent	590 *	8.8
10 to 24.9 percent	527 *	7.7
25 to 49.9 percent	507	6.7
50 to 74.9 percent	488	11.3
75 percent or more	477	19.0

‡ Reporting standards not met.

† Not applicable.

\*  $p < .05$ . Significantly different from both the U.S. and OECD averages at the .05 level of statistical significance.

\*\*  $p < .05$ . Significantly different from the OECD average at the .05 level of statistical significance.

NOTE: The OECD average is the average of the national averages of the OECD member countries, with each country weighted equally. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American, and Hispanic includes Latino. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities were not shown separately because the reporting standards were not met, they are included in the U.S. and state totals. Data on free or reduced-price lunch are based on principals' responses to a question in the school questionnaire that asked the approximate percentage of eligible students in the school during the previous school year. Standard error is noted by s.e.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.



# National Center for Education Statistics

Table AA1. Percentage distribution of U.S. 15-year-old students, by grade level: 2012

Grade level	Percent	s.e.
Grade 7	#	†
Grade 8	‡	†
Grade 9	11.7	1.06
Grade 10	71.2	1.10
Grade 11	16.6	0.83
Grade 12	‡	†
Total	100.0	

# Rounds to zero.

† Not applicable.

‡ Reporting standards not met.

NOTE: Standard error is noted by s.e.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

**Table AA2. Cut scores for proficiency levels for mathematics, science, and reading literacy: 2012**

<b>Proficiency level</b>	<b>Mathematics</b>	<b>Science</b>	<b>Reading<sup>1</sup></b>
Below level 1	0-358	0-335	0-262
Level 1	greater than 358-420	greater than 335-410	greater than 262-335 (1b) greater than 335-407 (1a)
Level 2	greater than 420-482	greater than 410-484	greater than 407-480
Level 3	greater than 482-545	greater than 484-559	greater than 480-553
Level 4	greater than 545-607	greater than 559-633	greater than 553-626
Level 5	greater than 607-669	greater than 733-708	greater than 626-698
Level 6	greater than 669-1000	greater than 708-1000	greater than 698-1000

<sup>1</sup>The first reading literacy proficiency level is composed of levels 1a and 1b. The score range for below level 1 refers to scores below 1b.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Table AB1. Number of schools and weighted participation rates, by education system: 2012

Education system	Percent		Number of participating schools after replacement
	Weighted school participation before replacement	Weighted school participation after replacement	
<i>Albania</i>	100.0	100.0	204
<i>Argentina</i>	95.5	95.9	219
<i>Australia</i>	97.9	97.9	757
<i>Austria</i>	100.0	100.0	191
<i>Belgium</i>	84.4	96.6	282
<i>Brazil</i>	92.7	95.4	837
<i>Bulgaria</i>	99.2	99.8	187
<i>Canada</i>	91.3	92.9	840
<i>Chile</i>	91.9	98.8	221
<i>Chinese Taipei</i>	100.0	100.0	163
<i>Colombia</i>	86.6	97.4	352
<i>Costa Rica</i>	98.9	98.9	191
<i>Croatia</i>	98.7	99.9	163
<i>Cyprus</i>	96.6	96.6	117
<i>Czech Republic</i>	98.1	99.6	295
<i>Denmark</i>	87.0	95.5	339
<i>Estonia</i>	100.0	100.0	206
<i>Finland</i>	99.0	99.3	311
<i>France</i>	96.6	96.6	223
<i>Germany</i>	97.7	98.0	228
<i>Greece</i>	93.2	98.9	188
<i>Hong Kong-China</i>	78.7	94.1	147
<i>Hungary</i>	97.6	99.4	204
<i>Iceland</i>	99.3	99.3	133
<i>Indonesia</i>	94.9	98.0	206
<i>Ireland</i>	98.7	99.3	183
<i>Israel</i>	91.1	93.8	172
<i>Italy</i>	89.1	97.4	1,186
<i>Japan</i>	86.3	95.5	191
<i>Jordan</i>	100.0	100.0	233
<i>Kazakhstan</i>	100.0	100.0	218
<i>Korea, Republic of</i>	99.9	99.9	156
<i>Latvia</i>	87.9	99.9	211
<i>Liechtenstein</i>	100.0	100.0	12
<i>Lithuania</i>	98.2	100.0	216
<i>Luxembourg</i>	100.0	100.0	42
<i>Macao-China</i>	100.0	100.0	45
<i>Malaysia</i>	100.0	100.0	164
<i>Mexico</i>	91.8	95.3	1,468
<i>Montenegro, Republic of</i>	100.0	100.0	51
<i>Netherlands</i>	75.3	89.4	177
<i>New Zealand</i>	80.9	89.3	177
<i>Norway</i>	85.2	94.7	197
<i>Peru</i>	97.9	98.6	240
<i>Poland</i>	85.4	97.9	182
<i>Portugal</i>	95.4	95.8	187
<i>Qatar</i>	99.9	99.9	157
<i>Romania</i>	100.0	100.0	178
<i>Russian Federation</i>	100.0	100.0	227
<i>Serbia, Republic of</i>	90.0	95.4	152
<i>Shanghai-China</i>	100.0	100.0	155
<i>Singapore</i>	97.5	98.2	172
<i>Slovak Republic</i>	87.5	99.0	231
<i>Slovenia</i>	98.1	98.1	335
<i>Spain</i>	99.7	99.7	902
<i>Sweden</i>	98.9	99.8	209
<i>Switzerland</i>	94.5	98.3	410
<i>Thailand</i>	98.0	100.0	239
<i>Tunisia</i>	99.3	99.3	152
<i>Turkey</i>	97.5	99.9	169
<i>United Arab Emirates</i>	99.4	99.4	453
<i>United Kingdom</i>	80.1	89.2	505
<b>United States</b>	<b>67.1</b>	<b>77.2</b>	<b>161</b>
<i>Uruguay</i>	99.4	100.0	180
<i>Vietnam</i>	100.0	100.0	162

## U.S. state education systems

<i>Connecticut</i>	98.0	98.0	50
<i>Florida</i>	100.0	100.0	54
<i>Massachusetts</i>	100.0	100.0	49

NOTE: In calculating school participation rates, each school received a weight equal to the product of its base weight (the reciprocal of its probability of selection) and the number of age-eligible students enrolled in the school, as indicated on the sampling frame. Weighted school participation before replacement refers to the sum of weights of the original sample schools with PISA-assessed students and a student response rate of at least 50 percent over the sum of weights of all original sample schools. Weighted school participation after replacement refers to the sum of weights of the original and replacement schools with PISA-assessed students and a student response rate of at least 50 percent over the sum of weights of responding original sample schools, responding replacement schools, and eligible refusing original sample schools. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public schools only. This table corresponds to table B-1 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.

# National Center for Education Statistics

Table AB2. Coverage of target population, student exclusion and weighted participation rates, and number of students, by education system: 2012

Education system	Total population of 15-year-olds (number)	Percent				Number of participating students
		Coverage of 15-year-old population	Coverage of national desired population	Overall student exclusion rate	Weighted student participation after replacement	
<i>Albania</i>	76,910	55.2	99.9	0.1	92.5	4,743
<i>Argentina</i>	684,879	79.7	99.3	0.7	88.0	5,908
Australia	291,967	85.9	96.0	4.0	86.8	17,774
<i>Austria</i>	93,537	87.9	98.7	1.3	91.7	4,756
Belgium	123,469	95.5	98.6	1.4	90.9	9,690
<i>Brazil</i>	3,574,928	69.1	98.6	1.4	90.1	20,091
<i>Bulgaria</i>	70,188	77.3	97.4	2.5	95.7	5,282
Canada	417,873	83.3	93.6	6.4	80.8	21,548
<i>Chile</i>	274,803	83.4	98.7	1.3	94.6	6,857
<i>Chinese Taipei</i>	328,356	89.1	98.8	1.2	96.3	6,046
<i>Colombia</i>	889,729	63.0	99.9	0.1	93.1	11,173
<i>Costa Rica</i>	81,489	49.6	100.0	0.0	89.0	4,602
<i>Croatia</i>	48,155	94.5	97.8	2.2	92.2	6,153
<i>Cyprus</i>	9,956	96.9	96.7	3.3	93.3	5,078
Czech Republic	96,946	84.7	98.2	1.8	90.1	6,535
Denmark	72,310	90.8	93.8	6.1	89.1	7,481
Estonia	12,649	92.0	94.2	5.7	92.9	5,867
Finland	62,523	96.0	98.1	1.9	90.7	8,829
France	792,983	88.5	95.6	4.3	89.5	5,682
Germany	798,136	94.8	98.5	1.5	93.2	5,001
Greece	110,521	87.4	96.4	3.6	96.7	5,125
<i>Hong Kong-China</i>	84,200	83.9	98.2	1.8	93.1	4,670
Hungary	111,761	81.6	97.4	2.6	92.7	4,810
Iceland	4,505	92.5	96.2	3.8	84.7	3,508
<i>Indonesia</i>	4,174,217	63.4	99.7	0.3	95.2	5,622
Ireland	59,296	91.1	95.5	4.5	84.1	5,016
Israel	118,953	90.6	95.9	4.1	90.0	6,061
Italy	605,490	86.1	96.7	3.3	92.8	38,142
Japan	1,241,786	90.9	97.9	2.1	96.1	6,351
<i>Jordan</i>	129,492	85.8	99.6	0.4	95.0	7,038
<i>Kazakhstan</i>	258,716	80.6	96.6	3.3	98.9	5,808
Korea, Republic of	687,104	87.9	99.2	0.8	98.7	5,033
<i>Latvia</i>	18,789	85.4	96.0	3.9	90.9	5,276
<i>Liechtenstein</i>	417	75.3	95.8	4.2	93.3	293
<i>Lithuania</i>	38,524	85.8	96.0	4.0	92.1	4,618
Luxembourg	6,187	89.3	87.2	8.3	95.2	5,260
<i>Macao-China</i>	6,600	81.3	99.8	0.2	99.4	5,335
<i>Malaysia</i>	544,302	79.4	99.8	0.2	94.0	5,197
Mexico	2,114,745	62.7	99.3	0.7	93.9	33,806
<i>Montenegro, Republic of</i>	8,600	89.7	99.7	0.3	93.8	4,744
Netherlands	194,000	101.2	95.6	4.3	85.0	4,460
New Zealand	60,940	87.6	95.4	4.6	84.7	5,248
Norway	64,917	91.6	93.9	6.1	90.9	4,686
<i>Peru</i>	584,294	71.9	99.8	0.2	96.0	6,035
Poland	425,597	89.1	95.4	4.6	87.6	5,662
Portugal	108,728	88.3	98.4	1.6	87.4	5,722
<i>Qatar</i>	11,667	94.3	97.5	2.5	99.7	10,966
<i>Romania</i>	146,243	96.4	96.5	3.4	97.8	5,074
<i>Russian Federation</i>	1,272,632	92.1	97.6	2.4	97.3	6,418
<i>Serbia, Republic of</i>	80,089	84.8	97.1	2.8	93.4	4,684
<i>Shanghai-China</i>	108,056	78.8	98.5	1.5	98.5	6,374
<i>Singapore</i>	53,637	95.2	98.8	1.2	94.3	5,546
Slovak Republic	59,723	91.2	97.1	2.9	93.8	5,737
Slovenia	19,471	94.0	98.4	1.6	90.5	7,229
Spain	423,444	88.4	95.7	4.3	89.9	25,335
Sweden	102,087	93.0	94.6	5.4	92.2	4,739
Switzerland	87,200	91.4	95.8	4.1	92.0	11,234
<i>Thailand</i>	982,080	71.6	98.7	1.3	98.9	6,606
<i>Tunisia</i>	132,313	91.3	99.8	0.2	90.3	4,407
Turkey	1,266,638	68.4	98.5	1.5	98.2	4,848
<i>United Arab Emirates</i>	48,824	83.2	97.9	2.1	94.7	11,500
United Kingdom	738,066	93.2	94.6	5.4	86.1	12,659
<b>United States</b>	<b>3,985,714</b>	<b>88.7</b>	<b>94.6</b>	<b>5.3</b>	<b>88.9</b>	<b>6,111</b>
<i>Uruguay</i>	54,638	72.8	99.7	0.3	90.0	5,315
<i>Vietnam</i>	1,717,996	55.7	99.3	0.7	99.9	4,959

## U.S. state education systems

<i>Connecticut</i>	48,970	75.7	95.9	4.1	87.5	1,697
<i>Florida</i>	226,434	77.0	91.7	8.3	90.0	1,896
<i>Massachusetts</i>	81,580	69.9	95.6	4.4	90.0	1,723

NOTE: In calculating student participation rates, each student received a weight (student base weight) equal to the product of the school base weight—for the school in which the student was enrolled—and the reciprocal of the student selection probability within the school. Coverage of 15-year-old population refers to the extent to which the weighted participants covered the target population of all enrolled students in grades 7 and above. Coverage of national desired population refers to the extent to which the weighted participants covered the national population of 15-year-olds under the nonexcluded portion of the student sample. Overall student exclusion rate is the percentage of students excluded for intellectual or functional disabilities, or insufficient assessment language experience at either the school level or within schools. Weighted student participation after replacement refers to the sum of weights of students in original and replacement schools with PISA-assessed students and a student response rate of at least 50 percent over the sum of weights of students in responding original sample schools, responding replacement schools, and eligible refusing original sample schools. Italics indicate non-OECD countries and education systems. Results for Connecticut, Florida, and Massachusetts are for public school students only. This table is an expanded version of table B-2 in *Performance of U.S. 15-Year-Old Students in Mathematics, Science, and Reading Literacy in an International Context* (NCES 2014-024).

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2012.