

## CHAPTER 6

# International Comparisons of Education

This chapter offers a broad perspective on education across the nations of the world. It also provides an international context for examining the condition of education in the United States. Insights into the educational practices and outcomes of the United States are obtained by comparing them with those of other countries. The National Center for Education Statistics (NCES) carries out a variety of these activities to provide statistical data for international comparisons of education.

This chapter presents data drawn from materials prepared by the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the Institute of International Education, the Organization for Economic Cooperation and Development (OECD), and the International Association for the Evaluation of Educational Achievement (IEA). The basic summary data on enrollments, teachers, enrollment ratios, and finances were synthesized from information appearing in *Education at a Glance*, published by OECD. Even though OECD tabulations are very carefully prepared, international data users should be cautioned about the many problems of definition and reporting involved in the collection of data about the educational systems in the world (see the OECD entry in Appendix A: Guide to Sources).

This chapter also presents data from the Trends in International Mathematics and Science Study (TIMSS) carried out under the aegis of the IEA and supported by NCES and the National Science Foundation. This survey was formerly known as the Third International Mathematics and Science Study. TIMSS, conducted every 4 years, is an assessment of fourth- and eighth-graders in mathematics and science. In 1995, TIMSS collected data for fourth and eighth grades. In 1999, TIMSS collected data for eighth grade only. With the 2003 data collection, TIMSS offers the first international trend comparisons in mathematics and science at grades 4 and 8. In 2003, the United States and a number of other countries participated in data collection at two grade levels: 25 nations collected data on fourth-graders, and 45 nations collected data on eighth-graders. For 15 of these nations, including the United States, TIMSS offers comparisons of fourth-grade student achievement between 1995 and 2003. For 34 of these nations, including the United States, TIMSS also offers comparisons of eighth-grade student achievement between 2003 and at least one prior data collection year, either 1995 or 1999.

This chapter includes additional information on performance scores of 15-year-olds in the areas of reading, mathematics, and science literacy from the Program for

International Student Assessment (PISA). PISA also measures general, or cross-curricular, competencies such as learning strategies. While this study focuses on OECD countries, data from some non-OECD countries are also provided.

The role that the United States plays in the world of higher education is illuminated by data on foreign students enrolled in U.S. institutions of higher education. The Institute of International Education provides estimates of the number of foreign students and their countries of origin.

Further information on survey methodologies is in Appendix A: Guide to Sources and in the publications cited in the table source notes.

## Population

Among the reporting OECD countries, Iceland had the largest percentage of young people ages 5 to 14 (16 percent in 2002) (table 394), followed by New Zealand (15 percent) and the United States (15 percent). Countries with relatively small proportions of persons these ages included Greece, Spain, Japan, and Italy (all at 10 percent). Turkey had the largest percentage of young people ages 5 to 14 (21 percent) among reporting OECD countries in 1999 (2002 data were not available for Turkey).

## Enrollments

In 2004, about 1.3 billion students were enrolled in schools around the world (table 392). Of these students, 685 million were in elementary-level programs, 503 million were in secondary programs, and 132 million were in higher education programs. Between 1990 and 2004, enrollment changes varied from region to region. Changes in elementary enrollment ranged from increases of 56 percent in Africa, 23 percent in Oceania, 16 percent in Asia, and 9 percent in Northern America (defined in UNESCO tabulations as including the United States, Canada, Greenland, Bermuda, St. Pierre, and Miquelon) to a 21 percent decrease in Europe and an 8 percent decrease in Central and South America (figure 26). Over the same period, enrollment increases at the secondary level outpaced increases at the primary (elementary) level. At the secondary level, enrollments increased by 158 percent in Central and South America, 99 percent in Africa, 85 percent in Oceania, 66 percent in Asia, 25 percent in Northern America, and 5 percent in Europe.

At the postsecondary level, developing areas of the world also had substantial increases in enrollment between 1990 and 2004 (table 392 and figure 26). Postsecondary enrollment rose by 173 percent in Africa, 154 percent in Asia, 103 percent in Oceania, 101 percent in Central and South America, 64 percent in Europe, and 16 percent in Northern America (figure 26). These increases are due to both growth in the proportion of the people attending postsecondary institutions and increases in the populations.

Postsecondary enrollment varied among countries due partially to differences in how postsecondary education is defined and the age at which postsecondary education is thought to begin. In 2002, the OECD countries with the highest proportion of 22- to 25-year-olds enrolled in postsecondary education were Finland (39 percent), followed by the Republic of Korea (32 percent), Denmark (29 percent), Sweden (28 percent), Norway (27 percent), and Poland (26 percent) (table 395). The United States' proportion was 25 percent.

In 2004–05, there were about 565,000 foreign students studying at U.S. colleges and universities (table 414). Fifty-eight percent of these students were from Asian countries. Between 1990 and 2005, the proportion of students at U.S. colleges who were nonresident aliens rose from 2.8 to 3.3 percent (table 210).

## Achievement

On the 2003 TIMSS assessment, U.S. fourth-grade students scored 518, on average, in mathematics, exceeding the international average of 495 for the 25 participating countries (table 399). (Average scale scores from the TIMSS assessment are based on a range of possible scores from 1 to 1,000.) U.S. fourth-graders were outperformed by their peers in 11 countries, including four Asian countries (Chinese Taipei, Hong Kong SAR, Japan, and Singapore) and seven European countries (Flemish Belgium, England, Hungary, Latvia, Lithuania, the Netherlands, and the Russian Federation). On the other hand, U.S. fourth-graders outscored students in 13 countries. In 2003, U.S. eighth-grade students scored 504 in mathematics, on average, exceeding the international average of 467 for the 45 participating countries (table 400). U.S. eighth-graders were outperformed by their peers in nine countries, including five Asian countries (Chinese Taipei, Hong Kong SAR, Japan, Korea, and Singapore) and four European countries (Flemish Belgium, Estonia, Hungary, and the Netherlands). On the other hand, U.S. eighth-graders outscored students in 25 countries.

In 2003, U.S. performance in mathematics literacy among 15-year-old students on the PISA assessment was lower than the average performance for 20 of the other 28 OECD countries for which comparable PISA results were reported (table 397). In problem solving, U.S. performance on PISA was lower than 22 of the other 28 OECD countries. The U.S. average score in reading literacy was not measurably different from the OECD average, and the U.S. average score in science literacy was below the OECD average.

## Degrees

Ratios of bachelor's degrees conferred per 100 persons at the typical age of graduation in 2004 ranged from 14 in Mexico and 19 in Belgium to 51 in Iceland and New Zealand and 55 in Finland (table 409 and figure 27). The ratio for the United States was 33. In 2004, women had higher bachelor's degree ratios than men in 21 out of 23 countries reporting data.

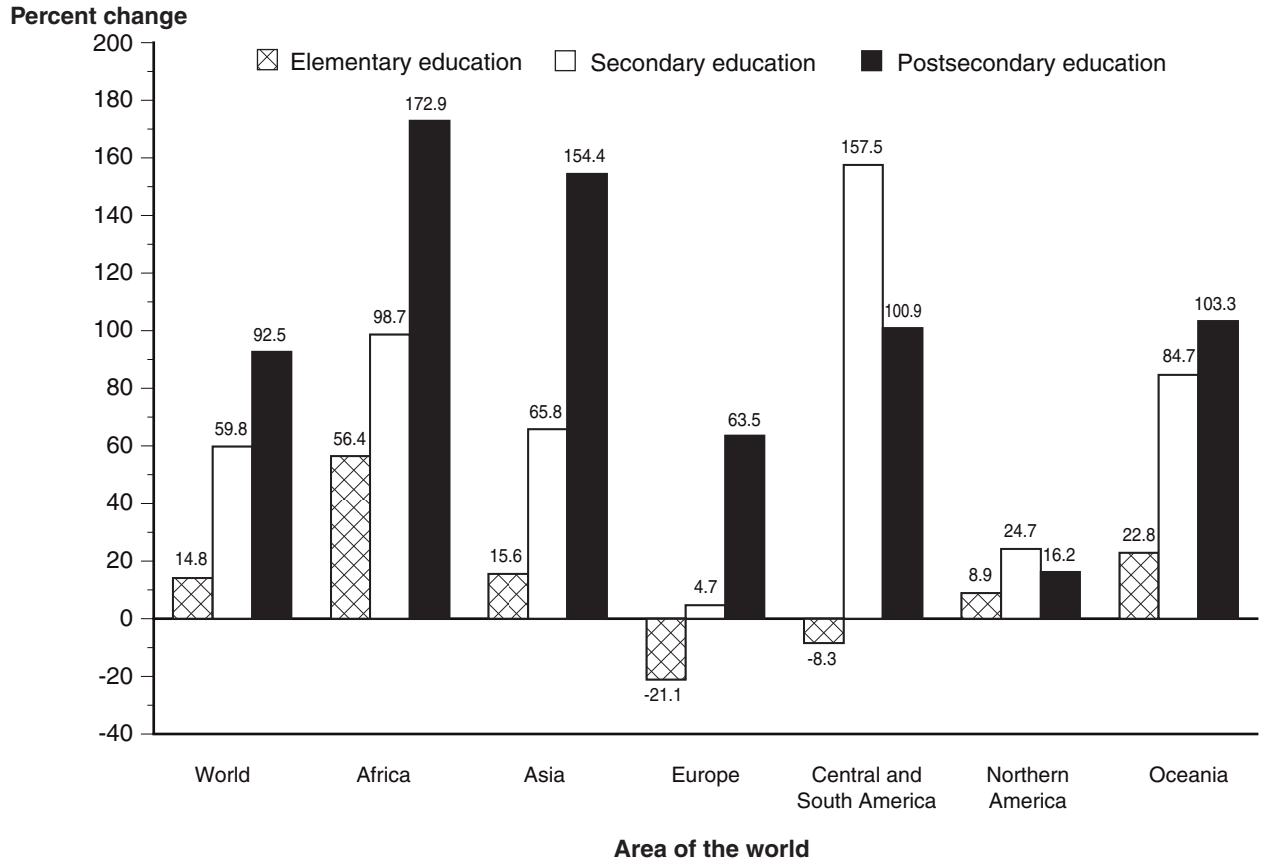
The percentages of undergraduate degrees awarded in science fields (including natural sciences, mathematics and computer science, and engineering) reported by OECD countries ranged from 11 percent in Denmark to 38 percent in Korea for 2003 (table 410). Germany, the Czech Republic, the United Kingdom, and Korea all awarded at least 30 percent of their undergraduate degrees in science fields. Denmark, Norway, Poland, Iceland, the United States, Japan, Portugal, and New Zealand awarded 20 percent or less of their undergraduate degrees in science fields. The proportion of graduate degrees awarded in science fields also ranged widely across countries in 2003 (table 411). Among the countries with the highest proportions of their graduate degrees in science were Korea (46 percent), Japan (39 percent), Germany (36 percent), and Spain (36 percent). Among the countries with the lowest proportions were Poland (4 percent), Hungary (8 percent), the Czech Republic (12 percent), Italy (13 percent), and the United States (14 percent).

## Finances

In 2003, per student expenditures at the elementary level of education were at least \$7,500 in six OECD countries (table 412). Specifically, Luxembourg spent approximately \$11,500 per student at the elementary level, the United States approximately \$8,300, Switzerland approximately \$8,100, Norway approximately \$8,000, and Denmark and Iceland each approximately \$7,800. At the secondary level, four countries had expenditures of over \$9,000 per student: Luxembourg (approximately \$17,100), Switzerland (approximately \$12,200), Norway (approximately \$10,900), and the United States (approximately \$9,600). At the higher education level, the following five countries had expenditures of at least \$14,000 per student in 2003: Switzerland (\$25,900), the United States (approximately \$24,100), Canada (\$19,992 in 2002), Sweden (approximately \$16,100), and Denmark (approximately \$14,000). These expenditures were adjusted to U.S. dollars using the purchasing-power-parity (PPP) index. This index is considered more stable and comparable than indexes using currency exchange rates.

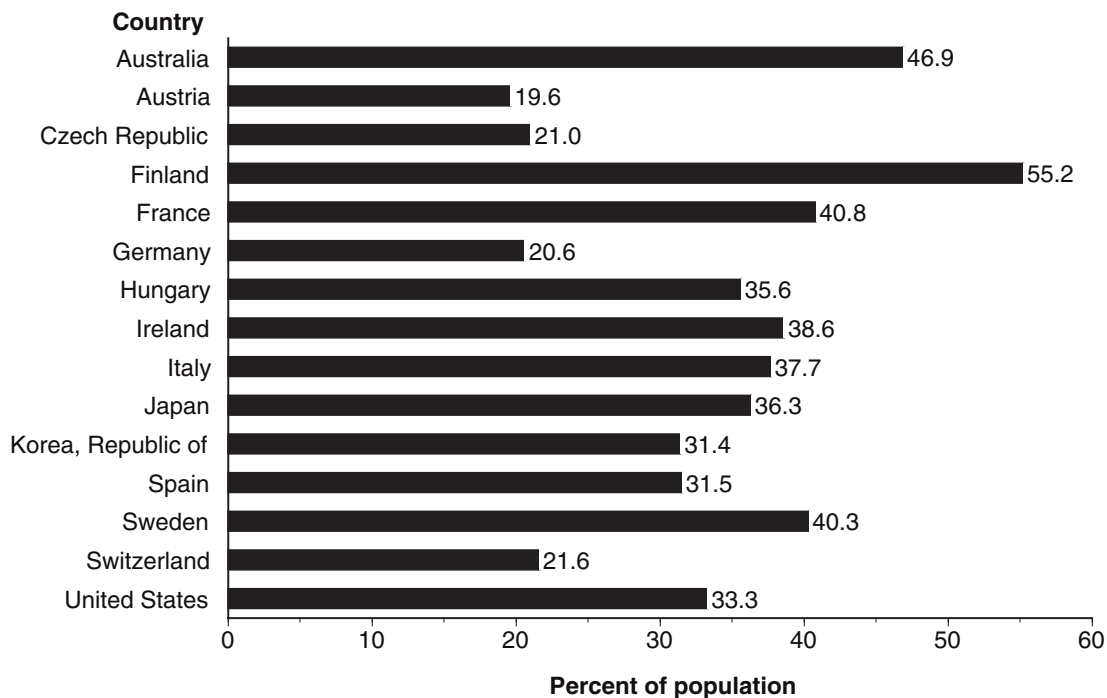
A comparison of public direct expenditures on education as a percentage of gross domestic product (GDP) in OECD countries shows that national investment in education in 2003 ranged from 3.5 percent in Japan and 3.6 percent in Turkey to 6.7 percent in Denmark and 7.5 percent in Iceland (table 413 and figure 28). Among reporting countries, the average public investment in education in 2003 was 5.1 percent of GDP. In the United States, the public expenditure on education as a percentage of GDP was 5.4 percent. The percentage of expenditures on education in the Russian Federation, a non-OECD country, was 3.7 percent.

**Figure 26. Percentage change in enrollment, by selected areas of the world and level of education: 1990 to 2004**



SOURCE: United Nations Educational, Scientific, and Cultural Organization (UNESCO), *Statistical Yearbook, 1999*, and unpublished tabulations.

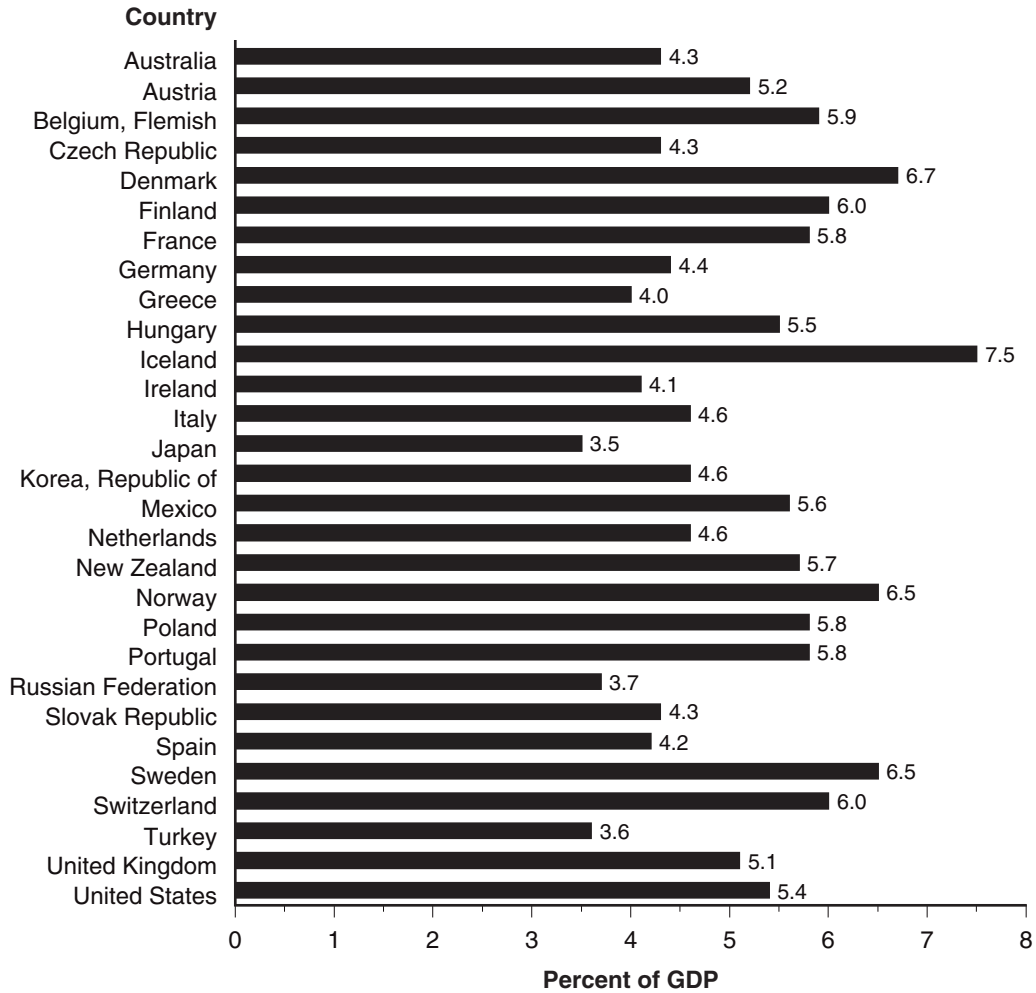
**Figure 27. Bachelor's degree recipients as a percentage of the population of the typical ages of graduation, by country: 2004**



NOTE: Includes graduates of any age.

SOURCE: Organization for Economic Cooperation and Development (OECD), Education Online Database.

**Figure 28. Public direct expenditures for education as a percentage of the gross domestic product (GDP), by country: 2003**



NOTE: Includes all government expenditures for education institutions, plus public subsidies to households for living costs that are not spent at education institutions.  
 SOURCE: Organization for Economic Cooperation and Development (OECD), *Education at a Glance, 2006*.

**Table 392. Selected population and finance statistics, school enrollment, and teachers, by major areas of the world: Selected years, 1980 through 2004**

Selected characteristic	World total <sup>1</sup>	Major areas of the world					
		Africa <sup>2</sup>	Asia <sup>3</sup>	Europe <sup>4</sup>	Central and South America <sup>5</sup>	Northern America <sup>5</sup>	Oceania <sup>6</sup>
1	2	3	4	5	6	7	8
<b>1980</b>							
Population, all ages <sup>7</sup> (in thousands) .....	4,447,090	475,714	2,641,312	693,075	359,307	255,109	22,573
Enrollment, all levels (in thousands) .....	856,971	78,036	495,155	131,633	87,291	60,041	4,815
First (primary) level <sup>8</sup> .....	541,556	62,134	336,174	52,471	65,414	22,611	2,752
Second level <sup>9</sup> .....	264,379	14,360	144,755	62,734	16,969	23,913	1,647
Third level <sup>10</sup> .....	51,037	1,542	14,227	16,428	4,908	13,516	416
Teachers, all levels (in thousands) .....	38,285	2,338	19,641	8,225	3,730	4,079	272
First (primary) level <sup>8</sup> .....	19,044	1,661	10,874	2,541	2,260	1,580	129
Second level <sup>9</sup> .....	15,398	584	7,554	4,387	1,083	1,679	112
Third level <sup>10</sup> .....	3,843	94	1,213	1,297	387	820	31
Public expenditures on education							
In millions of U.S. dollars .....	516,400	22,900	93,800	200,600	33,500	155,100	10,400
As a percent of gross national product .....	4.8	5.3	4.0	5.1 <sup>11</sup>	3.8	5.2	5.6
<b>1990</b>							
Population, all ages <sup>7</sup> (in thousands) .....	5,281,986	629,389	3,184,342	722,109	437,822	282,020	26,304
Enrollment, all levels (in thousands) .....	980,474	107,871	569,179	131,255	104,968	62,007	5,194
First (primary) level <sup>8</sup> .....	596,853	80,640	364,213	48,968	75,505	24,810	2,717
Second level <sup>9</sup> .....	315,008	24,378	181,652	63,366	22,194	21,569	1,849
Third level <sup>10</sup> .....	68,613	2,853	23,314	18,922	7,269	15,628	628
Teachers, all levels (in thousands) .....	47,105	3,791	24,455	9,398	5,131	4,000	330
First (primary) level <sup>8</sup> .....	22,626	2,390	12,692	2,812	3,006	1,582	143
Second level <sup>9</sup> .....	19,380	1,241	9,947	5,076	1,520	1,449	146
Third level <sup>10</sup> .....	5,100	160	1,816	1,509	605	969	41
Public expenditures on education							
In millions of U.S. dollars .....	986,500	25,700	199,800	367,500	44,600	330,300	18,600
As a percent of gross national product .....	4.8	5.6	3.7	5.1 <sup>11</sup>	4.1	5.4	5.6
<b>1995</b>							
Population, all ages <sup>7</sup> (in thousands) .....	5,686,775	719,497	3,437,791	728,034	476,641	296,644	28,168
Enrollment, all levels (in thousands) .....	1,103,756	130,794	644,609	137,839	116,821	66,510	7,183
First (primary) level <sup>8</sup> .....	649,480	95,928	394,304	47,344	82,279	26,501	3,124
Second level <sup>9</sup> .....	372,724	30,899	219,415	69,448	26,087	23,984	2,891
Third level <sup>10</sup> .....	81,552	3,966	30,890	21,047	8,455	16,026	1,167
Teachers, all levels (in thousands) .....	52,047	4,486	26,955	10,113	5,784	4,269	439
First (primary) level <sup>8</sup> .....	24,356	2,811	13,499	2,863	3,374	1,649	161
Second level <sup>9</sup> .....	21,746	1,471	11,273	5,561	1,696	1,528	217
Third level <sup>10</sup> .....	5,945	205	2,183	1,689	714	1,092	61
<b>2000</b>							
Enrollment, all levels (in thousands) .....	1,202,702	151,466	702,941	137,235	136,462	66,943	7,655
First (primary) level <sup>8</sup> .....	651,866	106,073	403,765 <sup>12</sup>	41,464	69,936	27,408	3,222
Second level <sup>9</sup> .....	452,828	39,027 <sup>12</sup>	259,692	70,397	55,213	25,110	3,390
Third level <sup>10</sup> .....	98,008	6,366 <sup>12</sup>	39,485	25,375 <sup>12</sup>	11,314	14,425	1,043 <sup>12</sup>
Teachers, all levels (in thousands) .....	57,211 <sup>13</sup>	5,177	30,137	10,360	6,443	4,648	‡
First (primary) level <sup>8</sup> .....	25,713 <sup>12</sup>	2,929	15,342	2,745	2,735	1,805	157 <sup>12</sup>
Second level <sup>9</sup> .....	24,780	1,891 <sup>12</sup>	12,371	5,746 <sup>12</sup>	2,850	1,686	236 <sup>12</sup>
Third level <sup>10</sup> .....	6,718 <sup>13</sup>	357 <sup>12</sup>	2,424	1,869 <sup>12</sup>	858	1,157	‡
<b>2004</b>							
Enrollment, all levels (in thousands) .....	1,320,808	182,388	781,369	135,935	141,007	72,082	8,027
First (primary) level <sup>8</sup> .....	685,275	126,157	420,861 <sup>12</sup>	38,640	69,256 <sup>12</sup>	27,025	3,335 <sup>12</sup>
Second level <sup>9</sup> .....	503,455	48,444 <sup>12</sup>	301,190	66,357	57,150 <sup>12</sup>	26,900	3,415 <sup>12</sup>
Third level <sup>10</sup> .....	132,077	7,787 <sup>12</sup>	59,318	30,937	14,600 <sup>12</sup>	18,157	1,276
Teachers, all levels (in thousands) .....	62,349	5,784	33,373	10,487	7,219	4,991	‡
First (primary) level <sup>8</sup> .....	26,474	3,332	15,542	2,638	2,891 <sup>12</sup>	1,896	‡
Second level <sup>9</sup> .....	27,398	2,149 <sup>12</sup>	14,364	5,669	3,181 <sup>12</sup>	1,787	‡
Third level <sup>10</sup> .....	8,477 <sup>12,13</sup>	303 <sup>12</sup>	3,468 <sup>12</sup>	2,180	1,148 <sup>12</sup>	1,307	‡

‡Reporting standards not met.

<sup>1</sup>Enrollment and teacher data exclude the Democratic People's Republic of Korea.<sup>2</sup>Excludes Rodrigues and other small islands.<sup>3</sup>Includes five countries of the former Union of Soviet Socialist Republics (U.S.S.R.), Arab states, and both the Asian and the European portions of Turkey.<sup>4</sup>Includes all countries of the former U.S.S.R. except Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, and Turkmenistan.<sup>5</sup>Northern America includes Bermuda, Canada, Greenland, St. Pierre and Miquelon, and the United States of America. Hawaii is included in Northern America rather than Oceania. Central and South America includes Latin America and the Caribbean.<sup>6</sup>Includes American Samoa, Australia, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, New Zealand, Niue, Norfolk Island, Pacific Islands, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and the Republic of Vanuatu.<sup>7</sup>Estimate of midyear population.<sup>8</sup>First-level enrollment generally consists of elementary school, grades 1–6.<sup>9</sup>Second-level enrollment includes general education, teacher training (at the second level), and technical and vocational education. This level generally corresponds to secondary education in the United States, grades 7–12.<sup>10</sup>Third-level enrollment includes college and university enrollment, and technical and vocational education beyond the high school level. There is considerable variation in reporting from country to country.<sup>11</sup>This figure is for Europe, not including the former U.S.S.R.<sup>12</sup>Includes relatively high proportion of imputed values for nonrespondent countries.<sup>13</sup>Includes estimates for Oceania not separately shown.

NOTE: Detail may not sum to totals because of rounding. Public expenditure data not available for 1995, 2000, and 2004.

SOURCE: United Nations Educational, Scientific, and Cultural Organization (UNESCO), *Statistical Yearbook, 1999*, and unpublished tabulations. (This table was prepared October 2006.)

**Table 393. Selected population and enrollment statistics for countries with populations over 10 million, by continent: Selected years, 1980 through 2004**

Country <sup>1</sup>	Midyear population (in millions)				Persons per square kilometer, 2004	First level <sup>2</sup>							
						Enrollment (in thousands)				Gross enrollment ratio <sup>3</sup>			
	1980	1990	2000	2004		1980	1990	2000	2004 <sup>4</sup>	1980	1990	2000	2004 <sup>4</sup>
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>World total<sup>7</sup></b> .....	<b>4,447</b>	<b>5,282</b>	<b>6,054</b>	<b>6,345</b>	<b>49</b>	<b>541,556</b>	<b>596,853</b>	<b>651,866</b>	<b>685,275</b>	<b>96</b>	<b>99.2</b>	<b>—</b>	<b>106</b>
<b>Africa</b>													
Algeria <sup>8</sup> .....	19	25	30	32	14	3,119	4,189	4,721	4,508	94	100	112	112
Angola .....	7	9	13	14	11	1,301	990 <sup>9</sup>	1,178 <sup>10</sup>	—	175	92	74 <sup>10</sup>	—
Burkina Faso .....	7	9	11	12	45	202	504	901	1,140	17	33	44	53
Cameroon .....	9	11	15	16	35	1,379	1,964	2,689 <sup>12</sup>	2,979	98	101	108 <sup>12</sup>	117
Cote d'Ivoire .....	8	12	16	17	54	1,025	1,415	2,047	2,046 <sup>11,13</sup>	75	67	79	—
Democratic Rep. of the Congo .....	27	37	51	55	24	4,196	4,562	7,856 <sup>10</sup>	7,874 <sup>10,11</sup>	92	94	100 <sup>10</sup>	100 <sup>10,11</sup>
Egypt <sup>15</sup> .....	44	56	64	69	69	4,663	6,964	6,651	8,019 <sup>19</sup>	37	33	64	93 <sup>19</sup>
Ethiopia .....	36	46	64	70	70	2,131	2,466	3,689	6,651	37	33	60	88 <sup>19</sup>
Ghana <sup>8</sup> .....	11	15	19	21	93	1,378 <sup>17</sup>	1,945	2,478	2,930 <sup>19</sup>	79	75	80	88 <sup>19</sup>
Kenya <sup>8</sup> .....	17	23	30	32	57	3,927	5,392	5,700 <sup>10</sup>	5,926	115	95	94 <sup>10</sup>	111
Madagascar .....	9	13	16	17	30	1,724	1,571	2,308	3,366	130	103	103	134
Malawi .....	6	9	11	11	119	810	1,401	—	2,842	60	68	—	125
Mali .....	7	8	11	12	10	291	395	1,127	1,397	26	26	61	64
Morocco <sup>8</sup> .....	19	24	29	31	69	2,172	2,484	3,842	4,070	83	67	94	106
Mozambique <sup>8</sup> .....	12	14	18	19	24	1,387 <sup>24</sup>	1,260	2,316	3,569	67	67	92	95
Niger .....	6	8	11	12	10	227	369	657	980	25	29	35	45
Nigeria <sup>8</sup> .....	72	96	127	140	154	12,117	13,607	—	21,111	109	91	—	99
Senegal .....	6	8	10	11	54	420	708	1,160	1,383	46	59	75	76
South Africa .....	29	37	43	46	38	4,353 <sup>25</sup>	6,952	7,445	7,470 <sup>11</sup>	90	122	111	105 <sup>11</sup>
Sudan <sup>8</sup> .....	19	24	—	34	14	1,464	2,043	2,800	3,208	50	53	59	60
Tunisia <sup>16</sup> .....	6	8	10	10	64	1,054	1,406	1,374	1,277 <sup>11</sup>	102	113	117	111
Uganda .....	13	17	22	26	132	1,292 <sup>29</sup>	2,470 <sup>25,29</sup>	6,559	7,152 <sup>19</sup>	50	74	136	118 <sup>19</sup>
United Republic of Tanzania .....	19	25	34	37	41	3,368	3,379	4,280 <sup>10</sup>	7,541 <sup>19</sup>	93	70	63 <sup>10</sup>	106 <sup>19</sup>
Zambia .....	6	8	10	11	14	1,042	1,461	1,590	2,251	90	99	78	99
Zimbabwe <sup>16</sup> .....	7	10	12	13	34	1,235	2,116	2,461	2,362 <sup>11</sup>	85	116	95	96 <sup>11</sup>
<b>Asia</b>													
Afghanistan <sup>8</sup> .....	16	15	—	—	—	1,116	623	500	4,430	34	27	15	93
Bangladesh .....	88	110	130	141	1,079	8,240	11,940	17,688	17,953	61	72	100	109
Cambodia .....	6	9	12	14	77	1,328	1,330	2,431 <sup>12</sup>	2,763	—	121	110	137
China <sup>16</sup> .....	999	1,155	1,261	1,297	139	146,270	122,414	125,757	120,999	113	125	114	118
India .....	689	851	1,016	1,080	363	73,873	99,118	—	125,569 <sup>11</sup>	83	97	—	107 <sup>11</sup>
Indonesia <sup>16</sup> .....	151	183	210	218	120	25,537	29,754	28,690	29,051 <sup>11</sup>	107	115	110	116 <sup>11</sup>
Iran, Islamic Republic of .....	39	59	64	67	41	4,799	9,370	7,968	7,307	98 <sup>30</sup>	112	86	103
Iraq .....	13	18	—	—	—	2,616	3,328	—	4,335	113	111	—	98
Japan <sup>16</sup> .....	117	124	127	128	351	11,827	9,373	7,395	7,269 <sup>11</sup>	101	100	101	100 <sup>11</sup>
Kazakhstan .....	15	20	—	15	6	1,064	1,197	1,190	1,080	84	87	—	109
Korea, North (DPR) .....	18	20	—	—	—	—	—	—	—	—	—	—	—
Korea, South (Republic of) <sup>16</sup> .....	38	43	47	48	488	5,658	4,869	4,030	4,185	110	105	101	105
Malaysia <sup>16</sup> .....	14	18	23	25	77	2,009	2,456	3,018	3,009 <sup>14</sup>	93	94	98	93 <sup>14</sup>
Myanmar .....	34	41	46	—	—	4,148	5,385	4,782	4,948 <sup>19</sup>	91	106	89	97 <sup>19</sup>
Nepal <sup>8</sup> .....	14	19	24	25	176	1,068	2,789	3,623	4,030 <sup>19</sup>	86	108	118	113 <sup>19</sup>
Pakistan .....	85	119	138	152	197	5,474 <sup>31</sup>	11,451 <sup>31</sup>	14,562 <sup>13</sup>	16,207 <sup>11</sup>	40	61	75 <sup>13</sup>	82
Philippines <sup>16</sup> .....	48	61	76	83	278	8,034 <sup>17</sup>	10,427	12,760	12,971 <sup>11</sup>	112	111	113	113 <sup>11</sup>
Saudi Arabia .....	10	16	21	23	11	927	1,877	2,308	2,386	61	73	68	67
Sri Lanka <sup>16</sup> .....	15	17	19	19	301	2,081	2,112	—	1,702 <sup>10,11</sup>	103	106	—	102 <sup>10,11</sup>
Syrian Arab Republic .....	9	12	16	18	97	1,556	2,452	2,835	2,193	100	108	109	123
Thailand <sup>16</sup> .....	47	56	61	62	122	7,393	6,957	6,179	6,113	99	99	95	99
Turkey <sup>16</sup> .....	44	56	65	72	93	5,656	6,862	8,015 <sup>10</sup>	7,904 <sup>10,11</sup>	96	99	101 <sup>10</sup>	95 <sup>10,11</sup>
Uzbekistan .....	16	21	25	26	63	1,391	1,778	—	2,441 <sup>10</sup>	81	81	—	100 <sup>10</sup>
Vietnam .....	54	67	79	82	252	7,887	8,862	9,751	8,350	109	103	106	98
Yemen .....	8	12	18	20	37	—	2,679 <sup>27</sup>	2,644 <sup>10</sup>	3,108	—	79 <sup>27</sup>	79 <sup>10</sup>	87
<b>Europe</b>													
Belarus <sup>8</sup> .....	10	10	10	10	47	750	615	551 <sup>10</sup>	404	104	95	109 <sup>10</sup>	101
Belgium <sup>16</sup> .....	10	10	10	10	344	842	719	772	762 <sup>11</sup>	104	101	105	105 <sup>11</sup>
Czech Republic <sup>16</sup> .....	10	10	10	10	132	647	546	631	567 <sup>11</sup>	96	96	104	102 <sup>11</sup>
France <sup>16</sup> .....	54	57	59	60	109	4,610	4,149	3,838	3,792 <sup>11</sup>	111	108	105	105 <sup>11</sup>
Germany <sup>16,34</sup> .....	78	83	83	83	237	3,636	3,431	3,019	3,040 <sup>11</sup>	101	104	104	98 <sup>11</sup>
Greece <sup>16</sup> .....	10	10	11	11	86	901	813	636	652 <sup>11</sup>	103	98	99	100 <sup>11</sup>
Hungary <sup>16,16</sup> .....	11	10	10	10	109	1,162	1,131	490	464 <sup>11</sup>	96	95	102	99 <sup>11</sup>
Italy <sup>16</sup> .....	56	57	58	58	196	4,423	3,056	2,810	2,779 <sup>11</sup>	100	103	101	101 <sup>11</sup>
Netherlands <sup>16</sup> .....	14	15	16	16	480	1,333	1,082	1,282	1,291 <sup>11</sup>	100	102	108	108 <sup>11</sup>
Poland <sup>16</sup> .....	36	38	39	38	125	4,167	5,189	3,221	2,983 <sup>11</sup>	100	98	100	100 <sup>11</sup>
Portugal <sup>16</sup> .....	10	10	10	10	114	1,240	1,020	802	768 <sup>11</sup>	123	123	121	118 <sup>11</sup>
Romania <sup>16</sup> .....	22	23	22	22	95	3,308	1,253	1,090	991 <sup>11</sup>	104	91	99	100 <sup>11</sup>
Russian Federation <sup>16</sup> .....	130	148	146	143	8	6,009	7,596	5,202	5,417 <sup>11</sup>	102	109	109	118 <sup>11</sup>
Spain <sup>16</sup> .....	38	39	39	41	83	3,610	2,820	2,505	2,488 <sup>11</sup>	109	109	105	107 <sup>11</sup>
Ukraine <sup>8</sup> .....	50	52	50	48	83	3,592	3,991	—	1,851	102	89	—	95
United Kingdom <sup>16</sup> .....	56	58	60	59	247	4,911	4,533	4,596	4,488 <sup>11</sup>	103	104	99	101 <sup>11</sup>
<b>North America</b>													
Canada <sup>16</sup> .....	25	28	31	32	3	2,185	2,376	2,456	2,482 <sup>10,14</sup>	99	103	100	101 <sup>10,14</sup>
Cuba .....	10	11	—	—	—	1,469	888	1,007	906	106	98	102	100
Guatemala .....	7	9	11	13	116	803	1,165	1,909	2,281 <sup>11</sup>	71	78	102	113
Mexico <sup>16</sup> .....	68	83	98	104	54	14,666	14,402	14,793	14,857 <sup>11</sup>	120	114	113	109 <sup>11</sup>
United States <sup>16</sup> .....	230	254	282	294	32	20,420	22,429	25,298	24,849 <sup>11</sup>	99	102	101	100 <sup>11</sup>
<b>South America</b>													
Argentina <sup>16</sup> .....	28	33	37	38	14	3,917	4,965	4,898	4,914 <sup>14</sup>	106	106	120	118 <sup>14</sup>
Brazil <sup>16</sup> .....	122	148	170	179	21	22,598	28,944	20,212	19,380 <sup>14</sup>	98	106	155	145 <sup>14</sup>
Chile <sup>16</sup> .....	11	13	15	16	21	2,185	1,991	1,799	1,714 <sup>11</sup>	109	100	103	99 <sup>11</sup>
Colombia .....	27	33	42	45	44	4,638	4,347	5,221	5,259	112	102	112	111
Ecuador .....	8	10	13	13	48	1,534	1,846	1,955	1,990	117			

**Table 393. Selected population and enrollment statistics for countries with populations over 10 million, by continent: Selected years, 1980 through 2004—Continued**

Second level <sup>2</sup>										Third level <sup>4</sup>									
Enrollment (in thousands)				Gross enrollment ratio <sup>5</sup>				Enrollment (in thousands)				Gross enrollment ratio <sup>5</sup>							
1980	1990	2000	2004 <sup>6</sup>	1980	1990	2000	2004 <sup>6</sup>	1980	1990	2000	2004 <sup>6</sup>	1980	1990	2000	2004 <sup>6</sup>				
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
264,379	315,008	452,828	503,455	47	52	—	65	51,037	66,613	98,008	132,077	12	14	—	24				
1,029	2,176	2,991	3,677	33	61	71	81	79	286	—	716	6	11	—	20				
191	186	400 <sup>10</sup>	—	21	12	18 <sup>10</sup>	—	2	7	—	13 <sup>10,11</sup>	#	1	—	1 <sup>10,11</sup>				
28	99	199	246 <sup>10</sup>	3	7	10	—	2	5	—	19 <sup>10</sup>	#	1	—	2 <sup>10</sup>				
234	500	—	1,161	18	28	44	—	12	33	68	84 <sup>13</sup>	2	3	5	5 <sup>13</sup>				
198	361	664 <sup>10</sup>	737 <sup>10,14</sup>	19	22	23 <sup>10</sup>	—	20	30 <sup>11</sup>	—	—	3	—	—	—				
862	1,097 <sup>15</sup>	—	—	24	21 <sup>15</sup>	—	—	80	—	—	—	1	—	—	—				
2,929	5,507	8,324 <sup>10</sup>	8,384 <sup>10,11</sup>	50	76	86 <sup>10</sup>	—	716	629 <sup>17,18</sup>	—	2,154 <sup>11</sup>	16	16	—	29 <sup>11</sup>				
426	866	1,495 <sup>10</sup>	4,506 <sup>19</sup>	9	14	18 <sup>10</sup>	—	14	34	87	172	#	1	2	1				
693	—	1,031	1,350 <sup>10,19</sup>	41	36	36	—	44 <sup>10,19</sup>	8	64	70	2	1	3	3				
428	618 <sup>21</sup>	1,251 <sup>10</sup>	2,420 <sup>10</sup>	20	24	31 <sup>10</sup>	—	48 <sup>10</sup>	13	35 <sup>20</sup>	99	108	2	2	3				
—	323 <sup>21</sup>	—	—	—	18	—	—	—	23	36	31	42	3	2	—				
26	61	488 <sup>10</sup>	505	5	8	36 <sup>10</sup>	—	29	3	5	—	5	1	—	3				
—	84	—	398	—	7	—	—	22	4 <sup>22</sup>	5	—	26	1	—	2				
797 <sup>23</sup>	1,194	—	1,851	26 <sup>23</sup>	35	—	—	112	256	310	344	6	11	10	11				
90 <sup>21</sup>	160	352	243	—	5	—	—	11	8	10 <sup>10</sup>	22	#	#	1 <sup>10</sup>	—				
33	77	108 <sup>10</sup>	158	5	7	6 <sup>10</sup>	—	8	1 <sup>25</sup>	26	13	#	#	1	—				
1,865	2,908	—	6,316	18	25	—	—	35	150	208 <sup>20,27</sup>	—	1,290	3	4 <sup>26,27</sup>	10				
96	—	263 <sup>10</sup>	360	11	16	18 <sup>10</sup>	—	19	14	—	52	3	3	—	5				
—	2,742	4,142	4,447 <sup>11</sup>	11	74	87	—	90 <sup>11</sup>	—	439 <sup>28</sup>	645	718 <sup>11</sup>	13	15	15 <sup>11</sup>				
384	732	—	1,293	16	24	—	—	33	29	60 <sup>17</sup>	—	—	2	3	—				
293	565	1,143 <sup>10</sup>	1,149 <sup>11</sup>	27	45	78	—	32	69	207	263 <sup>11</sup>	263 <sup>11</sup>	5	9	26 <sup>11</sup>				
73 <sup>21,29</sup>	245 <sup>21,29</sup>	—	651 <sup>10,19</sup>	5	5	—	—	6	18	63	88	1	1	3	—				
79	167	279 <sup>10</sup>	—	3	13	6 <sup>10</sup>	—	—	7 <sup>15</sup>	22	43	0	0	—	1				
102	190	283 <sup>10</sup>	364	16	24	24 <sup>10</sup>	—	—	15	25 <sup>10</sup>	—	1	2	2 <sup>10</sup>	—				
75	661	844	758 <sup>11</sup>	8	50	44	—	8	49	49 <sup>10</sup>	56 <sup>10,11</sup>	1	5	4 <sup>10</sup>	4 <sup>10,11</sup>				
137	182	—	594	10	9	—	—	16	—	24	20	—	2	1	—				
2,659	3,593	10,329	11,051 <sup>11</sup>	18	19	46	—	51 <sup>11</sup>	240	434	879	877 <sup>11</sup>	3	4	7				
18 <sup>21</sup>	264	397	632 <sup>10</sup>	—	32	19	—	29 <sup>10</sup>	1	7	25	45	2	3	3				
56,778	52,386	90,723	98,763	46	49	68	—	73	1,663	3,822	12,144	19,417	2	3	13				
32,748	54,180 <sup>21</sup>	—	81,050 <sup>11</sup>	30	44	—	—	52 <sup>11</sup>	3,545	4,951 <sup>15</sup>	—	11,295 <sup>11</sup>	5	6	—				
5,722	10,965	14,828	15,873 <sup>11</sup>	29	44	57	—	62 <sup>11</sup>	543	1,773 <sup>15</sup>	3,018	3,441 <sup>11</sup>	9	15	11 <sup>11</sup>				
2,718	5,085	9,091	10,913	45 <sup>30</sup>	55	78	—	82	184 <sup>17,30</sup>	312	734	1,955	10	10	22				
1,033	1,024 <sup>21</sup>	—	1,706	47	45	—	—	45	107	170 <sup>30</sup>	413	413	12 <sup>30</sup>	15	54				
9,558	11,026	8,606	8,131 <sup>11</sup>	93	97	102	—	102 <sup>11</sup>	2,412	2,899 <sup>15</sup>	3,972	4,032	31	48	22				
1,996	2,144	2,032	2,090	93	98	88	—	98	525	537	446 <sup>10</sup>	664	34	40	31 <sup>10</sup>				
4,286	4,560	3,959	3,646	78	90	94	—	91	648	1,691	3,003	3,223	15	39	78				
1,084	1,456	2,205	2,300 <sup>14</sup>	48	56	70	—	70 <sup>14</sup>	58	121	549	632 <sup>14</sup>	4	7	28				
1,066	1,281	2,318 <sup>10</sup>	2,589 <sup>19</sup>	22	23	39 <sup>10</sup>	—	41 <sup>19</sup>	163	196	553	555 <sup>10,14</sup>	5	5	12				
512	709	1,350 <sup>10</sup>	2,054 <sup>19</sup>	22	33	51	—	46 <sup>19</sup>	94	194	103	147	5	5	6				
2,166	4,345	5,772 <sup>13</sup>	7,272 <sup>14</sup>	23	25	35 <sup>13</sup>	—	34 <sup>17</sup>	288 <sup>30</sup>	—	—	521	3	3	3				
2,929	4,034	5,386	6,069 <sup>11</sup>	64	73	84 <sup>11</sup>	—	84 <sup>11</sup>	1,276	1,709	2,432	2,427 <sup>11</sup>	24	28	31				
349	893	1,914	2,037 <sup>11</sup>	29	44	68	—	68	62	154	—	574	7	12	28				
1,267	2,082	—	2,320 <sup>10,11</sup>	55	74	—	—	59 <sup>30</sup>	55 <sup>32</sup>	—	—	—	3	5	—				
604	914	—	2,249	46	52	43	—	63	140	222	—	—	17	18	—				
1,920	2,230	5,577	5,010	29	30	82	—	77	911 <sup>22</sup>	1,156 <sup>26</sup>	2,096	2,251 <sup>11</sup>	15	19 <sup>26</sup>	35				
2,218	3,808	—	5,742 <sup>10,11</sup>	35	47	—	—	85 <sup>10,11</sup>	246	750	1,607	1,918 <sup>11</sup>	5	13	24				
2,879	3,295	—	4,235 <sup>10</sup>	105	99	95 <sup>10</sup>	—	95 <sup>10</sup>	516	603	—	408	28	30	41				
3,847 <sup>21</sup>	3,236	8,321	9,589	42	32	67	—	73	115	130	750	845 <sup>10</sup>	2	10	15				
—	212 <sup>27</sup>	1,446	—	—	23 <sup>27</sup>	48	—	48	—	53 <sup>15</sup>	—	192	4	15	9				
760	968	981 <sup>10</sup>	970	98	93	84 <sup>10</sup>	—	93	340	335	438	507	39	48	56				
836	769	—	1,811 <sup>11</sup>	91	103	—	—	160 <sup>11</sup>	196	276	359	386	26	40	58				
1,161 <sup>30</sup>	1,268	1,004	1,000 <sup>11</sup>	99	91	95	—	97 <sup>11</sup>	118 <sup>33</sup>	260	260	287 <sup>11</sup>	17	16	30				
5,014	5,522	5,876	5,859 <sup>11</sup>	85	99	108	—	110 <sup>11</sup>	1,077	1,699	2,032	2,160	25	40	54				
8,457	7,398	8,388	8,447 <sup>11</sup>	81	98	99	—	100 <sup>11</sup>	1,624	2,049	—	—	27	34	—				
740	851	743	714 <sup>11</sup>	93	98	96	—	96 <sup>11</sup>	121	283	478	561 <sup>11</sup>	27	36	72 <sup>11</sup>				
357	514	—	1,030 <sup>11</sup>	70	79	—	—	103 <sup>11</sup>	101	102	331	390 <sup>11</sup>	14	14	52 <sup>11</sup>				
5,308	5,118	4,473	4,528 <sup>11</sup>	72	83	96	—	99 <sup>11</sup>	1,118	1,452	1,812	1,986	27	32	50				
1,391	1,402	1,403	1,415 <sup>11</sup>	93	120	124	—	122 <sup>11</sup>	360	479	504	527 <sup>11</sup>	29	40	55				
1,674	1,888	3,974	3,895 <sup>11</sup>	77	81	101	—	105 <sup>11</sup>	589	545	1,775	1,983 <sup>11</sup>	18	22	59 <sup>11</sup>				
398	670	813	766 <sup>11</sup>	37	67	114	—	109 <sup>11</sup>	92	186	388	401 <sup>11</sup>	11	23	50				
1,148	2,838	2,249	2,218 <sup>11</sup>	94	92	82	—	85 <sup>11</sup>	193	193	533	644 <sup>11</sup>	12	10	27				
12,991	13,858	13,858	14,522 <sup>11</sup>	96	93	83	—	83 <sup>11</sup>	5,700	5,100	7,224	8,622 <sup>10</sup>	46	52	64				
3,977	4,755	3,183	3,053 <sup>11</sup>	87	104	116	—	117 <sup>11</sup>	698	1,222	1,834	1,840	23	37	59				
3,406	3,408	—	4,446	94	93	—	—	93	1,684	1,652	—	2,465	42	47	66				
5,342	4,336	8,374	9,219 <sup>11</sup>	83	85	156	—	170 <sup>11</sup>	827	1,258	2,067	2,247	19	30	60				
2,323	2,292	2,621	2,622 <sup>10,14</sup>	88	101	106	—	105 <sup>10,14</sup>	1,173 <sup>35</sup>	1,917	1,212	1,193 <sup>10,14</sup>	57	95	59				
1,146	1,002	837	932	81	89	85	—	93	152	242	178	236 <sup>11</sup>	17	21	25				
1,72	295 <sup>15</sup>	504	699	19	23 <sup>15</sup>	37	—	49	51	70 <sup>26</sup>	—	115 <sup>10,11</sup>	8	8 <sup>26</sup>	10 <sup>10,11</sup>				
4,742	6,704	9,357	10,188 <sup>11</sup>	49	53	75	—	79 <sup>11</sup>	930	1,311	2,048	2,237 <sup>11</sup>	14	15	22 <sup>11</sup>				
21,585	19,270	23,087	23,854 <sup>11</sup>	91	93	95	—	95 <sup>11</sup>	12,097	13,710	13,596	16,900	56	75	82				
1,327	2,160	3,832	3,976 <sup>14</sup>	56	71	97	—	97 <sup>14</sup>											

**Table 394. School-age populations as a percentage of total population, by age group and country: Selected years, 1985 through 2002**

Country	5- to 14-year-olds as a percent of total population							15- to 19-year-olds as a percent of total population						
	1985 <sup>1</sup>	1990 <sup>1</sup>	1995 <sup>1</sup>	1996	1998	1999	2002	1985 <sup>2</sup>	1990 <sup>2</sup>	1995 <sup>2</sup>	1996	1998	1999	2002
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Australia.....	14	13	13	14	14	14	14	7	6	6	7	7	7	7
Belgium.....	11	11	11	12	12	12	12	6	5	5	6	6	6	6
Canada.....	13	12	12	13	14	14	—	6	5	5	7	7	7	—
Czech Republic.....	—	—	12	13	13	12	12	—	—	6	8	8	7	7
Denmark.....	12	10	10	11	11	12	12	6	6	5	6	6	5	5
Finland.....	11	12	11	13	13	13	12	6	5	5	6	6	6	6
France.....	13	12	12	13	13	13	12	6	6	5	7	7	7	7
Germany <sup>3</sup> .....	9	9	10	11	11	11	11	6	4	4	5	6	6	6
Greece.....	—	—	11	12	11	11	10	—	5	6	7	7	7	6
Iceland.....	16	15	14	16	16	16	16	7	7	6	8	8	8	7
Ireland.....	18	18	15	17	16	15	14	8	8	8	9	9	9	8
Italy.....	13	10	9	10	10	10	10	6	6	5	6	6	5	5
Japan.....	14	12	10	11	11	10	10	6	7	5	7	6	6	6
Korea, Republic of.....	—	—	14	15	14	14	14	—	—	7	9	9	8	7
Luxembourg.....	10	10	11	12	12	12	13	5	4	4	5	6	6	6
Netherlands.....	12	11	11	12	12	12	12	7	5	5	6	6	6	6
New Zealand.....	15	13	13	15	15	15	15	7	7	6	7	7	7	7
Norway.....	13	11	11	13	13	13	13	6	6	5	6	6	6	6
Russian Federation.....	—	—	14	16	—	14	12	—	—	6	7	—	8	8
Spain.....	15	13	10	11	11	10	10	7	7	6	8	7	7	6
Sweden.....	11	10	11	12	13	13	13	5	5	5	6	6	6	6
Switzerland.....	11	10	10	12	12	12	12	6	5	5	6	6	6	6
Turkey.....	21	21	20	20	21	21	—	9	9	9	11	11	11	—
United Kingdom.....	11	11	12	13	13	13	13	6	5	5	6	6	6	6
United States.....	13	13	13	15	14	15	15	6	5	6	7	7	7	7

—Not available.

<sup>1</sup>Data are for the 5- to 13-year-old population.<sup>2</sup>Data are for the 14- to 17-year-old population.<sup>3</sup>Data for 1985 are for the former West Germany.SOURCE: Organization for Economic Cooperation and Development (OECD), *Education at a Glance*, selected years, 1987 through 2004. (This table was prepared April 2005.)



**Table 395. Percentage of population enrolled in secondary and postsecondary institutions, by age group and country: Selected years, 1985 through 2003**

Country	Secondary schools, 16 years old, 2003	Secondary schools, 17 years old, 2003	Postsecondary education											
			18 to 21 years old				22 to 25 years old				26 to 29 years old			
			1985	1990	1999	2002	1985	1990	1999	2002	1985	1990	1999	2002
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Australia.....	93	80	—	—	31	35	—	—	15	20	—	—	8	10
Austria.....	90	77	—	—	15	14	—	—	20	17	—	—	12	8
Belgium <sup>1</sup> .....	102	104	25	—	42	42	7	—	15	18	2	—	3	5
Canada.....	—	—	—	—	27	—	—	—	18	—	—	—	7	—
Czech Republic.....	100	98	—	—	17	20	—	—	12	16	—	—	4	5
Denmark.....	93	86	7	7	8	10	16	18	27	29	8	9	15	16
Finland.....	96	95	9	14	23	21	17	21	35	39	8	10	18	19
France.....	96	89	19	25	35	35	10	12	20	20	4	4	5	5
Germany <sup>2</sup> .....	97	91	9	9	11	12	—	16	19	20	9	10	11	12
Greece.....	97	68	—	—	54	46	—	—	7	24	—	—	2	11
Hungary.....	94	89	—	—	20	24	—	—	14	18	—	—	5	7
Iceland.....	93	83	—	—	7	10	—	—	21	23	—	—	9	11
Ireland.....	96	76	—	21	33	—	—	—	11	—	—	—	3	—
Italy.....	88	81	—	—	22	24	—	—	21	21	—	—	7	8
Japan.....	97	95	—	—	—	—	—	—	—	—	—	—	—	—
Korea, Republic of.....	98	93	—	—	51	56	—	—	26	32	—	—	6	7
Mexico.....	50	38	—	—	12	15	—	—	8	7	—	—	1	3
Netherlands.....	97	81	14	18	26	28	12	13	20	22	6	5	5	6
New Zealand.....	85	67	—	21	29	30	—	15	14	17	—	—	8	8
Norway.....	94	93	9	14	19	17	14	17	28	27	6	8	12	13
Poland.....	97	94	—	—	21	26	—	—	21	26	—	—	5	7
Portugal.....	79	74	6	—	25	25	5	—	17	20	2	—	6	8
Spain.....	92	81	15	21	32	35	11	14	24	24	4	5	8	8
Sweden.....	97	97	8	9	16	17	11	11	25	28	7	6	12	13
Switzerland.....	90	86	6	6	10	10	11	12	17	18	5	6	9	9
Turkey.....	53	31	—	7	14	—	—	4	9	—	—	2	4	—
United Kingdom.....	94	81	15	16	29	30	7	11	12	12	—	—	6	6
United States.....	94	82	37	41	44	46	15	17	18	25	8	9	11	11

—Not available.

<sup>1</sup>Data for Flemish Belgium only.<sup>2</sup>Data for 1985 are for the former West Germany.

NOTE: Data in this table refer to programs classified by the Organization for Economic Cooperation and Development (OECD) as International Standard Classification of Education (ISCED) level 3, level 5A (first and second award), level 5B, and level 6. The table includes both full-time and part-time students. ISCED 3 corresponds to secondary education in the United States. ISCED 5A (first and second award), ISCED 5B, and ISCED 6 correspond to 2-year and 4-year college undergraduate and graduate programs in the United States. Some increases in enrollment rates may be due to more

complete reporting by countries. Enrollment figures may not be directly comparable due to differing definitions of postsecondary education and the age at which postsecondary education begins. Differences in reference dates between enrollment and population data can result in enrollment rates that exceed 100 percent.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education at a Glance*, selected years, 1987 through 2004; and Education Online Database, 2003, retrieved March 20, 2006, from <http://stats.oecd.org/WBOS/Default.aspx>. U.S. Department of Commerce, Census Bureau, Current Population Survey (CPS), October 2000 through October 2003. (This table was prepared March 2006.)

Table 396. Pupils per teacher in public and private elementary and secondary schools, by level of education and country: Selected years, 1985 through 2004

Country	Elementary								Junior high school (lower secondary)								Senior high school (upper secondary)							
	1985	1990	1996	2000	2001	2002	2003	2004	1985	1990	1996	2000	2001	2002	2003	2004	1985	1990	1996	2000	2001	2002	2003	2004
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Australia.....	13.8 <sup>1</sup>	—	18.1	17.3	17.0	16.9	16.6	16.4	—	—	—	—	—	12.5 <sup>2,3</sup>	12.4 <sup>2,3</sup>	12.3 <sup>2,3</sup>	3.2	—	—	—	—	12.5 <sup>2,3</sup>	12.4 <sup>2,3</sup>	12.3 <sup>2,3</sup>
Austria.....	11.3	11.6	12.7	—	14.3	14.4	14.4	15.1	9.2	7.7	9.2	—	9.8	9.8	10.0	10.4	15.2	12.4	8.5	—	9.9	10.3	10.2	11.0
Belgium.....	—	—	—	15.0	13.4	13.1	13.1	12.9	—	—	—	9.7 <sup>2</sup>	9.8 <sup>2</sup>	9.3 <sup>2</sup>	10.6	10.6	—	—	—	9.7 <sup>2</sup>	9.8 <sup>2</sup>	9.3 <sup>2</sup>	9.6	9.2
Canada.....	18.1	17.1	17.0	18.1	18.3	—	—	—	16.0	15.5	20.0	18.1	18.4	—	—	—	16.0	15.3	19.5	19.5	17.2	—	—	—
Denmark.....	12.7	11.2	11.2	10.4	10.0	10.9 <sup>4</sup>	10.8 <sup>4</sup>	11.3 <sup>4</sup>	10.2	9.3	10.1	11.4	11.1	10.9 <sup>4</sup>	10.8 <sup>4</sup>	11.3 <sup>4</sup>	14.8	13.3	12.1	14.4	13.9	14.2	13.4	—
France.....	—	—	19.5	19.8	19.5	19.4	19.4	19.4	—	—	—	14.7	13.5	13.7	13.7	14.1	—	—	—	10.4	11.2	10.6	10.6	10.3
Germany <sup>5</sup> .....	20.7	20.3	20.9	19.8	19.4	18.9	18.7	18.8	16.9	14.6	16.0	15.7	15.7	15.7	15.6	15.6	23.7	21.0	13.1	13.9	13.7	13.6	13.7	13.9
Ireland.....	—	—	22.6	21.5	20.3	19.5	18.7	18.3	—	—	—	15.9 <sup>2</sup>	15.2 <sup>2</sup>	14.3 <sup>2</sup>	13.7 <sup>2</sup>	14.3 <sup>2</sup>	7.2	8.3	—	15.9 <sup>2</sup>	15.2 <sup>2</sup>	14.3 <sup>2</sup>	13.7 <sup>2</sup>	14.3 <sup>2</sup>
Italy.....	12.8	10.7	11.2	11.0	10.8	10.6	10.9	10.7	9.6	8.5	10.8	10.4	9.9	9.9	10.3	10.3	10.8	10.7	9.8	10.2	10.4	10.3	10.8	11.5
Japan.....	—	20.8 <sup>1</sup>	19.7	20.9	20.6	20.3	19.9	19.6	—	18.6	16.2	16.8	16.6	16.2	15.7	15.3	—	16.2	15.6	14.0	14.0	13.7	13.5	13.2
Netherlands.....	20.2	19.2	20.0	16.8	17.2	17.0	16.0	15.9	12.7	12.4	—	17.1 <sup>2</sup>	17.1 <sup>2</sup>	15.9 <sup>2</sup>	15.7 <sup>2</sup>	15.8 <sup>2</sup>	—	—	—	17.1 <sup>2</sup>	17.1 <sup>2</sup>	15.9 <sup>2</sup>	15.7 <sup>2</sup>	15.8 <sup>2</sup>
New Zealand.....	20.1	19.1	22.0	20.6	19.6	19.6	19.9	16.7	—	—	18.1	19.9	18.7	19.4	18.8	17.3	—	—	14.1	13.1	12.8	13.8	10.9	12.5
Norway.....	—	—	—	12.4	11.6	11.5	11.7 <sup>1</sup>	11.9 <sup>1</sup>	—	—	—	9.9	9.3	10.3	10.4 <sup>1</sup>	10.5 <sup>1</sup>	—	—	—	9.7	9.2	9.2	9.2 <sup>1</sup>	9.6 <sup>1</sup>
Portugal.....	—	—	—	12.1	11.6	11.0	—	11.1	—	—	—	10.4	9.9	9.3	—	10.0	—	—	—	7.9	8.0	7.5	—	7.3
Spain.....	26.8	21.2	18.0	14.9	14.7	14.6	14.3	14.3	21.4	18.8	17.8	11.9 <sup>2</sup>	11.0 <sup>2</sup>	13.7	13.3	12.9	15.3	14.8	14.2	11.9 <sup>2</sup>	11.0 <sup>2</sup>	8.3	7.9	8.0
Sweden.....	11.6	10.6	12.7	12.8	12.4	12.5	12.3	12.1	10.8	10.2	12.2	12.8	12.4	12.2	12.1	11.9	13.1	11.9	15.2	15.2	16.6	14.1	14.1	14.0
Turkey.....	31.1	30.6	—	30.5	29.8	27.5	25.9	26.5	41.3	48.4	—	—	†	†	†	†	11.0	12.1	—	14.0	17.2	17.7	18.0	16.9
United Kingdom	19.7	22.0	21.3	21.2	20.5	19.9	20.0 <sup>3</sup>	21.1	—	18.5	16.0	17.6 <sup>3</sup>	17.3 <sup>3</sup>	17.6 <sup>3</sup>	17.4 <sup>3</sup>	17.1 <sup>3</sup>	11.1	13.9	15.3	12.5 <sup>3</sup>	12.3 <sup>3</sup>	12.5 <sup>3</sup>	12.6 <sup>3</sup>	12.3 <sup>3</sup>
United States....	17.0	15.6	16.9	15.8	16.3	15.5	15.5	15.0	16.5	15.9	17.5	16.3	17.0	15.5	15.5	15.2	16.2	15.8	14.7	14.1	14.8	15.6	15.6	16.0

—Not available.

†Not applicable.

<sup>1</sup>Public schools only.<sup>2</sup>Junior high school and senior high school data are combined.<sup>3</sup>Includes only general programs in junior high school and senior high school.<sup>4</sup>Elementary school data and junior high school data are combined.<sup>5</sup>Data for 1985 are for the former West Germany.

NOTE: In the U.S. data in this table, elementary corresponds to grades 1 through 6, junior high school corresponds to grades 7 through 9, and senior high school corresponds to grades 10 through 12.

SOURCE: Organization for Economic Cooperation and Development (OECD), Education Online Database; *Annual National Accounts, Vol. 1, 1997*; and *Education at a Glance, 2002 through 2006*. (This table was prepared September 2006.)

**Table 397. Average mathematics literacy, reading literacy, science literacy, and problem-solving scores of 15-year-olds, by sex and country: 2003**

Country	Mathematics literacy			Reading literacy			Science literacy			Problem solving		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1	2	3	4	5	6	7	8	9	10	11	12	13
<b>OECD total<sup>1</sup></b> .....	<b>489 (1.1)</b>	<b>494 (1.3)</b>	<b>484 (1.3)</b>	<b>488 (1.2)</b>	<b>472 (1.4)</b>	<b>503 (1.3)</b>	<b>496 (1.1)</b>	<b>499 (1.3)</b>	<b>493 (1.3)</b>	<b>490 (1.2)</b>	<b>489 (1.4)</b>	<b>490 (1.3)</b>
<b>OECD average<sup>2</sup></b> .....	<b>500 (0.6)</b>	<b>506 (0.8)</b>	<b>494 (0.8)</b>	<b>494 (0.6)</b>	<b>477 (0.7)</b>	<b>511 (0.7)</b>	<b>500 (0.6)</b>	<b>503 (0.7)</b>	<b>497 (0.8)</b>	<b>500 (0.6)</b>	<b>499 (0.8)</b>	<b>501 (0.8)</b>
Australia .....	524 (2.1)	527 (3.0)	522 (2.7)	525 (2.1)	506 (2.8)	545 (2.6)	525 (2.1)	525 (2.9)	525 (2.8)	530 (2.0)	527 (2.7)	533 (2.5)
Austria .....	506 (3.3)	509 (4.0)	502 (4.0)	491 (3.8)	467 (4.5)	514 (4.2)	491 (3.4)	490 (4.3)	492 (4.2)	506 (3.2)	505 (3.9)	508 (3.8)
Belgium .....	529 (2.3)	533 (3.4)	525 (3.2)	507 (2.6)	489 (3.8)	526 (3.3)	509 (2.5)	509 (3.6)	509 (3.5)	525 (2.2)	524 (3.1)	527 (3.2)
Canada .....	532 (1.8)	541 (2.1)	530 (1.9)	528 (1.7)	514 (2.0)	546 (1.8)	519 (2.0)	527 (2.3)	516 (2.2)	529 (1.7)	533 (2.0)	532 (1.8)
Czech Republic .....	516 (3.5)	524 (4.3)	509 (4.4)	489 (3.5)	473 (4.1)	504 (4.4)	523 (3.4)	526 (4.3)	520 (4.1)	516 (3.4)	520 (4.1)	513 (4.3)
Denmark .....	514 (2.7)	523 (3.4)	506 (3.0)	492 (2.8)	479 (3.3)	505 (3.0)	475 (3.0)	484 (3.6)	467 (3.2)	517 (2.5)	519 (3.1)	514 (2.9)
Finland .....	544 (1.9)	548 (2.5)	541 (2.1)	543 (1.6)	521 (2.2)	565 (2.0)	548 (1.9)	545 (2.6)	551 (2.2)	548 (1.9)	543 (2.5)	553 (2.2)
France .....	511 (2.5)	515 (3.6)	507 (2.9)	496 (2.7)	476 (3.8)	514 (3.2)	511 (3.0)	511 (4.1)	511 (3.5)	519 (2.7)	519 (3.8)	520 (2.9)
Germany .....	503 (3.3)	508 (4.0)	499 (3.9)	491 (3.4)	471 (4.2)	513 (3.9)	502 (3.6)	506 (4.5)	500 (4.2)	513 (3.2)	511 (3.9)	517 (3.7)
Greece .....	445 (3.9)	455 (4.8)	436 (3.8)	472 (4.1)	453 (5.1)	490 (4.0)	481 (3.8)	487 (4.8)	475 (3.9)	449 (4.0)	449 (4.9)	448 (4.1)
Hungary .....	490 (2.8)	494 (3.3)	486 (3.3)	482 (2.5)	467 (3.2)	498 (3.0)	503 (2.8)	503 (3.3)	504 (3.3)	501 (2.9)	499 (3.4)	503 (3.4)
Iceland .....	515 (1.4)	508 (2.3)	523 (2.2)	492 (1.6)	464 (2.3)	522 (2.2)	495 (1.5)	490 (2.4)	500 (2.4)	505 (1.4)	490 (2.2)	520 (2.5)
Ireland .....	503 (2.4)	510 (3.0)	495 (3.4)	515 (2.6)	501 (3.3)	530 (3.7)	505 (2.7)	506 (3.1)	504 (3.9)	498 (2.3)	499 (2.8)	498 (3.5)
Italy .....	466 (3.1)	475 (4.6)	457 (3.8)	476 (3.0)	455 (5.1)	495 (3.4)	486 (3.1)	490 (5.2)	484 (3.6)	470 (3.1)	467 (5.0)	471 (3.5)
Japan .....	534 (4.0)	539 (5.8)	530 (4.0)	498 (3.9)	487 (5.5)	509 (4.1)	548 (4.1)	550 (6.0)	546 (4.1)	547 (4.1)	546 (5.7)	548 (4.1)
Korea, Republic of .....	542 (3.2)	552 (4.4)	528 (5.3)	534 (3.1)	525 (3.7)	547 (4.3)	538 (3.5)	546 (4.7)	527 (5.5)	550 (3.1)	554 (4.0)	546 (4.8)
Luxembourg .....	493 (1.0)	502 (1.9)	485 (1.5)	479 (1.5)	463 (2.6)	496 (1.8)	483 (1.5)	489 (2.5)	477 (1.9)	494 (1.4)	495 (2.4)	492 (1.9)
Mexico .....	385 (3.6)	391 (4.3)	380 (4.1)	400 (4.1)	389 (4.6)	410 (4.6)	405 (3.5)	410 (3.9)	400 (4.2)	384 (4.3)	387 (5.0)	382 (4.7)
Netherlands .....	538 (3.1)	540 (4.1)	535 (3.5)	513 (2.9)	503 (3.7)	524 (3.2)	524 (3.1)	527 (4.2)	522 (3.6)	520 (3.0)	522 (3.6)	518 (3.6)
New Zealand .....	523 (2.3)	531 (2.8)	516 (3.2)	522 (2.5)	508 (3.1)	535 (3.3)	521 (2.4)	529 (3.0)	513 (3.4)	533 (2.2)	531 (2.6)	534 (3.1)
Norway .....	495 (2.4)	498 (2.8)	492 (2.9)	500 (2.8)	475 (3.4)	525 (3.4)	484 (2.9)	485 (3.5)	483 (3.3)	490 (2.6)	486 (3.1)	494 (3.2)
Poland .....	490 (2.5)	493 (3.0)	487 (2.9)	497 (2.9)	477 (3.6)	516 (3.2)	498 (2.9)	501 (3.2)	494 (3.4)	487 (2.8)	486 (3.4)	487 (3.0)
Portugal .....	466 (3.4)	472 (4.2)	460 (3.4)	478 (3.7)	459 (4.3)	495 (3.7)	468 (3.5)	471 (4.0)	465 (3.6)	470 (3.9)	470 (4.6)	470 (3.9)
Slovak Republic .....	498 (3.3)	507 (3.9)	489 (3.6)	469 (3.1)	453 (3.8)	486 (3.3)	495 (3.7)	502 (4.3)	487 (3.9)	492 (3.4)	495 (4.1)	488 (3.6)
Spain .....	485 (2.4)	490 (3.4)	481 (2.2)	481 (2.6)	461 (3.8)	500 (2.5)	487 (2.6)	489 (3.9)	485 (2.6)	482 (2.7)	479 (3.6)	485 (2.6)
Sweden .....	509 (2.6)	512 (3.0)	506 (3.1)	514 (2.4)	496 (2.8)	533 (2.9)	506 (2.7)	509 (3.1)	504 (3.5)	509 (2.4)	504 (3.0)	514 (2.8)
Switzerland .....	527 (3.4)	535 (4.7)	518 (3.6)	499 (3.3)	482 (4.4)	517 (3.1)	513 (3.7)	518 (5.0)	508 (3.9)	521 (3.0)	520 (4.0)	523 (3.3)
Turkey .....	423 (6.7)	430 (7.9)	415 (6.7)	441 (5.8)	426 (6.8)	459 (6.1)	434 (5.9)	434 (6.7)	434 (6.4)	408 (6.0)	408 (7.3)	406 (5.8)
United Kingdom <sup>3</sup> .....	508 (2.4)	512 (2.9)	505 (3.9)	507 (2.5)	492 (3.1)	520 (3.6)	518 (2.5)	520 (3.1)	517 (4.0)	510 (2.4)	506 (3.0)	514 (3.5)
United States .....	483 (2.9)	486 (3.3)	480 (3.2)	495 (3.2)	479 (3.7)	511 (3.5)	491 (3.1)	494 (3.5)	489 (3.5)	477 (3.1)	477 (3.4)	478 (3.5)
<b>Non-OECD countries</b>												
Brazil .....	356 (4.8)	365 (6.1)	348 (4.4)	403 (4.6)	384 (5.8)	419 (4.1)	390 (4.3)	393 (5.3)	387 (4.3)	371 (4.8)	374 (6.0)	368 (4.3)
Hong Kong-China .....	550 (4.5)	552 (6.5)	548 (4.6)	510 (3.7)	494 (5.3)	525 (3.5)	539 (4.3)	538 (6.1)	541 (4.2)	548 (4.2)	545 (6.2)	550 (4.0)
Indonesia .....	360 (3.9)	362 (3.9)	358 (4.6)	382 (3.4)	369 (3.4)	394 (3.9)	395 (3.2)	396 (3.1)	394 (3.8)	361 (3.3)	358 (3.1)	365 (4.0)
Latvia .....	483 (3.7)	485 (4.8)	482 (3.6)	491 (3.7)	470 (4.5)	509 (3.7)	489 (3.9)	487 (5.1)	491 (3.9)	483 (3.9)	481 (5.1)	484 (4.0)
Liechtenstein .....	536 (4.1)	550 (7.2)	521 (6.3)	525 (3.6)	517 (7.2)	534 (6.5)	525 (4.3)	538 (7.7)	512 (7.3)	529 (3.9)	535 (6.6)	524 (5.9)
Macao-China .....	527 (2.9)	538 (4.8)	517 (3.3)	498 (2.2)	491 (3.6)	504 (2.8)	525 (3.0)	529 (5.0)	521 (4.0)	532 (2.5)	538 (4.3)	527 (3.2)
Russian Federation .....	468 (4.2)	473 (5.3)	463 (4.2)	442 (3.9)	428 (4.7)	456 (3.7)	489 (4.1)	494 (5.3)	485 (4.0)	479 (4.6)	480 (5.9)	477 (4.4)
Serbia and Montenegro .....	437 (3.8)	437 (4.2)	436 (4.5)	412 (3.6)	390 (3.7)	433 (3.9)	436 (3.5)	434 (3.7)	439 (4.2)	420 (3.3)	416 (3.8)	424 (3.9)
Thailand .....	417 (3.0)	415 (4.0)	419 (3.4)	420 (2.8)	396 (3.7)	439 (3.0)	429 (2.7)	425 (3.7)	433 (3.1)	425 (2.7)	418 (3.9)	431 (3.1)
Tunisia .....	359 (2.5)	365 (2.7)	353 (2.9)	375 (2.8)	362 (3.3)	387 (3.3)	385 (2.6)	380 (2.7)	390 (3.0)	345 (2.1)	346 (2.5)	343 (2.5)
Uruguay .....	422 (3.3)	428 (4.0)	416 (3.8)	434 (3.4)	414 (4.5)	453 (3.7)	438 (2.9)	441 (3.7)	436 (3.6)	411 (3.7)	412 (4.6)	409 (4.2)

<sup>1</sup>Illustrates how a country compares with the OECD area as a whole. Computed taking the OECD countries as a single entity, to which each country contributes in proportion to the number of 15-year-olds enrolled in its schools.

<sup>2</sup>Refers to the mean of the data values for all OECD countries, to which each country contributes equally, regardless of the absolute size of the student population of each country.

<sup>3</sup>Response rate is too low to ensure comparability with other countries.

NOTE: Scales were designed to have an average score of 500 points and standard deviation of 100. Possible scores range from 0 to 1000. Standard errors appear in parentheses.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2003, *Learning for Tomorrow's World, 2003*, and *Problem Solving for Tomorrow's World, 2003*. U.S. Department of Education, National Center for Education Statistics, PISA, 2003, *International Outcomes of Learning in Mathematics Literacy and Problem Solving, 2003*. (This table was prepared March 2005.)

**Table 398. Mean scores and percentage distribution of 15-year-olds scoring at each mathematics literacy proficiency level, by country: 2003**

Country	Mean score	Percentage distribution at levels of proficiency						
		Below level 1 <sup>1</sup>	Level 1 <sup>2</sup>	Level 2 <sup>3</sup>	Level 3 <sup>4</sup>	Level 4 <sup>5</sup>	Level 5 <sup>6</sup>	Level 6 <sup>7</sup>
1	2	3	4	5	6	7	8	9
<b>OECD total<sup>8</sup></b> .....	<b>489 (1.07)</b>	<b>11.0 (0.32)</b>	<b>14.6 (0.32)</b>	<b>21.2 (0.28)</b>	<b>22.4 (0.32)</b>	<b>17.6 (0.25)</b>	<b>9.6 (0.19)</b>	<b>3.5 (0.19)</b>
<b>OECD average<sup>9</sup></b> .....	<b>500 (0.63)</b>	<b>8.2 (0.17)</b>	<b>13.2 (0.16)</b>	<b>21.1 (0.15)</b>	<b>23.7 (0.18)</b>	<b>19.1 (0.17)</b>	<b>10.6 (0.13)</b>	<b>4.0 (0.10)</b>
Australia.....	524 (2.15)	4.3 (0.45)	10.0 (0.51)	18.6 (0.62)	24.0 (0.71)	23.3 (0.64)	14.0 (0.53)	5.8 (0.45)
Austria.....	506 (3.27)	5.6 (0.70)	13.2 (0.84)	21.6 (0.90)	24.9 (1.14)	20.5 (0.84)	10.5 (0.85)	3.7 (0.52)
Belgium.....	529 (2.29)	7.2 (0.56)	9.3 (0.49)	15.9 (0.65)	20.1 (0.71)	21.0 (0.62)	17.5 (0.69)	9.0 (0.48)
Canada.....	532 (1.82)	2.4 (0.26)	7.7 (0.36)	18.3 (0.61)	26.2 (0.67)	25.1 (0.60)	14.8 (0.55)	5.5 (0.45)
Czech Republic.....	516 (3.55)	5.0 (0.69)	11.6 (0.90)	20.1 (0.96)	24.3 (0.95)	20.8 (0.87)	12.9 (0.80)	5.3 (0.53)
Denmark.....	514 (2.74)	4.7 (0.50)	10.7 (0.62)	20.6 (0.89)	26.2 (0.88)	21.9 (0.83)	11.8 (0.86)	4.1 (0.50)
Finland.....	544 (1.87)	1.5 (0.23)	5.3 (0.38)	16.0 (0.57)	27.7 (0.65)	26.1 (0.89)	16.7 (0.64)	6.7 (0.46)
France.....	511 (2.50)	5.6 (0.68)	11.0 (0.77)	20.2 (0.82)	25.9 (0.99)	22.1 (0.97)	11.6 (0.72)	3.5 (0.40)
Germany.....	503 (3.32)	9.2 (0.84)	12.4 (0.81)	19.0 (1.05)	22.6 (0.82)	20.6 (1.02)	12.2 (0.87)	4.1 (0.48)
Greece.....	445 (3.90)	17.8 (1.21)	21.2 (1.15)	26.3 (1.04)	20.2 (1.01)	10.6 (0.87)	3.4 (0.53)	0.6 (0.17)
Hungary.....	490 (2.84)	7.8 (0.80)	15.2 (0.81)	23.8 (1.05)	24.3 (0.93)	18.2 (0.90)	8.2 (0.73)	2.5 (0.42)
Iceland.....	515 (1.42)	4.5 (0.40)	10.5 (0.55)	20.2 (1.02)	26.1 (0.88)	23.2 (0.81)	11.7 (0.61)	3.7 (0.36)
Ireland.....	503 (2.45)	4.7 (0.57)	12.1 (0.84)	23.6 (0.83)	28.0 (0.82)	20.2 (1.06)	9.1 (0.76)	2.2 (0.33)
Italy.....	466 (3.08)	13.2 (1.19)	18.7 (0.93)	24.7 (1.03)	22.9 (0.84)	13.4 (0.73)	5.5 (0.43)	1.5 (0.19)
Japan.....	534 (4.02)	4.7 (0.65)	8.6 (0.72)	16.3 (0.80)	22.4 (1.02)	23.6 (1.24)	16.1 (0.96)	8.2 (1.14)
Korea, Republic of.....	542 (3.24)	2.5 (0.32)	7.1 (0.65)	16.6 (0.80)	24.1 (0.98)	25.0 (1.08)	16.7 (0.81)	8.1 (0.93)
Luxembourg.....	493 (0.97)	7.4 (0.41)	14.3 (0.65)	22.9 (0.87)	25.9 (0.79)	18.7 (0.85)	8.5 (0.59)	2.4 (0.31)
Mexico.....	385 (3.64)	38.1 (1.71)	27.9 (1.02)	20.8 (0.87)	10.1 (0.84)	2.7 (0.39)	0.4 (0.10)	# (†)
Netherlands.....	538 (3.13)	2.6 (0.65)	8.4 (0.95)	18.0 (1.11)	23.0 (1.14)	22.6 (1.34)	18.2 (1.09)	7.3 (0.58)
New Zealand.....	523 (2.26)	4.9 (0.44)	10.1 (0.63)	19.2 (0.71)	23.2 (0.90)	21.9 (0.80)	14.1 (0.60)	6.6 (0.44)
Norway.....	495 (2.38)	6.9 (0.50)	13.9 (0.82)	23.7 (1.16)	25.2 (1.01)	18.9 (1.00)	8.7 (0.57)	2.7 (0.35)
Poland.....	490 (2.50)	6.8 (0.61)	15.2 (0.76)	24.8 (0.75)	25.3 (0.94)	17.7 (0.89)	7.8 (0.49)	2.3 (0.31)
Portugal.....	466 (3.40)	11.3 (1.11)	18.8 (0.99)	27.1 (0.99)	24.0 (1.03)	13.4 (0.94)	4.6 (0.47)	0.8 (0.16)
Slovak Republic.....	498 (3.35)	6.7 (0.85)	13.2 (0.86)	23.5 (0.88)	24.9 (1.08)	18.9 (0.82)	9.8 (0.68)	2.9 (0.38)
Spain.....	485 (2.41)	8.1 (0.66)	14.9 (0.87)	24.7 (0.78)	26.7 (1.02)	17.7 (0.65)	6.5 (0.62)	1.4 (0.25)
Sweden.....	509 (2.56)	5.6 (0.52)	11.7 (0.60)	21.7 (0.84)	25.5 (0.95)	19.8 (0.81)	11.6 (0.57)	4.1 (0.49)
Switzerland.....	527 (3.38)	4.9 (0.45)	9.6 (0.57)	17.5 (0.80)	24.3 (0.98)	22.5 (0.72)	14.2 (1.05)	7.0 (0.90)
Turkey.....	423 (6.74)	27.7 (2.01)	24.6 (1.33)	22.1 (1.12)	13.5 (1.27)	6.8 (1.05)	3.1 (0.82)	2.4 (1.02)
United Kingdom <sup>10</sup> .....	508 (2.43)	5.2 (0.54)	12.5 (0.67)	21.2 (1.20)	25.6 (0.88)	20.6 (0.73)	11.0 (0.73)	3.9 (0.43)
United States.....	483 (2.95)	10.2 (0.80)	15.5 (0.81)	23.9 (0.80)	23.8 (0.79)	16.6 (0.73)	8.0 (0.53)	2.0 (0.36)
<b>Non-OECD countries</b>								
Brazil.....	356 (4.83)	53.3 (1.94)	21.9 (1.09)	14.1 (0.86)	6.8 (0.78)	2.7 (0.47)	0.9 (0.36)	0.3 (0.16)
Hong Kong-China.....	550 (4.54)	3.9 (0.72)	6.5 (0.64)	13.9 (1.00)	20.0 (1.25)	25.0 (1.17)	20.2 (1.00)	10.5 (0.94)
Indonesia.....	360 (3.91)	50.5 (2.08)	27.6 (1.05)	14.8 (1.07)	5.5 (0.71)	1.4 (0.39)	0.2 (0.09)	# (†)
Latvia.....	483 (3.69)	7.6 (0.86)	16.1 (1.08)	25.5 (1.17)	26.3 (1.15)	16.6 (1.17)	6.3 (0.70)	1.6 (0.36)
Liechtenstein.....	536 (4.12)	4.8 (1.33)	7.5 (1.66)	17.3 (2.78)	21.6 (2.54)	23.2 (3.09)	18.3 (3.22)	7.3 (1.73)
Macao-China.....	527 (2.89)	2.3 (0.60)	8.8 (1.34)	19.6 (1.40)	26.8 (1.77)	23.7 (1.71)	13.8 (1.55)	4.8 (0.96)
Russian Federation.....	468 (4.20)	11.4 (1.03)	18.8 (1.09)	26.4 (1.13)	23.1 (1.02)	13.2 (0.92)	5.4 (0.58)	1.6 (0.38)
Serbia and Montenegro.....	437 (3.75)	17.6 (1.35)	24.5 (1.08)	28.6 (1.16)	18.9 (1.11)	8.1 (0.88)	2.1 (0.41)	0.2 (0.10)
Thailand.....	417 (3.00)	23.8 (1.28)	30.2 (1.25)	25.4 (1.12)	13.7 (0.85)	5.3 (0.53)	1.5 (0.31)	0.2 (0.10)
Tunisia.....	359 (2.54)	51.1 (1.37)	26.9 (0.95)	14.7 (0.75)	5.7 (0.61)	1.4 (0.30)	0.2 (0.12)	# (†)
Uruguay.....	422 (3.29)	26.3 (1.30)	21.8 (0.80)	24.2 (0.89)	16.8 (0.68)	8.2 (0.65)	2.3 (0.33)	0.5 (0.17)

†Not applicable.

#Rounds to zero.

<sup>1</sup>Less than or equal to 357.77 score points. Does not meet the requirements for proficiency at level 1.<sup>2</sup>A score greater than 357.77 and less than or equal to 420.07. Indicates an ability to answer questions involving familiar contexts where all relevant information is present and the questions are clearly defined.<sup>3</sup>A score greater than 420.07 and less than or equal to 482.38. Indicates an ability to interpret and recognize situations in contexts that require no more than direct inference, extract relevant information from a single source, and employ direct reasoning for literal interpretations of results.<sup>4</sup>A score greater than 482.38 and less than or equal to 544.68. Indicates an ability to execute clearly described procedures, interpret and use representations based on different information sources, and develop short communications reporting their interpretations, results, and reasoning.<sup>5</sup>A score greater than 544.68 and less than or equal to 606.99. Indicates an ability to work effectively with explicit models for complex concrete situations that may involve constraints or call for making assumptions, select and integrate different representations, reason with some insight, and construct and communicate explanations and arguments based on their interpretations and actions.<sup>6</sup>A score greater than 606.99 and less than or equal to 669.3. Indicates an ability to develop and work with models for complex situations, work strategically using broad, well-developed thinking and reasoning skills, and communicate their interpretations and reasoning.<sup>7</sup>A score greater than 669.3. Indicates an ability to conceptualize, generalize, and utilize information, link different information sources and representations, and formulate and precisely communicate actions and reflections regarding findings and interpretations.<sup>8</sup>Illustrates how a country compares with the OECD area as a whole. Computed by taking the OECD countries as a single entity to which each country contributes in proportion to the number of 15-year-olds enrolled in its schools.<sup>9</sup>Refers to the mean of the data values for all OECD countries, to which each country contributes equally, regardless of the absolute size of the student population of each country.<sup>10</sup>Response rate was too low to ensure comparability with other countries.

NOTE: Mean score was designed to have an average of 500 points, and a standard deviation of 100. Standard errors appear in parentheses. Possible scores range from 0 to 1000. Detail may not sum to totals because of rounding.

SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2003, *Learning for Tomorrow's World, 2003*. U.S. Department of Education, National Center for Education Statistics, PISA, 2003, *International Outcomes of Learning in Mathematics Literacy and Problem Solving, 2003*. (This table was prepared March 2005.)

**Table 399. Average fourth-grade mathematics scores, by content areas, index of time students spend doing mathematics homework in a normal school week, and country: 2003**

Country	Average score by content area						Index of time students spend doing mathematics homework (TMH) in a normal school week					
	Mathematics overall	Number <sup>1</sup>	Patterns and relationships <sup>2</sup>	Measurement <sup>3</sup>	Geometry <sup>4</sup>	Data <sup>5</sup>	High TMH <sup>6</sup>		Medium TMH <sup>7</sup>		Low TMH <sup>8</sup>	
							Percent	Mean score	Percent	Mean score	Percent	Mean score
1	2	3	4	5	6	7	8	9	10	11	12	13
<b>International average</b> .....	<b>495 (0.8)</b>	<b>495 (0.7)</b>	<b>495 (0.7)</b>	<b>495 (0.7)</b>	<b>495 (0.7)</b>	<b>495 (0.6)</b>	<b>18 (0.2)</b>	<b>489 (1.3)</b>	<b>56 (0.3)</b>	<b>500 (0.9)</b>	<b>26 (0.3)</b>	<b>494 (1.6)</b>
Armenia <sup>9</sup> .....	456 (3.5)	473 (3.0)	461 (4.1)	465 (3.1)	431 (3.8)	417 (3.6)	33 (1.3)	467 (5.1)	65 (1.3)	465 (3.5)	2 (0.3)	‡ (†)
Australia <sup>10</sup> .....	499 (3.9)	479 (4.3)	495 (3.7)	514 (3.7)	524 (3.7)	525 (3.6)	7 (0.8)	486 (13.0)	43 (2.1)	500 (4.6)	50 (2.1)	505 (4.4)
Belgium (Flemish).....	551 (1.8)	549 (1.9)	542 (1.9)	550 (1.4)	533 (1.8)	548 (2.2)	9 (0.7)	538 (3.9)	48 (1.7)	549 (2.7)	43 (2.0)	557 (2.0)
Chinese Taipei.....	564 (1.8)	568 (1.8)	555 (2.4)	557 (1.6)	553 (2.5)	564 (2.3)	11 (0.6)	546 (3.5)	62 (1.1)	569 (2.0)	27 (1.2)	561 (2.7)
Cyprus.....	510 (2.4)	514 (2.7)	519 (2.4)	506 (2.3)	505 (2.3)	509 (2.3)	14 (0.6)	494 (4.6)	76 (0.9)	521 (2.4)	10 (0.6)	497 (5.3)
England <sup>10</sup> .....	531 (3.7)	519 (4.1)	523 (3.9)	535 (3.3)	542 (3.7)	552 (3.4)	4 (0.6)	489 (14.3)	37 (1.8)	531 (4.8)	59 (1.9)	540 (4.2)
Hong Kong, SAR <sup>10,11</sup> .....	575 (3.2)	574 (3.3)	568 (3.5)	563 (2.7)	557 (2.9)	562 (2.3)	24 (1.0)	575 (3.8)	71 (0.9)	580 (3.2)	5 (0.5)	530 (5.6)
Hungary.....	529 (3.1)	524 (2.9)	545 (3.7)	532 (2.7)	514 (3.3)	513 (3.2)	17 (0.9)	515 (4.9)	78 (1.1)	538 (3.1)	5 (0.9)	535 (10.6)
Iran, Islamic Republic of.....	389 (4.2)	410 (3.7)	394 (3.9)	398 (3.2)	416 (3.9)	356 (4.4)	31 (2.3)	404 (5.1)	52 (1.8)	391 (5.0)	17 (2.3)	376 (8.1)
Italy.....	503 (3.7)	502 (3.6)	496 (4.3)	504 (3.4)	522 (3.5)	497 (3.0)	24 (1.1)	496 (5.2)	52 (1.1)	504 (4.5)	24 (1.6)	512 (3.6)
Japan.....	565 (1.6)	556 (2.0)	554 (1.4)	568 (1.6)	559 (1.9)	593 (1.6)	8 (0.6)	543 (4.6)	57 (1.8)	568 (2.3)	35 (2.1)	565 (2.7)
Latvia.....	536 (2.8)	531 (2.6)	532 (3.4)	545 (2.6)	523 (2.2)	526 (2.7)	25 (1.1)	525 (4.1)	71 (1.1)	546 (2.7)	4 (0.6)	517 (9.1)
Lithuania <sup>12</sup> .....	534 (2.8)	535 (2.9)	531 (3.0)	540 (2.7)	524 (2.2)	517 (2.5)	29 (1.2)	527 (3.8)	66 (1.3)	545 (3.1)	5 (0.6)	510 (10.7)
Moldova, Republic of.....	504 (4.9)	507 (4.7)	521 (5.1)	505 (4.0)	501 (4.9)	477 (4.3)	31 (2.0)	518 (6.3)	66 (1.9)	504 (5.4)	3 (0.6)	494 (10.9)
Morocco <sup>13</sup> .....	347 (5.1)	359 (4.7)	360 (4.7)	345 (5.5)	362 (4.9)	355 (5.0)	22 (1.3)	362 (5.9)	58 (1.9)	365 (4.8)	20 (2.1)	353 (12.3)
Netherlands <sup>10</sup> .....	540 (2.1)	536 (2.2)	527 (2.4)	545 (2.2)	521 (3.2)	553 (2.4)	1 (0.2)	‡ (†)	10 (0.8)	508 (6.6)	89 (0.9)	546 (1.8)
New Zealand.....	493 (2.2)	475 (2.3)	495 (2.9)	503 (2.0)	517 (1.8)	522 (2.0)	7 (0.4)	489 (6.7)	41 (1.1)	491 (3.3)	52 (1.3)	504 (3.1)
Norway <sup>14</sup> .....	451 (2.3)	440 (2.2)	439 (2.7)	475 (2.2)	478 (2.2)	479 (2.3)	12 (1.0)	447 (4.7)	56 (1.8)	462 (3.2)	32 (2.1)	467 (4.0)
Philippines.....	358 (7.9)	380 (7.4)	382 (7.0)	330 (7.8)	335 (8.8)	384 (7.5)	17 (0.8)	349 (7.0)	52 (1.7)	362 (6.7)	31 (1.9)	372 (15.7)
Russian Federation.....	532 (4.7)	532 (4.6)	531 (5.0)	538 (3.8)	528 (4.8)	505 (4.1)	38 (1.3)	531 (5.3)	59 (1.2)	537 (4.7)	2 (0.4)	‡ (†)
Scotland <sup>10</sup> .....	490 (3.3)	475 (3.3)	495 (2.9)	499 (3.1)	511 (2.5)	516 (2.7)	6 (0.8)	477 (6.8)	40 (2.0)	488 (4.2)	54 (2.2)	498 (3.4)
Singapore.....	594 (5.6)	612 (6.0)	579 (5.4)	566 (4.6)	570 (5.5)	575 (3.9)	40 (1.5)	604 (6.0)	49 (1.3)	595 (5.8)	11 (0.6)	575 (7.2)
Slovenia.....	479 (2.6)	461 (2.7)	490 (2.7)	497 (2.8)	498 (2.2)	486 (2.7)	14 (0.9)	466 (6.7)	76 (1.2)	490 (2.6)	10 (0.9)	455 (8.6)
Tunisia <sup>13</sup> .....	339 (4.7)	360 (4.1)	330 (4.7)	308 (5.5)	346 (5.1)	308 (4.7)	22 (2.2)	373 (8.6)	50 (2.8)	365 (6.3)	28 (3.0)	365 (8.0)
United States <sup>10</sup> .....	518 (2.4)	516 (2.6)	524 (2.7)	500 (2.1)	518 (2.2)	549 (2.0)	12 (0.6)	504 (4.0)	63 (1.3)	524 (2.7)	25 (1.5)	520 (3.5)

†Not applicable.

‡Reporting standards not met.

<sup>1</sup>Topic includes whole numbers; fractions and decimals; integers; and ratio, proportion, and percent.

<sup>2</sup>Topic includes patterns, equations and formulas, and relationships.

<sup>3</sup>Topic includes attributes and units and tools, techniques, and formulas.

<sup>4</sup>Topic includes lines and angles, two- and three-dimensional shapes, congruence and similarity, locations and spatial relationships, and symmetry and transformations.

<sup>5</sup>Topic includes data collection and organization, data representation, and data interpretation.

<sup>6</sup>High level indicates more than 30 minutes of mathematics homework assigned 3–4 times a week.

<sup>7</sup>Medium level includes all possible combinations of responses not included in the high or low level categories (see below for details on the low level).

<sup>8</sup>Low level indicates no more than 30 minutes of mathematics homework assigned no more than twice a week.

<sup>9</sup>Response rate for the TMH index was at least 70 but less than 85 percent of the students, with missing data having not been explicitly accounted for in the analysis.

<sup>10</sup>Met international guidelines for participation rates only after replacement schools were included.

<sup>11</sup>SAR = Special Administrative Region.

<sup>12</sup>National Desired Population does not cover all of the International Desired Population.

<sup>13</sup>Response rate for the TMH index was at least 50 but less than 70 percent of the students, with missing data having not been explicitly accounted for in the analysis.

<sup>14</sup>Students had received 4 years of formal schooling, but first grade is called "First grade/preschool."

NOTE: TMH index data are provided by students. Data are for fourth-grade students or equivalent in most countries. Possible scores range from 1 to 1,000. Detail may not sum to totals because of rounding. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2003, *TIMSS 2003 International Mathematics Report*, by Ina V.S. Mullis et al. (This table was prepared March 2005.)

Table 400. Average eighth-grade mathematics scores, by content areas, index of time students spend doing mathematics homework in a normal school week, and country: 2003

Country	Average score by content area						Index of time students spend doing mathematics homework (TMH) in a normal school week					
	Mathematics overall	Number <sup>1</sup>	Algebra <sup>2</sup>	Measurement <sup>3</sup>	Geometry <sup>4</sup>	Data <sup>5</sup>	High TMH <sup>6</sup>		Medium TMH <sup>7</sup>		Low TMH <sup>8</sup>	
							Percent	Mean score	Percent	Mean score	Percent	Mean score
1	2	3	4	5	6	7	8	9	10	11	12	13
<b>International average<sup>9</sup></b> .....	<b>467 (0.5)</b>	<b>467 (0.5)</b>	<b>467 (0.5)</b>	<b>467 (0.5)</b>	<b>467 (0.5)</b>	<b>467 (0.5)</b>	<b>26 (0.2)</b>	<b>468 (0.8)</b>	<b>54 (0.2)</b>	<b>471 (0.6)</b>	<b>19 (0.2)</b>	<b>456 (1.0)</b>
Armenia.....	478 (3.0)	473 (3.1)	489 (2.6)	488 (3.3)	481 (3.1)	419 (2.7)	35 (1.3)	490 (3.9)	60 (1.2)	478 (3.7)	4 (0.4)	475 (7.5)
Australia.....	505 (4.6)	498 (4.6)	499 (4.4)	511 (4.3)	491 (4.8)	531 (3.8)	19 (1.6)	520 (6.0)	50 (1.5)	509 (5.4)	31 (2.0)	497 (5.5)
Bahrain.....	401 (1.7)	380 (1.9)	411 (2.5)	388 (2.1)	438 (2.1)	414 (2.1)	18 (0.8)	387 (3.3)	69 (1.2)	409 (2.0)	13 (1.1)	398 (4.9)
Belgium (Flemish).....	537 (2.8)	539 (2.7)	523 (2.8)	535 (2.5)	527 (3.1)	546 (2.9)	13 (1.1)	542 (4.5)	42 (1.4)	546 (3.2)	44 (2.0)	532 (3.7)
Botswana.....	366 (2.6)	382 (2.2)	377 (2.7)	377 (2.0)	335 (3.9)	375 (2.7)	25 (0.8)	385 (3.9)	53 (0.8)	368 (2.6)	22 (0.9)	355 (3.0)
Bulgaria.....	476 (4.3)	477 (4.1)	481 (4.0)	473 (4.6)	484 (4.5)	458 (3.9)	33 (1.8)	482 (6.4)	54 (1.5)	478 (4.6)	14 (1.5)	469 (5.4)
Chile.....	387 (3.3)	390 (3.1)	384 (3.1)	404 (2.9)	378 (3.3)	412 (3.4)	10 (0.7)	387 (6.9)	43 (1.0)	389 (3.8)	47 (1.4)	388 (3.7)
Chinese Taipei.....	585 (4.6)	585 (4.6)	585 (4.9)	574 (4.4)	588 (5.1)	568 (3.4)	18 (1.5)	611 (6.0)	45 (1.2)	594 (4.4)	37 (2.0)	563 (5.6)
Cyprus.....	459 (1.7)	464 (1.5)	455 (1.7)	459 (2.2)	457 (2.4)	458 (1.7)	21 (0.8)	459 (2.8)	70 (0.7)	469 (1.8)	9 (0.6)	438 (5.3)
Egypt.....	406 (3.5)	421 (3.0)	408 (3.9)	401 (3.3)	408 (3.6)	393 (3.2)	26 (0.8)	402 (4.3)	60 (1.0)	418 (3.6)	14 (0.7)	419 (4.7)
England <sup>10</sup> .....	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)
Estonia.....	531 (3.0)	523 (3.1)	528 (2.6)	528 (3.0)	540 (2.6)	535 (2.8)	28 (1.3)	519 (4.0)	66 (1.3)	538 (3.2)	7 (1.2)	523 (10.3)
Ghana.....	276 (4.7)	289 (5.1)	288 (4.8)	262 (3.7)	278 (4.3)	293 (4.1)	24 (0.9)	288 (5.8)	56 (0.9)	280 (4.5)	20 (1.0)	275 (7.5)
Hong Kong, SAR <sup>11,12</sup> .....	586 (3.3)	586 (3.2)	580 (3.2)	584 (3.3)	588 (3.6)	566 (3.0)	32 (1.9)	600 (3.5)	49 (1.5)	587 (3.6)	19 (1.5)	566 (7.6)
Hungary.....	529 (3.2)	529 (3.6)	534 (3.1)	525 (3.1)	515 (3.1)	526 (2.9)	20 (1.2)	516 (5.8)	77 (1.2)	537 (3.1)	3 (0.5)	501 (14.1)
Indonesia <sup>13</sup> .....	411 (4.8)	421 (4.6)	418 (4.5)	394 (4.9)	413 (4.6)	418 (4.0)	37 (1.1)	435 (4.3)	48 (0.8)	406 (5.3)	15 (0.8)	391 (7.3)
Iran, Islamic Republic of.....	411 (2.4)	416 (2.3)	412 (3.1)	399 (2.6)	437 (3.1)	404 (2.6)	24 (1.2)	420 (3.8)	52 (0.9)	414 (2.8)	25 (1.1)	403 (3.4)
Israel <sup>14</sup> .....	496 (3.4)	504 (3.3)	498 (3.2)	480 (3.4)	488 (3.7)	492 (3.3)	33 (1.4)	498 (3.9)	55 (1.3)	505 (4.1)	12 (0.9)	479 (6.3)
Italy.....	484 (3.2)	480 (3.2)	477 (3.4)	500 (3.2)	469 (3.5)	490 (3.0)	54 (1.4)	484 (3.8)	40 (1.1)	487 (3.6)	7 (0.7)	471 (8.0)
Japan.....	570 (2.1)	557 (2.3)	568 (2.0)	559 (2.0)	587 (2.1)	573 (1.9)	6 (0.7)	565 (10.1)	36 (1.5)	566 (2.8)	58 (1.9)	576 (2.1)
Jordan.....	424 (4.1)	413 (4.4)	434 (4.4)	418 (4.4)	446 (4.0)	430 (3.5)	25 (0.8)	425 (4.7)	64 (1.1)	437 (4.1)	11 (0.9)	411 (4.9)
Korea, Republic of <sup>15</sup> .....	589 (2.2)	586 (2.1)	597 (2.2)	577 (2.0)	598 (2.6)	569 (2.0)	11 (1.0)	582 (4.3)	46 (1.6)	592 (2.6)	43 (2.0)	590 (2.8)
Latvia.....	508 (3.2)	507 (3.2)	508 (3.2)	500 (3.0)	515 (3.3)	506 (3.8)	33 (1.3)	502 (4.7)	61 (1.3)	516 (3.0)	6 (0.7)	508 (9.3)
Lebanon.....	433 (3.1)	430 (3.3)	448 (3.1)	430 (3.7)	459 (3.0)	394 (4.0)	42 (1.7)	436 (3.5)	52 (1.7)	437 (3.5)	5 (0.6)	412 (7.6)
Lithuania <sup>13</sup> .....	502 (2.5)	500 (2.7)	501 (2.4)	492 (3.0)	506 (2.5)	502 (2.5)	32 (1.4)	493 (3.1)	63 (1.3)	509 (3.0)	5 (0.8)	490 (8.7)
Macedonia, Republic of <sup>14</sup> .....	435 (3.5)	438 (3.5)	442 (3.6)	434 (3.6)	442 (3.7)	419 (3.6)	26 (1.1)	440 (4.5)	61 (1.3)	444 (3.9)	13 (1.3)	439 (6.0)
Malaysia.....	508 (4.1)	524 (4.0)	495 (3.9)	504 (4.5)	495 (4.8)	505 (3.2)	33 (1.3)	515 (4.4)	56 (1.1)	510 (4.5)	11 (0.8)	485 (5.9)
Moldova.....	460 (4.0)	463 (3.8)	464 (4.2)	468 (4.0)	463 (4.7)	428 (3.4)	38 (1.4)	472 (4.3)	57 (1.3)	458 (4.6)	5 (0.5)	437 (8.3)
Morocco <sup>13,16,17</sup> .....	387 (2.5)	384 (2.7)	400 (2.8)	376 (3.4)	415 (2.3)	374 (2.5)	34 (1.5)	390 (4.5)	52 (1.1)	392 (3.2)	14 (1.0)	380 (4.8)
Netherlands <sup>11</sup> .....	536 (3.8)	539 (3.6)	514 (4.0)	549 (3.7)	513 (4.1)	560 (3.1)	19 (1.3)	540 (5.2)	62 (1.4)	542 (4.4)	19 (1.7)	518 (6.5)
New Zealand.....	494 (5.3)	481 (6.0)	490 (5.2)	500 (4.8)	488 (4.6)	526 (5.1)	14 (1.1)	488 (5.1)	49 (1.8)	505 (6.0)	37 (2.1)	492 (7.2)
Norway.....	461 (2.5)	456 (2.3)	428 (2.7)	481 (2.9)	461 (2.8)	498 (2.5)	26 (1.3)	454 (4.0)	52 (1.3)	466 (2.5)	22 (1.3)	472 (3.5)
Palestinian National Authority.....	390 (3.1)	385 (3.6)	392 (3.5)	386 (2.8)	423 (3.1)	390 (2.8)	27 (1.1)	393 (3.5)	65 (1.1)	398 (3.5)	8 (0.6)	371 (6.6)
Philippines.....	378 (5.2)	393 (5.1)	400 (5.2)	372 (4.8)	344 (5.3)	390 (4.5)	24 (0.9)	390 (5.4)	54 (1.0)	382 (5.5)	22 (1.2)	361 (6.6)
Romania.....	475 (4.8)	474 (4.9)	480 (4.7)	485 (4.7)	476 (4.9)	445 (4.6)	68 (1.6)	492 (4.5)	28 (1.4)	451 (6.4)	3 (0.4)	437 (13.0)

See notes at end of table.

**Table 400. Average eighth-grade mathematics scores, by content areas, index of time students spend doing mathematics homework in a normal school week, and country: 2003—Continued**

Country	Average score by content area						Index of time students spend doing mathematics homework (TMH) in a normal school week					
	Mathematics overall	Number <sup>1</sup>	Algebra <sup>2</sup>	Measurement <sup>3</sup>	Geometry <sup>4</sup>	Data <sup>5</sup>	High TMH <sup>6</sup>		Medium TMH <sup>7</sup>		Low TMH <sup>8</sup>	
							Percent	Mean score	Percent	Mean score	Percent	Mean score
1	2	3	4	5	6	7	8	9	10	11	12	13
Russian Federation.....	508 (3.7)	505 (4.0)	516 (3.2)	507 (3.9)	515 (4.2)	484 (3.2)	53 (1.2)	509 (4.4)	45 (1.2)	511 (3.4)	2 (0.2)	‡ (†)
Saudi Arabia.....	332 (4.6)	307 (5.3)	331 (4.7)	338 (3.4)	382 (4.3)	339 (3.8)	15 (1.0)	315 (8.1)	62 (1.6)	335 (4.6)	23 (1.6)	345 (5.7)
Scotland <sup>11</sup> .....	498 (3.7)	484 (4.2)	488 (3.9)	508 (3.6)	491 (3.3)	531 (3.7)	8 (0.8)	493 (5.8)	46 (2.1)	507 (4.5)	46 (2.5)	496 (4.1)
Serbia <sup>13</sup> .....	477 (2.6)	477 (2.8)	488 (2.5)	475 (2.5)	471 (3.0)	456 (2.6)	25 (1.3)	466 (4.1)	54 (1.2)	481 (3.5)	20 (1.7)	497 (3.5)
Singapore.....	605 (3.6)	618 (3.5)	590 (3.5)	611 (3.6)	580 (3.7)	579 (3.2)	38 (1.1)	621 (3.1)	51 (0.9)	604 (3.8)	11 (0.8)	566 (7.8)
Slovak Republic.....	508 (3.3)	514 (3.3)	505 (3.3)	508 (3.7)	501 (3.6)	495 (2.9)	11 (0.9)	495 (6.4)	81 (1.4)	511 (3.4)	8 (1.3)	500 (7.7)
Slovenia.....	493 (2.2)	498 (2.0)	487 (2.3)	496 (2.3)	483 (2.5)	494 (2.3)	25 (1.1)	482 (2.9)	71 (1.2)	500 (2.5)	4 (0.8)	463 (8.8)
South Africa.....	264 (5.5)	274 (5.4)	275 (5.1)	298 (4.7)	247 (5.4)	296 (5.3)	21 (0.8)	275 (8.1)	58 (0.8)	270 (6.3)	20 (1.0)	260 (5.4)
Sweden.....	499 (2.6)	496 (2.6)	480 (3.0)	512 (2.6)	467 (3.4)	539 (3.0)	4 (0.5)	453 (7.0)	38 (1.4)	494 (3.5)	58 (1.5)	509 (2.7)
Tunisia.....	410 (2.2)	419 (2.3)	405 (2.4)	407 (2.2)	427 (2.0)	387 (2.2)	39 (1.1)	410 (2.7)	50 (1.1)	414 (2.2)	11 (0.9)	414 (4.3)
United States <sup>16</sup> .....	504 (3.3)	508 (3.4)	510 (3.1)	495 (3.2)	472 (3.1)	527 (3.2)	31 (1.0)	518 (4.1)	60 (0.9)	506 (3.2)	9 (0.9)	461 (6.3)

†Not applicable.

‡Reporting standards not met.

<sup>1</sup>Topic includes whole numbers; fractions and decimals; integers; and ratio, proportion, and percent.

<sup>2</sup>Topic includes patterns, algebraic expressions, equations and formulas, and relationships.

<sup>3</sup>Topic includes attributes and units and tools, techniques, and formulas.

<sup>4</sup>Topic includes lines and angles, two- and three-dimensional shapes, congruence and similarity, locations and spatial relationships, and symmetry and transformations.

<sup>5</sup>Topic includes data collection and organization, data representation, data interpretation, and uncertainty and probability.

<sup>6</sup>High level indicates more than 30 minutes of mathematics homework assigned 3–4 times a week.

<sup>7</sup>Medium level includes all possible combinations of responses not included in the high or low level categories (see below for details on the low level).

<sup>8</sup>Low level indicates no more than 30 minutes of mathematics homework assigned no more than twice a week.

<sup>9</sup>The international average of 467 may sometimes appear as 466. In that case, the TIMSS 2003 average for eighth-graders published in the National Center for Education Statistics report reflects the deletion of England from the average.

<sup>10</sup>Did not satisfy guidelines for sample participation rates.

<sup>11</sup>Met guidelines for sample participation rates only after replacement schools were included.

<sup>12</sup>SAR = Special Administrative Region.

<sup>13</sup>National Desired Population does not cover all of International Desired Population.

<sup>14</sup>National Defined Population covers less than 90 percent of National Desired Population.

<sup>15</sup>Korea tested the same cohort of students as other countries, but later in 2003, at the beginning of the next school year.

<sup>16</sup>Nearly satisfied guidelines for sample participation rates only after replacement schools were included.

<sup>17</sup>Response rate for the TMH index was at least 70 but less than 85 percent of the students, with missing data having not been explicitly accounted for in the analysis.

NOTE: TMH index data are provided by students. Data are for eighth grade or equivalent in most countries. Possible scores range from 1 to 1,000. Standard errors appear in parentheses. Detail may not sum to totals because of rounding.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2003, *TIMSS 2003 International Mathematics Report*, by Ina V.S. Mullis et al. (This table was prepared April 2005.)

Table 401. Percentage of lesson time spent on various mathematics activities, yearly mathematics instructional time, and mathematics instructional time as a percentage of total instructional time in eighth grade, by country: 2003

Country	Percentage of time in mathematics lessons students spend on various activities in a typical week									Students' average yearly mathematics instructional time, in hours	Mathematics instructional time as a percent of total instructional time
	Reviewing homework	Listening to lecture-style presentations	Working problems with teacher's guidance	Working problems on their own without teacher's guidance	Listening to teachers reteach and clarify content/procedures	Taking tests and quizzes	Participating in classroom management tasks not related to the lesson's content/purpose	Other student activities			
1	2	3	4	5	6	7	8	9	10	11	
<b>International average</b> .....	<b>11 (0.1)</b>	<b>19 (0.1)</b>	<b>22 (0.2)</b>	<b>18 (0.2)</b>	<b>11 (0.1)</b>	<b>10 (0.1)</b>	<b>5 (0.1)</b>	<b>4 (0.1)</b>	<b>123 (0.4)</b>	<b>12 (#)</b>	
Armenia.....	10 <sup>1</sup> (0.5)	14 <sup>1</sup> (0.8)	26 <sup>1</sup> (1.1)	19 <sup>1</sup> (0.9)	13 <sup>1</sup> (0.6)	11 <sup>1</sup> (0.6)	4 <sup>1</sup> (0.3)	4 <sup>1</sup> (0.3)	‡ (†)	‡ (†)	
Australia.....	8 (0.5)	15 (0.8)	23 (1.2)	28 (1.2)	9 (0.4)	7 (0.4)	7 (0.6)	3 (0.4)	136 <sup>1</sup> (2.9)	13 <sup>1</sup> (0.3)	
Bahrain.....	13 (0.5)	24 (0.9)	17 (0.5)	12 (0.5)	12 (0.3)	13 (0.5)	6 (0.5)	6 (0.3)	142 (0.8)	16 (0.1)	
Belgium (Flemish).....	7 (0.4)	14 (1.0)	26 (1.0)	20 (0.9)	16 (0.8)	11 (0.4)	4 (0.3)	2 (0.2)	123 <sup>2</sup> (2.2)	13 (0.3)	
Botswana.....	13 <sup>1</sup> (0.9)	16 <sup>1</sup> (1.1)	19 <sup>1</sup> (1.1)	21 <sup>1</sup> (1.2)	11 <sup>1</sup> (0.8)	10 <sup>1</sup> (0.7)	6 <sup>1</sup> (0.5)	5 <sup>1</sup> (0.4)	‡ (†)	‡ (†)	
Bulgaria.....	10 (0.6)	18 (1.3)	26 (1.0)	16 (0.8)	17 (0.9)	8 (0.5)	3 (0.4)	2 (0.3)	96 <sup>1</sup> (1.7)	11 <sup>1</sup> (0.2)	
Chile.....	10 (0.4)	18 (0.8)	21 (0.9)	18 (0.8)	14 (0.7)	11 (0.5)	6 (0.4)	3 (0.3)	160 <sup>1</sup> (4.1)	14 <sup>1</sup> (0.4)	
Chinese Taipei.....	12 (0.5)	42 (1.3)	13 (0.6)	7 (0.5)	9 (0.4)	10 (0.4)	4 (0.3)	3 (0.3)	141 (2.0)	13 (0.2)	
Cyprus.....	22 <sup>1</sup> (0.4)	16 <sup>1</sup> (0.5)	20 <sup>1</sup> (0.5)	14 <sup>1</sup> (0.4)	12 <sup>1</sup> (0.4)	10 <sup>1</sup> (0.5)	5 <sup>1</sup> (0.2)	2 <sup>1</sup> (0.2)	75 <sup>2</sup> (0.4)	8 (0.1)	
Egypt.....	11 (0.4)	18 (1.0)	17 (0.8)	15 (0.7)	15 (0.8)	11 (0.4)	6 (0.3)	7 (0.4)	‡ (†)	‡ (†)	
England <sup>3</sup> .....	‡ <sup>2</sup> (†)	‡ <sup>2</sup> (†)	‡ <sup>2</sup> (†)	‡ <sup>2</sup> (†)	‡ <sup>2</sup> (†)	‡ <sup>2</sup> (†)	‡ <sup>2</sup> (†)	‡ <sup>2</sup> (†)	‡ (†)	‡ (†)	
Estonia.....	10 (0.4)	12 (0.6)	25 (1.0)	25 (0.8)	11 (0.5)	13 (0.6)	3 (0.3)	2 (0.3)	125 (1.2)	12 (0.2)	
Ghana.....	11 <sup>1</sup> (0.4)	16 <sup>1</sup> (0.9)	20 <sup>1</sup> (0.8)	18 <sup>1</sup> (0.7)	12 <sup>1</sup> (0.7)	12 <sup>1</sup> (0.4)	7 <sup>1</sup> (0.4)	6 <sup>1</sup> (0.3)	‡ (†)	‡ (†)	
Hong Kong, SAR <sup>4,5</sup> .....	8 (0.4)	36 (1.5)	18 (0.7)	16 (0.8)	9 (0.7)	6 (0.3)	4 (0.5)	4 (0.4)	145 <sup>2</sup> (5.2)	15 (0.5)	
Hungary.....	12 (0.4)	13 (0.7)	25 (0.9)	25 (1.0)	10 (0.4)	10 (0.4)	3 (0.3)	3 (0.3)	112 <sup>2</sup> (2.0)	11 (0.2)	
Indonesia <sup>6</sup> .....	12 <sup>1</sup> (0.5)	25 <sup>1</sup> (1.1)	20 <sup>1</sup> (0.9)	14 <sup>1</sup> (0.9)	12 <sup>1</sup> (0.5)	12 <sup>1</sup> (0.7)	3 <sup>1</sup> (0.4)	3 <sup>1</sup> (0.5)	169 <sup>2</sup> (4.4)	13 (0.4)	
Iran, Islamic Republic of.....	12 (0.6)	17 (0.8)	18 (0.7)	14 (0.7)	15 (0.7)	11 (0.5)	6 (0.3)	6 (0.6)	115 <sup>2</sup> (3.5)	12 (0.4)	
Israel <sup>7</sup> .....	14 <sup>1</sup> (0.6)	15 <sup>1</sup> (0.8)	22 <sup>1</sup> (0.7)	21 <sup>1</sup> (0.8)	11 <sup>1</sup> (0.4)	10 <sup>1</sup> (0.5)	5 <sup>1</sup> (0.5)	3 <sup>1</sup> (0.3)	‡ (†)	‡ (†)	
Italy.....	15 (0.6)	22 (0.6)	19 (0.6)	13 (0.6)	13 (0.4)	11 (0.5)	4 (0.3)	2 (0.3)	132 <sup>1</sup> (1.7)	13 <sup>1</sup> (0.2)	
Japan.....	7 (0.6)	29 (1.3)	28 (1.1)	11 (1.0)	15 (0.9)	6 (0.4)	2 (0.2)	2 (0.4)	107 (2.6)	10 (0.2)	
Jordan.....	15 (0.7)	23 (1.0)	17 (0.8)	13 (0.8)	11 (0.5)	9 (0.4)	6 (0.4)	6 (0.5)	110 (0.9)	12 (0.2)	
Korea, Republic of <sup>8</sup> .....	6 <sup>2</sup> (0.3)	30 <sup>2</sup> (1.2)	19 <sup>2</sup> (0.6)	20 <sup>2</sup> (0.7)	9 <sup>2</sup> (0.4)	8 <sup>2</sup> (0.4)	5 <sup>2</sup> (0.3)	3 <sup>2</sup> (0.5)	109 <sup>2</sup> (1.2)	9 (0.1)	
Latvia.....	8 <sup>1</sup> (0.6)	12 <sup>1</sup> (0.7)	25 <sup>1</sup> (1.1)	22 <sup>1</sup> (0.9)	11 <sup>1</sup> (0.6)	15 <sup>1</sup> (0.7)	2 <sup>1</sup> (0.2)	4 <sup>1</sup> (0.4)	122 <sup>2</sup> (1.4)	13 (0.3)	
Lebanon.....	24 <sup>2</sup> (1.6)	17 <sup>2</sup> (0.9)	23 <sup>2</sup> (1.1)	8 <sup>2</sup> (0.8)	10 <sup>2</sup> (0.6)	11 <sup>2</sup> (0.6)	4 <sup>2</sup> (0.4)	4 <sup>2</sup> (0.4)	‡ (†)	‡ (†)	
Lithuania <sup>6</sup> .....	9 (0.5)	7 (0.6)	30 (1.2)	26 (0.9)	11 (0.7)	14 (0.6)	1 (0.2)	2 (0.2)	122 <sup>1</sup> (0.9)	11 <sup>1</sup> (0.2)	
Macedonia, Republic of <sup>7</sup> .....	7 (0.3)	37 (1.1)	19 (0.7)	15 (0.7)	6 (0.4)	8 (0.4)	3 (0.3)	4 (0.3)	80 <sup>1</sup> (1.2)	9 <sup>1</sup> (0.2)	
Malaysia.....	13 (0.7)	21 (1.0)	21 (0.9)	16 (0.8)	9 (0.5)	8 (0.4)	6 (0.4)	6 (0.4)	120 (1.4)	12 (0.1)	
Moldova.....	9 <sup>2</sup> (0.6)	15 <sup>2</sup> (1.0)	23 <sup>2</sup> (1.0)	18 <sup>2</sup> (0.9)	11 <sup>2</sup> (0.8)	14 <sup>2</sup> (0.8)	4 <sup>2</sup> (0.7)	5 <sup>2</sup> (0.6)	‡ (†)	‡ (†)	
Morocco <sup>6,9</sup> .....	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	
Netherlands <sup>4</sup> .....	15 (1.1)	13 (0.7)	21 (2.0)	28 (2.5)	7 (0.5)	8 (0.5)	5 (0.5)	4 (0.4)	94 <sup>2</sup> (1.4)	9 (0.1)	
New Zealand.....	7 (0.4)	17 (0.8)	24 (1.1)	23 (1.3)	9 (0.4)	8 (0.4)	7 (0.5)	4 (0.5)	136 (1.7)	14 (0.2)	
Norway.....	8 (0.4)	19 (0.6)	26 (1.2)	25 (1.5)	10 (0.4)	6 (0.3)	4 (0.3)	3 (0.4)	114 (2.3)	13 (0.3)	
Palestinian National Authority.....	13 <sup>1</sup> (0.6)	23 <sup>1</sup> (1.0)	18 <sup>1</sup> (0.8)	16 <sup>1</sup> (0.9)	11 <sup>1</sup> (0.5)	9 <sup>1</sup> (0.3)	6 <sup>1</sup> (0.3)	6 <sup>1</sup> (0.4)	127 <sup>2</sup> (2.3)	14 (0.3)	
Philippines.....	9 <sup>1</sup> (0.4)	20 <sup>1</sup> (0.9)	16 <sup>1</sup> (0.8)	15 <sup>1</sup> (1.0)	11 <sup>1</sup> (0.5)	16 <sup>1</sup> (0.7)	7 <sup>1</sup> (0.3)	6 <sup>1</sup> (0.4)	193 (3.6)	17 (0.4)	
Romania.....	9 (0.4)	24 (0.8)	29 (1.0)	15 (0.7)	10 (0.4)	9 (0.5)	3 (0.3)	2 (0.2)	120 <sup>1</sup> (2.1)	13 <sup>1</sup> (0.3)	
Russian Federation.....	11 (0.2)	20 (0.7)	20 (0.7)	18 (0.7)	8 (0.4)	18 (0.5)	1 (0.2)	3 (0.3)	128 <sup>1</sup> (2.1)	15 <sup>1</sup> (0.3)	
Saudi Arabia.....	15 <sup>1</sup> (1.0)	16 <sup>1</sup> (1.6)	13 <sup>1</sup> (1.0)	8 <sup>1</sup> (0.7)	23 <sup>1</sup> (2.2)	12 <sup>1</sup> (1.0)	6 <sup>1</sup> (0.4)	7 <sup>1</sup> (0.8)	110 <sup>2</sup> (1.0)	11 (0.2)	
Scotland <sup>4</sup> .....	8 <sup>1</sup> (0.3)	22 <sup>1</sup> (0.7)	26 <sup>1</sup> (1.3)	22 <sup>1</sup> (1.5)	8 <sup>1</sup> (0.5)	4 <sup>1</sup> (0.3)	6 <sup>1</sup> (0.5)	3 <sup>1</sup> (0.5)	142 <sup>2</sup> (2.2)	14 (0.2)	
Serbia <sup>6</sup> .....	7 (0.4)	25 (1.4)	23 (1.2)	20 (1.2)	9 (0.5)	7 (0.4)	3 (0.3)	5 (0.5)	107 <sup>2</sup> (1.5)	13 (0.2)	
Singapore.....	11 (0.4)	27 (0.7)	19 (0.6)	15 (0.5)	9 (0.3)	8 (0.3)	6 (0.4)	4 (0.4)	114 (1.6)	13 (0.2)	

See notes at end of table.



**Table 401. Percentage of lesson time spent on various mathematics activities, yearly mathematics instructional time, and mathematics instructional time as a percentage of total instructional time in eighth grade, by country: 2003—Continued**

Country	Percentage of time in mathematics lessons students spend on various activities in a typical week								Students' average yearly mathematics instructional time, in hours	Mathematics instructional time as a percent of total instructional time
	Reviewing homework	Listening to lecture-style presentations	Working problems with teacher's guidance	Working problems on their own without teacher's guidance	Listening to teachers reteach and clarify content/procedures	Taking tests and quizzes	Participating in classroom management tasks not related to the lesson's content/purpose	Other student activities		
1	2	3	4	5	6	7	8	9	10	11
Slovak Republic.....	8 (0.3)	17 (0.7)	27 (0.9)	17 (0.7)	13 (0.5)	12 (0.4)	3 (0.3)	3 (0.3)	126 <sup>1</sup> (1.9)	14 <sup>1</sup> (0.3)
Slovenia.....	11 (0.4)	21 (0.8)	24 (0.7)	22 (0.9)	10 (0.6)	6 (0.3)	2 (0.2)	4 (0.4)	116 (1.3)	11 (0.1)
South Africa.....	15 <sup>2</sup> (0.9)	13 <sup>2</sup> (0.7)	19 <sup>2</sup> (0.9)	18 <sup>2</sup> (0.9)	11 <sup>2</sup> (0.6)	12 <sup>2</sup> (0.6)	7 <sup>2</sup> (0.4)	5 <sup>2</sup> (0.4)	‡ (†)	‡ (†)
Sweden.....	4 (0.4)	11 (0.6)	37 (1.8)	28 (1.8)	9 (0.3)	6 (0.3)	3 (0.3)	3 (0.4)	91 <sup>1</sup> (1.6)	10 <sup>1</sup> (0.2)
Tunisia.....	18 <sup>1</sup> (0.9)	14 <sup>1</sup> (1.0)	17 <sup>1</sup> (0.9)	18 <sup>1</sup> (0.9)	14 <sup>1</sup> (0.8)	13 <sup>1</sup> (0.7)	4 <sup>1</sup> (0.4)	4 <sup>1</sup> (0.5)	‡ (†)	‡ (†)
United States <sup>9</sup> .....	13 (0.5)	18 (0.7)	21 (0.6)	18 (0.6)	11 (0.3)	11 (0.4)	5 (0.3)	4 (0.4)	135 <sup>2</sup> (2.2)	13 (0.2)

†Not applicable.

#Rounds to zero.

‡Reporting standards not met.

<sup>1</sup>Data available for at least 70 but less than 85 percent of students, with missing data having not been explicitly accounted for in the analysis.

<sup>2</sup>Data available for at least 50 but less than 70 percent of students, with missing data having not been explicitly accounted for in the analysis.

<sup>3</sup>Did not satisfy guidelines for sample participation rates.

<sup>4</sup>Met guidelines for sample participation rates only after replacement schools were included.

<sup>5</sup>SAR = Special Administrative Region.

<sup>6</sup>National Desired Population does not cover all of International Desired Population.

<sup>7</sup>National Defined Population covers less than 90 percent of National Desired Population.

<sup>8</sup>Korea tested the same cohort of students as other countries, but later in 2003, at the beginning of the next school year.

<sup>9</sup>Nearly satisfied guidelines for sample participation rates only after replacement schools were included.

NOTE: Percentage of time in mathematics lessons students spend on various activities in a typical week provided by teachers. Mathematics instructional time provided by teachers and total instructional time provided by schools. Data are for eighth grade or equivalent in most countries. Detail may not sum to totals because of rounding. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2003, *TIMSS 2003 International Mathematics Report*, by Ina V.S. Mullis et al. (This table was prepared April 2005.)

Table 402. Average size and scores of eighth-grade mathematics classes and Index of Teachers' Emphasis on Mathematics Homework (EMH), by country: 2003

Country	Overall average class size	Percentage distribution and mean scores of mathematics classes, by average class size								Index of Teachers' Emphasis on Mathematics Homework (EMH) <sup>1</sup>					
		1 to 24 students		25 to 32 students		33 to 40 students		41 or more students		High EMH <sup>2</sup>		Medium EMH <sup>3</sup>		Low EMH <sup>4</sup>	
		Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>International average.....</b>	<b>30 (0.1)</b>	<b>29 (0.5)</b>	<b>461 (1.9)</b>	<b>35 (0.5)</b>	<b>473 (1.4)</b>	<b>24 (0.5)</b>	<b>470 (2.1)</b>	<b>13 (0.3)</b>	<b>448 (1.7)</b>	<b>30 (0.5)</b>	<b>473 (1.4)</b>	<b>51 (0.6)</b>	<b>469 (0.9)</b>	<b>19 (0.4)</b>	<b>453 (1.7)</b>
Armenia.....	27 <sup>5</sup> (0.9)	39 (4.4)	474 (5.6)	43 (4.3)	485 (5.0)	7 (1.8)	460 (9.9)	11 (2.8)	462 (8.4)	65 <sup>6</sup> (4.6)	481 (4.2)	31 (4.7)	474 (6.6)	4 (2.1)	467 (11.5)
Australia.....	26 (0.5)	31 (4.2)	482 (9.4)	65 (4.7)	518 (5.9)	4 (2.2)	492 (14.2)	# (†)	† (†)	10 (3.0)	544 (19.7)	56 (4.1)	518 (5.9)	34 (3.8)	475 (9.5)
Bahrain.....	32 (0.1)	6 (0.7)	451 (5.8)	52 (2.7)	402 (2.1)	40 (2.6)	395 (3.5)	3 (#)	412 (3.8)	15 (2.5)	389 (6.1)	72 (3.7)	404 (2.3)	14 (3.1)	396 (8.7)
Belgium (Flemish).....	20 (0.3)	90 (2.3)	538 (3.3)	10 (2.3)	553 (10.5)	# (†)	† (†)	# (†)	† (†)	9 (2.5)	555 (6.5)	30 (3.8)	555 (5.8)	60 (3.9)	529 (5.6)
Botswana.....	37 (0.4)	1 (0.7)	† (†)	14 (2.6)	392 (9.1)	60 (4.3)	360 (3.7)	25 (4.1)	362 (4.1)	44 (4.6)	364 (4.0)	49 (4.5)	368 (4.0)	7 (2.5)	379 (7.0)
Bulgaria.....	22 (0.5)	64 (4.2)	468 (4.9)	32 (3.9)	503 (8.0)	3 (2.4)	423 (5.0)	1 (#)	† (†)	53 (4.2)	483 (6.1)	38 (4.2)	467 (7.7)	9 (2.5)	469 (15.6)
Chile.....	35 (0.4)	9 (1.5)	385 (17.0)	22 (2.6)	384 (8.1)	47 (3.6)	390 (5.7)	23 (3.0)	389 (6.9)	10 (2.2)	401 (14.9)	49 (3.6)	388 (5.1)	40 (3.3)	383 (5.5)
Chinese Taipei.....	37 (0.4)	4 (1.5)	598 (28.9)	14 (2.8)	567 (11.5)	65 (4.0)	575 (4.7)	17 (3.2)	636 (8.7)	29 (3.9)	602 (8.6)	39 (3.9)	588 (6.3)	32 (3.9)	570 (7.6)
Cyprus.....	26 (0.1)	21 (1.9)	463 (3.2)	79 (1.9)	460 (2.0)	# (†)	† (†)	# (†)	† (†)	35 (3.1)	455 (3.2)	65 (3.1)	462 (2.3)	# (†)	† (†)
Egypt.....	38 (0.6)	3 (1.2)	422 (13.8)	9 (2.1)	428 (11.3)	61 (4.1)	403 (4.3)	27 (3.7)	407 (7.5)	23 (3.3)	401 (8.6)	57 (3.8)	409 (4.8)	20 (3.2)	406 (8.1)
England <sup>7</sup> .....	† <sup>8</sup> (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† <sup>6</sup> (†)	† (†)	† (†)	† (†)	† (†)	† (†)
Estonia.....	27 (0.5)	32 (3.4)	523 (5.1)	41 (4.2)	530 (4.3)	27 (3.8)	550 (5.4)	# (†)	† (†)	12 (2.3)	540 (9.9)	78 (3.2)	532 (3.3)	9 (2.5)	518 (14.1)
Ghana.....	37 <sup>5</sup> (1.0)	16 (2.7)	232 (7.4)	18 (3.1)	249 (8.9)	29 (4.0)	292 (9.0)	37 (4.7)	289 (9.1)	48 (5.0)	271 (7.9)	37 (5.0)	275 (7.1)	15 (3.0)	284 (10.2)
Hong Kong, SAR <sup>9,10</sup> .....	39 (0.3)	3 (1.1)	504 (28.1)	6 (1.6)	513 (21.3)	49 (4.1)	575 (5.7)	43 (4.1)	612 (4.7)	26 (3.7)	598 (6.0)	50 (4.6)	593 (6.0)	24 (4.0)	566 (10.0)
Hungary.....	22 (0.4)	64 (3.9)	522 (4.2)	35 (4.0)	540 (6.5)	2 (0.9)	† (†)	# (†)	† (†)	8 (2.0)	532 (8.9)	90 (2.2)	530 (3.5)	2 (0.9)	† (†)
Indonesia <sup>11</sup> .....	40 (0.5)	3 (1.7)	413 (8.6)	10 (2.8)	366 (20.0)	38 (4.1)	413 (8.3)	48 (4.3)	421 (6.7)	45 (3.9)	421 (7.4)	45 (4.4)	402 (9.4)	10 (2.6)	412 (15.3)
Iran, Islamic Republic of.....	29 (0.4)	23 (2.9)	397 (5.7)	50 (4.0)	413 (4.5)	25 (3.3)	420 (6.0)	3 (1.4)	431 (13.7)	63 (4.4)	417 (3.2)	26 (4.0)	406 (7.2)	12 (2.8)	399 (9.3)
Israel <sup>12</sup> .....	34 <sup>5</sup> (0.4)	9 (2.2)	512 (18.3)	23 (3.7)	500 (9.2)	64 (4.5)	490 (4.9)	4 (1.7)	531 (4.5)	50 (3.8)	501 (5.4)	44 (4.1)	500 (6.1)	6 (1.7)	438 (17.8)
Italy.....	22 (0.3)	78 (3.1)	483 (3.4)	22 (3.1)	488 (8.3)	# (†)	† (†)	# (†)	† (†)	71 (3.5)	482 (3.2)	25 (3.2)	489 (8.4)	4 (1.5)	480 (11.2)
Japan.....	35 (0.2)	3 (1.2)	561 (6.1)	18 (2.6)	557 (4.5)	78 (2.6)	571 (2.7)	1 (1.0)	† (†)	7 (2.2)	583 (23.4)	29 (3.8)	573 (6.9)	64 (3.9)	567 (2.5)
Jordan.....	35 (0.7)	14 (2.8)	430 (9.4)	26 (3.6)	424 (13.3)	32 (4.4)	417 (5.9)	28 (3.8)	428 (7.4)	30 (3.8)	422 (5.5)	55 (4.4)	430 (6.3)	14 (2.8)	410 (8.6)
Korea, Republic of <sup>13</sup> .....	37 <sup>8</sup> (0.4)	1 (0.9)	† (†)	20 (3.0)	569 (4.6)	57 (4.6)	594 (2.9)	22 (3.5)	600 (7.0)	9 <sup>14</sup> (2.1)	582 (10.8)	31 (3.6)	589 (4.7)	60 (3.5)	591 (3.5)
Latvia.....	24 (0.7)	52 (3.5)	497 (4.4)	42 (3.4)	519 (5.5)	3 (1.0)	527 (20.3)	3 (1.7)	506 (12.6)	17 (2.9)	523 (8.8)	75 (3.8)	505 (3.5)	9 (2.6)	500 (11.7)
Lebanon.....	29 (0.9)	32 (3.9)	429 (6.0)	44 (4.8)	429 (5.1)	16 (3.1)	443 (10.4)	8 (3.1)	464 (8.7)	49 (4.6)	433 (4.6)	45 (4.4)	436 (5.8)	6 (1.9)	401 (13.1)
Lithuania <sup>12</sup> .....	25 (0.3)	39 (3.2)	486 (4.2)	61 (3.2)	510 (3.0)	# (†)	† (†)	# (†)	† (†)	13 (2.7)	512 (7.7)	76 (3.6)	501 (3.4)	11 (2.6)	477 (11.3)
Macedonia, Republic of <sup>12</sup> .....	28 (0.4)	24 (3.5)	439 (9.2)	58 (4.3)	435 (5.9)	17 (3.6)	429 (13.7)	1 (1.0)	† (†)	22 (3.3)	450 (8.1)	66 (3.9)	428 (5.2)	12 (2.6)	432 (13.8)
Malaysia.....	37 (0.4)	1 (0.7)	† (†)	18 (3.3)	514 (11.0)	56 (4.4)	503 (5.1)	25 (3.5)	515 (8.8)	60 (4.5)	508 (5.0)	34 (4.2)	515 (8.5)	5 (1.9)	466 (10.1)
Moldova.....	24 <sup>5</sup> (0.5)	56 (4.5)	449 (6.0)	38 (4.6)	460 (7.0)	5 (2.5)	485 (25.2)	1 (0.6)	† (†)	43 <sup>6</sup> (4.8)	451 (6.1)	52 (5.0)	463 (7.9)	5 (1.9)	468 (10.1)
Morocco <sup>11,15</sup> .....	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	54 <sup>14</sup> (6.2)	391 (5.9)	37 (6.4)	383 (5.2)	9 (4.1)	389 (11.1)
Netherlands <sup>9</sup> .....	26 (0.3)	33 (3.9)	514 (9.4)	66 (4.1)	546 (5.8)	1 (1.0)	† (†)	# (†)	† (†)	7 (2.4)	550 (15.3)	82 (3.7)	541 (4.9)	11 (3.1)	495 (14.1)
New Zealand.....	27 (0.4)	22 (3.0)	469 (8.9)	72 (4.1)	500 (5.7)	6 (3.2)	538 (17.8)	# (†)	† (†)	7 (2.1)	479 (15.6)	67 (4.1)	510 (6.6)	25 (4.2)	471 (5.3)
Norway.....	25 (0.3)	34 (3.8)	467 (4.3)	65 (3.6)	460 (3.5)	1 (0.7)	† (†)	1 (0.7)	† (†)	25 (3.4)	460 (6.5)	46 (4.3)	465 (3.8)	29 (4.3)	455 (5.0)
Palestinian National Authority..	39 (0.6)	6 (2.0)	398 (20.0)	17 (2.8)	393 (7.4)	27 (3.9)	394 (8.9)	50 (3.7)	385 (4.2)	30 (4.0)	389 (6.4)	58 (4.3)	391 (4.6)	12 (2.5)	388 (14.9)
Philippines.....	54 (0.7)	1 (0.6)	† (†)	1 (0.7)	† (†)	7 (2.0)	448 (23.4)	91 (2.1)	372 (5.4)	24 (4.0)	358 (10.9)	61 (4.8)	384 (7.1)	15 (3.7)	377 (19.1)
Romania.....	24 (0.5)	51 (4.5)	469 (6.7)	46 (4.5)	480 (7.4)	3 (1.4)	534 (34.7)	1 (#)	† (†)	78 (3.3)	478 (5.5)	21 (3.3)	463 (10.1)	1 (0.7)	† (†)
Russian Federation.....	24 (0.6)	47 (4.2)	500 (5.1)	47 (3.6)	515 (5.0)	6 (3.4)	533 (11.0)	# (†)	† (†)	56 (3.5)	514 (4.3)	43 (3.5)	499 (4.7)	1 (0.5)	† (†)
Saudi Arabia.....	28 (0.9)	36 (5.3)	333 (7.5)	26 (4.8)	340 (8.1)	29 (5.8)	330 (5.6)	8 (3.0)	325 (4.1)	14 (3.0)	331 (8.9)	69 (3.9)	332 (4.6)	17 (3.0)	346 (15.0)
Scotland <sup>9</sup> .....	27 <sup>5</sup> (0.5)	33 (3.9)	457 (7.2)	56 (4.4)	520 (6.2)	11 (3.4)	548 (10.1)	1 (0.7)	† (†)	3 (1.7)	549 (10.6)	45 (4.6)	527 (5.7)	51 (4.5)	477 (6.2)
Serbia <sup>11</sup> .....	26 (0.4)	38 (3.7)	464 (4.4)	51 (4.0)	483 (3.8)	11 (2.9)	489 (8.2)	# (†)	† (†)	34 (4.1)	474 (4.9)	45 (4.3)	481 (4.5)	22 (3.7)	470 (5.6)
Singapore.....	38 (0.2)	2 (0.6)	† (†)	8 (1.6)	613 (18.0)	63 (2.7)	606 (5.0)	26 (2.5)	607 (5.7)	59 (2.4)	620 (4.2)	33 (2.5)	592 (6.6)	8 (1.3)	563 (13.1)

See notes at end of table.

**Table 402. Average size and scores of eighth-grade mathematics classes and Index of Teachers' Emphasis on Mathematics Homework (EMH), by country: 2003—Continued**

Country	Overall average class size	Percentage distribution and mean scores of mathematics classes, by average class size								Index of Teachers' Emphasis on Mathematics Homework (EMH) <sup>1</sup>					
		1 to 24 students		25 to 32 students		33 to 40 students		41 or more students		High EMH <sup>2</sup>		Medium EMH <sup>3</sup>		Low EMH <sup>4</sup>	
		Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Slovak Republic.....	25 (0.4)	42 (4.6)	498 (4.7)	53 (4.7)	512 (5.4)	5 (1.8)	543 (19.7)	# (†)	‡ (†)	5 (1.5)	510 (12.4)	79 (2.9)	511 (4.0)	16 (2.7)	492 (6.3)
Slovenia.....	22 (0.3)	70 (4.1)	491 (3.0)	30 (4.1)	500 (4.1)	# (†)	‡ (†)	# (†)	‡ (†)	13 (2.9)	490 (9.2)	85 (3.1)	495 (2.5)	3 (1.0)	473 (9.7)
South Africa.....	45 <sup>8</sup> (1.3)	4 (1.2)	309 (35.8)	14 (3.0)	290 (23.8)	30 (3.7)	265 (11.7)	52 (4.1)	249 (8.7)	26 <sup>6</sup> (3.4)	266 (9.2)	54 (3.9)	267 (9.6)	20 (3.3)	250 (9.1)
Sweden.....	21 (0.4)	71 (3.6)	491 (3.3)	27 (3.7)	522 (5.5)	1 (1.0)	‡ (†)	# (†)	‡ (†)	17 (2.8)	503 (7.0)	25 (3.2)	506 (6.0)	59 (3.7)	494 (4.0)
Tunisia.....	34 (0.3)	1 (1.0)	‡ (†)	26 (3.3)	404 (3.6)	71 (3.5)	412 (3.2)	2 (1.1)	‡ (†)	12 (2.5)	423 (9.1)	84 (3.0)	407 (2.2)	4 (1.6)	442 (11.3)
United States <sup>15</sup> .....	24 <sup>5</sup> (0.4)	56 (2.9)	504 (3.9)	39 (2.7)	510 (5.1)	4 (1.2)	531 (16.4)	1 (0.7)	‡ (†)	27 (2.5)	531 (8.0)	62 (2.9)	504 (3.8)	11 (2.2)	471 (9.5)

†Not applicable.

#Rounds to zero.

‡Reporting standards not met.

<sup>1</sup>Index based on teachers' responses to two questions about how often they usually assign mathematics homework and how many minutes of mathematics homework they usually assign.

<sup>2</sup>High EMH indicates the assignment of more than 30 minutes of homework in about half of the lessons or more.

<sup>3</sup>Medium level includes all possible combinations of responses not included in the high or low level categories (see below for details on the low level).

<sup>4</sup>Low level indicates no assignment or the assignment of less than 30 minutes of homework in about half the lessons or less.

<sup>5</sup>Class size data available for at least 70 but less than 85 percent of students, with missing data having not been explicitly accounted for in the analysis.

<sup>6</sup>EMH data available for at least 70 but less than 85 percent of students, with missing data having not been explicitly accounted for in the analysis.

<sup>7</sup>Did not satisfy guidelines for sample participation rates.

<sup>8</sup>Class size data available for at least 50 but less than 70 percent of students, with missing data having not been explicitly accounted for in the analysis.

<sup>9</sup>Met guidelines for sample participation rates only after replacement schools were included.

<sup>10</sup>SAR = Special Administrative Region.

<sup>11</sup>National Desired Population does not cover all of International Desired Population.

<sup>12</sup>National Defined Population covers less than 90 percent of National Desired Population.

<sup>13</sup>Korea tested the same cohort of students as other countries, but later in 2003, at the beginning of the next school year.

<sup>14</sup>EMH data available for at least 50 but less than 70 percent of students, with missing data having not been explicitly accounted for in the analysis.

<sup>15</sup>Nearly satisfied guidelines for sample participation rates only after replacement schools were included.

NOTE: Background data provided by teachers. Data are for 8th grade or equivalent in most countries. Possible scores range from 0 to 1000. Detail may not sum to totals because of rounding. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2003, *TIMSS 2003 International Mathematics Report*, by Ina V. S. Mullis et al. (This table was prepared April 2005.)

Table 403. Eighth-grade students' perceptions about mathematics and hours spent on leisure activities, by country: 2003

Country	Index of students' self-confidence in learning mathematics (SCM) <sup>1</sup>						Average hours spent each day <sup>2</sup>								
	High SCM		Medium SCM		Low SCM		Watching TV or videos	Playing computer games	Playing or talking with friends	Doing jobs at home	Playing sports	Reading for enjoyment	Using the Internet	Working at a paid job	
	Percent	Mean score	Percent	Mean score	Percent	Mean score									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Armenia	41 (1.1)	505 (4.0)	40 (1.0)	468 (3.7)	19 (0.9)	462 (4.1)	1.8 (0.03)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	
Australia	50 (1.7)	542 (4.5)	31 (1.1)	483 (3.7)	19 (1.2)	451 (6.4)	2.0 (0.03)	0.9 (0.02)	1.7 (0.04)	1.0 (0.02)	1.6 (0.03)	0.7 (0.02)	1.3 (0.04)	0.4 (0.03)	
Bahrain	44 (0.9)	437 (2.0)	38 (0.9)	379 (2.4)	18 (0.6)	366 (3.2)	2.0 (0.03)	1.2 (0.02)	1.6 (0.03)	1.2 (0.02)	1.5 (0.03)	0.9 (0.02)	1.4 (0.03)	0.6 (0.02)	
Belgium (Flemish)	45 (0.9)	556 (3.2)	30 (0.7)	526 (3.0)	25 (0.8)	518 (3.5)	2.1 (0.03)	1.0 (0.03)	1.9 (0.03)	0.9 (0.02)	1.6 (0.03)	0.5 (0.01)	1.3 (0.03)	0.2 (0.02)	
Botswana	38 (0.9)	390 (2.8)	45 (0.8)	361 (2.5)	17 (0.8)	352 (3.4)	1.4 (0.03)	0.5 (0.02)	2.1 (0.04)	2.3 (0.03)	1.5 (0.02)	1.8 (0.03)	0.7 (0.02)	0.6 (0.03)	
Bulgaria	33 (1.3)	519 (5.5)	39 (1.4)	467 (4.2)	28 (1.2)	445 (4.8)	2.5 (0.04)	1.1 (0.04)	2.6 (0.05)	1.5 (0.03)	1.2 (0.04)	0.7 (0.03)	1.0 (0.04)	0.3 (0.02)	
Chile	35 (0.9)	427 (3.9)	42 (0.7)	369 (3.4)	23 (0.7)	361 (3.9)	2.2 (0.02)	0.7 (0.02)	2.3 (0.02)	1.5 (0.02)	1.8 (0.03)	0.6 (0.01)	0.7 (0.02)	0.3 (0.02)	
Chinese Taipei	26 (1.0)	661 (4.1)	30 (0.7)	593 (5.1)	44 (1.1)	534 (4.0)	1.7 (0.03)	1.4 (0.04)	1.4 (0.03)	0.7 (0.01)	1.0 (0.02)	1.0 (0.02)	1.4 (0.04)	0.2 (0.01)	
Cyprus	46 (0.8)	503 (2.0)	32 (0.8)	437 (2.2)	22 (0.7)	407 (3.6)	2.1 (0.03)	1.3 (0.02)	2.1 (0.03)	1.0 (0.03)	1.7 (0.03)	0.9 (0.02)	1.2 (0.02)	0.6 (0.02)	
Egypt	58 (1.0)	437 (3.3)	35 (0.9)	383 (3.7)	7 (0.4)	374 (5.3)	0.8 (0.02)	0.7 (0.02)	0.8 (0.02)	1.3 (0.03)	1.1 (0.02)	1.0 (0.02)	0.6 (0.02)	0.6 (0.02)	
England <sup>3</sup>	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	
Estonia	41 (0.9)	569 (3.2)	32 (0.7)	520 (3.1)	28 (0.8)	489 (3.5)	2.3 (0.03)	1.1 (0.03)	2.8 (0.03)	1.1 (0.02)	1.4 (0.03)	0.7 (0.02)	1.5 (0.04)	0.4 (0.02)	
Ghana	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	0.7 (0.02)	0.6 (0.02)	1.2 (0.03)	1.5 (0.03)	1.3 (0.02)	1.7 (0.03)	0.8 (0.03)	0.8 (0.03)	
Hong Kong, SAR <sup>4</sup>	30 (0.9)	627 (2.9)	38 (0.7)	581 (4.1)	33 (0.9)	556 (4.0)	2.3 (0.03)	2.0 (0.04)	1.6 (0.03)	0.7 (0.01)	1.0 (0.02)	1.1 (0.02)	2.0 (0.03)	0.1 (0.01)	
Hungary	44 (1.0)	574 (3.3)	32 (1.0)	507 (3.9)	24 (0.8)	479 (3.9)	2.1 (0.03)	1.1 (0.03)	2.2 (0.03)	1.1 (0.02)	1.5 (0.03)	0.8 (0.02)	0.6 (0.03)	0.2 (0.02)	
Indonesia	27 (1.1)	420 (6.6)	59 (0.8)	408 (4.5)	15 (0.9)	416 (4.7)	1.5 (0.03)	0.5 (0.02)	1.3 (0.03)	2.2 (0.03)	1.1 (0.02)	1.1 (0.02)	0.3 (0.02)	0.8 (0.03)	
Iran, Islamic Republic of	35 (0.9)	447 (3.5)	49 (0.8)	399 (2.6)	16 (0.7)	377 (3.4)	1.6 (0.03)	0.4 (0.02)	1.4 (0.03)	1.5 (0.03)	1.4 (0.04)	1.0 (0.02)	0.2 (0.02)	0.7 (0.05)	
Israel	59 (1.2)	526 (3.5)	30 (0.9)	461 (3.8)	11 (0.7)	451 (5.7)	2.5 (0.04)	1.9 (0.03)	2.3 (0.03)	1.4 (0.03)	1.6 (0.03)	0.9 (0.02)	1.8 (0.04)	0.6 (0.02)	
Italy	46 (0.9)	521 (3.3)	29 (0.9)	466 (3.6)	25 (1.0)	439 (3.4)	1.8 (0.03)	1.0 (0.02)	2.6 (0.03)	1.1 (0.03)	1.8 (0.03)	0.7 (0.02)	0.6 (0.02)	0.9 (0.02)	
Japan	17 (0.6)	634 (3.1)	38 (0.7)	580 (2.7)	45 (0.8)	538 (2.3)	2.7 (0.03)	0.9 (0.02)	1.6 (0.04)	0.6 (0.01)	1.3 (0.03)	0.9 (0.02)	0.6 (0.02)	0.1 (0.01)	
Jordan	49 (1.2)	463 (4.7)	38 (1.0)	400 (3.7)	13 (0.7)	390 (4.4)	1.5 (0.03)	0.9 (0.03)	1.2 (0.03)	1.3 (0.03)	1.2 (0.03)	0.9 (0.02)	0.6 (0.03)	0.6 (0.03)	
Korea, Republic of <sup>5</sup>	30 (0.7)	650 (2.8)	36 (0.6)	592 (2.5)	34 (0.8)	534 (2.3)	1.7 (0.03)	1.5 (0.03)	1.8 (0.03)	0.7 (0.01)	0.7 (0.02)	0.6 (0.01)	1.7 (0.03)	0.1 (0.01)	
Latvia	34 (1.0)	555 (3.4)	33 (0.9)	499 (3.2)	33 (1.0)	473 (3.4)	2.4 (0.03)	1.0 (0.02)	2.8 (0.03)	1.6 (0.03)	1.3 (0.03)	0.8 (0.03)	0.8 (0.03)	0.5 (0.02)	
Lebanon	43 (1.4)	462 (3.6)	44 (1.1)	416 (3.1)	13 (0.7)	403 (4.4)	1.8 (0.04)	1.3 (0.03)	1.6 (0.04)	1.3 (0.03)	1.6 (0.03)	1.0 (0.02)	1.0 (0.03)	0.8 (0.03)	
Lithuania	36 (1.0)	552 (3.1)	37 (0.9)	486 (2.8)	26 (0.9)	456 (2.7)	2.1 (0.03)	1.1 (0.03)	2.6 (0.04)	1.6 (0.04)	1.1 (0.03)	0.6 (0.02)	0.7 (0.03)	0.3 (0.02)	
Macedonia, Republic of	33 (1.0)	482 (4.0)	37 (1.0)	418 (4.7)	31 (1.0)	424 (3.9)	2.3 (0.04)	1.3 (0.03)	2.2 (0.03)	1.6 (0.03)	1.8 (0.03)	1.0 (0.02)	0.9 (0.03)	0.7 (0.03)	
Malaysia	39 (1.2)	546 (4.2)	45 (1.0)	490 (3.7)	16 (0.7)	471 (4.4)	2.1 (0.04)	0.8 (0.03)	1.5 (0.03)	1.7 (0.02)	1.1 (0.02)	1.2 (0.02)	0.6 (0.02)	0.3 (0.02)	
Moldova, Republic of	30 (1.2)	494 (5.0)	50 (0.9)	451 (4.5)	20 (1.1)	441 (5.3)	1.9 (0.04)	0.7 (0.03)	2.0 (0.04)	2.2 (0.06)	1.3 (0.03)	1.1 (0.03)	0.7 (0.03)	0.5 (0.03)	
Morocco	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	1.3 (0.04)	2.3 (0.06)	1.3 (0.03)	1.8 (0.03)	1.5 (0.03)	‡ (†)	‡ (†)	‡ (†)	
Netherlands	45 (1.4)	557 (4.4)	33 (1.0)	527 (4.7)	23 (1.0)	511 (4.8)	2.1 (0.05)	1.2 (0.04)	2.0 (0.05)	0.8 (0.02)	1.7 (0.04)	0.5 (0.02)	1.5 (0.04)	0.8 (0.05)	
New Zealand	43 (1.4)	534 (6.4)	36 (1.1)	475 (5.4)	21 (0.9)	452 (4.1)	2.1 (0.04)	1.0 (0.04)	1.8 (0.05)	1.0 (0.02)	1.5 (0.03)	0.7 (0.03)	1.3 (0.04)	0.6 (0.03)	
Norway	46 (1.1)	502 (2.0)	32 (0.8)	445 (2.9)	21 (0.8)	405 (3.4)	2.2 (0.03)	1.2 (0.03)	2.7 (0.03)	1.0 (0.03)	1.8 (0.03)	0.6 (0.02)	1.2 (0.03)	0.7 (0.02)	
Palestinian National Authority	43 (1.0)	428 (3.9)	41 (0.9)	370 (2.9)	16 (0.6)	355 (3.6)	1.2 (0.02)	0.7 (0.02)	1.3 (0.03)	1.5 (0.03)	1.1 (0.03)	1.0 (0.02)	0.5 (0.02)	0.6 (0.03)	
Philippines	29 (0.7)	405 (6.1)	59 (0.7)	369 (4.8)	12 (0.5)	366 (6.5)	1.6 (0.04)	0.6 (0.02)	1.7 (0.03)	1.9 (0.03)	1.4 (0.02)	1.2 (0.02)	0.5 (0.03)	0.8 (0.04)	
Romania	30 (1.2)	533 (4.6)	45 (1.1)	465 (4.5)	25 (0.9)	442 (5.4)	2.0 (0.04)	0.9 (0.03)	2.1 (0.03)	1.7 (0.05)	1.3 (0.03)	1.0 (0.03)	0.8 (0.04)	0.5 (0.04)	
Russian Federation	43 (1.1)	548 (3.0)	30 (0.8)	492 (4.1)	27 (0.8)	466 (4.6)	2.0 (0.03)	1.0 (0.03)	2.5 (0.04)	1.6 (0.03)	1.3 (0.02)	1.1 (0.03)	0.4 (0.02)	0.2 (0.02)	
Saudi Arabia	41 (1.4)	361 (4.8)	43 (1.1)	321 (5.4)	16 (0.9)	303 (5.8)	1.6 (0.05)	1.1 (0.03)	1.3 (0.03)	1.5 (0.04)	1.2 (0.04)	0.9 (0.02)	0.8 (0.05)	0.8 (0.03)	
Scotland	52 (1.5)	524 (3.9)	32 (1.0)	477 (3.8)	15 (0.9)	456 (5.0)	2.2 (0.03)	1.4 (0.04)	2.7 (0.03)	0.8 (0.02)	1.7 (0.03)	0.6 (0.02)	1.4 (0.03)	0.5 (0.03)	
Serbia	44 (1.1)	530 (2.8)	26 (0.7)	458 (3.2)	30 (1.1)	422 (3.4)	2.1 (0.03)	1.0 (0.03)	2.1 (0.03)	1.3 (0.03)	1.7 (0.03)	0.8 (0.02)	0.6 (0.03)	0.3 (0.02)	
Singapore	39 (0.8)	639 (3.0)	34 (0.7)	594 (3.9)	27 (0.7)	571 (4.6)	2.3 (0.02)	1.4 (0.02)	1.7 (0.02)	0.7 (0.02)	1.4 (0.02)	0.9 (0.02)	1.6 (0.02)	0.2 (0.02)	
Slovak Republic	40 (1.1)	556 (3.7)	35 (1.0)	487 (3.9)	25 (1.0)	462 (4.1)	2.5 (0.03)	1.1 (0.03)	2.8 (0.03)	1.5 (0.03)	1.9 (0.04)	0.9 (0.02)	0.6 (0.03)	0.4 (0.02)	
Slovenia	40 (0.9)	533 (3.2)	39 (1.0)	474 (2.5)	20 (0.9)	453 (2.8)	2.2 (0.03)	1.3 (0.03)	2.0 (0.03)	1.2 (0.03)	1.7 (0.03)	0.8 (0.02)	1.1 (0.03)	0.4 (0.02)	
South Africa	37 (0.9)	300 (8.3)	48 (0.9)	242 (3.9)	15 (0.8)	255 (9.9)	1.5 (0.03)	0.7 (0.02)	2.0 (0.03)	1.8 (0.03)	1.6 (0.02)	1.6 (0.03)	0.8 (0.02)	0.8 (0.02)	
Sweden	49 (1.3)	534 (2.6)	36 (0.9)	477 (3.1)	16 (0.9)	446 (3.4)	2.1 (0.03)	1.1 (0.03)	2.8 (0.03)	1.0 (0.02)	1.6 (0.03)	0.6 (0.02)	1.7 (0.04)	0.4 (0.02)	
Tunisia	44 (1.0)	436 (2.7)	36 (0.8)	399 (2.5)	20 (0.9)	384 (2.2)	1.4 (0.02)	0.8 (0.03)	1.5 (0.02)	1.9 (0.03)	1.5 (0.02)	1.3 (0.02)	0.7 (0.02)	0.6 (0.02)	
United States	51 (0.8)	534 (3.3)	29 (0.6)	483 (3.5)	20 (0.6)	461 (3.6)	2.2 (0.03)	1.1 (0.02)	2.4 (0.03)	1.2 (0.02)	1.8 (0.02)	0.7 (0.01)	1.8 (0.03)	0.6 (0.02)	

—Not available.

†Not applicable.

‡Reporting standards not met.

<sup>1</sup>Index based on students' responses to four statements about mathematics: 1) I usually do well in mathematics; 2) Mathematics is more difficult for me than for many of my classmates; 3) Mathematics is not one of my strengths; 4) I learn things quickly in mathematics. Average is computed across the four items based on a 4-point scale: 1. Agree a lot; 2. Agree a little; 3. Disagree a little; 4. Disagree a lot. Students showing positive attitudes a little or a lot of the time across the four statements were assigned to the high level. Students showing negative attitudes a little or a lot of the time across the four statements were assigned to the low level. Students showing mixed attitudes across the four statements were assigned to the middle level.

<sup>2</sup>Number of hours based on: No time = 0; Less than 1 hour = 0.5; 1–2 hours = 1.5; More than 2, but less than 4 hours = 3; 4 or more hours = 4.5. Activities are not necessarily exclusive; students may have reported engaging in more than one activity at the same time.

<sup>3</sup>Did not satisfy guidelines for sample participation rates.

<sup>4</sup>SAR = Special Administrative Region.

<sup>5</sup>Korea tested the same cohort of students as other countries, but later in 2003, at the beginning of the next school year.

NOTE: Data are for eighth grade or equivalent in most countries. Possible scores range from 0 to 1000. Detail may not sum to totals because of rounding. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2003, *TIMSS 2003 International Mathematics Report*, by Ina V. S. Mullis et al. (This table was prepared April 2005.)

**Table 404. Average mathematics scores at the end of secondary school, by sex, average time spent studying mathematics out of school, and country: 1995**

Country	Average score in mathematics			Amount of daily out-of-school study time in mathematics						Average hours <sup>1</sup>
	Total	Males	Females	Less than 1 hour		1 to 2 hours		3 or more hours		
				Percent	Mean score	Percent	Mean score	Percent	Mean score	
1	2	3	4	5	6	7	8	9	10	11
Australia <sup>2</sup> .....	522 (9.3)	540 (10.3)	510 (9.3)	59 (2.2)	521 (8.3)	36 (2.2)	557 (10.2)	5 (0.8)	534 (13.4)	1.0 (0.04)
Austria <sup>2</sup> .....	518 (5.3)	545 (7.2)	503 (5.5)	77 (1.7)	526 (5.8)	19 (1.6)	533 (9.4)	4 (0.8)	502 (13.7)	0.6 (0.04)
Canada <sup>2</sup> .....	519 (2.8)	537 (3.8)	504 (3.5)	56 (2.1)	539 (5.1)	38 (1.9)	547 (5.0)	7 (1.0)	526 (14.6)	1.1 (0.05)
Cyprus <sup>2</sup> .....	446 (2.5)	454 (4.9)	439 (3.7)	63 (2.1)	435 (4.3)	29 (1.8)	471 (4.8)	8 (1.3)	451 (9.0)	1.0 (0.05)
Czech Republic.....	466 (12.3)	488 (11.3)	443 (16.8)	92 (1.5)	464 (13.8)	8 (1.4)	482 (17.8)	# (†)	— (†)	0.4 (0.03)
Denmark <sup>2</sup> .....	547 (3.3)	575 (4.0)	523 (4.0)	68 (2.0)	571 (4.9)	28 (1.6)	563 (4.7)	4 (0.7)	562 (11.9)	0.9 (0.04)
France <sup>2</sup> .....	523 (5.1)	544 (5.6)	506 (5.3)	59 (2.3)	517 (5.1)	35 (2.3)	539 (6.7)	5 (0.7)	505 (14.7)	1.0 (0.04)
Germany <sup>2</sup> .....	495 (5.9)	509 (8.7)	480 (8.8)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Hungary.....	483 (3.2)	485 (4.9)	481 (4.8)	74 (0.9)	480 (3.2)	24 (0.8)	496 (5.5)	2 (0.2)	— (†)	0.7 (0.02)
Iceland <sup>2</sup> .....	534 (2.0)	558 (3.4)	514 (2.2)	79 (1.1)	553 (3.2)	19 (1.1)	542 (7.0)	2 (0.4)	— (†)	0.7 (0.02)
Italy <sup>2</sup> .....	476 (5.5)	490 (7.4)	464 (6.0)	55 (2.6)	479 (6.3)	40 (2.2)	486 (7.2)	5 (0.9)	477 (11.2)	1.0 (0.05)
Lithuania <sup>2</sup> .....	469 (6.1)	485 (7.3)	461 (7.7)	67 (1.8)	472 (5.8)	29 (1.7)	480 (5.2)	4 (0.5)	484 (11.5)	0.8 (0.03)
Netherlands <sup>2</sup> .....	560 (4.7)	585 (5.6)	533 (5.9)	82 (1.7)	606 (6.2)	16 (1.6)	581 (11.1)	1 (0.3)	— (†)	0.7 (0.03)
New Zealand.....	522 (4.5)	536 (4.9)	507 (6.2)	75 (1.4)	544 (6.1)	23 (1.4)	552 (5.9)	2 (0.3)	— (†)	0.7 (0.03)
Norway <sup>2</sup> .....	528 (4.1)	555 (5.3)	501 (4.8)	85 (1.4)	541 (5.1)	14 (1.3)	558 (9.5)	1 (0.3)	— (†)	0.5 (0.03)
Russian Federation <sup>2</sup> .....	471 (6.2)	488 (6.5)	460 (6.6)	56 (2.0)	463 (5.9)	33 (1.4)	484 (7.5)	11 (1.2)	494 (8.1)	1.2 (0.06)
Slovenia <sup>2</sup> .....	512 (8.3)	535 (12.7)	490 (8.0)	72 (2.7)	521 (9.4)	25 (2.6)	518 (9.5)	2 (0.6)	— (†)	0.7 (0.05)
South Africa <sup>2</sup> .....	356 (8.3)	365 (9.3)	348 (10.8)	33 (1.8)	394 (17.1)	51 (1.8)	375 (10.9)	17 (1.2)	344 (7.2)	1.7 (0.05)
Sweden.....	552 (4.3)	573 (5.9)	531 (3.9)	90 (0.9)	579 (5.4)	9 (0.9)	580 (7.8)	1 (0.2)	— (†)	0.4 (0.02)
Switzerland.....	540 (5.8)	555 (6.4)	522 (7.4)	67 (1.6)	569 (4.9)	28 (1.3)	550 (5.6)	5 (0.9)	522 (10.6)	0.9 (0.04)
United States <sup>2</sup> .....	461 (3.2)	466 (4.1)	456 (3.6)	76 (1.5)	475 (3.8)	22 (1.5)	486 (5.9)	2 (0.2)	— (†)	0.7 (0.02)

—Not available.

†Not applicable.

#Rounds to zero.

<sup>1</sup>Average hours based on: No time = 0; Less than 1 hour = .5; 1–2 hours = 1.5; 3–5 hours = 4; More than 5 hours = 7.<sup>2</sup>Countries did not meet all International Association for the Evaluation of Educational Achievement sampling specifications.

NOTE: End of secondary school is equivalent to 12th grade in the United States and a few other countries, but ranges from 9th to 14th grades among the survey countries. Possible scores range from 1 to 1000. Detail may not sum to totals because of rounding. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study, 1995, *Mathematics and Science Achievement in the Final Year of Secondary School*, by Ina V. S. Mullis et al. (This table was prepared October 1998.)

**Table 405. Average fourth-grade science scores in content areas and average time spent teaching science in school, by country: 2003**

Country	Average score by content area								Average yearly science instructional time in hours	Science instructional time as a percent of total instructional time <sup>1</sup>		
	Science overall		Life science		Physical science		Earth science					
1	2		3		4		5		6		7	
Armenia.....	437	(4.3)	435	(4.4)	429	(4.3)	450	(3.6)	‡	(†)	‡	(†)
Australia.....	521 <sup>2</sup>	(4.2)	523 <sup>2</sup>	(3.8)	518 <sup>2</sup>	(3.9)	518 <sup>2</sup>	(4.1)	45 <sup>3</sup>	(2.6)	5	(0.3)
Austria.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Belgium (Flemish).....	518	(1.8)	524	(1.7)	507	(2.3)	522	(1.7)	‡	(†)	‡	(†)
Canada.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Chinese Taipei.....	551	(1.7)	540	(1.6)	554	(2.0)	559	(2.6)	84	(1.0)	11	(0.2)
Cyprus.....	480	(2.4)	482	(2.1)	479	(2.3)	487	(2.5)	46 <sup>3</sup>	(1.4)	5	(0.2)
Czech Republic.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
England.....	540 <sup>2</sup>	(3.6)	532 <sup>2</sup>	(3.1)	546 <sup>2</sup>	(3.2)	535 <sup>2</sup>	(3.5)	‡	(†)	‡	(†)
Greece.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Hong Kong, SAR <sup>4</sup> .....	542 <sup>2</sup>	(3.1)	535 <sup>2</sup>	(2.6)	548 <sup>2</sup>	(2.7)	536 <sup>2</sup>	(2.7)	77 <sup>3</sup>	(5.4)	8	(0.5)
Hungary.....	530	(3.0)	536	(2.5)	526	(2.7)	526	(3.7)	54 <sup>3</sup>	(1.0)	6	(0.1)
Iceland.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Iran, Islamic Republic of ....	414	(4.1)	424	(4.6)	419	(4.5)	428	(3.0)	‡	(†)	‡	(†)
Ireland.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Israel.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Italy.....	516	(3.8)	521	(3.5)	512	(3.5)	519	(3.7)	73 <sup>5</sup>	(2.3)	8 <sup>5</sup>	(0.3)
Japan.....	543	(1.5)	530	(1.3)	557	(1.7)	535	(1.9)	81	(1.2)	8	(0.2)
Korea, Republic of <sup>6</sup> .....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Kuwait.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Latvia.....	532	(2.5)	531	(2.3)	532	(2.6)	534	(2.9)	‡	(†)	‡	(†)
Lithuania.....	512	(2.6)	516 <sup>2,7</sup>	(2.0)	512 <sup>2,7</sup>	(2.5)	503 <sup>2,7</sup>	(3.2)	53	(1.6)	6	(0.2)
Netherlands.....	525 <sup>2</sup>	(2.0)	547 <sup>2</sup>	(1.8)	505 <sup>2</sup>	(1.9)	503 <sup>2</sup>	(2.3)	33 <sup>3</sup>	(1.8)	3	(0.2)
New Zealand.....	520	(2.5)	520	(2.3)	516	(2.3)	522	(2.3)	65 <sup>3</sup>	(3.5)	7	(0.4)
Norway.....	466	(2.6)	480	(2.2)	456	(2.3)	473	(2.8)	38 <sup>5</sup>	(1.8)	4 <sup>5</sup>	(0.2)
Philippines.....	332	(9.4)	330	(9.0)	343	(9.6)	324	(9.2)	176 <sup>5</sup>	(3.2)	16 <sup>5</sup>	(0.4)
Portugal.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Russian Federation.....	526	(5.2)	526	(4.7)	527	(5.2)	527	(6.0)	33 <sup>3</sup>	(1.2)	5	(0.2)
Scotland.....	502 <sup>2</sup>	(2.9)	506 <sup>2</sup>	(3.1)	503 <sup>2</sup>	(2.6)	498 <sup>2</sup>	(2.6)	‡	(†)	‡	(†)
Singapore.....	565	(5.5)	506	(3.1)	503	(2.6)	498	(2.6)	64	(0.6)	7	(0.1)
Slovenia.....	490	(2.5)	489	(2.9)	497	(2.3)	490	(2.7)	75 <sup>5</sup>	(2.2)	9 <sup>5</sup>	(0.3)
Thailand.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Tunisia.....	314	(5.7)	290	(5.9)	324	(5.3)	336	(4.8)	‡	(†)	‡	(†)
United States.....	536 <sup>2</sup>	(2.5)	537 <sup>2</sup>	(2.2)	531 <sup>2</sup>	(2.3)	535 <sup>2</sup>	(2.5)	83 <sup>5</sup>	(3.0)	8 <sup>5</sup>	(0.3)

—Not available.

†Not applicable.

‡Reporting standards not met.

<sup>1</sup>Computed as the ratio of science instructional time to the total instructional time averaged across students.<sup>2</sup>Met guidelines for participation rates only after replacement schools were included.<sup>3</sup>Data are available for at least 50 but less than 70 percent of the students.<sup>4</sup>SAR = Special Administrative Region.<sup>5</sup>Data are available for at least 70 but less than 85 percent of the students.<sup>6</sup>Korea tested the same cohort of students as other countries, but later in 2003, at the beginning of the next school year.<sup>7</sup>National Desired Population does not cover all of International Desired Population.

NOTE: Data are for fourth grade or equivalent in most countries. Detail may not sum to totals because of rounding. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2003, *TIMSS 2003 International Science Report*, by Michael O. Martin et al. (This table was prepared October 2005.)

**Table 406. Average eighth-grade science scores in content areas and average time spent studying out of school, by country: 2003**

Country	Average score by content area						Index of time students spend doing science homework (TSH) in a normal school week <sup>1</sup>																	
	Science overall		Life science		Chemistry		Physics		Earth science		Environmental science		High TSH		Medium TSH		Low TSH							
	Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19						
<b>International average.....</b>	<b>473</b>	<b>(0.5)</b>	<b>474</b>	<b>(0.5)</b>	<b>474</b>	<b>(0.5)</b>	<b>474</b>	<b>(0.5)</b>	<b>474</b>	<b>(0.5)</b>	<b>474</b>	<b>(0.5)</b>	<b>13</b>	<b>(0.2)</b>	<b>458</b>	<b>(1.3)</b>	<b>44</b>	<b>(0.2)</b>	<b>466</b>	<b>(0.9)</b>	<b>43</b>	<b>(0.3)</b>	<b>467</b>	<b>(0.9)</b>
Armenia.....	461	(3.5)	453 <sup>2</sup>	(3.3)	466 <sup>2</sup>	(4.2)	479	(3.2)	460 <sup>2</sup>	(3.7)	417 <sup>2</sup>	(4.4)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Australia.....	527	(3.8)	532 <sup>3</sup>	(3.8)	506 <sup>3</sup>	(3.8)	521 <sup>3</sup>	(3.7)	531 <sup>3</sup>	(4.2)	536 <sup>3</sup>	(3.4)	9	(0.8)	520	(6.4)	35	(1.6)	530	(3.3)	56	(2.0)	530	(4.4)
Bahrain.....	438	(1.8)	445 <sup>2</sup>	(1.9)	441 <sup>2</sup>	(2.6)	443 <sup>2</sup>	(2.0)	440 <sup>2</sup>	(2.4)	439 <sup>2</sup>	(3.1)	13	(0.7)	426	(4.1)	56	(1.3)	441	(2.5)	31	(1.4)	445	(2.6)
Belgium (Flemish).....	516	(2.5)	526 <sup>3</sup>	(2.4)	503 <sup>3</sup>	(2.0)	514 <sup>3</sup>	(2.5)	508 <sup>3</sup>	(2.5)	523 <sup>3</sup>	(2.7)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Botswana.....	365	(2.8)	370 <sup>2</sup>	(2.7)	348 <sup>2</sup>	(3.1)	371 <sup>2</sup>	(3.2)	361 <sup>2</sup>	(3.1)	381 <sup>2</sup>	(3.3)	14	(0.7)	378	(6.1)	45	(1.0)	368	(3.2)	40	(1.2)	366	(3.6)
Bulgaria.....	479	(5.2)	474	(5.2)	482	(5.7)	485 <sup>3</sup>	(5.0)	491 <sup>3</sup>	(4.9)	464 <sup>3</sup>	(5.0)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Chile.....	413	(2.9)	427 <sup>2</sup>	(2.7)	405 <sup>2</sup>	(3.3)	401 <sup>2</sup>	(3.1)	435 <sup>2</sup>	(3.1)	436 <sup>2</sup>	(2.9)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Chinese Taipei.....	571	(3.5)	563 <sup>3</sup>	(3.1)	584 <sup>3</sup>	(4.0)	569 <sup>3</sup>	(3.3)	548 <sup>3</sup>	(3.1)	560 <sup>3</sup>	(3.1)	12 <sup>4</sup>	(1.2)	588 <sup>4</sup>	(4.6)	37 <sup>4</sup>	(1.3)	581 <sup>4</sup>	(4.0)	51 <sup>4</sup>	(2.1)	561 <sup>4</sup>	(3.5)
Cyprus.....	441	(2.0)	437 <sup>2</sup>	(2.2)	443 <sup>2</sup>	(2.6)	450 <sup>2</sup>	(1.7)	447 <sup>2</sup>	(2.1)	441 <sup>2</sup>	(2.3)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
England <sup>5</sup> .....	†	(†)	†	(†)	†	(†)	†	(†)	†	(†)	†	(†)	†	(†)	†	(†)	†	(†)	†	(†)	†	(†)	†	(†)
Egypt.....	421	(3.9)	425 <sup>2</sup>	(3.7)	442 <sup>2</sup>	(3.8)	414 <sup>2</sup>	(4.1)	403 <sup>2</sup>	(4.4)	430 <sup>2</sup>	(4.0)	23	(0.7)	416	(4.4)	64	(0.8)	436	(4.0)	13	(0.6)	430	(6.6)
Estonia.....	552	(2.5)	547 <sup>3</sup>	(2.4)	552 <sup>3</sup>	(2.1)	544 <sup>3</sup>	(2.4)	558 <sup>3</sup>	(2.9)	540 <sup>3</sup>	(2.2)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Ghana.....	255	(5.9)	256 <sup>2</sup>	(5.6)	276 <sup>2</sup>	(6.6)	239 <sup>2</sup>	(5.4)	254 <sup>2</sup>	(5.6)	267 <sup>2</sup>	(6.2)	25	(1.2)	267	(8.5)	54	(1.0)	262	(6.0)	22	(1.0)	258	(8.1)
Hong Kong, SAR <sup>6,7</sup> .....	556	(3.0)	551 <sup>3</sup>	(2.9)	542 <sup>3</sup>	(2.6)	555 <sup>3</sup>	(2.8)	549 <sup>3</sup>	(2.9)	555 <sup>3</sup>	(2.6)	6	(0.5)	548	(4.6)	43	(1.4)	563	(2.9)	50	(1.4)	554	(3.9)
Hungary.....	543	(2.8)	536 <sup>3</sup>	(2.7)	560 <sup>3</sup>	(3.1)	536 <sup>3</sup>	(2.7)	537 <sup>3</sup>	(3.1)	528 <sup>3</sup>	(2.9)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Indonesia <sup>8</sup> .....	420	(4.1)	424 <sup>2</sup>	(3.9)	391 <sup>2</sup>	(3.8)	430 <sup>2</sup>	(4.0)	431 <sup>2</sup>	(3.8)	454 <sup>2</sup>	(3.4)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Iran, Islamic Republic of.....	453	(2.3)	447 <sup>2</sup>	(2.6)	445 <sup>2</sup>	(2.7)	445 <sup>2</sup>	(3.0)	468 <sup>2</sup>	(2.9)	487 <sup>3</sup>	(2.1)	8	(0.7)	451	(5.6)	42	(1.4)	457	(2.9)	49	(1.7)	452	(2.7)
Israel <sup>9</sup> .....	488 <sup>10</sup>	(3.1)	491 <sup>3</sup>	(3.0)	499 <sup>3</sup>	(3.4)	484 <sup>3</sup>	(2.9)	485 <sup>3</sup>	(3.0)	486 <sup>3</sup>	(2.9)	13	(0.9)	480	(4.7)	43	(1.6)	485	(4.3)	44	(2.0)	505	(3.4)
Italy.....	491	(3.1)	498 <sup>3</sup>	(3.2)	487 <sup>3</sup>	(3.3)	470	(3.2)	513 <sup>3</sup>	(3.2)	497 <sup>3</sup>	(3.0)	14	(1.0)	489	(5.9)	41	(1.1)	487	(3.7)	45	(1.4)	496	(3.7)
Japan.....	552	(1.7)	549 <sup>3</sup>	(2.0)	552 <sup>3</sup>	(2.1)	564 <sup>3</sup>	(1.9)	530 <sup>3</sup>	(2.1)	537 <sup>3</sup>	(2.0)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Jordan.....	475	(3.8)	475	(4.0)	478	(4.4)	465 <sup>2</sup>	(3.8)	472	(4.0)	492 <sup>3</sup>	(3.2)	19	(0.9)	466	(4.2)	52	(1.2)	478	(3.9)	29	(1.5)	499	(5.0)
Korea, Republic of <sup>11</sup> .....	558	(1.6)	558 <sup>3</sup>	(1.6)	529 <sup>3</sup>	(2.5)	579 <sup>3</sup>	(1.6)	540 <sup>3</sup>	(1.9)	544 <sup>3</sup>	(1.4)	4	(0.4)	549	(6.3)	26	(1.7)	562	(2.4)	70	(2.0)	559	(1.9)
Latvia.....	513	(2.9)	511 <sup>3</sup>	(2.5)	514 <sup>3</sup>	(3.2)	512 <sup>3</sup>	(2.4)	514 <sup>3</sup>	(2.8)	508 <sup>3</sup>	(3.3)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Lebanon.....	393	(4.3)	360 <sup>2</sup>	(5.0)	433 <sup>2</sup>	(4.9)	419 <sup>2</sup>	(4.0)	395 <sup>2</sup>	(4.0)	374 <sup>2</sup>	(5.1)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Lithuania <sup>6</sup> .....	519	(2.1)	517	(2.4)	534 <sup>3</sup>	(2.3)	519 <sup>3</sup>	(2.7)	512 <sup>3</sup>	(2.7)	507 <sup>3</sup>	(2.0)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Macedonia <sup>9</sup> .....	449	(3.6)	448 <sup>2</sup>	(3.8)	467 <sup>2</sup>	(3.9)	458 <sup>2</sup>	(3.1)	440 <sup>2</sup>	(4.3)	442 <sup>2</sup>	(3.7)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Malaysia.....	510	(3.7)	504 <sup>3</sup>	(3.7)	514 <sup>3</sup>	(3.8)	519 <sup>3</sup>	(3.6)	502 <sup>3</sup>	(3.8)	513 <sup>3</sup>	(3.2)	20	(1.0)	513	(4.4)	49	(0.9)	510	(3.6)	31	(1.3)	510	(4.6)
Moldova.....	472	(3.4)	466 <sup>2</sup>	(3.7)	479	(3.9)	479	(3.7)	475	(4.0)	454 <sup>2</sup>	(3.8)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Morocco <sup>7,8</sup> .....	396 <sup>10</sup>	(2.5)	390 <sup>2</sup>	(2.6)	402 <sup>2</sup>	(2.7)	410 <sup>2</sup>	(2.7)	397 <sup>2</sup>	(3.4)	396 <sup>2</sup>	(3.3)	14 <sup>12</sup>	(0.7)	391 <sup>12</sup>	(5.3)	47 <sup>12</sup>	(1.1)	396 <sup>12</sup>	(3.4)	39 <sup>12</sup>	(1.3)	408 <sup>12</sup>	(3.5)
Netherlands <sup>7</sup> .....	536	(3.1)	536 <sup>3</sup>	(3.3)	514 <sup>3</sup>	(2.6)	538 <sup>3</sup>	(3.4)	534 <sup>3</sup>	(3.2)	539 <sup>3</sup>	(2.8)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
New Zealand.....	520	(5.0)	523 <sup>3</sup>	(5.1)	501 <sup>3</sup>	(5.6)	515 <sup>3</sup>	(4.7)	525 <sup>3</sup>	(4.8)	525 <sup>3</sup>	(3.9)	10	(1.3)	519	(6.2)	41	(1.6)	531	(6.9)	48	(2.0)	518	(5.1)
Norway.....	494	(2.2)	496 <sup>3</sup>	(2.5)	485 <sup>3</sup>	(3.0)	488 <sup>3</sup>	(2.6)	517 <sup>3</sup>	(2.7)	496 <sup>3</sup>	(2.2)	13	(0.8)	485	(3.7)	44	(1.2)	493	(3.1)	43	(1.7)	503	(2.3)
Palestinian National Authority.....	435	(3.2)	435 <sup>2</sup>	(3.6)	444 <sup>2</sup>	(3.9)	432 <sup>2</sup>	(3.6)	439 <sup>2</sup>	(3.0)	444 <sup>2</sup>	(3.7)	21	(1.1)	433	(4.4)	56	(1.3)	442	(3.4)	23	(1.3)	441	(4.8)
Philippines <sup>13</sup> .....	377	(5.8)	387 <sup>2</sup>	(5.8)	342 <sup>2</sup>	(6.1)	380 <sup>2</sup>	(4.7)	377 <sup>2</sup>	(5.7)	404 <sup>2</sup>	(5.4)	17	(0.7)	381	(7.5)	50	(0.8)	379	(5.7)	33	(1.2)	381	(7.2)
Romania.....	470	(4.9)	471	(4.8)	474	(4.9)	473	(4.1)	469	(5.2)	472	(4.7)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Russian Federation.....	514	(3.7)	514 <sup>3</sup>	(3.3)	527 <sup>3</sup>	(4.0)	511 <sup>3</sup>	(3.4)	518 <sup>3</sup>	(3.3)	491 <sup>3</sup>	(3.2)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Saudi Arabia.....	398	(4.0)	412 <sup>2</sup>	(3.9)	382 <sup>2</sup>	(4.8)	394 <sup>2</sup>	(3.9)	394 <sup>2</sup>	(4.0)	410 <sup>2</sup>	(3.8)	8	(0.7)	382	(6.0)	61	(1.5)	402	(4.6)	31	(1.7)	403	(4.6)
Scotland <sup>7</sup> .....	512	(3.4)	512 <sup>3</sup>	(3.3)	499 <sup>3</sup>	(3.2)	515 <sup>3</sup>	(3.0)	515 <sup>3</sup>	(3.8)	511 <sup>3</sup>	(3.5)	3	(0.4)	487	(14.2)	27	(1.4)	508	(5.0)	71	(1.5)	517	(3.4)
Serbia <sup>6</sup> .....	468	(2.5)	468 <sup>2</sup>	(2.6)	474	(3.2)	471	(2.6)	471	(3.0)	457 <sup>2</sup>	(2.4)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Singapore.....	578	(4.3)	569 <sup>3</sup>	(4.0)	582 <sup>3</sup>	(4.2)	579 <sup>3</sup>	(3.4)	549 <sup>3</sup>	(3.9)	568 <sup>3</sup>	(3.8)	18	(0.7)	595	(4.1)	48	(0.7)	585	(4.4)	34	(0.9)	564	(5.5)

See notes at end of table.

**Table 406. Average eighth-grade science scores in content areas and average time spent studying out of school, by country: 2003—Continued**

Country	Average score by content area						Index of time students spend doing science homework (TSH) in a normal school week <sup>1</sup>					
	Science overall	Life science	Chemistry	Physics	Earth science	Environmental science	High TSH		Medium TSH		Low TSH	
							Percent	Mean score	Percent	Mean score	Percent	Mean score
1	2	3	4	5	6	7	8	9	10	11	12	13
Slovak Republic.....	517 (3.2)	514 <sup>3</sup> (2.9)	519 <sup>3</sup> (3.6)	519 <sup>3</sup> (2.9)	523 <sup>3</sup> (3.3)	509 <sup>3</sup> (2.8)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Slovenia.....	520 (1.8)	521 <sup>3</sup> (2.2)	532 <sup>3</sup> (2.6)	509 <sup>3</sup> (1.8)	523 <sup>3</sup> (2.2)	515 <sup>3</sup> (2.2)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
South Africa.....	244 (6.7)	250 <sup>2</sup> (6.0)	285 <sup>2</sup> (5.9)	244 <sup>2</sup> (6.2)	247 <sup>2</sup> (6.3)	261 <sup>2</sup> (6.6)	17 (0.7)	234 (9.6)	52 (0.9)	246 (7.9)	32 (0.9)	263 (7.4)
Sweden.....	524 (2.7)	528 <sup>3</sup> (2.7)	526 <sup>3</sup> (2.6)	525 <sup>3</sup> (2.9)	532 <sup>3</sup> (3.3)	499 <sup>3</sup> (2.6)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Tunisia.....	404 (2.1)	417 <sup>2</sup> (2.0)	413 <sup>2</sup> (2.5)	386 <sup>2</sup> (2.5)	408 <sup>2</sup> (2.0)	436 <sup>2</sup> (2.2)	9 (0.6)	398 (4.0)	35 (0.9)	400 (2.8)	56 (1.2)	411 (2.6)
United States <sup>9</sup> .....	527 <sup>10</sup> (3.1)	537 <sup>3</sup> (3.0)	513 <sup>3</sup> (3.2)	515 <sup>3</sup> (2.9)	532 <sup>3</sup> (2.9)	533 <sup>3</sup> (2.9)	13 (0.7)	519 (4.3)	43 (1.4)	530 (3.4)	45 (1.7)	531 (3.7)

—Not available.

†Not applicable.

‡Reporting standards not met.

<sup>1</sup>Index based on students' reports on the frequency and amount of science homework they are given. High level indicates more than 30 minutes of science homework assigned 3–4 times a week. Low level indicates no more than 30 minutes of science homework no more than twice a week. Medium level includes all other possible combinations of responses.

<sup>2</sup>Country average significantly lower than international average.

<sup>3</sup>Country average significantly higher than international average.

<sup>4</sup>Students were asked about natural science; data pertain to grade 8 physics/chemistry course.

<sup>5</sup>Did not satisfy guidelines for sample participation rates.

<sup>6</sup>SAR = Special Administrative Region.

<sup>7</sup>Met guidelines for sample participation rates only after replacement schools were included.

<sup>8</sup>National Desired Population does not cover all of International Desired Population.

<sup>9</sup>National Defined Population covers less than 90 percent of National Desired Population.

<sup>10</sup>Did not meet international sampling or other guidelines.

<sup>11</sup>Korea tested the same cohort of students as other countries, but later in 2003, at the beginning of the next school year.

<sup>12</sup>Met guidelines for sample participation rates only after replacement schools were included.

<sup>13</sup>Students study only biology at grade 8.

NOTE: Data are for eighth grade or equivalent in most countries. Possible scores range from 0 to 1000. Detail may not sum to totals because of rounding. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2003, *TIMSS 2003 International Science Report*, by Michael O. Martin et al. (This table was prepared October 2005.)



**Table 407. Instructional practices and time spent teaching science in eighth grade, by country: 2003**

Country	Percent of students who reported doing activity about half the lessons or more						Students' average yearly instructional time in hours															
	Watch the teacher demonstrate an experiment or investigation		Design or plan an experiment or investigation		Conduct an experiment or investigation		Work in small groups on an experiment or investigation		Write explanations about what was observed and why it happened		Relate what is being learned in science to our daily lives		General integrated science		Earth science		Chemistry		Biology		Physics	
1	2		3		4		5		6		7		8		9		10		11		12	
<b>International average.....</b>	<b>64</b>	<b>(0.2)</b>	<b>49</b>	<b>(0.2)</b>	<b>57</b>	<b>(0.3)</b>	<b>59</b>	<b>(0.3)</b>	<b>66</b>	<b>(0.2)</b>	<b>57</b>	<b>(0.2)</b>	<b>117</b>	<b>(0.7)</b>	<b>55</b>	<b>(0.6)</b>	<b>61</b>	<b>(0.8)</b>	<b>61</b>	<b>(0.8)</b>	<b>68</b>	<b>(0.6)</b>
Australia.....	54	(1.6)	49	(1.7)	60	(2.2)	68	(2.1)	75	(1.5)	42	(1.1)	132 <sup>1</sup>	(3.6)	—	(†)	—	(†)	—	(†)	—	(†)
Bahrain.....	83	(0.8)	63	(0.8)	64	(0.8)	66	(1.1)	68	(0.9)	64	(0.9)	119	(1.1)	—	(†)	—	(†)	—	(†)	—	(†)
Belgium (Flemish).....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	52 <sup>1</sup>	(3.2)	—	(†)	55 <sup>1</sup>	(3.3)	58 <sup>1</sup>	(2.7)
Botswana.....	61	(0.9)	45	(0.8)	48	(1.0)	50	(1.1)	61	(0.9)	71	(0.8)	‡	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Bulgaria.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	53 <sup>2</sup>	(2.2)	63 <sup>2</sup>	(2.9)	65 <sup>1</sup>	(3.2)	64 <sup>2</sup>	(3.3)
Chile.....	57	(1.3)	56	(1.4)	54	(1.5)	61	(1.4)	69	(1.0)	62	(0.7)	118 <sup>2</sup>	(2.2)	—	(†)	—	(†)	—	(†)	—	(†)
Chinese Taipei.....	48 <sup>3</sup>	(1.1)	24 <sup>3</sup>	(0.9)	36 <sup>3</sup>	(1.3)	37 <sup>3</sup>	(1.5)	37 <sup>3</sup>	(1.1)	40 <sup>3</sup>	(1.0)	—	(†)	—	(†)	— <sup>4</sup>	(†)	—	(†)	134 <sup>4</sup>	(2.0)
Cyprus.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	53 <sup>1</sup>	(0.7)	34 <sup>1</sup>	(1.6)	—	(†)	52 <sup>1</sup>	(0.8)
England.....	‡	(†)	‡	(†)	‡	(†)	‡	(†)	‡	(†)	‡	(†)	‡	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Egypt.....	80	(0.7)	61	(1.0)	62	(1.0)	60	(0.8)	71	(0.7)	73	(0.7)	‡	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Estonia.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	‡	(†)	55	(2.9)	65	(3.9)	80	(4.8)	59	(1.8)
Ghana.....	73	(1.2)	54	(1.3)	55	(1.3)	54	(1.5)	64	(1.5)	75	(1.0)	‡	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Hong Kong, SAR <sup>5</sup> .....	66	(1.2)	35	(1.0)	71	(1.5)	75	(1.2)	67	(1.2)	61	(0.8)	103 <sup>1</sup>	(4.0)	—	(†)	—	(†)	—	(†)	—	(†)
Hungary.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	58 <sup>1</sup>	(2.5)	59 <sup>1</sup>	(2.1)	61 <sup>1</sup>	(2.8)	57 <sup>1</sup>	(2.5)
Indonesia.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	93 <sup>1</sup>	(3.6)	93 <sup>1</sup>	(3.3)
Iran, Islamic Republic of.....	87	(1.0)	66	(1.4)	77	(1.2)	73	(1.5)	78	(1.0)	70	(1.0)	106 <sup>1</sup>	(3.7)	—	(†)	—	(†)	—	(†)	—	(†)
Israel.....	73	(1.6)	56	(1.4)	63	(1.6)	52	(1.8)	76	(1.3)	56	(1.0)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Italy.....	26	(1.3)	16	(0.9)	13	(0.8)	12	(0.8)	32	(1.4)	35	(1.1)	69 <sup>1</sup>	(1.1)	—	(†)	—	(†)	—	(†)	—	(†)
Japan.....	66	(1.5)	51	(1.7)	75	(1.7)	79	(1.6)	69	(1.5)	27	(1.1)	99 <sup>2</sup>	(1.5)	—	(†)	—	(†)	—	(†)	—	(†)
Jordan.....	67	(1.5)	56	(1.4)	55	(1.7)	53	(1.6)	66	(1.3)	70	(1.1)	135	(0.8)	—	(†)	—	(†)	—	(†)	—	(†)
Korea, Republic of.....	31	(1.0)	14	(0.8)	20	(1.1)	39	(1.3)	44	(1.3)	36	(0.9)	103 <sup>1</sup>	(2.7)	—	(†)	—	(†)	—	(†)	—	(†)
Latvia.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	‡	(†)	64 <sup>1</sup>	(4.2)	56 <sup>1</sup>	(4.1)
Lebanon.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	‡	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Lithuania.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	59 <sup>2</sup>	(0.4)	65 <sup>2</sup>	(1.2)	46 <sup>2</sup>	(3.5)	60 <sup>2</sup>	(0.8)
Macedonia.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	53 <sup>2</sup>	(1.4)	64 <sup>2</sup>	(2.5)	59 <sup>2</sup>	(2.0)	79 <sup>2</sup>	(1.5)
Malaysia.....	83	(1.1)	46	(1.3)	71	(1.7)	77	(1.3)	73	(1.0)	72	(1.0)	119	(1.8)	—	(†)	—	(†)	—	(†)	—	(†)
Moldova.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	‡	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Morocco.....	82	(1.2)	62	(1.3)	61 <sup>2</sup>	(1.2)	50	(1.3)	74	(1.0)	65 <sup>2</sup>	(1.2)	—	(†)	— <sup>6</sup>	(†)	— <sup>4</sup>	(†)	‡ <sup>6</sup>	(†)	‡ <sup>4</sup>	(†)
Netherlands.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	54 <sup>1</sup>	(1.7)	— <sup>4</sup>	(†)	58 <sup>1</sup>	(1.8)	68 <sup>2,4</sup>	(2.4)
New Zealand.....	60	(2.0)	50	(2.1)	56	(2.5)	66	(2.3)	73	(1.8)	45	(1.3)	132	(2.4)	—	(†)	—	(†)	—	(†)	—	(†)
Norway.....	40	(1.5)	34	(1.6)	49	(2.2)	49	(2.2)	56	(1.9)	31	(0.9)	92	(2.5)	—	(†)	—	(†)	—	(†)	—	(†)
Palestinian National Authority.....	70	(1.2)	56	(1.2)	57	(1.0)	54	(1.5)	66	(1.2)	69	(0.9)	101 <sup>1</sup>	(1.8)	—	(†)	—	(†)	—	(†)	—	(†)
Philippines <sup>7</sup> .....	74	(0.9)	58	(1.2)	57	(1.0)	62	(1.1)	72	(1.0)	76	(0.8)	202	(4.2)	—	(†)	—	(†)	—	(†)	—	(†)
Romania.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	60 <sup>2</sup>	(1.1)	67 <sup>2</sup>	(2.4)	38 <sup>2</sup>	(2.6)	67 <sup>2</sup>	(2.4)
Russian Federation.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	49 <sup>2</sup>	(0.7)	59 <sup>2</sup>	(1.2)	49 <sup>2</sup>	(0.8)	49 <sup>2</sup>	(0.9)

See notes at end of table.

Table 407. Instructional practices and time spent teaching science in eighth grade, by country: 2003—Continued

Country	Percent of students who reported doing activity about half the lessons or more						Students' average yearly instructional time in hours				
	Watch the teacher demonstrate an experiment or investigation	Design or plan an experiment or investigation	Conduct an experiment or investigation	Work in small groups on an experiment or investigation	Write explanations about what was observed and why it happened	Relate what is being learned in science to our daily lives	General integrated science	Earth science	Chemistry	Biology	Physics
1	2	3	4	5	6	7	8	9	10	11	12
Saudi Arabia .....	68 (1.3)	50 (1.3)	51 (1.4)	43 (1.4)	60 (1.3)	67 (1.0)	106 <sup>1</sup> (1.6)	— (†)	— (†)	— (†)	— (†)
Scotland.....	69 (1.4)	54 (1.3)	74 (1.4)	81 (1.2)	83 (1.1)	47 (1.0)	‡ (†)	— (†)	— (†)	— (†)	— (†)
Serbia .....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	53 <sup>2</sup> (2.2)	61 <sup>1</sup> (3.7)	53 <sup>1</sup> (1.0)	56 <sup>1</sup> (2.5)
Singapore .....	49 (0.9)	31 (0.6)	55 (1.0)	57 (0.8)	68 (0.8)	58 (0.7)	107 (1.9)	— (†)	— (†)	— (†)	— (†)
Slovak Republic .....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	66 <sup>2</sup> (3.9)	76 <sup>2</sup> (3.8)	72 <sup>2</sup> (5.2)	70 <sup>2</sup> (4.5)
Slovenia .....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	59 (1.1)	56 (0.7)	57 <sup>2</sup> (0.5)
South Africa .....	72 (1.1)	64 (1.2)	63 (1.1)	70 (1.1)	73 (0.7)	77 (0.7)	‡ (†)	— (†)	— (†)	— (†)	— (†)
Sweden.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	131 <sup>2</sup> (7.6)	— (†)	— (†)	— (†)	— (†)
Tunisia.....	79 (0.7)	65 (1.0)	69 (1.0)	55 (1.2)	73 (0.8)	54 (0.9)	‡ (†)	— (†)	— (†)	— (†)	— (†)
United States.....	57 (1.3)	48 (1.2)	55 (1.4)	65 (1.5)	65 (1.4)	51 (0.9)	135 <sup>1</sup> (2.2)	— (†)	— (†)	— (†)	— (†)

—Not available.

†Not applicable.

‡Reporting standards not met.

<sup>1</sup>Data are available for at least 50 but less than 70 percent of the students.<sup>2</sup>Data are available for at least 70 but less than 85 percent of the students.<sup>3</sup>Students in Chinese Taipei were asked about natural science; data pertain to grade 8 physics/chemistry course.<sup>4</sup>Data reported in physics column are for grade 8 physics/chemistry.<sup>5</sup>SAR = Special Administrative Region.<sup>6</sup>Data reported in biology column are for grade 8 biology/earth science.<sup>7</sup>Students study only biology at grade 8.

NOTE: Data are for eighth grade or equivalent in most countries. Standard errors appear in parentheses. Detail may not sum to totals because of rounding.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS) 2003, *TIMSS 2003 International Science Report*, by Michael O. Martin et al. (This table was prepared April 2005.)

**Table 408. Average science scores at the end of secondary school, by sex, average time spent studying science out of school, and country: 1995**

Country	Average score in science			Amount of daily out-of-school study time in science						Average hours <sup>1</sup>
	Total	Male	Female	Less than 1 hour		1 to 2 hours		3 or more hours		
				Percent	Mean score	Percent	Mean score	Percent	Mean score	
1	2	3	4	5	6	7	8	9	10	11
Australia <sup>2</sup>	527 (9.8)	547 (11.5)	513 (9.4)	58 (1.8)	540 (9.5)	35 (1.7)	575 (6.9)	7 (1.0)	588 (33.0)	1.0 (0.04)
Austria <sup>2</sup>	520 (5.6)	554 (8.7)	501 (5.8)	87 (1.4)	529 (6.0)	11 (1.4)	526 (13.8)	1 (0.3)	— (†)	0.4 (0.03)
Canada <sup>2</sup>	532 (2.6)	550 (3.6)	518 (3.8)	57 (2.1)	554 (4.2)	35 (1.8)	567 (6.8)	8 (0.9)	537 (18.0)	1.1 (0.05)
Cyprus <sup>2</sup>	448 (3.0)	459 (5.8)	439 (3.0)	80 (1.1)	436 (3.7)	16 (0.9)	483 (10.7)	4 (0.6)	552 (11.8)	0.5 (0.03)
Czech Republic	487 (8.8)	512 (8.8)	460 (11.0)	84 (2.6)	520 (11.6)	14 (2.3)	571 (11.5)	3 (0.5)	583 (13.6)	0.5 (0.05)
Denmark <sup>2</sup>	509 (3.6)	532 (5.4)	490 (4.1)	73 (1.8)	555 (4.7)	25 (1.6)	570 (6.1)	3 (0.6)	565 (15.0)	0.7 (0.03)
France <sup>2</sup>	487 (5.1)	508 (6.7)	468 (4.8)	59 (2.0)	497 (5.7)	35 (1.8)	525 (7.0)	6 (0.8)	515 (9.1)	1.0 (0.04)
Germany <sup>2</sup>	497 (5.1)	514 (7.9)	478 (8.5)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Hungary	471 (3.0)	484 (4.2)	455 (4.3)	67 (1.2)	475 (3.9)	27 (0.9)	486 (4.9)	6 (0.6)	497 (11.5)	0.9 (0.03)
Iceland <sup>2</sup>	549 (1.5)	572 (2.7)	530 (2.1)	87 (1.0)	566 (2.5)	12 (1.0)	575 (4.6)	1 (0.3)	— (†)	0.4 (0.01)
Italy <sup>2</sup>	475 (5.3)	495 (6.7)	458 (5.6)	70 (2.8)	487 (6.3)	25 (2.5)	482 (9.7)	5 (1.2)	462 (13.9)	0.8 (0.06)
Lithuania <sup>2</sup>	461 (5.7)	481 (6.4)	450 (7.3)	69 (1.5)	465 (5.5)	26 (1.3)	469 (6.5)	5 (0.6)	470 (11.4)	0.8 (0.03)
Netherlands <sup>2</sup>	558 (5.3)	582 (5.7)	532 (6.2)	78 (2.8)	593 (6.4)	20 (2.9)	605 (16.9)	1 (0.4)	— (†)	0.7 (0.03)
New Zealand	529 (5.2)	543 (7.1)	515 (5.2)	80 (1.1)	551 (6.3)	18 (1.1)	581 (6.6)	3 (0.5)	553 (15.3)	0.6 (0.02)
Norway <sup>2</sup>	544 (4.1)	574 (5.1)	513 (4.5)	74 (2.4)	592 (7.1)	23 (2.2)	598 (10.8)	3 (0.7)	583 (23.8)	0.7 (0.05)
Russian Federation <sup>2</sup>	481 (5.7)	510 (5.7)	463 (6.7)	61 (1.6)	478 (6.0)	30 (1.3)	488 (7.0)	10 (0.8)	501 (8.0)	1.1 (0.04)
Slovenia <sup>2</sup>	517 (8.2)	541 (12.7)	494 (6.4)	85 (2.0)	528 (8.1)	13 (1.9)	548 (8.9)	2 (0.6)	— (†)	0.5 (0.04)
South Africa <sup>2</sup>	349 (10.5)	367 (11.5)	333 (13.0)	47 (1.6)	373 (15.5)	35 (1.3)	367 (12.2)	18 (1.4)	326 (7.3)	1.5 (0.05)
Sweden	559 (4.4)	585 (5.9)	534 (3.5)	81 (1.9)	599 (7.4)	17 (1.8)	632 (10.1)	2 (0.5)	— (†)	0.6 (0.03)
Switzerland	523 (5.3)	540 (6.1)	500 (7.8)	76 (2.3)	564 (6.6)	21 (2.3)	564 (10.9)	3 (0.9)	508 (29.0)	0.7 (0.04)
United States <sup>2</sup>	480 (3.3)	492 (4.5)	469 (3.9)	76 (2.1)	505 (4.3)	21 (2.1)	517 (5.7)	2 (0.4)	— (†)	0.7 (0.04)

—Not available.

†Not applicable.

<sup>1</sup>Average hours based on: No time = 0; Less than 1 hour = 5; 1–2 hours = 1.5; 3–5 hours = 4; More than 5 hours = 7.<sup>2</sup>Country did not meet all International Association for the Evaluation of Educational Achievement sampling specifications.

NOTE: End of secondary school is equivalent to 12th grade in the United States and a few other countries, but ranges from 9th to 14th grade among the survey countries. Possible scores range from 1 to 1000. Detail may not sum to totals because of rounding. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995, *Mathematics and Science Achievement in the Final Year of Secondary School*, by Ina V. S. Mullis et al. (This table was prepared October 1998.)**Table 409. Number of bachelor's degree recipients per 100 persons of the typical age of graduation, by sex and country: 2002, 2003, and 2004**

Country	Male and female			Male			Female		
	2002	2003	2004	2002	2003	2004	2002	2003	2004
1	2	3	4	5	6	7	8	9	10
Australia	50.7	54.8	46.9	43.0	46.7	37.4	58.8	63.4	57.0
Austria	18.0	19.0	19.6	17.9	18.7	19.0	18.1	19.4	20.3
Belgium <sup>1</sup>	19.2	—	18.8	18.7	—	18.0	19.7	—	19.6
Canada	—	—	—	—	—	—	—	—	—
Czech Republic	15.4	17.3	21.0	14.3	15.9	18.8	16.6	18.8	23.4
Denmark	34.4	38.6	46.6	23.4	25.1	33.3	45.7	52.3	59.9
Finland	51.8	55.8	55.2	37.7	40.4	39.9	66.4	72.2	71.3
France	39.0	41.5	40.8	32.9	34.9	34.1	45.3	48.4	47.6
Germany	19.2	19.5	20.6	19.3	19.3	20.3	19.3	19.7	20.9
Hungary	31.1	33.6	35.6	23.2	24.6	25.4	39.3	43.2	46.3
Iceland	40.0	44.2	50.7	27.2	29.4	31.5	53.1	59.1	70.4
Ireland	30.9	36.8	38.6	25.6	29.7	31.9	36.2	44.0	45.3
Italy	22.4	27.8	37.7	19.2	24.0	31.4	25.6	31.6	44.3
Japan	34.1	34.4	36.3	40.2	40.1	41.4	27.6	28.5	31.0
Korea, Republic of	31.5	31.7	31.4	31.6	32.1	30.9	31.3	31.2	31.9
Mexico	16.5	14.3	14.0	15.6	13.3	13.3	17.4	15.3	14.6
Netherlands	38.6	42.5	42.0	34.4	36.4	36.4	42.9	48.7	47.8
New Zealand	41.6	39.0	50.9	31.8	29.1	37.8	51.3	49.1	64.4
Norway	41.1	42.0	42.9	29.7	30.0	30.9	52.8	54.2	55.2
Portugal	—	—	—	—	—	—	—	—	—
Spain	33.1	32.0	31.5	26.4	25.5	24.7	40.0	38.9	38.7
Sweden	35.2	38.4	40.3	26.5	28.6	30.1	44.1	48.5	50.9
Switzerland	20.8	20.9	21.6	23.3	23.5	23.3	18.3	18.4	19.9
Turkey	—	—	—	—	—	—	—	—	—
United Kingdom	—	—	39.2	—	—	34.2	—	—	44.3
United States	36.1	33.4	33.3	29.7	27.6	27.6	42.9	39.4	39.3

—Not available.

<sup>1</sup>Data for Flemish Belgium only.

NOTE: The recipients per 100 persons ratio relates the number of people of all ages earning bachelor's degrees in a particular year to the number of people in the population at the typical age of graduation. The typical age is based on full-time attendance and normal progression through the

education system (without repeating a year, taking a year off, etc.); this age varies across countries because of differences in their education systems.

SOURCE: Organization for Economic Cooperation and Development (OECD), Education Online Database. Retrieved October 24, 2006, from <http://stats.oecd.org/WBOS/Default.aspx>. (This table was prepared October 2006.)

**Table 410. Percentage of bachelor's degrees awarded in science, by field and country: Selected years, 1985 through 2003**

Country	All science degrees <sup>1</sup>					Natural sciences <sup>2</sup>					Mathematics and computer science <sup>3</sup>					Engineering				
	1985	1990	1995	2000	2003	1985	1990	1995	2000	2003	1985	1990	1995	2000	2003	1985	1990	1995	2000	2003
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Australia.....	—	—	19.3	21.1	23.7	—	—	9.9	7.6	5.5	—	—	3.8	5.1	10.2	—	—	5.6	8.5	8.0
Austria.....	16.8	19.6	21.1	25.7	26.5	5.0	5.3	6.0	5.0	5.3	4.1	5.2	5.3	3.4	3.4	7.7	9.0	9.9	17.3	17.8
Belgium <sup>4</sup> .....	—	—	—	—	24.6	4.6	—	—	—	7.0	1.7	—	—	—	2.8	—	—	—	—	14.9
Canada.....	17.1	16.4	16.7	20.0	—	4.9	6.0	6.5	8.1	—	4.5	4.2	3.8	4.3	—	7.7	6.2	6.4	7.6	—
Czech Republic.....	—	—	—	29.5	30.2	—	—	—	4.2	4.7	—	—	—	8.4	4.2	—	—	—	—	16.9
Denmark.....	—	—	—	10.5	11.4	6.3	4.4	2.5	6.8	3.2	—	—	—	3.1	1.1	16.2	21.7	17.0	0.6	7.1
Finland.....	39.3	33.5	37.2	32.2	28.8	7.7	4.1	4.0	3.9	2.6	6.3	5.9	6.9	3.3	4.5	25.3	23.4	26.3	24.9	21.8
France.....	—	—	—	30.1	27.1	—	—	—	12.2	9.0	—	—	—	5.5	4.7	—	—	—	—	12.5
Germany <sup>5</sup> .....	23.8	31.3	31.6	31.7	30.1	5.0	7.2	6.7	6.4	6.0	2.3	3.5	5.2	4.9	5.8	16.5	20.5	19.7	20.3	18.3
Hungary.....	—	—	—	12.6	—	—	—	—	1.1	—	—	—	—	1.2	—	—	—	—	—	10.4
Iceland.....	—	—	—	16.5	17.3	—	—	—	6.0	4.7	—	—	—	4.0	6.6	—	—	—	—	6.5
Ireland.....	28.8	34.1	32.3	29.3	27.0	12.8	14.1	16.9	11.5	8.4	4.0	6.3	4.7	7.2	9.6	12.0	13.7	10.7	10.6	8.9
Italy.....	19.5	19.7	19.5	27.5	25.6	8.1	7.6	6.8	5.9	5.1	3.1	3.9	3.8	3.2	2.9	8.3	8.3	8.9	18.4	17.6
Japan.....	22.7	23.5	22.8	—	—	2.4	2.4	3.4	—	—	—	—	—	—	—	20.3	21.0	19.3	18.9	18.2
Korea, Republic of.....	—	—	—	36.9	37.8	—	—	—	6.3	6.6	—	—	—	4.3	3.9	—	—	—	—	26.3
Mexico.....	—	—	—	23.0	28.1	—	—	—	2.2	2.5	—	—	—	6.7	8.9	—	—	—	—	14.1
Netherlands.....	21.8	21.1	—	16.2	—	8.5	7.1	—	3.2	—	1.2	1.6	1.6	1.9	—	12.1	12.4	—	—	11.1
New Zealand.....	20.5	19.5	—	17.8	20.4	11.7	8.2	—	11.2	5.8	5.5	5.5	—	1.9	8.7	3.3	5.8	3.2	4.7	5.8
Norway.....	—	12.9	16.8	11.6	16.5	2.5	2.1	3.1	0.7	0.4	1.8	0.6	0.5	3.4	6.5	—	10.2	13.2	7.5	9.7
Poland.....	—	—	—	16.7	17.0	—	—	—	2.7	2.6	—	—	—	2.0	3.0	—	—	—	—	12.0
Portugal.....	—	—	15.0	17.5	18.2	6.5	6.7	2.2	1.7	2.9	—	—	2.8	3.6	2.4	—	10.5	9.9	12.2	12.9
Spain.....	13.9	15.0	18.2	22.7	24.7	5.5	5.7	4.3	5.3	4.7	1.3	2.6	4.5	4.3	4.6	7.0	6.7	9.4	13.1	15.4
Sweden.....	15.4	24.0	26.4	27.7	—	2.6	4.1	3.9	3.7	—	1.6	4.7	5.5	3.7	—	11.3	15.2	17.0	20.3	—
Switzerland.....	20.2	23.0	22.3	25.1	23.9	10.3	11.2	10.4	6.0	5.6	2.1	3.7	3.7	1.8	3.6	7.9	8.1	8.3	17.3	14.7
Turkey.....	23.0	20.6	20.9	24.1	21.7	3.6	4.6	5.1	7.4	6.4	1.6	2.1	2.7	3.6	3.8	17.8	13.8	13.1	13.1	11.5
United Kingdom.....	—	—	—	28.5	31.2	—	—	—	12.5	13.0	—	—	—	5.8	8.5	—	—	—	—	10.2
United States.....	21.7	16.9	—	17.1	17.6	6.3	5.1	—	6.6	6.0	5.5	4.0	3.3	3.9	5.2	9.8	7.8	6.7	6.6	6.4

—Not available.

<sup>1</sup>Includes life sciences, physical sciences, mathematics/statistics, computer science, and engineering.<sup>2</sup>Includes life sciences and physical sciences.<sup>3</sup>Includes mathematics/statistics and computer science.<sup>4</sup>Data for Flemish Belgium only.<sup>5</sup>Data for 1985 are for the former West Germany.

NOTE: Data in this table refer to degrees classified by the Organization for Economic Cooperation and Development (OECD) as International Standard Classification of Education (ISCED), level 5A, first award. This level corresponds to the bachelor's degree in the United States.

SOURCE: Organization for Economic Cooperation and Development (OECD), Education Online Database. Retrieved October 31, 2005, from <http://stats.oecd.org/WBQS/Default.aspx>. (This table was prepared November 2005.)

Table 411. Percentage of graduate degrees awarded in science, by field and country: Selected years, 1985 through 2003

Country	All science degrees <sup>1</sup>						Natural sciences <sup>2</sup>						Mathematics and computer science <sup>3</sup>						Engineering					
	1985	1990	1996	1999	2000	2003	1985	1990	1996	1999	2000	2003	1985	1990	1996	1999	2000	2003	1985	1990	1996	1999	2000	2003
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Australia.....	—	—	14.0	17.9	15.2	15.5	—	—	5.4	6.3	4.0	3.6	—	—	3.8	3.8	4.9	7.2	—	—	4.7	7.7	6.3	4.7
Austria.....	43.3	37.7	38.8	38.4	39.2	35.4	14.2	12.3	17.5	15.0	16.7	14.9	7.3	4.6	4.7	3.6	4.7	5.3	21.7	20.8	16.6	19.8	17.7	15.1
Belgium <sup>4</sup> .....	—	—	—	17.6	—	18.8	—	—	—	7.0	—	—	—	—	—	2.4	—	4.9	—	—	—	8.3	—	4.4
Canada.....	19.7	20.0	22.3	23.0	22.4	—	7.5	7.8	7.7	7.9	7.4	—	2.8	3.4	3.5	3.6	4.1	—	9.4	8.8	11.2	11.5	10.9	—
Czech Republic.....	—	—	—	21.3	21.0	12.4	—	—	—	5.6	5.3	3.5	—	—	—	6.3	7.9	2.2	—	—	—	9.3	7.7	6.7
Denmark.....	16.0	22.2	12.3	—	30.2	27.8	4.1	5.8	3.1	—	9.8	8.1	2.7	4.8	1.5	—	2.5	4.1	9.2	11.6	7.8	—	15.4	15.7
Finland.....	47.6	30.6	28.3	31.1	28.7	28.1	24.0	14.7	11.6	8.5	11.3	10.3	6.3	5.4	4.0	3.9	2.4	3.5	17.2	10.5	12.7	18.7	14.9	14.3
France.....	—	—	—	21.0	26.4	34.4	—	—	—	6.4	13.5	17.1	—	—	—	1.6	5.6	8.5	—	—	—	13.0	7.3	8.9
Germany <sup>5</sup> .....	27.7	33.2	38.6	38.9	38.1	36.0	18.7	23.5	25.5	25.2	24.9	22.2	1.8	2.3	3.5	4.0	3.7	4.2	7.2	7.4	9.5	9.8	9.5	9.6
Hungary.....	—	—	—	13.5	9.9	7.7	—	—	—	4.8	1.7	1.7	—	—	—	1.2	0.7	1.1	—	—	—	7.6	7.5	4.9
Iceland.....	—	—	—	30.7	35.9	20.5	—	—	—	20.0	19.4	10.3	—	—	—	—	—	1.0	—	—	—	10.7	16.5	9.2
Ireland.....	31.4	34.5	23.1	24.8	28.1	21.0	18.9	19.5	10.9	4.0	6.9	5.1	2.6	5.8	3.0	16.0	15.2	10.0	9.9	9.3	9.2	4.8	6.0	6.0
Italy.....	—	—	—	13.1	11.7	12.8	—	—	—	1.0	0.3	2.8	—	—	—	6.5	5.8	3.9	—	—	—	5.6	5.7	6.1
Japan.....	50.1	54.6	—	—	51.7	—	9.5	9.5	10.2	—	—	—	—	—	—	—	—	—	40.5	45.1	44.4	42.4	41.9	38.5
Korea, Republic of.....	—	—	—	48.3	48.4	45.6	—	—	—	8.8	8.5	10.2	—	—	—	4.1	5.7	3.1	—	—	—	35.4	34.3	32.3
Mexico.....	—	—	—	22.7	31.4	20.0	—	—	—	14.3	18.9	6.8	—	—	—	2.0	4.1	2.5	—	—	—	6.4	8.4	10.8
Netherlands.....	—	28.9	18.6	17.6	—	24.2	20.6	17.7	4.4	—	—	3.9	—	1.5	3.7	8.7	—	0.7	7.5	9.7	10.6	8.8	1.2	19.7
New Zealand.....	45.1	22.6	16.7	24.4	20.5	16.7	24.6	13.8	12.7	13.4	11.6	6.7	5.4	4.7	1.1	1.5	1.4	6.0	15.1	4.0	3.0	9.4	7.5	4.1
Norway.....	40.1	33.4	38.3	21.0	22.0	22.0	17.9	8.0	8.7	15.0	14.9	11.8	3.5	2.1	1.9	4.3	4.6	5.6	18.7	23.3	27.7	—	2.5	4.7
Poland.....	—	—	—	3.1	3.3	4.1	—	—	—	0.6	0.7	0.8	—	—	—	0.9	0.7	0.6	—	—	—	1.7	1.9	2.7
Portugal.....	—	—	—	—	39.3	—	—	—	—	—	11.7	—	—	—	—	—	9.4	—	—	—	—	—	18.2	—
Spain.....	35.6	26.9	36.0	40.1	36.1	35.8	28.6	19.7	24.8	24.8	23.9	22.7	1.8	1.4	4.1	4.2	5.4	5.7	5.1	5.7	7.1	11.1	6.8	7.3
Sweden.....	48.0	48.5	32.3	41.5	40.5	32.2	21.2	19.4	9.2	14.4	14.3	11.4	6.8	9.2	5.9	4.1	4.0	3.8	20.0	19.9	17.1	23.0	22.2	17.0
Switzerland.....	30.7	30.2	40.1	41.5	42.7	32.6	20.3	22.0	25.8	11.4	11.7	9.8	2.8	1.7	4.1	17.0	19.5	12.6	7.6	6.5	10.1	13.1	11.6	10.2
Turkey.....	35.8	24.0	—	29.8	25.7	22.9	6.6	7.6	—	8.0	7.6	6.9	2.8	3.3	—	3.0	3.0	3.2	26.3	13.2	—	18.7	15.2	12.7
United Kingdom.....	—	—	—	21.8	21.7	22.1	—	—	—	6.0	7.4	7.5	—	—	—	4.7	5.0	6.2	—	—	—	11.0	9.2	8.4
United States.....	13.5	14.5	13.8	13.7	13.0	13.7	4.5	4.2	4.0	3.8	3.4	3.4	2.8	3.4	3.2	3.1	3.4	4.0	6.3	6.9	6.7	6.8	6.2	6.4

—Not available.

<sup>1</sup>Includes life sciences, physical sciences, mathematics/statistics, computer science, and engineering.<sup>2</sup>Includes life sciences and physical sciences.<sup>3</sup>Includes mathematics/statistics and computer science.<sup>4</sup>Data for Flemish Belgium only.<sup>5</sup>Data for 1985 are for the former West Germany.

NOTE: Data in this table refer to degrees classified by the Organization for Economic Cooperation and Development (OECD) as International Standard Classification of Education (ISCED), level 5A, second award and ISCED 6. ISCED 5A, second award, corresponds to master's and first-professional degrees in the United States, and ISCED 6 corresponds to doctor's degrees.

SOURCE: Organization for Economic Cooperation and Development (OECD), Education Online Database. Retrieved October 31, 2005, from <http://stats.oecd.org/WBOS/Default.aspx>. (This table was prepared November 2005.)

**Table 412. Public and private education expenditures per student, by level of education and country: 2000 through 2003**

Country	Elementary				Secondary				Higher education			
	2000	2001	2002	2003	2000	2001	2002	2003	2000	2001	2002	2003
1	2	3	4	5	6	7	8	9	10	11	12	13
Current dollars												
Australia.....	\$4,967	\$5,052	\$5,169	\$5,494	\$6,894	\$7,239	\$7,375	\$7,788	\$12,854	\$12,688	\$12,416	\$12,406
Austria.....	6,560	6,571	7,015	7,139	8,578	8,562	8,887	8,943	10,851	11,274	12,448	12,344
Belgium.....	4,310	5,321	5,665	6,180	6,889	7,912	8,272	7,708	10,771	11,589	12,019	11,824
Canada.....	—	—	—	—	5,947 <sup>1</sup>	—	6,482	—	14,983	—	19,992	—
Czech Republic.....	1,827	1,871	2,077	2,273	3,239	3,448	3,628	4,088	5,431	5,555	6,236	6,774
Denmark.....	7,074	7,572	7,727	7,814	7,726	8,113	8,003	8,183	11,981	14,280	15,183	14,014
Finland.....	4,317	4,708	5,087	5,321	6,094	6,537	7,121	7,402	8,244	10,981	11,768	12,047
France.....	4,486	4,777	5,033	4,939	7,636	8,107	8,472	8,653	8,373	8,837	9,276	10,704
Germany.....	4,198	4,237	4,537	4,624	6,826	6,620	7,025	7,173	10,898	10,504	10,999	11,594
Greece.....	3,318 <sup>2</sup>	3,299	3,803	4,218	3,859 <sup>2</sup>	3,768	4,058	4,954	3,402 <sup>2</sup>	4,280	4,731	4,924
Hungary <sup>2</sup> .....	2,245	2,592	3,016	3,286	2,446	2,633	3,184	3,948	7,024	7,122	8,205	8,576
Iceland.....	5,854 <sup>2</sup>	6,373	7,171	7,752	6,518 <sup>2</sup>	7,265	7,229	6,898	7,994 <sup>2</sup>	7,674	8,251	8,023
Ireland.....	3,385	3,743	4,180	4,760	4,638	5,245	5,725	6,374	11,083	10,003	9,809	9,341
Italy <sup>2</sup> .....	5,973	6,783	7,231	7,366	7,218	8,258	7,598	7,938	8,065	8,347	8,636	8,764
Japan.....	5,507	5,771	6,117	6,350	6,266	6,534	6,952	7,283	10,914	11,164	11,716	11,556
Korea, Republic of.....	3,155	3,714	3,553	4,098	4,069	5,159	5,882	6,410	6,118	6,618	6,047	7,089
Luxembourg.....	—	7,873	10,611	11,481	—	11,091	15,195	17,078	—	—	—	—
Mexico.....	1,291	1,357	1,467	1,656	1,615	1,915	1,768	1,918	4,688	4,341	6,074	5,774
Netherlands.....	4,325	4,862	5,558	5,836	5,912	6,403	6,823	6,996	11,934	12,974	13,101	13,444
New Zealand.....	—	—	4,536	4,841	—	—	5,698	5,693	—	—	—	8,832
Norway.....	6,550 <sup>2</sup>	7,404	7,508	7,977	8,476 <sup>2</sup>	9,040	10,154	10,919	13,353 <sup>2</sup>	13,189	13,739	13,772
Poland <sup>2</sup> .....	2,105	2,322	2,585	2,859	—	—	—	2,951	3,222	3,579	4,834	4,589
Portugal.....	3,672	4,181	4,940 <sup>2</sup>	4,503 <sup>2</sup>	5,349	5,976	6,921 <sup>2</sup>	6,094 <sup>2</sup>	4,766	5,199	6,960	7,200 <sup>2</sup>
Slovak Republic.....	1,308	1,252	1,471	2,020	1,927	1,874	2,193	2,401	4,949	5,285	4,756	4,678
Spain.....	3,941	4,168	4,592	4,829	5,185	5,442	6,010	6,418	6,666	7,455	8,020	8,943
Sweden.....	6,336	6,295	7,143	7,291	6,339	6,482	7,400	7,662	15,097	15,188	15,715	16,073
Switzerland <sup>2</sup> .....	6,631	6,889	7,776	8,131	9,780	10,916	11,900	12,209	18,450	20,230	23,714	25,900
Turkey <sup>2</sup> .....	—	—	—	869	—	—	—	1,428	4,121	—	—	—
United Kingdom.....	3,877	4,415	5,150	5,851	5,991	5,933	6,505	7,290	9,657	10,753	11,822	11,866
United States.....	6,995	7,560	8,049	8,305	8,855	8,779	9,098	9,590	20,358	22,234	20,545	24,074
Constant 2005 dollars												
Australia.....	\$5,633	\$5,571	\$5,611	\$5,831	\$7,819	\$7,983	\$8,006	\$8,266	\$14,578	\$13,992	\$13,479	\$13,168
Austria.....	7,440	7,246	7,616	7,577	9,729	9,442	9,648	9,492	12,307	12,433	13,514	13,102
Belgium.....	4,888	5,868	6,150	6,560	7,813	8,725	8,980	8,181	12,216	12,780	13,048	12,550
Canada.....	—	—	—	—	6,745 <sup>1</sup>	—	6,880	—	16,993	—	21,220	—
Czech Republic.....	2,072	2,063	2,255	2,413	3,674	3,802	3,939	4,339	6,160	6,126	6,770	7,190
Denmark.....	8,023	8,350	8,388	8,294	8,762	8,947	8,688	8,686	13,588	15,748	16,483	14,875
Finland.....	4,896	5,192	5,522	5,648	6,911	7,209	7,731	7,857	9,350	12,109	12,775	12,787
France.....	5,088	5,268	5,464	5,242	8,660	8,940	9,197	9,184	9,496	9,745	10,070	11,361
Germany.....	4,761	4,672	4,925	4,908	7,742	7,300	7,626	7,614	12,360	11,583	11,941	12,306
Greece.....	3,763 <sup>2</sup>	3,638	4,129	4,477	4,377 <sup>2</sup>	4,155	4,405	5,258	3,858 <sup>2</sup>	4,720	5,136	5,226
Hungary <sup>2</sup> .....	2,546	2,858	3,274	3,488	2,774	2,904	3,457	4,190	7,966	7,854	8,907	9,103
Iceland.....	6,639 <sup>2</sup>	7,028	7,785	8,228	7,392 <sup>2</sup>	8,012	7,848	7,322	9,066 <sup>2</sup>	8,463	8,957	8,516
Ireland.....	3,839	4,128	4,538	5,052	5,260	5,784	6,215	6,765	12,570	11,031	10,649	9,915
Italy <sup>2</sup> .....	6,774	7,480	7,850	7,818	8,186	9,107	8,248	8,425	9,147	9,205	9,375	9,302
Japan.....	6,246	6,364	6,641	6,740	7,107	7,205	7,547	7,730	12,378	12,311	12,719	12,266
Korea, Republic of.....	3,578	4,096	3,857	4,350	4,615	5,689	6,386	6,804	6,939	7,298	6,565	7,524
Luxembourg.....	—	8,682	11,519	12,186	—	12,231	16,496	18,127	—	—	—	—
Mexico.....	1,464	1,496	1,593	1,758	1,832	2,112	1,919	2,036	5,317	4,787	6,594	6,129
Netherlands.....	4,905	5,362	6,034	6,194	6,705	7,061	7,407	7,426	13,535	14,307	14,222	14,270
New Zealand.....	—	—	4,924	5,138	—	—	6,186	6,043	—	—	—	9,374
Norway.....	7,429 <sup>2</sup>	8,165	8,151	8,467	9,613 <sup>2</sup>	9,969	11,023	11,590	15,144 <sup>2</sup>	14,544	14,915	14,618
Poland <sup>2</sup> .....	2,387	2,561	2,806	3,035	—	—	—	3,132	3,654	3,947	5,248	4,871
Portugal.....	4,165	4,611	5,363 <sup>2</sup>	4,780 <sup>2</sup>	6,067	6,590	7,513 <sup>2</sup>	6,468 <sup>2</sup>	5,405	5,733	7,556	7,642 <sup>2</sup>

See notes at end of table.

**Table 412. Public and private education expenditures per student, by level of education and country: 2000 through 2003—Continued**

Country	Elementary				Secondary				Higher education			
	2000	2001	2002	2003	2000	2001	2002	2003	2000	2001	2002	2003
1	2	3	4	5	6	7	8	9	10	11	12	13
Slovak Republic .....	1,483	1,381	1,597	2,144	2,186	2,067	2,381	2,548	5,613	5,828	5,163	4,965
Spain .....	4,470	4,596	4,985	5,126	5,881	6,001	6,524	6,812	7,560	8,221	8,707	9,492
Sweden.....	7,186	6,942	7,754	7,739	7,189	7,148	8,033	8,133	17,122	16,749	17,060	17,060
Switzerland <sup>2</sup> .....	7,521	7,597	8,442	8,630	11,092	12,038	12,919	12,959	20,925	22,309	25,744	27,491
Turkey <sup>2</sup> .....	—	—	—	922	—	—	—	1,516	4,674	—	—	—
United Kingdom.....	4,397	4,869	5,591	6,210	6,795	6,543	7,062	7,738	10,952	11,858	12,834	12,595
United States .....	7,933	8,337	8,738	8,815	10,043	9,681	9,877	10,179	23,089	24,519	22,304	25,552

—Not available.

<sup>1</sup>Includes elementary education.<sup>2</sup>Public institutions only.

NOTE: Data adjusted to U.S. dollars using the purchasing-power-parity (PPP) index. Constant dollars based on the Consumer Price Index, prepared by the Bureau of Labor Statistics, U.S. Department of Labor.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education at a Glance*, 2002 through 2006. (This table was prepared September 2006.)

Table 413. Total public direct expenditures on education as a percentage of the gross domestic product, by level and country: Selected years, 1985 through 2003

Country	All institutions							Primary and secondary institutions							Higher education institutions						
	1985	1990	1995	2000	2001 <sup>1</sup>	2002 <sup>1</sup>	2003 <sup>1</sup>	1985	1990	1995	2000	2001 <sup>1</sup>	2002 <sup>1</sup>	2003 <sup>1</sup>	1985	1990	1995	2000	2001 <sup>1</sup>	2002 <sup>1</sup>	2003 <sup>1</sup>
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
<b>Average for year.....</b>	<b>5.3</b>	<b>4.9</b>	<b>4.9</b>	<b>5.1</b>	<b>4.9</b>	<b>5.0</b>	<b>5.1</b>	<b>3.7</b>	<b>3.5</b>	<b>3.5</b>	<b>3.5</b>	<b>3.6</b>	<b>3.5</b>	<b>3.6</b>	<b>1.1</b>	<b>1.0</b>	<b>0.9</b>	<b>1.2</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>
<b>Average for countries reporting data for all years.....</b>	<b>5.2</b>	<b>5.2</b>	<b>5.2</b>	<b>5.4</b>	<b>5.1</b>	<b>5.3</b>	<b>5.2</b>	<b>3.7</b>	<b>3.6</b>	<b>3.6</b>	<b>3.6</b>	<b>3.7</b>	<b>3.7</b>	<b>3.7</b>	<b>1.1</b>	<b>1.1</b>	<b>1.1</b>	<b>1.4</b>	<b>1.1</b>	<b>1.2</b>	<b>1.0</b>
Australia.....	5.4	4.3	4.5	5.1	4.5	4.4	4.3	3.5	3.2	3.2	3.9	3.6	3.6	3.4	1.7	1.0	1.2	1.2	0.8	0.8	0.8
Austria.....	5.6	5.2	5.3	5.8	5.6	5.4	5.2	3.7	3.6	3.8	3.8 <sup>2</sup>	3.8	3.7	3.7	1.0	1.0	0.9	1.4 <sup>2</sup>	1.2	1.1	1.1
Belgium <sup>3</sup> .....	6.3	4.8	5.0	5.2	6.0	6.1	5.9	4.0	3.4	3.4	3.4 <sup>4</sup>	4.0 <sup>4</sup>	4.1 <sup>4</sup>	4.0	1.0	0.8	0.9	1.3 <sup>4</sup>	1.2 <sup>4</sup>	1.2 <sup>4</sup>	1.2
Canada.....	6.1	5.4	5.8	5.5	4.9	4.6	—	4.1	3.7	4.0	3.3 <sup>5</sup>	3.1 <sup>5</sup>	3.2 <sup>5,6</sup>	—	2.0	1.5	1.5	2.0 <sup>5</sup>	1.5 <sup>5</sup>	1.3 <sup>5</sup>	—
Czech Republic.....	—	—	4.8	4.4	4.2	4.2	4.3	—	—	3.4	3.0 <sup>4</sup>	2.8 <sup>4</sup>	2.8	2.9	—	—	0.7	0.8 <sup>4</sup>	0.8 <sup>4</sup>	0.8	0.9
Denmark.....	6.2	6.2	6.5	8.4	6.8 <sup>2</sup>	6.8 <sup>2</sup>	6.7	4.7	4.4	4.2	4.8 <sup>2,7</sup>	4.2 <sup>2,7</sup>	4.1 <sup>2,7</sup>	4.1 <sup>7</sup>	1.2	1.3	1.3	2.5 <sup>2,7</sup>	1.8 <sup>2,7</sup>	1.9 <sup>2,7</sup>	1.7 <sup>7</sup>
Finland.....	5.8	6.4	6.6	6.0	5.7	5.9	6.0	—	4.3	4.2	3.6	3.7	3.8	3.9	—	1.2	1.7	2.0	1.7	1.7	1.7
France.....	—	5.1	5.8	5.8	5.6	5.7	5.8	—	3.7	4.1	4.1	4.0	4.0	4.0	—	0.8	1.0	1.0	1.0	1.0	1.1
Germany <sup>8</sup> .....	4.6	—	4.5	4.5	4.3	4.4	4.4	2.8	—	2.9	3.0	2.9	3.0	2.9	1.0	—	1.0	1.1	1.0	1.0	1.0
Greece.....	—	—	3.7	3.8	3.8 <sup>2</sup>	3.9 <sup>2</sup>	4.0	—	—	2.8	2.7 <sup>2</sup>	2.4 <sup>2</sup>	2.5 <sup>2</sup>	2.6 <sup>6</sup>	—	—	0.8	0.9 <sup>2</sup>	1.1 <sup>2</sup>	1.2 <sup>2</sup>	1.2
Hungary.....	—	5.0	4.9	4.9	4.6	5.0	5.5	—	3.5	3.3	3.1	2.8	3.1	3.5	—	0.8	0.8	1.0	0.9	1.0	1.0
Iceland.....	—	4.3	4.5	6.0	6.1 <sup>2</sup>	6.8 <sup>2</sup>	7.5	—	3.3	3.4	4.7 <sup>2</sup>	5.0 <sup>2</sup>	5.4 <sup>2,7</sup>	5.2 <sup>7</sup>	—	0.6	0.7	1.1 <sup>2</sup>	0.9 <sup>2</sup>	1.0 <sup>2,7</sup>	1.1 <sup>7</sup>
Ireland.....	5.6	4.7	4.7	4.4	4.1	4.1	4.1	4.0	3.3	3.3	3.0 <sup>4</sup>	2.9 <sup>4</sup>	3.0 <sup>4</sup>	3.1	0.9	0.9	0.9	1.3 <sup>4</sup>	1.1 <sup>4</sup>	1.1 <sup>4</sup>	1.0
Italy.....	4.7	5.8	4.5	4.6	4.9	4.6	4.6	3.2	4.1	3.2	3.2	3.6	3.4	3.5	0.6	1.0	0.7	0.8	0.8	0.8	0.7
Japan.....	—	3.6	3.6	3.6	3.5	3.5	3.5	—	2.9	2.8	2.7 <sup>7</sup>	2.7 <sup>7</sup>	2.7 <sup>7</sup>	2.7 <sup>7</sup>	—	0.4	0.4	0.5 <sup>7</sup>	0.5 <sup>7</sup>	0.4 <sup>7</sup>	0.5 <sup>7</sup>
Korea, Republic of.....	—	—	3.6	4.3	4.8	4.2	4.6	—	—	3.0	3.3	3.5	3.3	3.5	—	—	0.3	0.7	0.4	0.3	0.6
Luxembourg.....	—	—	4.3	—	3.6 <sup>2</sup>	—	—	—	—	4.2	—	3.6 <sup>2</sup>	3.9 <sup>2,7</sup>	4.0 <sup>6</sup>	—	—	0.1	—	—	—	—
Mexico.....	—	3.2	4.6	4.9	5.1	5.1	5.6	—	2.2	3.4	3.4	3.8	3.5	3.8	—	0.7	0.8	0.9	0.7	1.0	0.9
Netherlands.....	6.2	5.7	4.6	4.8	4.5	4.6	4.6	4.1	3.6	3.0	3.2	3.1	3.3	3.2	1.5	1.6	1.1	1.3	1.0	1.0	1.1
New Zealand.....	—	5.5	5.3	7.0	5.5	5.6	5.7	—	3.9	3.8	4.9	4.3	4.4	4.5	—	1.2	1.1	1.7	0.9	0.9	0.9
Norway.....	5.1	6.2	6.8	6.7	6.1	6.7	6.5	4.0	4.1	4.1	3.9	4.6	4.2	4.6	0.7	1.1	1.5	1.7	1.3	1.4	1.5
Poland.....	—	—	5.2	5.2	5.6 <sup>2</sup>	5.5 <sup>2</sup>	5.8	—	—	3.3	3.8 <sup>2</sup>	4.0 <sup>2</sup>	4.0 <sup>2</sup>	4.2	—	—	0.8	0.8 <sup>2</sup>	1.1 <sup>2</sup>	1.1 <sup>2</sup>	1.0
Portugal.....	—	—	5.4	5.7	5.8 <sup>2</sup>	5.7 <sup>2</sup>	5.8	—	—	4.1	4.2 <sup>2</sup>	4.2 <sup>2</sup>	4.2 <sup>2</sup>	4.2	—	—	1.0	1.0 <sup>2</sup>	1.0 <sup>2</sup>	0.9 <sup>2</sup>	1.0
Russian Federation.....	†	†	3.4	3.0	3.0	3.7 <sup>2</sup>	3.7	†	†	1.9	1.7	1.7	2.2	2.1	†	†	0.7	0.5	0.5	0.6	0.7
Slovak Republic.....	†	4.8	4.6	4.2	4.0 <sup>2,4</sup>	4.0	4.3	†	—	—	2.7 <sup>2,4</sup>	2.6 <sup>2,4</sup>	2.7 <sup>2,4</sup>	2.8 <sup>9,10</sup>	†	—	—	0.7 <sup>2,4</sup>	0.8 <sup>2,4</sup>	0.7 <sup>2,4</sup>	0.8 <sup>9,10</sup>
Spain.....	3.6	4.2	4.8	4.4	4.3	4.3	4.2	2.9	3.2	3.5	3.1	3.0	2.9	2.8	0.4	0.7	0.8	1.0	1.0	1.0 <sup>4</sup>	0.9
Sweden.....	—	5.3	6.6	7.4	6.3	6.7	6.5	—	4.4	4.4	4.9 <sup>4</sup>	4.3 <sup>4</sup>	4.6 <sup>4</sup>	4.5	—	1.0	1.6	2.0 <sup>4</sup>	1.5 <sup>4</sup>	1.6 <sup>4</sup>	1.6
Switzerland.....	4.9	5.0	5.5	5.4	5.4	5.7	6.0	4.0	3.7	4.1	3.9	3.9	4.0	4.0	0.9	1.0	1.1	1.2	1.3	1.4	1.6
Turkey.....	—	3.2	2.2	3.5	3.5 <sup>2</sup>	3.4 <sup>2</sup>	3.6	—	2.3	1.4	2.4 <sup>2</sup>	2.5 <sup>2</sup>	2.3 <sup>2</sup>	2.5 <sup>2</sup>	—	0.9	0.8	1.1 <sup>2</sup>	1.0 <sup>2</sup>	1.0 <sup>2</sup>	1.1
United Kingdom.....	4.9	4.3	4.6	4.8	4.7	5.0	5.1	3.1	3.5	3.8	3.4	3.4	3.7	4.0	1.0	0.7	0.7	1.0	0.8	0.8	0.8
United States.....	4.7	5.3	5.0	5.0	5.1	5.3	5.4	3.2	3.8	3.5	3.5 <sup>5</sup>	3.8 <sup>5</sup>	3.8	3.9	1.3	1.4	1.1	1.1 <sup>5</sup>	0.9 <sup>5</sup>	1.2	1.2

—Not available.

†Not applicable. Country did not exist during this time period.

<sup>1</sup>Includes public subsidies to households attributable for educational institutions and direct expenditure on educational institutions from international sources, except where noted.<sup>2</sup>Public subsidies to households not included in public expenditure.<sup>3</sup>Data are for Flemish Belgium only.<sup>4</sup>Direct expenditure on education institutions from international sources exceeds 1.5 percent of all public expenditure.<sup>5</sup>Postsecondary non-higher-education included in higher education.<sup>6</sup>Preprimary education (for children age 3 and older) is included in primary and secondary education.<sup>7</sup>Postsecondary non-higher-education included in both secondary and higher education.<sup>8</sup>Data for 1985 are for the former West Germany.<sup>9</sup>Postsecondary non-higher-education included in primary and secondary education.<sup>10</sup>Education at the associate's degree level is included in primary and secondary education.

NOTE: Direct public expenditure on educational services includes both amounts spent directly by governments to hire educational personnel and to procure other resources, and amounts provided by governments to public or private institutions, or households. Figures for 1985 also include transfers and payments to private entities, and thus are not strictly comparable with later figures. Some data have been revised from previously published figures.

SOURCE: Organization for Economic Cooperation and Development (OECD), Education Online Database; *Annual National Accounts, Vol. 1, 1997*; and *Education at a Glance, 2002 through 2006*. (This table was prepared September 2006.)



**Table 414. Foreign students enrolled in institutions of higher education in the United States and other jurisdictions, by continent, region, and selected countries of origin: Selected years, 1980–81 through 2004–05**

Continent, region, and country	1980–81		1985–86		1990–91		1995–96		2000–01		2001–02		2002–03		2003–04		2004–05	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Total</b> .....	<b>311,880</b>	<b>100.0</b>	<b>343,780</b>	<b>100.0</b>	<b>407,530</b>	<b>100.0</b>	<b>453,787</b>	<b>100.00</b>	<b>547,867</b>	<b>100.0</b>	<b>582,996</b>	<b>100.0</b>	<b>586,323</b>	<b>100.0</b>	<b>572,509</b>	<b>100.0</b>	<b>565,039</b>	<b>100.0</b>
<b>Africa</b> .....	<b>38,180</b>	<b>12.2</b>	<b>34,190</b>	<b>9.9</b>	<b>23,800</b>	<b>5.8</b>	<b>20,844</b>	<b>4.59</b>	<b>34,217</b>	<b>6.2</b>	<b>37,724</b>	<b>6.5</b>	<b>40,193</b>	<b>6.9</b>	<b>38,150</b>	<b>6.7</b>	<b>36,100</b>	<b>6.4</b>
Eastern Africa.....	6,260	2.0	6,730	2.0	7,590	1.9	7,596	1.67	13,516	2.5	15,331	2.6	15,996	2.7	14,831	2.6	13,675	2.4
Central Africa.....	1,130	0.4	1,540	0.4	1,650	0.4	1,346	0.30	1,859	0.3	1,972	0.3	2,371	0.4	2,331	0.4	2,505	0.4
North Africa.....	7,310	2.3	5,980	1.7	4,540	1.1	3,422	0.75	5,184	0.9	5,593	1.0	5,218	0.9	4,487	0.8	3,898	0.7
Southern Africa.....	1,480	0.5	2,360	0.7	2,840	0.7	2,657	0.59	3,304	0.6	3,443	0.6	3,017	0.5	2,679	0.5	2,240	0.4
West Africa.....	22,000	7.1	17,580	5.1	7,180	1.8	5,818	1.28	10,346	1.9	11,385	2.0	13,590	2.3	13,821	2.4	13,782	2.4
Nigeria.....	17,350	5.6	13,710	4.0	3,710	0.9	2,093	0.46	3,820	0.7	4,499	0.8	5,816	1.0	6,140	1.1	6,335	1.1
<b>Asia</b> .....	<b>94,640</b>	<b>30.3</b>	<b>156,830</b>	<b>45.6</b>	<b>229,830</b>	<b>56.4</b>	<b>259,893</b>	<b>57.27</b>	<b>302,058</b>	<b>55.1</b>	<b>324,812</b>	<b>55.7</b>	<b>332,298</b>	<b>56.7</b>	<b>324,006</b>	<b>56.6</b>	<b>325,112</b>	<b>57.5</b>
East Asia.....	51,650	16.6	80,720	23.5	146,020	35.8	166,717	36.74	189,371	34.6	196,813	33.8	199,666	34.1	189,874	33.2	192,561	34.1
China.....	2,770	0.9	13,980	4.1	39,600	9.7	39,613	8.73	59,939	10.9	63,211	10.8	64,757	11.0	61,765	10.8	62,523	11.1
Hong Kong.....	9,660	3.1	10,710	3.1	12,630	3.1	12,018	2.65	7,627	1.4	7,757	1.3	8,076	1.4	7,353	1.3	7,180	1.3
Japan.....	13,500	4.3	13,360	3.9	36,610	9.0	45,531	10.03	46,497	8.5	46,810	8.0	45,960	7.8	40,835	7.1	42,215	7.5
Korea, Republic of.....	6,150	2.0	10,660	3.1	23,360	5.7	36,231	7.98	45,685	8.3	49,046	8.4	51,519	8.8	52,484	9.2	53,358	9.4
Taiwan.....	19,460	6.2	23,770	6.9	33,530	8.2	32,702	7.21	28,566	5.2	28,930	5.0	28,017	4.8	26,178	4.6	25,914	4.6
South and Central Asia.....	14,540	4.7	25,800	7.5	42,370	10.4	45,401	10.00	71,765	13.1	86,131	14.8	93,767	16.0	98,138	17.1	97,961	17.3
India.....	9,250	3.0	16,070	4.7	28,860	7.1	31,743	7.00	54,664	10.0	66,836	11.5	74,603	12.7	79,736	13.9	80,466	14.2
Pakistan.....	2,990	1.0	5,440	1.6	7,730	1.9	6,427	1.42	6,948	1.3	6,644	1.5	8,123	1.4	7,325	1.3	6,296	1.1
Southeast Asia.....	28,450	9.1	50,310	14.6	41,440	10.2	47,774	10.53	40,916	7.5	41,868	7.2	38,865	6.6	35,994	6.3	34,590	6.1
Indonesia.....	3,250	1.0	8,210	2.4	9,520	2.3	12,820	2.83	11,625	2.1	11,614	2.0	10,432	1.8	8,880	1.6	7,760	1.4
Malaysia.....	6,010	1.9	23,020	6.7	13,610	3.3	14,015	3.09	7,795	1.4	7,395	1.3	6,595	1.1	6,483	1.1	6,142	1.1
Philippines.....	—	—	3,920	1.1	4,270	1.0	3,127	0.69	3,139	0.6	3,295	0.6	3,576	0.6	3,467	0.6	3,531	0.6
Singapore.....	—	—	3,930	1.1	4,500	1.1	4,098	0.90	4,166	0.8	4,141	0.7	4,189	0.7	3,955	0.7	3,769	0.7
Thailand.....	6,550	2.1	6,940	2.0	7,090	1.7	12,165	2.68	11,187	2.0	11,606	2.0	9,982	1.7	8,937	1.6	8,637	1.5
<b>Europe</b> .....	<b>25,330</b>	<b>8.1</b>	<b>34,310</b>	<b>10.0</b>	<b>49,640</b>	<b>12.2</b>	<b>67,358</b>	<b>14.84</b>	<b>80,584</b>	<b>14.7</b>	<b>81,579</b>	<b>14.0</b>	<b>78,001</b>	<b>13.3</b>	<b>74,134</b>	<b>12.9</b>	<b>71,609</b>	<b>12.7</b>
Eastern Europe.....	1,670	0.5	1,770	0.5	4,780	1.2	18,032	3.97	27,674	5.1	29,591	5.1	29,167	5.0	27,710	4.8	26,553	4.7
Western Europe.....	23,660	7.6	32,540	9.5	44,860	11.0	49,326	10.87	52,910	9.7	51,988	8.9	48,834	8.3	46,424	8.1	45,056	8.0
France.....	—	—	3,680	1.1	5,630	1.4	5,710	1.26	7,273	1.3	7,401	1.3	7,223	1.2	6,818	1.2	6,555	1.2
Germany <sup>1</sup> .....	3,310	1.1	4,730	1.4	7,000	1.7	9,017	1.99	10,128	1.8	9,613	1.6	9,302	1.6	8,745	1.5	8,640	1.5
Greece.....	3,750	1.2	4,440	1.3	4,360	1.1	3,365	0.74	2,768	0.5	2,599	0.4	2,341	0.4	2,126	0.4	2,035	0.4
Spain.....	—	—	1,740	0.5	4,300	1.1	4,809	1.06	4,156	0.8	4,048	0.7	3,633	0.6	3,631	0.6	3,512	0.6
United Kingdom.....	4,440	1.4	5,940	1.7	7,300	1.8	7,799	1.72	8,139	1.5	8,414	1.4	8,326	1.4	8,439	1.5	8,236	1.5
<b>Latin America</b> .....	<b>49,810</b>	<b>16.0</b>	<b>45,480</b>	<b>13.2</b>	<b>47,580</b>	<b>11.7</b>	<b>47,253</b>	<b>10.41</b>	<b>63,634</b>	<b>11.6</b>	<b>68,358</b>	<b>11.7</b>	<b>68,950</b>	<b>11.8</b>	<b>69,658</b>	<b>12.2</b>	<b>67,818</b>	<b>12.0</b>
Caribbean.....	10,650	3.4	11,100	3.2	12,610	3.1	10,737	2.37	14,423	2.6	13,879	2.4	14,895	2.5	15,606	2.7	13,898	2.5
Central America.....	12,970	4.2	12,740	3.7	15,950	3.9	14,220	3.13	16,764	3.1	18,826	3.2	18,856	3.2	19,264	3.4	19,227	3.4
Mexico.....	6,730	2.2	5,460	1.6	6,740	1.7	6,687	1.91	10,670	1.9	12,518	2.1	12,801	2.2	13,329	2.3	13,063	2.3
South America.....	26,190	8.4	21,640	6.3	19,020	4.7	22,296	4.91	32,447	5.9	35,653	6.1	35,199	6.0	34,788	6.1	34,693	6.1
Brazil.....	—	—	2,840	0.8	3,900	1.0	5,497	1.21	8,846	1.6	8,972	1.5	8,388	1.4	7,799	1.4	7,244	1.3
Colombia.....	—	—	4,010	1.2	3,180	0.8	3,462	0.76	6,765	1.2	8,068	1.4	7,771	1.3	7,533	1.3	7,334	1.3
Venezuela.....	11,750	3.8	7,040	2.0	2,890	0.7	4,456	0.98	5,217	1.0	5,627	1.0	5,333	0.9	5,575	1.0	5,279	0.9
<b>Middle East</b> .....	<b>84,710</b>	<b>27.2</b>	<b>52,720</b>	<b>15.3</b>	<b>33,420</b>	<b>8.2</b>	<b>30,563</b>	<b>6.74</b>	<b>36,858</b>	<b>6.7</b>	<b>38,545</b>	<b>6.6</b>	<b>34,803</b>	<b>5.9</b>	<b>31,852</b>	<b>5.6</b>	<b>31,248</b>	<b>5.5</b>
Iran.....	47,550	15.2	14,210	4.1	6,260	1.5	2,628	0.58	1,844	0.3	2,216	0.4	2,258	0.4	2,321	0.4	2,251	0.4
Israel.....	—	—	—	—	—	—	—	—	—	—	3,458	0.6	3,521	0.6	3,474	0.6	3,323	0.6
Jordan.....	6,140	2.0	6,590	1.9	4,320	1.1	2,222	0.49	2,187	0.4	2,417	0.4	2,173	0.4	1,853	0.3	1,752	0.3
Kuwait.....	—	—	—	—	—	—	—	—	—	—	2,966	0.5	2,212	0.4	1,846	0.3	1,720	0.3
Lebanon.....	6,770	2.2	7,090	2.1	3,900	1.0	1,554	0.34	2,005	0.4	2,435	0.4	2,364	0.4	2,179	0.4	2,040	0.4
Saudi Arabia.....	10,440	3.3	6,900	2.0	3,590	0.9	4,191	0.92	5,273	1.0	5,579	1.0	4,175	0.7	3,521	0.6	3,035	0.5
Turkey.....	—	—	2,460	0.7	4,080	1.0	7,678	1.69	10,983	2.0	12,091	2.1	11,601	2.0	11,398	2.0	12,474	2.2
<b>North America</b> <sup>2</sup> .....	<b>14,790</b>	<b>4.7</b>	<b>16,030</b>	<b>4.7</b>	<b>18,950</b>	<b>4.6</b>	<b>23,644</b>	<b>5.21</b>	<b>25,888</b>	<b>4.7</b>	<b>27,039</b>	<b>4.6</b>	<b>27,227</b>	<b>4.6</b>	<b>27,650</b>	<b>4.8</b>	<b>28,634</b>	<b>5.1</b>
Canada.....	14,320	4.6	15,410	4.5	18,350	4.5	23,005	5.07	25,279	4.6	26,514	4.5	26,513	4.5	27,017	4.7	28,140	5.0
<b>Oceania</b> .....	<b>4,180</b>	<b>1.3</b>	<b>4,030</b>	<b>1.2</b>	<b>4,230</b>	<b>1.0</b>	<b>4,202</b>	<b>0.93</b>	<b>4,624</b>	<b>0.8</b>	<b>4,852</b>	<b>0.8</b>	<b>4,811</b>	<b>0.8</b>	<b>4,534</b>	<b>0.8</b>	<b>4,534</b>	<b>0.8</b>
<b>Stateless</b> <sup>3</sup> .....	<b>240</b>	<b>0.1</b>	<b>190</b>	<b>0.1</b>	<b>80</b>	<b>#</b>	<b>30</b>	<b>#</b>	<b>10</b>	<b>#</b>	<b>87</b>	<b>#</b>	<b>33</b>	<b>#</b>	<b>19</b>	<b>#</b>	<b>37</b>	<b>#</b>

—Not available.

#Rounds to zero.

<sup>1</sup>Data for 1980–81 and 1985–86 are for West Germany (Federal Republic of Germany before unification).

<sup>2</sup>Excludes Mexico and Central America, which are included with Latin America.

<sup>3</sup>Home country unknown or undeclared.

NOTE: Totals and subtotals include other countries not shown separately. Data are for "nonimmigrants" (i.e., students who have not migrated to this country). Detail may not sum to totals because of rounding.

SOURCE: Institute of International Education, *Open Doors: Report on International Educational Exchange*, 1981 through 2005 (selected years). (This table was prepared June 2006.)

