

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 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). 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 of 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 both grade 4 and grade 8. In 1999, TIMSS collected data for grade 8 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 one or both 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 in 2004, Mexico had the largest percentage of its population made up of young people ages 5 to 14 (22 percent), followed by Turkey (19 percent) (table 386). Countries with relatively small percentages of people in this age group included Japan (9 percent) and Germany, Greece, Italy, Portugal, and Spain (all at 10 percent). In the United States, the proportion of 5- to 14-year-olds was 14 percent, which was higher than in most of the other OECD countries.

Enrollments

In 2004, about 1.3 billion students were enrolled in schools around the world (table 384). 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 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 384 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 percentages of people attending postsecondary institutions and increases in the total populations in these regions.

In 2004, the OECD countries with the highest proportion of 22- to 25-year-olds enrolled in postsecondary education were Finland (40 percent), followed by Denmark, the Republic of Korea, and Sweden (all at 32 percent), and Norway and Poland (both at 29 percent) (table 387). The United States' proportion was 25 percent. Postsecondary enrollment varied among countries due partially to differences in how postsecondary education is defined and the age at which postsecondary education begins. For example, programs classified as postsecondary in some countries may be classified as long-duration secondary programs in other countries.

In 2005–06, there were about 565,000 foreign students studying at U.S. colleges and universities (table 406). 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 216).

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 educational systems (table 391). (Most participating educational systems represent countries; however, some represent subnational entities with separate educational systems, such as Hong Kong, SAR.¹ 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 educational systems, including 4 Asian educational systems (Chinese Taipei; Hong Kong, SAR; Japan; and Singapore) and 7 European educational systems (Flemish Belgium, England, Hungary, Latvia, Lithuania, the Netherlands, and the Russian Federation). On the other hand, U.S. fourth-graders outsourced students in 13 educational systems. In 2003, U.S. eighth-grade students scored 504 in mathematics, on average, exceeding the international average of 467 for the 45 participating educational systems (table 392). U.S. eighth-graders were outperformed by their peers in 9 educational systems, including 5 Asian educational systems (Chinese Taipei; Hong Kong, SAR; Japan; Korea; and Singapore) and 4 European educational systems (Flemish Belgium, Estonia, Hungary, and the Netherlands). On the other hand, U.S. eighth-graders outsourced students in 25 educational systems.

¹ Hong Kong, SAR is a Special Administrative Region (SAR) of the People's Republic of China.

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 389). 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 people at the typical age of graduation in 2004 ranged from 14 in Mexico and 19 in Flemish Belgium to 51 in Iceland and New Zealand and 55 in Finland (table 401 and figure 27). The ratio for the United States was 33 per 100 people. 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 mathematics and science fields (including natural sciences, mathematics and computer science, and engineering) reported by OECD countries ranged from 12 percent in Hungary to 38 percent in Korea for 2004 (table 402). Finland, Germany, Korea, and Sweden all awarded at least 30 percent of their undergraduate degrees in mathematics and science fields. Denmark, Hungary, Iceland, the Netherlands, New Zealand, Norway, Poland, Turkey, and the United States awarded 20 percent or less of their undergraduate degrees in mathematics and science fields. The percentages of graduate degrees awarded in mathematics and science fields also ranged widely across countries in 2004 (table 403). Among the countries with the highest percentages of their graduate degrees in mathematics and science were Korea (45 percent), Portugal (41 percent), Germany (35 percent), and Spain (35 percent). Among the countries with the lowest percentages were Poland (5 percent), Hungary (6 percent), the Czech Republic (12 percent), the United States (13 percent) and Italy (14 percent).

Finances

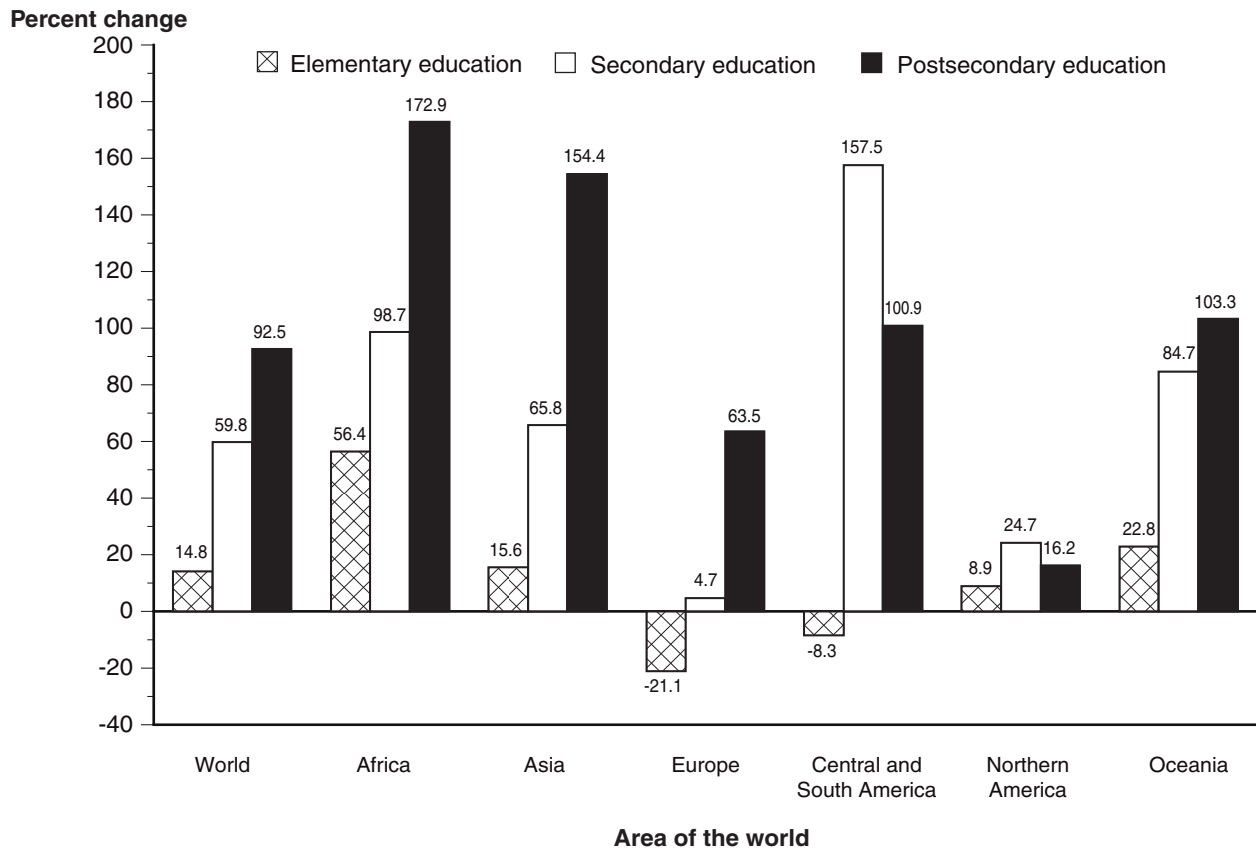
In 2004, per student expenditures at the elementary level of education were at least \$7,500 in seven OECD countries (table 404). Specifically, Luxembourg spent approximately \$13,500 per student at the elementary level, the United States approximately \$8,800, Switzerland approximately \$8,600, Norway approximately \$8,500, Iceland approximately \$8,400, Denmark approximately \$8,000, and Austria approximately \$7,700. At the secondary level, five countries had expenditures of over \$9,000 per student: Luxembourg (approximately \$17,900), Switzerland (approximately \$12,200), Norway (approximately \$11,100), the United States (approximately \$9,900), and Austria (approximately \$9,400). At the higher education level, the following six countries had expenditures of at least \$14,000 per student in 2004: the United States (approximately \$22,500), Switzerland (approximately \$22,000), Sweden (approximately \$16,200), Denmark

(approximately \$15,200), Norway (approximately \$15,000), and Australia (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

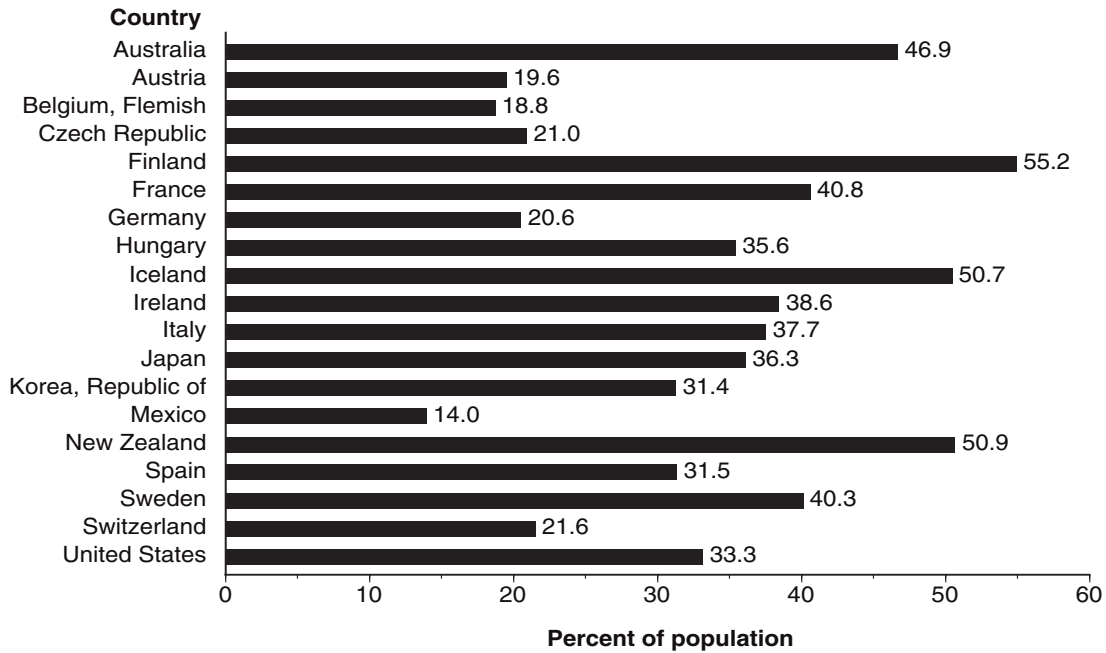
ranged from 3.5 percent in Japan and 3.6 percent in Turkey to 6.7 percent in Denmark and 7.5 percent in Iceland (table 405 and figure 28). Among reporting countries, the average public investment in education in 2003 was 5.1 percent of GDP. In the United States, the public expenditure on education as 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



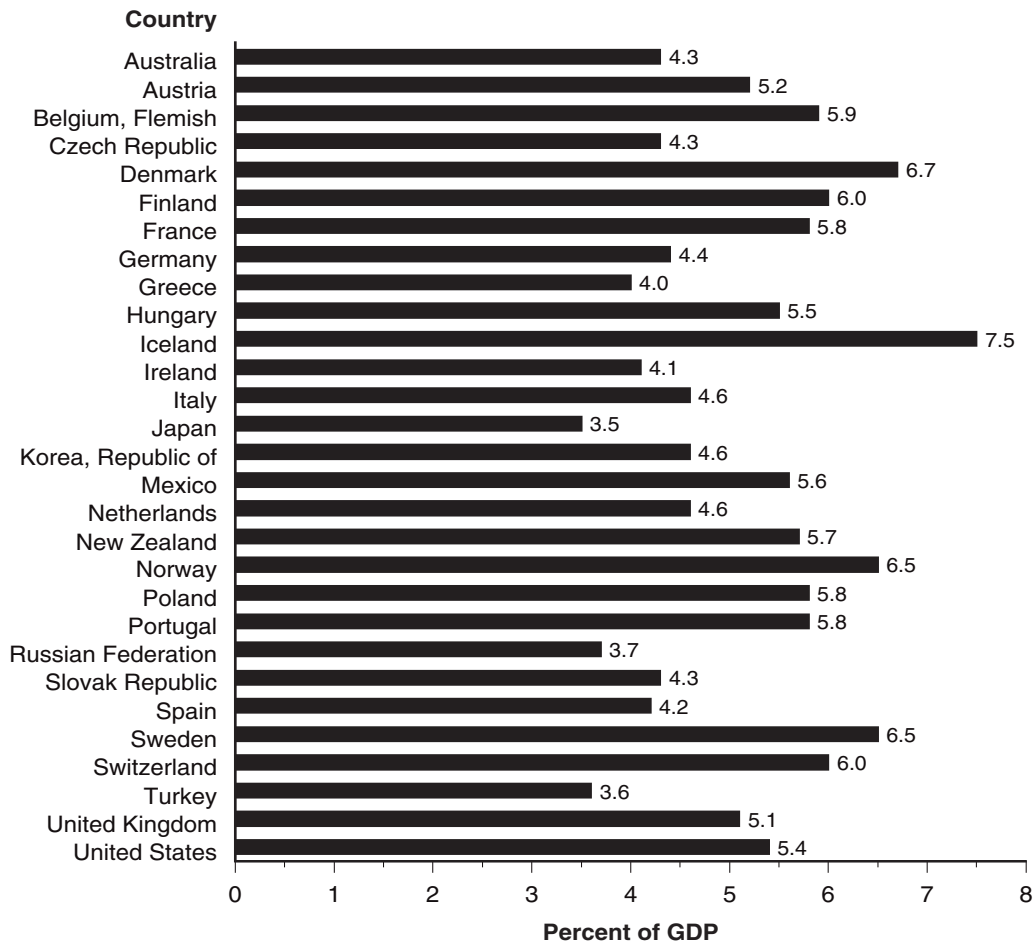
NOTE: Northern America includes Bermuda, Canada, Greenland, St. Pierre and Miquelon, and the United States of America. Hawaii is included in Northern America rather than Oceania. Central and South America includes Latin America and the Caribbean. Oceania includes American Samoa, Australia, Cook Islands, 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. 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 384. Selected population and finance statistics, school enrollment, and teachers, by major areas of the world: Selected years, 1980 through 2004

Selected characteristic	World total ¹	Major areas of the world					
		Africa ²	Asia ³	Europe ⁴	Central and South America ⁵	Northern America ⁵	Oceania ⁶
1	2	3	4	5	6	7	8
1980							
Population, all ages ⁷ (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 (elementary) level ⁸	541,556	62,134	336,174	52,471	65,414	22,611	2,752
Second level ⁹	264,379	14,360	144,755	62,734	16,969	23,913	1,647
Third level ¹⁰	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 (elementary) level ⁸	19,044	1,661	10,874	2,541	2,260	1,580	129
Second level ⁹	15,398	584	7,554	4,387	1,083	1,679	112
Third level ¹⁰	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 ¹¹	3.8	5.2	5.6
1990							
Population, all ages ⁷ (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 (elementary) level ⁸	596,853	80,640	364,213	48,968	75,505	24,810	2,717
Second level ⁹	315,008	24,378	181,652	63,366	22,194	21,569	1,849
Third level ¹⁰	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 (elementary) level ⁸	22,626	2,390	12,692	2,812	3,006	1,582	143
Second level ⁹	19,380	1,241	9,947	5,076	1,520	1,449	146
Third level ¹⁰	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 ¹¹	4.1	5.4	5.6
1995							
Population, all ages ⁷ (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 (elementary) level ⁸	649,480	95,928	394,304	47,344	82,279	26,501	3,124
Second level ⁹	372,724	30,899	219,415	69,448	26,087	23,984	2,891
Third level ¹⁰	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 (elementary) level ⁸	24,356	2,811	13,499	2,863	3,374	1,649	161
Second level ⁹	21,746	1,471	11,273	5,561	1,696	1,528	217
Third level ¹⁰	5,945	205	2,183	1,689	714	1,092	61
2000							
Population, all ages ⁷ (in thousands)	6,054,000	—	—	—	—	—	—
Enrollment, all levels (in thousands)	1,202,702	151,466	702,941	137,235	136,462	66,943	7,655
First (elementary) level ⁸	651,866	106,073	403,765 ¹²	41,464	69,936	27,408	3,222
Second level ⁹	452,828	39,027 ¹²	259,692	70,397	55,213	25,110	3,390
Third level ¹⁰	98,008	6,366 ¹²	39,485	25,375 ¹²	11,314	14,425	1,043 ¹²
Teachers, all levels (in thousands)	57,211 ¹³	5,177	30,137	10,360	6,443	4,648	‡
First (elementary) level ⁸	25,713 ¹²	2,929	15,342	2,745	2,735	1,805	157 ¹²
Second level ⁹	24,780	1,891 ¹²	12,371	5,746 ¹²	2,850	1,686	236 ¹²
Third level ¹⁰	6,718 ¹³	357 ¹²	2,424	1,869 ¹²	858	1,157	‡
2004							
Population, all ages ⁷ (in thousands)	6,345,100	—	—	—	—	—	—
Enrollment, all levels (in thousands)	1,320,808	182,388	781,369	135,935	141,007	72,082	8,027
First (elementary) level ⁸	685,275	126,157	420,861 ¹²	38,640	69,256 ¹²	27,025	3,335 ¹²
Second level ⁹	503,455	48,444 ¹²	301,190	66,357	57,150 ¹²	26,900	3,415 ¹²
Third level ¹⁰	132,077	7,787 ¹²	59,318	30,937	14,600 ¹²	18,157	1,276
Teachers, all levels (in thousands)	62,349	5,784	33,373	10,487	7,219	4,991	‡
First (elementary) level ⁸	26,474	3,332	15,542	2,638	2,891 ¹²	1,896	‡
Second level ⁹	27,398	2,149 ¹²	14,364	5,669	3,181 ¹²	1,787	‡
Third level ¹⁰	8,477 ^{12,13}	303 ¹²	3,468 ¹²	2,180	1,148 ¹²	1,307	‡

—Not available.

‡Reporting standards not met.

¹Enrollment and teacher data exclude the Democratic People's Republic of Korea.²Excludes Rodrigues and other small islands.³Includes 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.⁴Includes all countries of the former U.S.S.R. except Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, and Turkmenistan.⁵Northern 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.⁶Includes 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.⁷Estimate of midyear population.⁸First-level enrollment generally consists of elementary school, grades 1–6.⁹Second-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 7–12.¹⁰Third-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.¹¹This figure is for Europe, not including the former U.S.S.R.¹²Includes relatively high proportion of imputed values for nonrespondent countries.¹³Includes 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 November 2007.)

Table 385. Selected population and enrollment statistics for countries with populations over 10 million, by continent: Selected years, 1990 through 2005

Country ¹	Midyear population (in millions)			Persons per square kilo- meter, 2005	First level ²						Second level ³						Third level ⁴					
	1990	2000	2005		Enrollment (in thousands)			Gross enrollment ratio ⁵			Enrollment (in thousands)			Gross enrollment ratio ⁵			Enrollment (in thousands)			Gross enrollment ratio ⁵		
					1990-91	2000-01	2004-05	1990-91	2000-01	2004-05	1990-91	2000-01	2004-05	1990-91	2000-01	2004-05	1990-91	2000-01	2004-05	1990-91	2000-01	2004-05
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
World total⁶	5,282	6,054	6,438	50	596,853	652,605	688,741	99	101	107	315,008	453,424	512,439	52	61	68	68,613	98,630	137,931	14	19	24
Africa																						
Algeria ⁷	25	30	33	14	4,189	4,843	4,362	100	108	112	2,176	—	3,756 ⁸	61	—	83 ⁸	286	—	755	11	—	20
Angola	9	13	16	13	990 ⁹	—	—	92	—	—	186	355	—	12	15	—	7	—	48	1	—	3
Burkina Faso	9	11	13	48	504	852	1,271	33	44	58	99	190	295	7	11	14	5	—	28	1	—	2
Cameroon	11	15	16	35	1,964	2,237 ¹⁰	3,001	101	92 ¹⁰	117	500	700	1,198 ¹¹	28	29	44 ¹¹	33	66 ⁸	100 ⁸	3	5 ⁸	6 ⁸
Chad	—	—	10	8	—	914	1,262	—	67	77	—	137	237 ⁸	—	11	16 ⁸	—	6	10 ⁸	—	1	1 ⁸
Cote d'Ivoire	12	16	18	57	1,415	1,944	—	67	70	—	361	620 ⁸	—	22	22 ⁸	—	30 ¹²	—	—	—	—	—
Democratic Rep. of the Congo	37	51	58	25	4,562	—	—	70	—	—	1,097 ¹²	1,253 ⁸	—	21 ¹²	18 ⁸	—	80	—	—	2	—	—
Egypt ⁷	56	64	74	74	6,964	7,947 ⁸	9,564	94	101 ⁸	101	5,507	8,028 ⁸	8,177	76	83 ⁸	86	628 ^{13,14}	—	2,594 ⁸	16	—	34 ⁸
Ethiopia	48	64	71	71	2,486	4,874	8,019	33	63	93	866	2,168	4,489	14	17	31	34	68	191	1	1	3
Ghana ⁷	15	19	22	97	1,945	2,561	2,930	75	80	88	—	1,057	1,350 ⁸	36	37	44 ⁸	10 ¹⁵	55	120	1	3	5
Kenya ⁷	23	30	34	60	5,392	5,035	6,076	95	98	112	618 ¹⁶	1,909	2,464 ⁸	24	39	49 ⁸	35 ¹⁵	89	—	2	3	—
Madagascar	13	16	19	32	1,571	2,208	3,598	103	100	138	323 ¹⁶	—	—	18	—	—	36	32	45	3	2	3
Malawi	9	11	13	137	1,401	2,695	2,868	68	139	122	61	487	515	8	32	28	5	—	—	1	—	—
Mali	8	11	14	11	395	1,017	1,506	26	53	66	84	258 ⁸	430	7	16 ⁸	24	5	20	33	1	2	3
Morocco ⁷	24	29	30	68	2,484	3,670	4,023	67	93	105	1,194	1,541	1,952 ⁸	35	39	50 ⁸	256	276	367	11	9	11
Mozambique ⁷	14	18	20	25	1,260	2,544	3,943	67	74	103	160	124	306	8	6	13	5 ¹⁷	12	28	#	1	1
Niger	8	11	14	11	369	579	1,064	29	30	47	77	106 ⁸	182	7	6 ⁸	9	—	11	—	1	—	1
Nigeria ⁷	96	127	142	144	13,607	18,802 ⁸	22,267 ⁸	91	96 ⁸	103	2,908	—	6,398	25	—	34	208 ^{15,18}	—	—	4 ^{17,18}	—	—
Senegal	8	10	12	61	708	1,108	1,444	59	64	78	—	250	406	16	15	21	19	—	59 ¹¹	3	—	5 ¹¹
South Africa	37	43	45	37	6,952	7,445	—	122	107	—	2,742	4,142	—	74	85	—	439 ¹⁹	645	735	13	14	15
Sudan ⁷	24	—	36	15	2,043	2,567	3,278	53	51	60	732	980	1,370	24	26	34	60 ¹³	204 ⁸	—	3	6	—
Tunisia	8	10	10	65	1,406	1,414	1,184	113	114	109	565	1,104 ⁸	1,239 ⁸	45	75 ⁸	84 ⁸	69	180	312	9	19	30
Uganda	17	22	29	146	2,470 ^{20,21}	6,559	7,224	74	127	119	245 ^{16,21}	547	760	13	16	19	18	56	—	1	3	—
United Republic of Tanzania	25	34	38	43	3,379	4,382	7,541	70	66	106	167	—	—	5	—	7 ¹²	—	51 ⁸	#	—	—	1 ⁸
Zambia	8	10	12	16	1,461	1,590	2,565	99	75	111	190	276	409 ⁸	24	22	28 ⁸	15	25 ⁸	—	2	2 ⁸	—
Zimbabwe	10	12	13	34	2,116	2,461	—	116	98	—	661	844	—	50	42	—	49	49 ⁸	—	5	4 ⁸	—
Asia																						
Afghanistan ⁷	15	—	—	—	623	749	4,319	27	19	87	182	—	651	9	—	16	24	—	—	2	—	—
Bangladesh	110	130	142	1,090	11,940	17,668	—	72	109	—	3,593	—	—	19	50	—	434	727	912	4	6	6
Cambodia	9	12	14	80	1,330	2,248	2,695	121	106	134	264	351	—	32	17	—	7	22	57	1	2	3
China	1,155	1,261	1,305	140	122,414	122,414	112,740	125	113	113	52,386	81,488	100,632	49	63	74	3,822	7,364	21,336	3	8	20
India	851	1,016	1,095	368	99,118	113,613	140,013 ⁸	97	99	119 ⁸	54,180 ¹⁶	71,031	89,462	44	48	57	4,951	9,404	11,777	6	10	11
Indonesia	183	210	221	122	29,754	28,202 ⁸	29,150	115	111 ⁸	117	10,965	14,264 ⁸	15,993	44	55 ⁸	63	1,773 ¹²	—	3,640 ⁸	9	—	17 ⁸
Iran, Islamic Republic of	59	64	68	41	9,370	8,288	7,307	112	94	111	5,085	9,955	9,942	55	78	81	312 ¹³	1,405	2,126	10	19	24
Iraq	18	—	—	—	3,328	3,639	4,430 ⁸	111	91	98 ⁸	1,024 ¹⁶	1,224	1,751 ⁸	47	36	45 ⁸	170 ²²	289	425 ⁸	12 ²²	12	15 ⁸
Japan	124	127	128	351	9,373	7,529	7,232	100	101	100	11,026	8,782	7,710	97	102	102	2,899 ¹²	3,982	4,038	30	47	55
Kazakhstan	17	15	15	6	1,197	1,208	1,024	87	99	109	2,144	2,003	2,040	98	91	99	537	370	753	40	28	53
Korea, North (DPR)	20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Korea, South (Republic of)	43	47	48	489	4,869	3,946	4,125	105	98	105	4,560	4,177	3,693	90	98	93	1,691	2,838	3,225	39	73	90
Malaysia	18	23	25	77	2,456	3,026	—	94	97	—	1,456	2,205	—	56	69	—	121	549	—	7	26	—
Myanmar	41	46	—	—	5,385	4,858	4,948	106	89	100	1,281	2,268	2,589	23	38	40	196 ¹²	551 ⁸	—	4	11 ⁸	—
Nepal ⁷	19	24	27	190	2,789	3,780 ¹⁰	4,030	108	117 ¹⁰	113	709	1,348	2,054	33	35	46	94	94	—	5	4	—
Pakistan	119	138	156	202	11,451 ²³	13,987 ¹¹	17,258	61	71 ¹¹	87	4,345	—	7,245	23	—	27	—	—	783	3	—	5
Philippines	61	76	83	279	10,427	—	13,084	111	—	112	4,034	—	6,352	73	—	85	1,709	—	2,403	28	—	28
Saudi Arabia	16	21	25	11	1,877	—	3,264	73	—	91	893	—	2,732	44	—	88	154	404	604	12	22	28
Sri Lanka ⁷	17	19	20	303	2,112	—	—	106	—	—	2,082	—	—	74	—	—	55 ^{12,24}	—	—	5	—	—
Syrian Arab Republic	12	16	19	104	2,452	2,775	2,252	108	105	124	914	1,069	2,389	52	41	68	222	—	—	18	—	—
Thailand	56	61	64	126	6,957	6,101	5,975	99	95	97	2,230	—	4,533	30	—	70	1,156 ¹⁷	1,900	2,359	19 ¹⁷	34	43
Turkey	56	65	73	94	6,862	7,850 ⁸	7,948 ⁸	99	96 ⁸	93 ⁸	3,808	—	5,076 ⁸	47	—	75 ⁸	750	1,588 ⁸	2,106	13	23	31
Uzbekistan	21	25	27	63	1,778	—	—	81	—	—	3,295	—	—	99	—	—	603	—	—	30	—	—
Vietnam	67	79	83	255	8,862	10,063	7,773	103	107	95	3,236	7,926	9,939	32	65	76	130	732	1,355	2	9	16

Table 385. Selected population and enrollment statistics for countries with populations over 10 million, by continent: Selected years, 1990 through 2005—Continued

Country ¹	Midyear population (in millions)			Persons per square kilo- meter, 2005	First level ²						Second level ³						Third level ⁴					
	1990	2000	2005		Enrollment (in thousands)			Gross enrollment ratio ⁵			Enrollment (in thousands)			Gross enrollment ratio ⁵			Enrollment (in thousands)			Gross enrollment ratio ⁵		
					1990-91	2000-01	2004-05	1990-91	2000-01	2004-05	1990-91	2000-01	2004-05	1990-91	2000-01	2004-05	1990-91	2000-01	2004-05	1990-91	2000-01	2004-05
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Italy ⁷	57	58	57	195	3,056	2,836	2,771	103	101	102	5,118	4,404	4,507	83	93	99	1,452	1,770	2,015	32	49	66
Netherlands ⁷	15	16	16	482	1,082	1,279	1,278	102	108	107	1,402	1,379	1,410	120	124	119	479	488	565	40	53	61
Poland ⁷	38	39	38	125	5,189	3,319	2,724	98	99	98	1,888	3,988	3,445	81	100	99	545	1,580	2,118	22	49	63
Portugal ⁷	10	10	11	115	1,020	811	753	123	125	114	670	831	670	67	108	99	186	374	381	23	48	56
Romania ⁷	23	22	22	94	1,253	1,189	970	91	102	107	2,838	2,226	2,090	92	81	85	193	453	739	10	24	45
Russian Federation.....	148	146	143	9	7,596	—	5,309	109	—	129	13,956	—	12,433	93	—	92	5,100	—	9,020 ⁸	52	—	71 ⁸
Spain ⁷	39	39	43	87	2,820	2,540	2,485	109	107	106	4,755	3,246	3,108	104	112	124	1,222	1,829	1,809	37	58	67
Ukraine ⁷	52	50	47	81	3,991	2,079	1,946	89	105	107	3,408	5,204	4,043	93	97	89	1,652	1,812	2,605	47	50	69
United Kingdom ⁷	58	60	60	249	4,533	4,632	4,635	104	102	107	4,336	5,304	5,747	85	101	105	1,258	2,024	2,288	30	58	60
North America																						
Canada.....	28	31	32	4	2,376	2,456	—	103	99	—	2,292	2,621	—	101	107	—	1,917	1,212	—	95	59	—
Cuba.....	11	—	—	—	888	1,046	895	98	105	102	1,002	790	937	89	83	94	242	159	472	21	22	61
Guatemala.....	9	11	13	116	1,165	1,909	2,345	78	104	114	295 ¹²	504	754	23 ¹²	38	51	70 ¹⁷	—	—	8 ¹⁷	—	—
Mexico.....	83	98	103	54	14,402	14,766	14,700	114	109	109	6,704	9,094	10,564	53	72	80	1,311	1,963	2,385	15	19	24
United States.....	254	282	296	32	22,429	24,973	24,455	102	101	99	19,270	22,594	24,432	93	94	95	13,819	15,312	17,272	75	80	83
South America																						
Argentina.....	33	37	39	14	4,965	4,898	—	106	118	—	2,160	3,832	—	71	97	—	1,008 ¹²	1,767 ⁸	—	38 ¹²	53 ⁸	—
Brazil.....	148	170	186	22	28,944	20,212	—	106	151	—	3,499	26,097	—	38	104	—	1,540 ²⁷	2,781	—	11	16	—
Chile.....	13	15	16	22	1,991	1,799	1,721	100	100	104	720	1,391	1,630	73	83	91	262 ¹²	452	664	21 ¹²	37	48
Colombia.....	33	42	46	44	4,247	5,221	5,298	102	112	112	2,378 ¹²	3,569	4,297	50	70	78	487	934	1,224	13	23	29
Ecuador.....	10	13	13	48	1,846	1,925	2,000 ⁸	116	115	117 ⁸	786 ^{16,28}	917	1,000 ⁸	55	57	61 ⁸	207	—	—	20	—	—
Peru.....	22	26	28	22	3,855	4,338	4,077	118	121	112	1,698	2,374	2,691	67	86	92	678	—	909 ⁸	30	—	33 ⁸
Venezuela.....	20	24	27	30	4,053	3,328	3,449	96	102	105	281	1,543	2,028	35	59	74	550	668	—	29	28 ⁸	—
Oceania																						
Australia ⁷	17	19	20	3	1,583	1,906	1,935	108	99	104	1,278	2,589	2,491	82	159	148	485 ²⁹	845	1,015	36	65	72

—Not available.

#Rounds to zero.

¹Selection based on total population for midyear 2005.

²First-level enrollment generally consists of elementary school, grades 1–6.

³Second-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.

⁴Third-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.

⁵Data represent the total enrollment of all ages in the school level divided by the population of the specific age groups that correspond to the school level. Adjustments have been made for the varying lengths of first and second level programs. Ratios may exceed 100 because some countries have many students from outside the normal age range.

⁶Enrollment totals and ratios exclude Democratic People's Republic of Korea. Data do not include adult education or special education provided outside regular schools.

⁷Classification or data coverage of levels has been revised. Data by level may not be comparable over time.

⁸Estimated by the UNESCO Institute for Statistics.

⁹Data for 1994–95.

¹⁰Policy change in 2000–01: introduction of free universal primary education.

¹¹National estimation.

¹²Data for 1991–92.

¹³Excludes private institutions.

¹⁴Data refer to universities and exclude Al Azhar.

¹⁵Excludes nonuniversity institutions (such as teacher training colleges and technical colleges) and excludes distance-learning universities.

¹⁶General education enrollment only. Excludes teacher training and vocational education enrollments.

¹⁷Data for 1992–93.

¹⁸Data for 1993–94.

¹⁹Not including the former Independent States of Transke, Bophuthatswana, Venda, and Ciskei.

²⁰Estimated.

²¹Data refer to government aided and maintained schools only.

²²Data for 1985–86.

²³Includes preprimary education.

²⁴Excludes some nonuniversity institutions.

²⁵Includes full-time students only.

²⁶Data include both former East and West Germany.

²⁷Not including former ISCED level 7.

²⁸Including vocational education.

²⁹Data do not include Vocational Education and Training Institutes (VETS).

NOTE: Some data have been revised from previously published figures. Detail may not sum to totals because of rounding.

SOURCE: United Nations Educational, Scientific, and Cultural Organization (UNESCO), *Statistical Yearbook, 1999; Global Education Digest, 2003, 2005, and 2006*; unpublished tabulations; and tables 3B, 5, and 14, retrieved August 15, 2007, from <http://stats.uis.unesco.org/unesco/ReportFolders/ReportFolders.aspx>. World Bank, *World Development Indicators, 2000 and World Development Report, 2002, 2004, 2006, and 2007*. U.S. Department of Commerce, Census Bureau, International Data Base, retrieved May 6, 2005, from <http://www.census.gov/ipc/www/idbnew.html>. (This table was prepared August 2007.)

Table 386. School-age populations as a percentage of total population, by age group and country: Selected years, 1985 through 2004

Country	5- to 14-year-olds as a percent of total population									15- to 19-year-olds as a percent of total population								
	1985 ¹	1990 ¹	1995 ¹	1996	1998	1999	2002	2003	2004	1985 ²	1990 ²	1995 ²	1996	1998	1999	2002	2003	2004
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Australia.....	14	13	13	14	14	14	14	14	14	7	6	6	7	7	7	7	7	7
Austria.....	—	—	—	—	—	—	12	12	11	—	—	—	—	—	—	6	6	6
Belgium.....	11	11	11	12	12	12	12	12	12	6	5	5	6	6	6	6	6	6
Canada.....	13	12	12	13	14	14	—	13	13	6	5	5	7	7	7	—	7	7
Czech Republic.....	(³)	(³)	12	13	13	12	12	11	11	(³)	(³)	6	8	8	7	7	7	7
Denmark.....	12	10	10	11	11	12	12	13	13	6	6	5	6	6	5	5	5	5
Finland.....	11	12	11	13	13	13	12	12	12	6	5	5	6	6	6	6	6	6
France.....	13	12	12	13	13	13	12	12	12	6	6	5	7	7	7	7	6	6
Germany ⁴	9	9	10	11	11	11	11	10	10	6	4	4	5	6	6	6	6	6
Greece.....	—	—	11	12	11	11	10	10	10	—	5	6	7	7	7	6	6	6
Hungary.....	—	—	—	—	—	—	12	11	11	—	—	—	—	—	—	6	6	6
Iceland.....	16	15	14	16	16	16	16	16	15	7	7	6	8	8	8	7	7	7
Ireland.....	18	18	15	17	16	15	14	14	14	8	8	8	9	9	9	8	8	8
Italy.....	13	10	9	10	10	10	10	10	10	6	6	5	6	6	5	5	5	5
Japan.....	14	12	10	11	11	10	10	10	9	6	7	5	7	6	6	6	6	5
Korea, Republic of.....	—	—	14	15	14	14	14	14	14	—	—	7	9	9	8	7	7	6
Luxembourg.....	10	10	11	12	12	12	13	13	13	5	4	4	5	6	6	6	6	6
Mexico.....	—	—	—	—	—	—	22	22	22	—	—	—	—	—	—	10	10	10
Netherlands.....	12	11	11	12	12	12	12	12	12	7	5	5	6	6	6	6	6	6
New Zealand.....	15	13	13	15	15	15	15	15	15	7	7	6	7	7	7	7	7	7
Norway.....	13	11	11	13	13	13	13	14	14	6	6	5	6	6	6	6	6	6
Poland.....	—	—	—	—	—	—	13	13	12	—	—	—	—	—	—	9	8	8
Portugal.....	—	—	—	—	—	—	10	11	10	—	—	—	—	—	—	6	6	6
Russian Federation.....	(³)	(³)	14	16	—	14	12	12	11	(³)	(³)	6	7	—	8	8	9	9
Slovak Republic.....	(³)	(³)	—	—	—	—	13	13	13	(³)	(³)	—	—	—	—	8	8	8
Spain.....	15	13	10	11	11	10	10	10	10	7	7	6	8	7	7	6	6	6
Sweden.....	11	10	11	12	13	13	13	13	13	5	5	5	6	6	6	6	6	6
Switzerland.....	11	10	10	12	12	12	12	12	11	6	5	5	6	6	6	6	6	6
Turkey.....	21	21	20	20	21	21	—	19	19	9	9	9	11	11	11	—	9	9
United Kingdom.....	11	11	12	13	13	13	13	13	13	6	5	5	6	6	6	6	6	7
United States.....	13	13	13	15	14	15	15	14	14	6	5	6	7	7	7	7	7	7

—Not available.

¹Data are for the 5- to 13-year-old population.²Data are for the 14- to 17-year-old population.³Country did not exist in its current form in the given year.⁴Data 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. OECD, Education Online Database, retrieved July 16, 2007, from <http://stats.oecd.org/WBOS/Default.aspx>. (This table was prepared July 2007.)

Table 387. Percentage of population enrolled in secondary and postsecondary institutions, by age group and country: Selected years, 1985 through 2005

Country	Secondary schools, 16 years old, 2005	Secondary schools, 17 years old, 2005	Postsecondary education														
			18 to 21 years old					22 to 25 years old					26 to 29 years old				
			1985	1990	1999	2002	2004	1985	1990	1999	2002	2004	1985	1990	1999	2002	2004
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Australia.....	93	80	—	—	31	35	33	—	—	15	20	20	—	—	8	10	10
Austria.....	92	77	—	—	15	15	16	—	—	20	18	20	—	—	12	9	9
Belgium ¹	101	99	25	—	42	42	43	7	—	15	18	19	2	—	3	5	6
Canada.....	—	—	—	—	27	—	32	—	—	18	—	19	—	—	7	—	7
Czech Republic.....	100	97	(²)	(²)	17	20	23	(²)	(²)	12	16	18	(²)	(²)	4	5	5
Denmark.....	93	85	7	7	8	10	10	16	18	27	29	32	8	9	15	16	18
Finland.....	96	95	9	14	23	21	23	17	21	35	39	40	8	10	18	19	20
France.....	97	89	19	25	35	35	37	10	12	20	20	21	4	4	5	5	6
Germany ³	96	92	9	9	11	12	13	—	16	19	20	22	9	10	11	12	13
Greece.....	101	75	—	—	54	46	57	—	—	7	24	27	—	—	2	11	12
Hungary.....	96	92	—	—	20	24	28	—	—	14	18	22	—	—	5	7	9
Iceland.....	94	83	—	—	7	10	12	—	—	21	24	28	—	—	9	12	16
Ireland.....	96	76	—	21	33	36	39	—	—	11	11	13	—	—	3	5	5
Italy.....	88	83	—	—	22	24	28	—	—	21	21	23	—	—	7	8	8
Japan.....	97	95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Korea, Republic of.....	95	93	—	—	51	56	62	—	—	26	32	32	—	—	6	7	7
Luxembourg.....	82	78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mexico.....	54	41	—	—	12	15	15	—	—	8	7	8	—	—	1	3	2
Netherlands.....	95	83	14	18	26	28	28	12	13	20	22	23	6	5	5	6	7
New Zealand.....	87	70	—	21	29	30	34	—	15	14	17	23	—	—	8	8	12
Norway.....	94	92	9	14	19	17	19	14	17	28	27	29	6	8	12	13	14
Poland.....	97	95	—	—	21	27	29	—	—	21	26	29	—	—	5	7	6
Portugal.....	80	76	6	—	25	25	27	5	—	17	20	21	2	—	6	8	8
Russian Federation.....	73	34	(²)	(²)	—	42	—	(²)	(²)	—	—	—	(²)	(²)	—	—	—
Slovak Republic.....	95	90	(²)	(²)	—	21	20	(²)	(²)	—	13	15	(²)	(²)	—	4	5
Spain.....	94	82	15	21	32	35	34	11	14	24	24	23	4	5	8	8	9
Sweden.....	97	98	8	9	16	17	17	11	11	25	28	32	7	6	12	13	16
Switzerland.....	90	86	6	6	10	10	12	11	12	17	18	20	5	6	9	9	10
Turkey.....	55	28	—	7	14	—	18	—	4	9	—	10	—	2	4	—	4
United Kingdom.....	94	80	15	16	29	30	29	7	11	12	12	13	—	—	6	6	7
United States.....	96	83	37	41	44	46	42	15	17	18	25	25	8	9	11	11	11

—Not available.

¹Data for Flemish Belgium only.²Country did not exist in its current form in the given year.³Data 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. Some data have been revised from previously published figures.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education at a Glance*, selected years, 1987 through 2007; and Education Online Database, 2002 and 2004, retrieved August 27, 2007, from <http://stats.oecd.org/WBOS/Default.aspx>. (This table was prepared August 2007.)

Table 388. Pupils per teacher in public and private elementary and secondary schools, by level of education and country: Selected years, 1985 through 2005

Country	Elementary								Junior high school (lower secondary)							Senior high school (upper secondary)								
	1985	1990	1996	2000	2002	2003	2004	2005	1985	1990	1996	2000	2002	2003	2004	2005	1985	1990	1996	2000	2002	2003	2004	2005
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 ¹	—	18.1	17.3	16.9	16.6	16.4	16.2 ¹	—	—	—	—	12.5 ^{2,3}	12.4 ^{2,3}	12.3 ^{2,3}	12.1 ^{1,2,3}	3.2	—	—	—	12.5 ^{2,3}	12.4 ^{2,3}	12.3 ^{2,3}	12.1 ^{1,2,3}
Austria.....	11.3	11.6	12.7	—	14.4	14.4	15.1	14.1	9.2	7.7	9.2	—	9.8	10.0	10.4	10.6	15.2	12.4	8.5	—	10.3	10.2	11.0	11.3
Belgium.....	—	—	—	15.0	13.1	13.1	12.9	12.8	—	—	—	9.7 ²	9.3 ²	10.6	10.6	9.4	—	—	—	9.7 ²	9.3 ²	9.6	9.2	9.9
Canada.....	18.1	17.1	17.0	18.1	—	—	—	—	16.0	15.5	20.0	18.1	—	—	—	—	16.0	15.3	19.5	19.5	—	—	—	—
Czech Republic.....	(⁴)	(⁴)	—	19.7	18.9	18.3	17.9	17.5	(⁴)	(⁴)	—	14.7	14.4	14.3	13.5	13.5	(⁴)	(⁴)	—	11.5	12.9	12.6	12.6	12.8
Denmark.....	12.7	11.2	11.2	10.4	10.9 ⁵	10.8 ⁵	11.3 ⁵	11.9 ⁵	10.2	9.3	10.1	11.4	10.9 ⁵	10.8 ⁵	11.3 ⁵	11.9 ⁵	14.8	13.3	12.1	14.4	14.2	13.4	—	—
Finland.....	—	—	—	16.9	15.8	16.6	16.3	15.9	—	—	—	10.7	10.6	9.8	10.0	10.0	—	—	—	17.0	16.0	15.9	16.2	18.0
France.....	—	—	19.5	19.8	19.4	19.4	19.4	19.4	—	—	—	14.7	13.7	13.7	14.1	14.2	—	—	—	10.4	10.6	10.6	10.3	10.3
Germany ⁶	20.7	20.3	20.9	19.8	18.9	18.7	18.8	18.8	16.9	14.6	16.0	15.7	15.7	15.6	15.6	15.5	23.7	21.0	13.1	13.9	13.6	13.7	13.9	14.0
Greece.....	—	—	—	13.4	12.5	12.1	11.3	11.1	—	—	—	10.8	9.3	8.7	8.2	7.9	—	—	—	10.5	9.3	8.6	8.4	8.8
Hungary.....	—	—	—	10.9	10.8	10.6	10.7	10.6	—	—	—	10.9	10.7	10.6	10.2	10.4	—	—	—	11.4	13.1	13.2	12.3	12.2
Iceland.....	—	—	—	12.7 ⁵	11.4 ⁵	11.3 ⁵	11.4 ⁵	11.3 ⁵	—	—	—	12.7 ⁵	11.4 ⁵	11.3 ⁵	11.4 ⁵	11.3 ⁵	—	—	—	9.7	10.6	10.7	11.1	10.8
Ireland.....	—	—	22.6	21.5	19.5	18.7	18.3	17.9	—	—	—	15.9 ²	14.3 ²	13.7 ²	14.3 ²	15.5 ²	7.2	8.3	—	15.9 ²	14.3 ²	13.7 ²	14.3 ²	15.5 ²
Italy.....	12.8	10.7	11.2	11.0	10.6	10.9	10.7	10.6	9.6	8.5	10.8	10.4	9.9	10.3	10.1	10.8	10.7	9.8	10.2	10.3	10.8	11.5	11.0	11.0
Japan.....	—	20.8 ¹	19.7	20.9	20.3	19.9	19.6	19.4	—	18.6	16.2	16.8	16.2	15.7	15.3	15.1	—	16.2	15.6	14.0	13.7	13.5	13.2	13.0
Korea, Republic of.....	—	—	—	32.1	31.4	30.2	29.1	28.0	—	—	—	21.5	20.7	19.9	20.4	20.8	—	—	—	20.9	16.5	16.0	15.9	16.0
Luxembourg.....	—	—	—	15.9 ¹	11.6 ¹	10.8 ¹	—	—	—	—	—	9.2 ^{1,2}	9.0 ^{1,2}	9.0 ^{1,2}	9.0 ^{1,2}	9.0 ^{1,2}	—	—	—	9.2 ^{1,2}	9.0 ^{1,2}	9.0 ^{1,2}	9.0 ^{1,2}	9.0 ^{1,2}
Mexico.....	—	—	—	27.2	26.9	26.7	28.5	28.3	—	—	—	34.8	31.5	32.4	33.7	33.7	—	—	—	26.5	24.3	24.0	25.2	25.8
Netherlands.....	20.2	19.2	20.0	16.8	17.0	16.0	15.9	15.9	12.7	12.4	—	17.1 ²	15.9 ²	15.7 ²	15.8 ²	16.2 ²	—	—	—	17.1 ²	15.9 ²	15.7 ²	15.8 ²	16.2 ²
New Zealand.....	20.1	19.1	22.0	20.6	19.6	19.9	16.7	18.1	—	—	18.1	19.9	19.4	18.8	17.3	16.8	—	—	14.1	13.1	13.8	10.9	12.5	12.9
Norway.....	—	—	—	12.4	11.5	11.7 ¹	11.9 ¹	—	—	—	—	9.9	10.3	10.4 ¹	10.5 ¹	—	—	—	—	9.7	9.2	9.2 ¹	9.6 ¹	—
Poland.....	—	—	—	12.7	12.8	11.9	—	11.7	—	—	—	11.5	14.1	12.6	—	12.7	—	—	—	16.9	13.7	13.5	—	12.9
Portugal.....	—	—	—	12.1	11.0	—	11.1	10.8	—	—	—	10.4	9.3	—	10.0	8.2	—	—	—	7.9	7.5	—	7.3	8.0
Slovak Republic.....	(⁴)	(⁴)	—	18.3	20.1	19.4	18.9	18.9	(⁴)	(⁴)	—	13.5	14.0	13.9	13.9	14.1	(⁴)	(⁴)	—	12.8	13.3	14.0	14.2	14.3
Spain.....	26.8	21.2	18.0	14.9	14.6	14.3	14.3	14.3	21.4	18.8	17.8	11.9 ²	13.7	13.3	12.9	12.5	15.3	14.8	14.2	11.9 ²	8.3	7.9	8.0	8.1
Sweden.....	11.6	10.6	12.7	12.8	12.5	12.3	12.1	12.2	10.8	10.2	12.2	12.8	12.2	12.1	11.9	12.0	13.1	11.9	15.2	15.2	14.1	14.1	14.0	14.0
Switzerland.....	—	—	—	—	—	—	14.3 ¹	14.6 ¹	—	—	—	—	—	—	—	11.2 ¹	11.7 ^{1,3}	—	—	—	—	—	11.1 ¹	10.5 ^{1,3}
Turkey.....	31.1	30.6	—	30.5	27.5	25.9	26.5	25.8	41.3	48.4	—	—	†	†	†	†	11.0	12.1	—	14.0	17.7	18.0	16.9	16.2
United Kingdom.....	19.7	22.0	21.3	21.2	19.9	20.0 ³	21.1	20.7 ¹	—	18.5	16.0	17.6 ³	17.6 ³	17.4 ³	17.1	17.0 ^{1,3}	11.1	13.9	15.3	12.5 ³	12.5 ³	12.6 ³	12.3 ³	11.8 ^{1,3}
United States.....	17.0	15.6	16.9	15.8	15.5	15.5	15.0	14.9	16.5	15.9	17.5	16.3	15.5	15.5	15.2	15.1	16.2	15.8	14.7	14.1	15.6	15.6	16.0	16.0

—Not available.

†Not applicable.

¹Public schools only.²Junior high school and senior high school data are combined.³Includes only general programs in junior high school and senior high school.⁴Country did not exist in its current form in the given year.⁵Elementary school data and junior high school data are combined.⁶Data 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 2007*. (This table was prepared August 2007.)

Table 389. Average mathematics literacy, reading literacy, science literacy, and problem-solving scores of 15-year-olds, by sex and country: 2003

Country or other jurisdiction	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
OECD total¹	489 (1.1)	494 (1.3)	484 (1.3)	488 (1.2)	472 (1.4)	503 (1.3)	496 (1.1)	499 (1.3)	493 (1.3)	490 (1.2)	489 (1.4)	490 (1.3)
OECD average²	500 (0.6)	506 (0.8)	494 (0.8)	494 (0.6)	477 (0.7)	511 (0.7)	500 (0.6)	503 (0.7)	497 (0.8)	500 (0.6)	499 (0.8)	501 (0.8)
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 ³	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)
Non-OECD countries or other jurisdictions												
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)

¹Illustrates 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.

²Refers 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.

³Response 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 1,000. 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 390. Mean scores and percentage distribution of 15-year-olds scoring at each mathematics literacy proficiency level, by country: 2003

Country or other jurisdiction	Mean score	Percentage distribution at levels of proficiency							
		Below level 1 ¹	Level 1 ²	Level 2 ³	Level 3 ⁴	Level 4 ⁵	Level 5 ⁶	Level 6 ⁷	
1	2	3	4	5	6	7	8	9	
OECD total⁸	489 (1.07)	11.0 (0.32)	14.6 (0.32)	21.2 (0.28)	22.4 (0.32)	17.6 (0.25)	9.6 (0.19)	3.5 (0.19)	
OECD average⁹	500 (0.63)	8.2 (0.17)	13.2 (0.16)	21.1 (0.15)	23.7 (0.18)	19.1 (0.17)	10.6 (0.13)	4.0 (0.10)	
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 (0.86)	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 ¹⁰	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)	
Non-OECD countries or other jurisdictions									
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.

¹Less than or equal to 357.77 score points. Does not meet the requirements for proficiency at level 1.²A 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.³A 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.⁴A 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.⁵A 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.⁶A 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.⁷A 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.⁸Illustrates 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.⁹Refers 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.¹⁰Response 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. Possible scores range from 0 to 1,000. Standard errors appear in parentheses. 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 391. 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 or other jurisdiction	Average score by content area						Index of time students spend doing mathematics homework (TMH) in a normal school week					
	Mathematics overall	Number ¹	Patterns and relationships ²	Measurement ³	Geometry ⁴	Data ⁵	High TMH ⁶		Medium TMH ⁷		Low TMH ⁸	
							Percent	Mean score	Percent	Mean score	Percent	Mean score
1	2	3	4	5	6	7	8	9	10	11	12	13
International average	495 (0.8)	495 (0.7)	495 (0.7)	495 (0.7)	495 (0.7)	495 (0.6)	18 (0.2)	489 (1.3)	56 (0.3)	500 (0.9)	26 (0.3)	494 (1.6)
Armenia ⁹	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 ¹⁰	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 ¹⁰	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 ^{10,11}	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 ¹²	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 ¹³	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 ¹⁰	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 ¹⁴	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 ¹⁰	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 ¹³	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 ¹⁰	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.

¹Topic includes whole numbers; fractions and decimals; integers; and ratio, proportion, and percent.²Topic includes patterns, equations and formulas, and relationships.³Topic includes attributes and units and tools, techniques, and formulas.⁴Topic includes lines and angles, two- and three-dimensional shapes, congruence and similarity, locations and spatial relationships, and symmetry and transformations.⁵Topic includes data collection and organization, data representation, and data interpretation.⁶High level indicates more than 30 minutes of mathematics homework assigned 3–4 times a week.⁷Medium level includes all possible combinations of responses not included in the high or low level categories (see below for details on the low level).⁸Low level indicates no more than 30 minutes of mathematics homework assigned no more than twice a week.⁹Response 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.¹⁰Met international guidelines for participation rates only after replacement schools were included.¹¹SAR = Special Administrative Region.¹²National Desired Population does not cover all of the International Desired Population.¹³Response 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.¹⁴Students 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 392. 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 or other jurisdiction	Average score by content area						Index of time students spend doing mathematics homework (TMH) in a normal school week					
	Mathematics overall	Number ¹	Algebra ²	Measurement ³	Geometry ⁴	Data ⁵	High TMH ⁶		Medium TMH ⁷		Low TMH ⁸	
							Percent	Mean score	Percent	Mean score	Percent	Mean score
1	2	3	4	5	6	7	8	9	10	11	12	13
International average⁹	467 (0.5)	467 (0.5)	467 (0.5)	467 (0.5)	467 (0.5)	467 (0.5)	26 (0.2)	468 (0.8)	54 (0.2)	471 (0.6)	19 (0.2)	456 (1.0)
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 ¹⁰	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)
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 ^{11,12}	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 ¹³	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 ¹⁴	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 ¹⁵	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 ¹³	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 ¹⁴	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 ^{13,16,17}	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 ¹¹	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 392. 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 or other jurisdiction	Average score by content area						Index of time students spend doing mathematics homework (TMH) in a normal school week					
	Mathematics overall	Number ¹	Algebra ²	Measurement ³	Geometry ⁴	Data ⁵	High TMH ⁶		Medium TMH ⁷		Low TMH ⁸	
							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 ¹¹	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 ¹³	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 ¹⁶	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.

¹Topic includes whole numbers; fractions and decimals; integers; and ratio, proportion, and percent.

²Topic includes patterns, algebraic expressions, equations and formulas, and relationships.

³Topic includes attributes and units and tools, techniques, and formulas.

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

⁵Topic includes data collection and organization, data representation, data interpretation, and uncertainty and probability.

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

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

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

⁹The 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.

¹⁰Did not satisfy guidelines for sample participation rates.

¹¹Met guidelines for sample participation rates only after replacement schools were included.

¹²SAR = Special Administrative Region.

¹³National Desired Population does not cover all of International Desired Population.

¹⁴National Defined Population covers less than 90 percent of National Desired Population.

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

¹⁶Nearly satisfied guidelines for sample participation rates only after replacement schools were included.

¹⁷Response 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 393. 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 or other jurisdiction	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	
International average	11 (0.1)	19 (0.1)	22 (0.2)	18 (0.2)	11 (0.1)	10 (0.1)	5 (0.1)	4 (0.1)	123 (0.4)	12 (#)	
Armenia.....	10 ¹ (0.5)	14 ¹ (0.8)	26 ¹ (1.1)	19 ¹ (0.9)	13 ¹ (0.6)	11 ¹ (0.6)	4 ¹ (0.3)	4 ¹ (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 ¹ (2.9)	13 ¹ (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 ² (2.2)	13 (0.3)	
Botswana.....	13 ¹ (0.9)	16 ¹ (1.1)	19 ¹ (1.1)	21 ¹ (1.2)	11 ¹ (0.8)	10 ¹ (0.7)	6 ¹ (0.5)	5 ¹ (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 ¹ (1.7)	11 ¹ (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 ¹ (4.1)	14 ¹ (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 ¹ (0.4)	16 ¹ (0.5)	20 ¹ (0.5)	14 ¹ (0.4)	12 ¹ (0.4)	10 ¹ (0.5)	5 ¹ (0.2)	2 ¹ (0.2)	75 ² (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 ³	‡ ² (†)	‡ ² (†)	‡ ² (†)	‡ ² (†)	‡ ² (†)	‡ ² (†)	‡ ² (†)	‡ ² (†)	‡ (†)	‡ (†)	
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 ¹ (0.4)	16 ¹ (0.9)	20 ¹ (0.8)	18 ¹ (0.7)	12 ¹ (0.7)	12 ¹ (0.4)	7 ¹ (0.4)	6 ¹ (0.3)	‡ (†)	‡ (†)	
Hong Kong, SAR ^{4,5}	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 ² (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 ² (2.0)	11 (0.2)	
Indonesia ⁶	12 ¹ (0.5)	25 ¹ (1.1)	20 ¹ (0.9)	14 ¹ (0.9)	12 ¹ (0.5)	12 ¹ (0.7)	3 ¹ (0.4)	3 ¹ (0.5)	169 ² (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 ² (3.5)	12 (0.4)	
Israel ⁷	14 ¹ (0.6)	15 ¹ (0.8)	22 ¹ (0.7)	21 ¹ (0.8)	11 ¹ (0.4)	10 ¹ (0.5)	5 ¹ (0.5)	3 ¹ (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 ¹ (1.7)	13 ¹ (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 ⁸	6 ² (0.3)	30 ² (1.2)	19 ² (0.6)	20 ² (0.7)	9 ² (0.4)	8 ² (0.4)	5 ² (0.3)	3 ² (0.5)	109 ² (1.2)	9 (0.1)	
Latvia.....	8 ¹ (0.6)	12 ¹ (0.7)	25 ¹ (1.1)	22 ¹ (0.9)	11 ¹ (0.6)	15 ¹ (0.7)	2 ¹ (0.2)	4 ¹ (0.4)	122 ² (1.4)	13 (0.3)	
Lebanon.....	24 ² (1.6)	17 ² (0.9)	23 ² (1.1)	8 ² (0.8)	10 ² (0.6)	11 ² (0.6)	4 ² (0.4)	4 ² (0.4)	‡ (†)	‡ (†)	
Lithuania ⁶	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 ¹ (0.9)	11 ¹ (0.2)	
Macedonia, Republic of ⁷	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 ¹ (1.2)	9 ¹ (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 ² (0.6)	15 ² (1.0)	23 ² (1.0)	18 ² (0.9)	11 ² (0.8)	14 ² (0.8)	4 ² (0.7)	5 ² (0.6)	‡ (†)	‡ (†)	
Morocco ^{8,9}	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	
Netherlands ⁴	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 ² (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 ¹ (0.6)	23 ¹ (1.0)	18 ¹ (0.8)	16 ¹ (0.9)	11 ¹ (0.5)	9 ¹ (0.3)	6 ¹ (0.3)	6 ¹ (0.4)	127 ² (2.3)	14 (0.3)	
Philippines.....	9 ¹ (0.4)	20 ¹ (0.9)	16 ¹ (0.8)	15 ¹ (1.0)	11 ¹ (0.5)	16 ¹ (0.7)	7 ¹ (0.3)	6 ¹ (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 ¹ (2.1)	13 ¹ (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 ¹ (2.1)	15 ¹ (0.3)	
Saudi Arabia.....	15 ¹ (1.0)	16 ¹ (1.6)	13 ¹ (1.0)	8 ¹ (0.7)	23 ¹ (2.2)	12 ¹ (1.0)	6 ¹ (0.4)	7 ¹ (0.8)	110 ² (1.0)	11 (0.2)	
Scotland ⁴	8 ¹ (0.3)	22 ¹ (0.7)	26 ¹ (1.3)	22 ¹ (1.5)	8 ¹ (0.5)	4 ¹ (0.3)	6 ¹ (0.5)	3 ¹ (0.5)	142 ² (2.2)	14 (0.2)	
Serbia ⁶	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 ² (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 393. 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 or other jurisdiction	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 ¹ (1.9)	14 ¹ (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 ² (0.9)	13 ² (0.7)	19 ² (0.9)	18 ² (0.9)	11 ² (0.6)	12 ² (0.6)	7 ² (0.4)	5 ² (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 ¹ (1.6)	10 ¹ (0.2)
Tunisia.....	18 ¹ (0.9)	14 ¹ (1.0)	17 ¹ (0.9)	18 ¹ (0.9)	14 ¹ (0.8)	13 ¹ (0.7)	4 ¹ (0.4)	4 ¹ (0.5)	‡ (†)	‡ (†)
United States ⁹	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 ² (2.2)	13 (0.2)

†Not applicable.

#Rounds to zero.

‡Reporting standards not met.

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

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

³Did not satisfy guidelines for sample participation rates.

⁴Met guidelines for sample participation rates only after replacement schools were included.

⁵SAR = Special Administrative Region.

⁶National Desired Population does not cover all of International Desired Population.

⁷National Defined Population covers less than 90 percent of National Desired Population.

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

⁹Nearly 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 394. Average size and scores of eighth-grade mathematics classes and Index of Teachers' Emphasis on Mathematics Homework (EMH), by country: 2003

Country or other jurisdiction	Overall average class size	Percentage distribution and mean scores of mathematics classes, by average class size								Index of Teachers' Emphasis on Mathematics Homework (EMH) ¹					
		1 to 24 students		25 to 32 students		33 to 40 students		41 or more students		High EMH ²		Medium EMH ³		Low EMH ⁴	
		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
International average.....	30 (0.1)	29 (0.5)	461 (1.9)	35 (0.5)	473 (1.4)	24 (0.5)	470 (2.1)	13 (0.3)	448 (1.7)	30 (0.5)	473 (1.4)	51 (0.6)	469 (0.9)	19 (0.4)	453 (1.7)
Armenia.....	27 ⁵ (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 ⁶ (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 ⁷	† ⁸ (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† ⁶ (†)	† (†)	† (†)	† (†)	† (†)	† (†)
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 ⁵ (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 ^{9,10}	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 ¹¹	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 ¹²	34 ⁵ (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 ¹³	37 ⁸ (0.4)	1 (0.9)	† (†)	20 (3.0)	569 (4.6)	57 (4.6)	594 (2.9)	22 (3.5)	600 (7.0)	9 ¹⁴ (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 ¹²	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 ¹²	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 ⁵ (0.5)	56 (4.5)	449 (6.0)	38 (4.6)	460 (7.0)	5 (2.5)	485 (25.2)	1 (0.6)	† (†)	43 ⁶ (4.8)	451 (6.1)	52 (5.0)	463 (7.9)	5 (1.9)	468 (10.1)
Morocco ^{11,15}	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	54 ¹⁴ (6.2)	391 (5.9)	37 (6.4)	383 (5.2)	9 (4.1)	389 (11.1)
Netherlands ⁹	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 ⁹	27 ⁵ (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 ¹¹	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 394. Average size and scores of eighth-grade mathematics classes and Index of Teachers' Emphasis on Mathematics Homework (EMH), by country: 2003—Continued

Country or other jurisdiction	Overall average class size	Percentage distribution and mean scores of mathematics classes, by average class size								Index of Teachers' Emphasis on Mathematics Homework (EMH) ¹					
		1 to 24 students		25 to 32 students		33 to 40 students		41 or more students		High EMH ²		Medium EMH ³		Low EMH ⁴	
		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 ⁸ (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 ⁶ (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 ¹⁵	24 ⁵ (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.

¹Index 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.

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

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

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

⁵Class 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.

⁶EMH 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.

⁷Did not satisfy guidelines for sample participation rates.

⁸Class 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.

⁹Met guidelines for sample participation rates only after replacement schools were included.

¹⁰SAR = Special Administrative Region.

¹¹National Desired Population does not cover all of International Desired Population.

¹²National Defined Population covers less than 90 percent of National Desired Population.

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

¹⁴EMH 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.

¹⁵Nearly satisfied guidelines for sample participation rates only after replacement schools were included.

NOTE: Background data provided by teachers. Data are for eighth grade or equivalent in most countries. Possible scores range from 0 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 April 2005.)

Table 395. Eighth-grade students' perceptions about mathematics and hours spent on leisure activities, by country: 2003

Country or other jurisdiction	Index of students' self-confidence in learning mathematics (SCM) ¹						Average hours spent each day ²								
	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 ³	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	
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 ⁴	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 ⁵	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.

¹Index 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.

²Number 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.

³Did not satisfy guidelines for sample participation rates.

⁴SAR = Special Administrative Region.

⁵Korea 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 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 April 2005.)

Table 396. 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 ¹
	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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.

¹Average hours based on: No time = 0; Less than 1 hour = 0.5; 1–2 hours = 1.5; 3–5 hours = 4; More than 5 hours = 7.²Countries 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 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), 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 397. Average fourth-grade science scores in content areas and average time spent teaching science in school, by country: 2003

Country or other jurisdiction	Average score by content area								Average yearly science instructional time in hours	Science instructional time as a percent of total instructional time ¹		
	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 ²	(4.2)	523 ²	(3.8)	518 ²	(3.9)	518 ²	(4.1)	45 ³	(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 ³	(1.4)	5	(0.2)
Czech Republic.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
England.....	540 ²	(3.6)	532 ²	(3.1)	546 ²	(3.2)	535 ²	(3.5)	‡	(†)	‡	(†)
Greece.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Hong Kong, SAR ⁴	542 ²	(3.1)	535 ²	(2.6)	548 ²	(2.7)	536 ²	(2.7)	77 ³	(5.4)	8	(0.5)
Hungary.....	530	(3.0)	536	(2.5)	526	(2.7)	526	(3.7)	54 ³	(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 ⁵	(2.3)	8 ⁵	(0.3)
Japan.....	543	(1.5)	530	(1.3)	557	(1.7)	535	(1.9)	81	(1.2)	8	(0.2)
Korea, Republic of ⁶	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Kuwait.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Latvia.....	532	(2.5)	531	(2.3)	532	(2.6)	534	(2.9)	‡	(†)	‡	(†)
Lithuania.....	512	(2.6)	516 ^{2,7}	(2.0)	512 ^{2,7}	(2.5)	503 ^{2,7}	(3.2)	53	(1.6)	6	(0.2)
Netherlands.....	525 ²	(2.0)	547 ²	(1.8)	505 ²	(1.9)	503 ²	(2.3)	33 ³	(1.8)	3	(0.2)
New Zealand.....	520	(2.5)	520	(2.3)	516	(2.3)	522	(2.3)	65 ³	(3.5)	7	(0.4)
Norway.....	466	(2.6)	480	(2.2)	456	(2.3)	473	(2.8)	38 ⁵	(1.8)	4 ⁵	(0.2)
Philippines.....	332	(9.4)	330	(9.0)	343	(9.6)	324	(9.2)	176 ⁵	(3.2)	16 ⁵	(0.4)
Portugal.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Russian Federation.....	526	(5.2)	526	(4.7)	527	(5.2)	527	(6.0)	33 ³	(1.2)	5	(0.2)
Scotland.....	502 ²	(2.9)	506 ²	(3.1)	503 ²	(2.6)	498 ²	(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 ⁵	(2.2)	9 ⁵	(0.3)
Thailand.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Tunisia.....	314	(5.7)	290	(5.9)	324	(5.3)	336	(4.8)	‡	(†)	‡	(†)
United States.....	536 ²	(2.5)	537 ²	(2.2)	531 ²	(2.3)	535 ²	(2.5)	83 ⁵	(3.0)	8 ⁵	(0.3)

—Not available.

†Not applicable.

‡Reporting standards not met.

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

NOTE: Data are for fourth grade or equivalent in most countries. Possible scores range from 0 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 Science Report*, by Michael O. Martin et al. (This table was prepared October 2005.)

Table 398. Average eighth-grade science scores in content areas and average time spent studying out of school, by country: 2003

Country or other jurisdiction	Average score by content area						Index of time students spend doing science homework (TSH) in a normal school week ¹																	
	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	20					
International average.....	473	(0.5)	474	(0.5)	474	(0.5)	474	(0.5)	474	(0.5)	474	(0.5)	13	(0.2)	458	(1.3)	44	(0.2)	466	(0.9)	43	(0.3)	467	(0.9)
Armenia.....	461	(3.5)	453 ²	(3.3)	466 ²	(4.2)	479	(3.2)	460 ²	(3.7)	417 ²	(4.4)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Australia.....	527	(3.8)	532 ³	(3.8)	506 ³	(3.8)	521 ³	(3.7)	531 ³	(4.2)	536 ³	(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 ²	(1.9)	441 ²	(2.6)	443 ²	(2.0)	440 ²	(2.4)	439 ²	(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 ³	(2.4)	503 ³	(2.0)	514 ³	(2.5)	508 ³	(2.5)	523 ³	(2.7)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Botswana.....	365	(2.8)	370 ²	(2.7)	348 ²	(3.1)	371 ²	(3.2)	361 ²	(3.1)	381 ²	(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 ³	(5.0)	491 ³	(4.9)	464 ³	(5.0)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Chile.....	413	(2.9)	427 ²	(2.7)	405 ²	(3.3)	401 ²	(3.1)	435 ²	(3.1)	436 ²	(2.9)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Chinese Taipei.....	571	(3.5)	563 ³	(3.1)	584 ³	(4.0)	569 ³	(3.3)	548 ³	(3.1)	560 ³	(3.1)	12 ⁴	(1.2)	588 ⁴	(4.6)	37 ⁴	(1.3)	581 ⁴	(4.0)	51 ⁴	(2.1)	561 ⁴	(3.5)
Cyprus.....	441	(2.0)	437 ²	(2.2)	443 ²	(2.6)	450 ²	(1.7)	447 ²	(2.1)	441 ²	(2.3)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
England ⁵	‡	(†)	‡	(†)	‡	(†)	‡	(†)	‡	(†)	‡	(†)	‡	(†)	‡	(†)	‡	(†)	‡	(†)	‡	(†)	‡	(†)
Egypt.....	421	(3.9)	425 ²	(3.7)	442 ²	(3.8)	414 ²	(4.1)	403 ²	(4.4)	430 ²	(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 ³	(2.4)	552 ³	(2.1)	544 ³	(2.4)	558 ³	(2.9)	540 ³	(2.2)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Ghana.....	255	(5.9)	256 ²	(5.6)	276 ²	(6.6)	239 ²	(5.4)	254 ²	(5.6)	267 ²	(6.2)	25	(1.2)	267	(8.5)	54	(1.0)	262	(6.0)	22	(1.0)	258	(8.1)
Hong Kong, SAR ^{6,7}	556	(3.0)	551 ³	(2.9)	542 ³	(2.6)	555 ³	(2.8)	549 ³	(2.9)	555 ³	(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 ³	(2.7)	560 ³	(3.1)	536 ³	(2.7)	537 ³	(3.1)	528 ³	(2.9)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Indonesia ⁸	420	(4.1)	424 ²	(3.9)	391 ²	(3.8)	430 ²	(4.0)	431 ²	(3.8)	454 ²	(3.4)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Iran, Islamic Republic of.....	453	(2.3)	447 ²	(2.6)	445 ²	(2.7)	445 ²	(3.0)	468 ²	(2.9)	487 ³	(2.1)	8	(0.7)	451	(5.6)	42	(1.4)	457	(2.9)	49	(1.7)	452	(2.7)
Israel ⁹	488 ¹⁰	(3.1)	491 ³	(3.0)	499 ³	(3.4)	484 ³	(2.9)	485 ³	(3.0)	486 ³	(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 ³	(3.2)	487 ³	(3.3)	470	(3.2)	513 ³	(3.2)	497 ³	(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 ³	(2.0)	552 ³	(2.1)	564 ³	(1.9)	530 ³	(2.1)	537 ³	(2.0)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Jordan.....	475	(3.8)	475	(4.0)	478	(4.4)	465 ²	(3.8)	472	(4.0)	492 ³	(3.2)	19	(0.9)	466	(4.2)	52	(1.2)	478	(3.9)	29	(1.5)	499	(5.0)
Korea, Republic of ¹¹	558	(1.6)	558 ³	(1.6)	529 ³	(2.5)	579 ³	(1.6)	540 ³	(1.9)	544 ³	(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 ³	(2.5)	514 ³	(3.2)	512 ³	(2.4)	514 ³	(2.8)	508 ³	(3.3)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Lebanon.....	393	(4.3)	360 ²	(5.0)	433 ²	(4.9)	419 ²	(4.0)	395 ²	(4.0)	374 ²	(5.1)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Lithuania ⁹	519	(2.1)	517	(2.4)	534 ³	(2.3)	519 ³	(2.7)	512 ³	(2.7)	507 ³	(2.0)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Macedonia ⁹	449	(3.6)	448 ²	(3.8)	467 ²	(3.9)	458 ²	(3.1)	440 ²	(4.3)	442 ²	(3.7)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Malaysia.....	510	(3.7)	504 ³	(3.7)	514 ³	(3.8)	519 ³	(3.6)	502 ³	(3.8)	513 ³	(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 ²	(3.7)	479	(3.9)	479	(3.7)	475	(4.0)	454 ²	(3.8)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Morocco ^{7,8}	396 ¹⁰	(2.5)	390 ²	(2.6)	402 ²	(2.7)	410 ²	(2.7)	397 ²	(3.4)	396 ²	(3.3)	14 ⁷	(0.7)	391 ⁷	(5.3)	47 ⁷	(1.1)	396 ⁷	(3.4)	39 ⁷	(1.3)	408 ⁷	(3.5)
Netherlands ⁷	536	(3.1)	536 ³	(3.3)	514 ³	(2.6)	538 ³	(3.4)	534 ³	(3.2)	539 ³	(2.8)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
New Zealand.....	520	(5.0)	523 ³	(5.1)	501 ³	(5.6)	515 ³	(4.7)	525 ³	(4.8)	525 ³	(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 ³	(2.5)	485 ³	(3.0)	488 ³	(2.6)	517 ³	(2.7)	496 ³	(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 ²	(3.6)	444 ²	(3.9)	432 ²	(3.6)	439 ²	(3.7)	444 ²	(3.7)	21	(1.1)	433	(4.4)	56	(1.3)	442	(3.4)	23	(1.3)	441	(4.8)
Philippines ¹²	377	(5.8)	387 ²	(5.8)	342 ²	(6.1)	380 ²	(4.7)	377 ²	(5.7)	404 ²	(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 ³	(3.3)	527 ³	(4.0)	511 ³	(3.4)	518 ³	(3.3)	491 ³	(3.2)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Saudi Arabia.....	398	(4.0)	412 ²	(3.9)	382 ²	(4.8)	394 ²	(3.9)	394 ²	(4.0)	410 ²	(3.8)	8	(0.7)	382	(6.0)	61	(1.5)	402	(4.6)	31	(1.7)	403	(4.6)
Scotland ⁷	512	(3.4)	512 ³	(3.3)	499 ³	(3.2)	515 ³	(3.0)	515 ³	(3.8)	511 ³	(3.5)	3	(0.4)	487	(14.2)	27	(1.4)	508	(5.0)	71	(1.5)	517	(3.4)
Serbia ⁸	468	(2.5)	468 ²	(2.6)	474	(3.2)	471	(2.6)	471	(3.0)	457 ²	(2.4)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Singapore.....	578	(4.3)	569 ³	(4.0)	582 ³	(4.2)	579 ³	(3.4)	549 ³	(3.9)	568 ³	(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 398. Average eighth-grade science scores in content areas and average time spent studying out of school, by country: 2003—Continued

Country or other jurisdiction	Average score by content area						Index of time students spend doing science homework (TSH) in a normal school week ¹					
	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 ³ (2.9)	519 ³ (3.6)	519 ³ (2.9)	523 ³ (3.3)	509 ³ (2.8)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Slovenia.....	520 (1.8)	521 ³ (2.2)	532 ³ (2.6)	509 ³ (1.8)	523 ³ (2.2)	515 ³ (2.2)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
South Africa.....	244 (6.7)	250 ² (6.0)	285 ² (5.9)	244 ² (6.2)	247 ² (6.3)	261 ² (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 ³ (2.7)	526 ³ (2.6)	525 ³ (2.9)	532 ³ (3.3)	499 ³ (2.6)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Tunisia.....	404 (2.1)	417 ² (2.0)	413 ² (2.5)	386 ² (2.5)	408 ² (2.0)	436 ² (2.2)	9 (0.6)	398 (4.0)	35 (0.9)	400 (2.8)	56 (1.2)	411 (2.6)
United States ⁹	527 ¹⁰ (3.1)	537 ³ (3.0)	513 ³ (3.2)	515 ³ (2.9)	532 ³ (2.9)	533 ³ (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.

¹Index 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.

²Country average significantly lower than international average.

³Country average significantly higher than international average.

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

⁵Did not satisfy guidelines for sample participation rates.

⁶SAR = Special Administrative Region.

⁷Met guidelines for sample participation rates only after replacement schools were included.

⁸National Desired Population does not cover all of International Desired Population.

⁹National Defined Population covers less than 90 percent of National Desired Population.

¹⁰Did not meet international sampling or other guidelines.

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

¹²Students study only biology at grade 8.

NOTE: Data are for eighth grade or equivalent in most countries. Possible scores range from 0 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 Science Report*, by Michael O. Martin et al. (This table was prepared October 2005.)

Table 399. Instructional practices and time spent teaching science in eighth grade, by country: 2003

Country or other jurisdiction	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
International average.....	64 (0.2)	49 (0.2)	57 (0.3)	59 (0.3)	66 (0.2)	57 (0.2)	117 (0.7)	55 (0.6)	61 (0.8)	61 (0.8)	68 (0.6)
Australia.....	54 (1.6)	49 (1.7)	60 (2.2)	68 (2.1)	75 (1.5)	42 (1.1)	132 ¹ (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 ¹ (3.2)	— (†)	55 ¹ (3.3)	58 ¹ (2.7)
Botswana.....	61 (0.9)	45 (0.8)	48 (1.0)	50 (1.1)	61 (0.9)	71 (0.8)	‡ (†)	— (†)	— (†)	— (†)	— (†)
Bulgaria.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	53 ² (2.2)	63 ² (2.9)	65 ¹ (3.2)	64 ² (3.3)
Chile.....	57 (1.3)	56 (1.4)	54 (1.5)	61 (1.4)	69 (1.0)	62 (0.7)	118 ² (2.2)	— (†)	— (†)	— (†)	— (†)
Chinese Taipei.....	48 ³ (1.1)	24 ³ (0.9)	36 ³ (1.3)	37 ³ (1.5)	37 ³ (1.1)	40 ³ (1.0)	— (†)	— (†)	— ⁴ (†)	— (†)	134 ⁴ (2.0)
Cyprus.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	53 ¹ (0.7)	34 ¹ (1.6)	— (†)	52 ¹ (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 ⁵	66 (1.2)	35 (1.0)	71 (1.5)	75 (1.2)	67 (1.2)	61 (0.8)	103 ¹ (4.0)	— (†)	— (†)	— (†)	— (†)
Hungary.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	58 ¹ (2.5)	59 ¹ (2.1)	61 ¹ (2.8)	57 ¹ (2.5)
Indonesia.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	93 ¹ (3.6)	93 ¹ (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 ¹ (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 ¹ (1.1)	— (†)	— (†)	— (†)	— (†)
Japan.....	66 (1.5)	51 (1.7)	75 (1.7)	79 (1.6)	69 (1.5)	27 (1.1)	99 ² (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 ¹ (2.7)	— (†)	— (†)	— (†)	— (†)
Latvia.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	‡ (†)	64 ¹ (4.2)	56 ¹ (4.1)
Lebanon.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	‡ (†)	— (†)	— (†)	— (†)	— (†)
Lithuania.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	59 ² (0.4)	65 ² (1.2)	46 ² (3.5)	60 ² (0.8)
Macedonia.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	53 ² (1.4)	64 ² (2.5)	59 ² (2.0)	79 ² (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 ² (1.2)	50 (1.3)	74 (1.0)	65 ² (1.2)	— (†)	— ⁶ (†)	— ⁴ (†)	‡ ⁶ (†)	‡ ⁴ (†)
Netherlands.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	54 ¹ (1.7)	— ⁴ (†)	58 ¹ (1.8)	68 ^{2,4} (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 ¹ (1.8)	— (†)	— (†)	— (†)	— (†)
Philippines ⁷	74 (0.9)	58 (1.2)	57 (1.0)	62 (1.1)	72 (1.0)	76 (0.8)	202 (4.2)	— (†)	— (†)	— (†)	— (†)
Romania.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	60 ² (1.1)	67 ² (2.4)	38 ² (2.6)	67 ² (2.4)
Russian Federation.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	49 ² (0.7)	59 ² (1.2)	49 ² (0.8)	49 ² (0.9)

See notes at end of table.

Table 399. Instructional practices and time spent teaching science in eighth grade, by country: 2003—Continued

Country or other jurisdiction	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 ¹ (1.6)	— (†)	— (†)	— (†)	— (†)
Scotland.....	69 (1.4)	54 (1.3)	74 (1.4)	81 (1.2)	83 (1.1)	47 (1.0)	‡ (†)	— (†)	— (†)	— (†)	— (†)
Serbia	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	53 ² (2.2)	61 ¹ (3.7)	53 ¹ (1.0)	56 ¹ (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 ² (3.9)	76 ² (3.8)	72 ² (5.2)	70 ² (4.5)
Slovenia	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	59 (1.1)	56 (0.7)	57 ² (0.5)
South Africa	72 (1.1)	64 (1.2)	63 (1.1)	70 (1.1)	73 (0.7)	77 (0.7)	‡ (†)	— (†)	— (†)	— (†)	— (†)
Sweden.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	131 ² (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 ¹ (2.2)	— (†)	— (†)	— (†)	— (†)

—Not available.

†Not applicable.

‡Reporting standards not met.

¹Data are available for at least 50 but less than 70 percent of the students.²Data are available for at least 70 but less than 85 percent of the students.³Students in Chinese Taipei were asked about natural science; data pertain to grade 8 physics/chemistry course.⁴Data reported in physics column are for grade 8 physics/chemistry.⁵SAR = Special Administrative Region.⁶Data reported in biology column are for grade 8 biology/earth science.⁷Students 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 400. 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 ¹
	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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.

¹Average hours based on: No time = 0; Less than 1 hour = 0.5; 1–2 hours = 1.5; 3–5 hours = 4; More than 5 hours = 7.²Country 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 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), 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 401. 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 ¹	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.

¹Data 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 402. Percentage of bachelor's degrees awarded in mathematics and science, by field and country: Selected years, 1985 through 2004

Country	All mathematics and science degrees ¹						Natural sciences ²						Mathematics and computer science ³						Engineering						
	1985	1990	1995	2000	2003	2004	1985	1990	1995	2000	2003	2004	1985	1990	1995	2000	2003	2004	1985	1990	1995	2000	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.....	—	—	19.3	21.1	23.7	24.6	—	—	9.9	7.6	5.5	7.2	—	—	3.8	5.1	10.2	9.7	—	—	5.6	8.5	8.0	7.7	
Austria.....	16.8	19.6	21.1	25.7	26.5	26.0	5.0	5.3	6.0	5.0	5.3	4.8	4.1	5.2	5.3	3.4	3.4	5.6	7.7	9.0	9.9	17.3	17.8	15.6	
Belgium ⁴	—	—	—	23.6	24.6	25.1	4.6	—	—	—	6.4	7.0	6.9	1.7	—	—	2.3	2.8	3.1	—	—	—	14.9	14.8	15.1
Canada.....	17.1	16.4	16.7	20.0	—	20.3	4.9	6.0	6.5	8.1	—	7.2	4.5	4.2	3.8	4.3	—	5.3	7.7	6.2	6.4	7.6	—	7.8	
Czech Republic.....	(⁵)	(⁵)	—	29.5	30.2	29.5	(⁵)	(⁵)	—	4.2	4.7	4.8	(⁵)	(⁵)	—	8.4	4.2	4.0	(⁵)	(⁵)	—	16.9	21.4	20.7	
Denmark.....	—	—	—	—	11.4	16.4	6.3	4.4	2.5	—	3.2	2.7	—	—	—	—	1.1	3.4	16.2	21.7	17.0	—	7.0	10.3	
Finland.....	39.3	33.5	37.2	32.2	28.8	30.0	7.7	4.1	4.0	3.9	2.6	3.3	6.3	5.9	6.9	3.3	4.5	5.4	25.3	23.4	26.3	24.9	21.7	21.3	
France.....	—	—	—	30.1	27.1	27.1	—	—	—	—	12.2	9.0	9.0	—	—	—	5.5	4.7	4.7	—	—	—	12.5	13.4	13.4
Germany ⁶	23.8	31.3	31.6	31.7	30.1	30.3	5.0	7.2	6.7	6.4	6.0	6.0	2.3	3.5	5.2	4.9	5.8	7.0	16.5	20.5	19.7	20.3	18.3	17.3	
Greece.....	—	—	—	—	—	22.9	—	—	—	—	—	11.2	—	—	—	—	—	—	8.2	—	—	—	—	3.6	
Hungary.....	—	—	—	12.6	11.3	11.9	—	—	—	1.1	1.5	1.4	—	—	—	1.2	1.2	2.4	—	—	—	10.4	8.5	8.1	
Iceland.....	—	—	—	16.5	17.3	17.1	—	—	—	6.0	4.7	4.5	—	—	—	4.0	6.6	6.8	—	—	—	6.5	6.0	5.8	
Ireland.....	28.8	34.1	32.3	29.3	26.9	26.0	12.8	14.1	16.9	11.5	8.4	7.6	4.0	6.3	4.7	7.2	9.6	8.6	12.0	13.7	10.7	10.6	8.9	9.8	
Italy.....	19.5	19.7	19.5	27.5	25.6	24.9	8.1	7.6	6.8	5.9	5.1	5.1	3.1	3.9	3.8	3.2	2.9	2.5	8.3	8.3	8.9	18.4	17.6	17.3	
Japan.....	—	—	—	—	—	—	2.4	2.4	3.4	—	—	—	—	—	—	—	—	—	20.3	21.0	19.3	18.9	18.2	17.5	
Korea, Republic of.....	—	—	—	36.9	37.8	37.6	—	—	—	6.3	6.6	5.9	—	—	—	4.3	3.9	5.3	—	—	—	26.3	27.3	26.4	
Mexico.....	—	—	—	23.0	28.1	26.9	—	—	—	2.2	2.5	2.6	—	—	—	6.7	8.9	8.9	—	—	—	14.1	16.8	15.5	
Netherlands.....	21.8	21.1	—	16.2	15.0	15.1	8.5	7.1	—	3.2	2.7	2.5	1.2	1.6	1.6	1.9	2.3	4.5	12.1	12.4	—	11.1	10.0	8.2	
New Zealand.....	20.5	19.5	—	17.8	20.4	19.6	11.7	8.2	—	11.2	5.8	6.5	5.5	5.5	—	1.9	8.7	7.8	3.3	5.8	3.2	4.7	5.8	5.3	
Norway.....	—	12.9	16.8	11.6	16.5	16.2	2.5	2.1	3.1	0.7	0.4	0.8	1.8	0.6	0.5	3.4	6.5	6.1	—	10.2	13.2	7.5	9.7	9.3	
Poland.....	—	—	—	16.7	17.0	17.4	—	—	—	2.7	2.6	2.3	—	—	—	2.0	3.0	4.6	—	—	—	12.0	11.4	10.5	
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	—	—	
Slovak Republic.....	(⁵)	(⁵)	—	21.9	23.5	23.8	(⁵)	(⁵)	—	2.0	3.2	3.6	(⁵)	(⁵)	—	4.6	4.5	4.9	(⁵)	(⁵)	—	15.3	15.8	15.4	
Spain.....	13.9	15.0	18.2	22.7	24.7	24.5	5.5	5.7	4.3	5.3	4.7	4.4	1.3	2.6	4.5	4.3	4.6	4.9	7.0	6.7	9.4	13.1	15.4	15.2	
Sweden.....	15.4	24.0	26.4	27.7	29.6	81.5	2.6	4.1	3.9	3.7	3.8	4.1	1.6	4.7	5.5	3.7	4.4	4.2	11.3	15.2	17.0	20.3	21.4	23.2	
Switzerland.....	20.2	23.0	22.3	25.1	23.9	24.5	10.3	11.2	10.4	6.0	5.6	6.7	2.1	3.7	3.7	1.8	3.6	5.0	7.9	8.1	8.3	17.3	14.7	12.8	
Turkey.....	23.0	20.6	20.9	24.1	21.7	16.9	3.6	4.6	5.1	7.4	6.4	4.9	1.6	2.1	2.7	3.6	3.8	3.0	17.8	13.8	13.1	13.1	11.5	9.0	
United Kingdom.....	—	—	—	28.5	31.2	27.2	—	—	—	12.5	13.0	9.4	—	—	—	5.8	8.5	8.8	—	—	—	10.2	9.6	9.0	
United States.....	21.7	16.9	—	17.1	17.6	15.8	6.3	5.1	—	6.6	6.0	4.4	5.5	4.0	3.3	3.9	5.2	5.2	9.8	7.8	6.7	6.6	6.4	6.2	

—Not available.

¹Includes life sciences, physical sciences, mathematics/statistics, computer science, and engineering.²Includes life sciences and physical sciences.³Includes mathematics/statistics and computer science.⁴Data for Flemish Belgium only.⁵Country did not exist in its current form in the given year.⁶Data 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. Luxembourg does not have any postsecondary institutions and therefore is not shown. Some data have been revised from previously published figures.

SOURCE: Organization for Economic Cooperation and Development (OECD), Education Online Database. Retrieved August 28, 2007, from <http://stats.oecd.org/WBOS/Default.aspx>. (This table was prepared August 2007.)

Table 403. Percentage of graduate degrees awarded in mathematics and science, by field and country: Selected years, 1985 through 2004

Country	All mathematics and science degrees ¹						Natural sciences ²						Mathematics and computer science ³						Engineering					
	1985	1990	1996	1999	2000	2004	1985	1990	1996	1999	2000	2004	1985	1990	1996	1999	2000	2004	1985	1990	1996	1999	2000	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.....	—	—	14.0	17.9	15.2	17.9	—	—	5.4	6.3	4.0	2.4	—	—	3.8	3.8	4.9	9.3	—	—	4.7	7.7	6.3	6.1
Austria.....	43.3	37.7	38.8	38.4	39.2	34.0	14.2	12.3	17.5	15.0	16.7	12.4	7.3	4.6	4.7	3.6	4.7	5.4	21.7	20.8	16.6	19.8	17.7	16.2
Belgium ⁴	—	—	—	17.6	19.7	19.1	—	—	—	7.0	12.7	9.6	—	—	—	2.4	—	4.8	—	—	—	8.3	7.0	4.6
Canada.....	19.7	20.0	22.3	23.0	22.4	16.6	7.5	7.8	7.7	7.9	7.4	5.5	2.8	3.4	3.5	3.6	4.1	3.1	9.4	8.8	11.2	11.5	10.9	8.0
Czech Republic.....	(⁵)	(⁵)	—	21.3	21.0	11.8	(⁵)	(⁵)	—	5.6	5.3	3.2	(⁵)	(⁵)	—	6.3	7.9	2.6	(⁵)	(⁵)	—	9.3	7.7	6.0
Denmark.....	16.0	22.2	12.3	—	27.8	24.2	4.1	5.8	3.1	—	9.8	7.3	2.7	4.8	1.5	—	2.5	9.2	9.2	11.6	7.8	—	15.4	7.7
Finland.....	47.6	30.6	28.3	31.1	28.7	29.6	24.0	14.7	11.6	8.5	11.3	12.1	6.3	5.4	4.0	3.9	2.4	3.0	17.2	10.5	12.7	18.7	14.9	14.5
France.....	—	—	—	21.0	26.4	34.4	—	—	—	6.4	13.5	17.1	—	—	—	1.6	5.6	8.5	—	—	—	13.0	7.3	8.8
Germany ⁶	27.7	33.2	38.6	38.9	38.1	35.1	18.7	23.5	25.5	25.2	24.9	22.1	1.8	2.3	3.5	4.0	3.7	4.0	7.2	7.4	9.5	9.8	9.5	9.1
Greece.....	—	—	—	—	—	49.3	—	—	—	—	—	24.8	—	—	—	—	—	11.4	—	—	—	—	—	13.1
Hungary.....	—	—	—	13.5	9.9	5.6	—	—	—	4.8	1.7	1.8	—	—	—	1.2	0.7	1.4	—	—	—	7.6	7.5	2.3
Iceland.....	—	—	—	30.7	35.9	15.9	—	—	—	20.0	19.4	8.8	—	—	—	—	—	3.4	—	—	—	10.7	16.5	3.7
Ireland.....	31.4	34.5	23.1	24.8	28.1	17.5	18.9	19.5	10.9	4.0	6.9	4.8	2.6	5.8	3.0	16.0	15.2	6.5	9.9	9.3	9.2	4.8	6.0	6.2
Italy.....	—	—	—	13.1	11.7	13.7	—	—	—	1.0	0.3	3.4	—	—	—	6.5	5.8	3.5	—	—	—	5.6	5.7	6.8
Japan.....	50.1	54.6	—	—	—	—	9.5	9.5	10.2	—	—	—	—	—	—	—	—	—	40.5	45.1	44.4	42.4	41.9	38.0
Korea, Republic of.....	—	—	—	48.3	48.4	45.4	—	—	—	8.8	8.5	9.7	—	—	—	4.1	5.7	3.3	—	—	—	35.4	34.3	32.4
Mexico.....	—	—	—	22.7	31.4	16.1	—	—	—	14.3	18.9	3.4	—	—	—	2.0	4.1	3.6	—	—	—	6.4	8.4	9.2
Netherlands.....	—	28.9	18.6	17.6	—	22.5	20.6	17.7	4.4	—	—	6.7	—	1.5	3.7	8.7	—	1.3	7.5	9.7	10.6	8.8	—	14.4
New Zealand.....	45.1	22.6	16.7	24.4	20.5	17.2	24.6	13.8	12.7	13.4	11.6	7.4	5.4	4.7	1.1	1.5	1.4	5.6	15.1	4.0	3.0	9.4	7.5	4.1
Norway.....	40.1	33.4	38.3	21.0	22.0	16.5	17.9	8.0	8.7	15.0	14.9	7.6	3.5	2.1	1.9	4.3	4.6	5.8	18.7	23.3	27.7	—	2.5	3.0
Poland.....	—	—	—	3.1	3.3	4.9	—	—	—	0.6	0.7	1.0	—	—	—	0.9	0.7	1.4	—	—	—	1.7	1.9	2.4
Portugal.....	—	—	—	—	39.3	40.7	—	—	—	—	11.7	15.2	—	—	—	—	9.4	10.9	—	—	—	—	18.2	14.6
Slovak Republic.....	(⁵)	(⁵)	—	—	38.1	34.5	(⁵)	(⁵)	—	—	12.6	12.1	(⁵)	(⁵)	—	—	4.7	4.4	(⁵)	(⁵)	—	—	20.9	18.0
Spain.....	35.6	26.9	36.0	40.1	36.1	34.9	28.6	19.7	24.8	24.8	23.9	22.7	1.8	1.4	4.1	4.2	5.4	4.8	5.1	5.7	7.1	11.1	6.8	7.4
Sweden.....	48.0	48.5	32.3	41.5	40.5	32.5	21.2	19.4	9.2	14.4	14.3	10.6	6.8	9.2	5.9	4.1	4.0	4.2	20.0	19.9	17.1	23.0	22.2	17.7
Switzerland.....	30.7	30.2	40.1	41.5	42.7	26.6	20.3	22.0	25.8	11.4	11.7	10.6	2.8	1.7	4.1	17.0	19.5	2.4	7.6	6.5	10.1	13.1	11.6	13.6
Turkey.....	35.8	24.0	—	29.8	25.7	19.9	6.6	7.6	—	8.0	7.6	6.1	2.8	3.3	—	3.0	3.0	2.8	26.3	13.2	—	18.7	15.2	10.9
United Kingdom.....	—	—	—	21.8	21.7	19.8	—	—	—	6.0	7.4	5.7	—	—	—	4.7	5.0	5.9	—	—	—	11.0	9.2	8.2
United States.....	13.5	14.5	13.8	13.7	13.0	12.5	4.5	4.2	4.0	3.8	3.4	1.9	2.8	3.4	3.2	3.1	3.4	3.8	6.3	6.9	6.7	6.8	6.2	6.8

—Not available.

¹Includes life sciences, physical sciences, mathematics/statistics, computer science, and engineering.²Includes life sciences and physical sciences.³Includes mathematics/statistics and computer science.⁴Data for Flemish Belgium only.⁵Country did not exist in its current form in the given year.⁶Data 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 as 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. Luxembourg does not have any postsecondary institutions and therefore is not shown. Some data have been revised from previously published figures.

SOURCE: Organization for Economic Cooperation and Development (OECD), Education Online Database. Retrieved August 28, 2007, from <http://stats.oecd.org/WBQOS/Default.aspx>. (This table was prepared August 2007.)

Table 404. Public and private education expenditures per student, by level of education and country: Selected years, 2000 through 2004

Country	Elementary				Secondary				Higher education			
	2000	2002	2003	2004	2000	2002	2003	2004	2000	2002	2003	2004
1	2	3	4	5	6	7	8	9	10	11	12	13
Current dollars												
Australia.....	\$4,967	\$5,169	\$5,494	\$5,776	\$6,894	\$7,375	\$7,788	\$8,160	\$12,854	\$12,416	\$12,406	\$14,036
Austria.....	6,560	7,015	7,139	7,669	8,578	8,887	8,943	9,446	10,851	12,448	12,344	13,959
Belgium.....	4,310	5,665	6,180	6,636	6,889	8,272	7,708	7,751	10,771	12,019	11,824	11,842
Canada.....	—	—	—	—	5,947 ¹	6,482	—	—	14,983	19,992	—	—
Czech Republic.....	1,827	2,077	2,273	2,791	3,239	3,628	4,088	4,779	5,431	6,236	6,774	6,752
Denmark.....	7,074	7,727	7,814	8,081	7,726	8,003	8,183	8,849	11,981	15,183	14,014	15,225
Finland.....	4,317	5,087	5,321	5,581	6,094	7,121	7,402	7,441	8,244	11,768	12,047	12,505
France.....	4,486	5,033	4,939	5,082	7,636	8,472	8,653	8,373	9,276	10,704	10,668	—
Germany.....	4,198	4,537	4,624	4,948	6,826	7,025	7,173	7,576	10,898	10,999	11,594	12,255
Greece.....	3,318 ²	3,803	4,218	4,595	3,859 ²	4,058	4,954	5,213	3,402 ²	4,731	4,924	5,593
Hungary ²	2,245	3,016	3,286	3,841	2,446	3,184	3,948	3,692	7,024	8,205	8,576	7,095
Iceland.....	5,854 ²	7,171	7,752	8,434	6,518 ²	7,229	6,898	7,721	7,994 ²	8,251	8,023	8,881
Ireland.....	3,385	4,180	4,760	5,422	4,638	5,725	6,374	7,110	11,083	9,809	9,341	10,211
Italy ²	5,973	7,231	7,366	7,390	7,218	7,598	7,938	7,843	8,065	8,636	8,764	7,723
Japan.....	5,507	6,117	6,350	6,551	6,266	6,952	7,283	7,615	10,914	11,716	11,556	12,193
Korea, Republic of.....	3,155	3,553	4,098	4,490	4,069	5,882	6,410	6,761	6,118	6,047	7,089	7,068
Luxembourg.....	—	10,611	11,481	13,458 ²	—	15,195	17,078	17,876 ²	—	—	—	—
Mexico.....	1,291	1,467	1,656	1,694	1,615	1,768	1,918	1,922	4,688	6,074	5,774	5,778
Netherlands.....	4,325	5,558	5,836	6,222	5,912	6,823	6,996	7,541	11,934	13,101	13,444	13,846
New Zealand.....	—	4,536	4,841	5,190	—	5,698	5,693	6,299	—	—	—	8,866
Norway.....	6,550 ²	7,508	7,977	8,533	8,476 ²	10,154	10,919	11,109	13,353 ²	13,739	13,772	14,997
Poland ²	2,105	2,585	2,859	3,130	—	—	2,951	2,889	3,222	4,834	4,589	4,412
Portugal.....	3,672	4,940 ²	4,503 ²	4,681 ²	5,349	6,921 ²	6,094 ²	6,168 ²	4,766	6,960	7,200 ²	7,741 ²
Slovak Republic.....	1,308	1,471	2,020	2,073	1,927	2,401	2,744	4,949	4,756	4,678	6,535	—
Spain.....	3,941	4,592	4,829	4,965	5,185	6,010	6,418	6,701	6,666	8,020	8,943	9,378
Sweden.....	6,336	7,143	7,291	7,469	6,339	7,400	7,662	8,039	15,097	15,715	16,073	16,218
Switzerland ²	6,631	7,776	8,131	8,570	9,780	11,900	12,209	12,176	18,450	23,714	25,900	21,966
Turkey ²	—	—	869	1,120	—	—	1,428	1,808	4,121	—	—	—
United Kingdom.....	3,877	5,150	5,851	5,941	5,991	6,505	7,290	7,090	9,657	11,822	11,866	11,484
United States.....	6,995	8,049	8,305	8,805	8,855	9,098	9,590	9,938	20,358	20,545	24,074	22,476
Constant 2006 dollars												
Australia.....	\$5,815	\$5,793	\$6,021	\$6,165	\$8,071	\$8,265	\$8,535	\$8,709	\$15,048	\$13,915	\$13,595	\$14,980
Austria.....	7,680	7,862	7,823	8,185	10,042	9,960	9,800	10,082	12,703	13,951	13,527	14,898
Belgium.....	5,046	6,349	6,772	7,082	8,065	9,271	8,447	8,272	12,609	13,470	12,957	12,639
Canada.....	—	—	—	—	6,962 ¹	7,265	—	—	17,540	22,406	—	—
Czech Republic.....	2,139	2,328	2,491	2,979	3,792	4,066	4,480	5,101	6,358	6,989	7,423	7,206
Denmark.....	8,281	8,660	8,563	8,625	9,045	8,969	8,967	9,444	14,026	17,016	15,357	16,249
Finland.....	5,054	5,701	5,831	5,956	7,134	7,981	8,112	7,942	9,651	13,189	13,202	13,346
France.....	5,252	5,641	5,412	5,424	8,939	9,495	9,482	9,325	9,802	10,396	11,730	11,386
Germany.....	4,915	5,085	5,067	5,281	7,991	7,873	7,861	8,086	12,758	12,327	12,705	13,080
Greece.....	3,884 ²	4,262	4,622	4,904	4,518 ²	4,548	5,429	5,564	3,983 ²	5,302	5,396	5,969
Hungary ²	2,628	3,380	3,601	4,099	2,863	3,568	4,326	3,940	8,223	9,196	9,398	7,572
Iceland.....	6,853 ²	8,037	8,495	9,001	7,631 ²	8,102	7,559	8,240	9,358 ²	9,247	8,792	9,479
Ireland.....	3,963	4,685	5,216	5,787	5,430	6,416	6,985	7,588	12,975	10,993	10,236	10,898
Italy ²	6,992	8,104	8,072	7,887	8,450	8,515	8,699	8,371	9,442	9,679	9,604	8,243
Japan.....	6,447	6,856	6,959	6,992	7,336	7,791	7,981	8,127	12,777	13,130	12,664	13,013
Korea, Republic of.....	3,694	3,982	4,491	4,792	4,764	6,592	7,024	7,216	7,162	6,777	7,769	7,544
Luxembourg.....	—	11,892	12,582	14,363 ²	—	17,030	18,715	19,079 ²	—	—	—	—
Mexico.....	1,511	1,644	1,815	1,808	1,891	1,981	2,102	2,051	5,488	6,807	6,327	6,167
Netherlands.....	5,063	6,229	6,395	6,641	6,921	7,647	7,667	8,048	13,971	14,683	14,733	14,778
New Zealand.....	—	5,084	5,305	5,539	—	6,386	6,239	6,723	—	—	9,679	9,463
Norway.....	7,668 ²	8,414	8,742	9,107	9,923 ²	11,380	11,966	11,856	15,632 ²	15,398	15,092	16,006
Poland ²	2,464	2,897	3,133	3,341	—	—	3,234	3,083	3,772	5,418	5,029	4,709
Portugal.....	4,299	5,536 ²	4,935 ²	4,996 ²	6,262	7,757 ²	6,678 ²	6,583 ²	5,579	7,800	7,890 ²	8,262 ²
Slovak Republic.....	1,531	1,649	2,214	2,212	2,256	2,458	2,631	2,929	5,794	5,330	5,126	6,975
Spain.....	4,614	5,146	5,292	5,299	6,070	6,736	7,033	7,152	7,804	8,988	9,800	10,009
Sweden.....	7,417	8,005	7,990	7,972	7,421	8,293	8,396	8,580	17,674	17,612	17,614	17,309
Switzerland ²	7,763	8,715	8,910	9,147	11,449	13,337	13,379	12,995	21,599	26,577	28,383	23,444
Turkey ²	—	—	952	1,195	—	—	1,565	1,930	4,824	—	—	—
United Kingdom.....	4,539	5,772	6,412	6,341	7,014	7,290	7,989	7,567	11,305	13,249	13,003	12,257
United States.....	8,189	9,021	9,101	9,397	10,366	10,196	10,509	10,607	23,833	23,025	26,382	23,988

—Not available.

¹Includes elementary education.²Public 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 2007. (This table was prepared August 2007.)

Table 405. 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 ¹	2002 ¹	2003 ¹	1985	1990	1995	2000	2001 ¹	2002 ¹	2003 ¹	1985	1990	1995	2000	2001 ¹	2002 ¹	2003 ¹
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Average for year.....	5.3	4.5	4.9	5.1	4.9	5.0	5.1	3.7	3.5	3.5	3.5	3.6	3.5	3.6	1.1	1.0	0.9	1.2	1.0	1.0	1.0
Average for countries reporting data for all years.....	5.2	5.2	5.2	5.4	5.1	5.3	5.2	3.7	3.6	3.6	3.6	3.7	3.7	3.7	1.1	1.1	1.1	1.4	1.1	1.2	1.0
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 ²	3.8	3.7	3.7	1.0	1.0	0.9	1.4 ²	1.2	1.1	1.1
Belgium ³	6.3	4.8	5.0	5.2	6.0	6.1	5.9	4.0	3.4	3.4	3.4 ⁴	4.0 ⁴	4.1 ⁴	4.0	1.0	0.8	0.9	1.3 ⁴	1.2 ⁴	1.2 ⁴	1.2
Canada.....	6.1	5.4	5.8	5.5	4.9	4.6	—	4.1	3.7	4.0	3.3 ⁶	3.1 ⁶	3.2 ^{6,7}	—	2.0	1.5	1.5	2.0 ⁶	1.5 ⁶	1.3 ⁶	—
Czech Republic.....	(⁵)	(⁵)	4.8	4.4	4.2	4.2	4.3	(⁵)	(⁵)	3.4	3.0 ⁴	2.8 ⁴	2.8	2.9	(⁵)	(⁵)	0.7	0.8 ⁴	0.8 ⁴	0.8	0.9
Denmark.....	6.2	6.2	6.5	8.4	6.8 ²	6.8 ²	6.7	4.7	4.4	4.2	4.8 ^{2,8}	4.2 ^{2,8}	4.1 ^{2,8}	4.1 ⁸	1.2	1.3	1.3	2.5 ^{2,8}	1.8 ^{2,8}	1.9 ^{2,8}	1.7 ⁸
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 ⁹	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 ²	3.9 ²	4.0	—	—	2.8	2.7 ²	2.4 ²	2.5 ²	2.6 ⁷	—	—	0.8	0.9 ²	1.1 ²	1.2 ²	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 ²	6.8 ²	7.5	—	3.3	3.4	4.7 ²	5.0 ²	5.4 ^{2,8}	5.2 ⁸	—	0.6	0.7	1.1 ²	0.9 ²	1.0 ^{2,8}	1.1 ⁸
Ireland.....	5.6	4.7	4.7	4.4	4.1	4.1	4.1	4.0	3.3	3.3	3.0 ⁴	2.9 ⁴	3.0 ⁴	3.1	0.9	0.9	0.9	1.3 ⁴	1.1 ⁴	1.1 ⁴	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 ⁸	2.7 ⁸	2.7 ⁸	2.7 ⁸	—	0.4	0.4	0.5 ⁸	0.5 ⁸	0.4 ⁸	0.5 ⁸
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 ²	—	—	—	—	4.2	—	3.6 ²	3.9 ^{2,8}	4.0 ⁷	—	—	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 ²	5.5 ²	5.8	—	—	3.3	3.8 ²	4.0 ²	4.0 ²	4.2	—	—	0.8	0.8 ²	1.1 ²	1.1 ²	1.0
Portugal.....	—	—	5.4	5.7	5.8 ²	5.7 ²	5.8	—	—	4.1	4.2 ²	4.2 ²	4.2 ²	4.2	—	—	1.0	1.0 ²	1.0 ²	0.9 ²	1.0
Russian Federation.....	(⁶)	(⁶)	3.4	3.0	3.0	3.7 ²	3.7	(⁶)	(⁶)	1.9	1.7	1.7	2.2	2.1	(⁶)	(⁶)	0.7	0.5	0.5	0.6	0.7
Slovak Republic.....	(⁶)	(⁶)	4.6	4.2	4.0 ^{2,4}	4.0	4.3	(⁶)	(⁶)	—	2.7 ^{2,4}	2.6 ^{2,4}	2.7 ^{2,4}	2.8 ^{10,11}	(⁶)	(⁶)	—	0.7 ^{2,4}	0.8 ^{2,4}	0.7 ^{2,4}	0.8 ^{10,11}
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	0.9
Sweden.....	—	5.3	6.6	7.4	6.3	6.7	6.5	—	4.4	4.4	4.9 ⁴	4.3 ⁴	4.6 ⁴	4.5	—	1.0	1.6	2.0 ⁴	1.5 ⁴	1.6 ⁴	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 ²	3.4 ²	3.6	—	2.3	1.4	2.4 ²	2.5 ²	2.3 ²	2.5 ²	—	0.9	0.8	1.1 ²	1.0 ²	1.0 ²	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 ⁶	3.8 ⁶	3.8	3.9	1.3	1.4	1.1	1.1 ⁶	0.9 ⁶	1.2	1.2

—Not available.

¹Includes public subsidies to households attributable for educational institutions and direct expenditure on educational institutions from international sources, except where noted.

²Public subsidies to households not included in public expenditure.

³Data are for Flemish Belgium only.

⁴Direct expenditure on education institutions from international sources exceeds 1.5 percent of all public expenditure.

⁵Country did not exist in its current form in the given year.

⁶Postsecondary non-higher-education included in higher education.

⁷Preprimary education (for children age 3 and older) is included in primary and secondary education.

⁸Postsecondary non-higher-education included in both secondary and higher education.

⁹Data for 1985 are for the former West Germany.

¹⁰Postsecondary non-higher-education included in primary and secondary education.

¹¹Education 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 406. 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 2005–06

Continent, region, and country	1980–81		1985–86		1990–91		1995–96		2000–01		2002–03		2003–04		2004–05		2005–06	
	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
Total	311,880	100.0	343,780	100.0	407,530	100.0	453,787	100.00	547,867	100.0	586,323	100.0	572,509	100.0	565,039	100.0	564,766	100.0
Africa	38,180	12.2	34,190	9.9	23,800	5.8	20,844	4.6	34,217	6.2	40,193	6.9	38,150	6.7	36,100	6.4	36,308	6.4
East Africa.....	6,260	2.0	6,730	2.0	7,590	1.9	7,596	1.7	13,516	2.5	15,996	2.7	14,831	2.6	13,675	2.4	13,635	2.4
Central Africa.....	1,130	0.4	1,540	0.4	1,650	0.4	1,346	0.3	1,859	0.3	2,371	0.4	2,331	0.4	2,505	0.4	2,825	0.5
North Africa.....	7,310	2.3	5,980	1.7	4,540	1.1	3,422	0.8	5,184	0.9	5,218	0.9	4,487	0.8	3,898	0.7	3,770	0.7
Southern Africa.....	1,480	0.5	2,360	0.7	2,840	0.7	2,657	0.6	3,304	0.6	3,017	0.5	2,679	0.5	2,240	0.4	2,232	0.4
West Africa.....	22,000	7.1	17,580	5.1	7,180	1.8	5,818	1.3	10,346	1.9	13,590	2.3	13,821	2.4	13,782	2.4	13,846	2.5
Nigeria.....	17,350	5.6	13,710	4.0	3,710	0.9	2,093	0.5	3,820	0.7	5,816	1.0	6,140	1.1	6,335	1.1	6,192	1.1
Asia	94,640	30.3	156,830	45.6	229,830	56.4	259,893	57.3	302,058	55.1	332,298	56.7	324,006	56.6	325,112	57.5	327,785	58.0
East Asia.....	51,650	16.6	80,720	23.5	146,020	35.8	166,717	36.7	189,371	34.6	199,666	34.1	189,874	33.2	192,561	34.1	197,576	35.0
China.....	2,770	0.9	13,980	4.1	39,600	9.7	39,613	8.7	59,939	10.9	64,757	11.0	61,765	10.8	62,523	11.1	62,582	11.1
Hong Kong.....	9,660	3.1	10,710	3.1	12,630	3.1	12,018	2.6	7,627	1.4	8,076	1.4	7,353	1.3	7,180	1.3	7,849	1.4
Japan.....	13,500	4.3	13,360	3.9	36,610	9.0	45,531	10.0	46,497	8.5	45,960	7.8	40,835	7.1	42,215	7.5	38,712	6.9
Korea, Republic of.....	6,150	2.0	18,660	5.4	23,360	5.7	36,231	8.0	45,685	8.3	51,519	8.8	52,484	9.2	53,358	9.4	59,022	10.5
Taiwan.....	19,460	6.2	23,770	6.9	33,530	8.2	32,702	7.2	28,566	5.2	28,017	4.8	26,178	4.6	25,914	4.6	27,876	4.9
South and Central Asia.....	14,540	4.7	25,800	7.5	42,370	10.4	45,401	10.0	71,765	13.1	93,767	16.0	98,138	17.1	97,961	17.3	94,965	16.8
India.....	9,250	3.0	16,070	4.7	28,860	7.1	31,743	7.0	54,664	10.0	74,603	12.7	79,736	13.9	80,466	14.2	76,503	13.5
Pakistan.....	2,990	1.0	5,440	1.6	7,730	1.9	6,427	1.4	6,948	1.3	8,123	1.4	7,325	1.3	6,296	1.1	5,759	1.0
Southeast Asia.....	28,450	9.1	50,310	14.6	41,440	10.2	47,774	10.5	40,916	7.5	38,865	6.6	35,994	6.3	34,590	6.1	35,244	6.2
Indonesia.....	3,250	1.0	8,210	2.4	9,520	2.3	12,820	2.8	11,625	2.1	10,432	1.8	8,880	1.6	7,760	1.4	7,575	1.3
Malaysia.....	6,010	1.9	23,020	6.7	13,610	3.3	14,015	3.1	7,295	1.4	6,595	1.1	6,483	1.1	6,142	1.1	5,515	1.0
Philippines.....	—	—	3,920	1.1	4,270	1.0	3,127	0.7	3,139	0.6	3,576	0.6	3,467	0.6	3,531	0.6	3,758	0.7
Singapore.....	—	—	3,930	1.1	4,500	1.1	4,098	0.9	4,166	0.8	4,189	0.7	3,955	0.7	3,769	0.7	3,909	0.7
Thailand.....	6,550	2.1	6,940	2.0	7,090	1.7	12,165	2.7	11,187	2.0	9,982	1.7	8,937	1.6	8,637	1.5	8,765	1.6
Europe ¹	25,330	8.1	34,310	10.0	49,640	12.2	67,358	14.8	80,584	14.7	78,001	13.3	74,134	12.9	85,409	15.1	84,697	15.0
France.....	—	—	5,630	1.1	5,630	1.4	5,710	1.3	7,273	1.3	7,223	1.2	6,818	1.2	6,555	1.2	6,640	1.2
Germany ²	3,310	1.1	4,730	1.4	7,000	1.7	9,017	2.0	10,128	1.8	9,302	1.6	8,745	1.5	8,640	1.5	8,829	1.6
Greece.....	3,750	1.2	4,440	1.3	4,360	1.1	3,365	0.7	2,768	0.5	2,341	0.4	2,126	0.4	2,035	0.4	2,088	0.4
Spain.....	—	—	1,740	0.5	4,300	1.1	4,809	1.1	4,156	0.8	3,633	0.6	3,631	0.6	3,512	0.6	3,455	0.6
Turkey ¹	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
United Kingdom.....	4,440	1.4	5,940	1.7	7,300	1.8	7,799	1.7	8,139	1.5	8,326	1.4	8,439	1.5	8,236	1.5	8,274	1.5
Latin America	49,810	16.0	45,480	13.2	47,580	11.7	47,253	10.4	63,634	11.6	68,950	11.8	69,658	12.2	66,087	11.7	64,769	11.5
Caribbean.....	10,650	3.4	11,100	3.2	12,610	3.1	10,737	2.4	14,423	2.6	14,895	2.5	15,606	2.7	13,898	2.5	13,855	2.5
Central America.....	12,970	4.2	12,740	3.7	15,950	3.9	14,220	3.1	16,764	3.1	18,856	3.2	19,264	3.4	19,227	3.4	19,709	3.5
Mexico.....	6,730	2.2	5,460	1.6	6,740	1.7	8,687	1.9	10,670	1.9	12,801	2.2	13,329	2.3	13,063	2.3	13,931	2.5
South America.....	26,190	8.4	21,640	6.3	19,020	4.7	22,296	4.9	32,447	5.9	35,199	6.0	34,788	6.1	32,962	5.8	31,205	5.5
Brazil.....	—	—	2,840	0.8	3,900	1.0	5,497	1.2	8,846	1.6	8,388	1.4	7,799	1.4	7,244	1.3	7,009	1.2
Colombia.....	—	—	4,010	1.2	3,180	0.8	3,462	0.8	6,765	1.2	7,771	1.3	7,533	1.3	7,334	1.3	6,835	1.2
Venezuela.....	11,750	3.8	7,040	2.0	2,890	0.7	4,456	1.0	5,217	1.0	5,333	0.9	5,575	1.0	5,279	0.9	4,792	0.8
Middle East ¹	84,710	27.2	52,720	15.3	33,420	8.2	30,563	6.7	36,858	6.7	34,803	5.9	31,852	5.6	17,448	3.1	17,806	3.2
Iran.....	47,550	15.2	14,210	4.1	6,260	1.5	2,628	0.6	1,844	0.3	2,258	0.4	2,321	0.4	2,251	0.4	2,420	0.4
Israel.....	—	—	—	—	—	—	—	—	—	—	3,521	0.6	3,474	0.6	3,323	0.6	3,419	0.6
Jordan.....	6,140	2.0	6,590	1.9	4,320	1.1	2,222	0.5	2,187	0.4	2,173	0.4	1,853	0.3	1,754	0.3	1,733	0.3
Kuwait.....	—	—	—	—	—	—	—	—	—	—	2,212	0.4	1,846	0.3	1,720	0.3	1,703	0.3
Lebanon.....	6,770	2.2	7,090	2.1	3,900	1.0	1,554	0.3	2,005	0.4	2,364	0.4	2,179	0.4	2,040	0.4	1,950	0.3
Saudi Arabia.....	10,440	3.3	6,900	2.0	3,590	0.9	4,191	0.9	5,273	1.0	4,175	0.7	3,521	0.6	3,035	0.5	3,448	0.6
Turkey ¹	—	—	2,460	0.7	4,080	1.0	7,678	1.7	10,983	2.0	11,601	2.0	11,398	2.0	(¹)	(¹)	(¹)	(¹)
North America ³	14,790	4.7	16,030	4.7	18,950	4.6	23,644	5.2	25,888	4.7	27,227	4.6	27,650	4.8	28,634	5.1	28,699	5.1
Canada.....	14,320	4.6	15,410	4.5	18,350	4.5	23,005	5.1	25,279	4.6	26,513	4.5	27,017	4.7	28,140	5.0	28,202	5.0
Oceania	4,180	1.3	4,030	1.2	4,230	1.0	4,202	0.9	4,624	0.8	4,811	0.8	4,534	0.8	4,534	0.8	4,702	0.8
Australia.....	—	—	—	—	—	—	—	—	—	—	2,777	0.5	2,706	0.5	2,659	0.5	2,806	0.5
Unidentified ⁴	240	0.1	190	0.1	80	#	30	#	10	#	33	#	19	#	37	#	#	#

—Not available.

#Rounds to zero.

¹Cyprus (not shown separately) and Turkey were classified as being in the Middle East prior to 2004–05, but in Europe for 2004–05 and 2005–06.²Data for 1980–81 and 1985–86 are for West Germany (Federal Republic of Germany before unification).³Excludes Mexico and Central America, which are included with Latin America.⁴Home 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 2006 (selected years). (This table was prepared July 2007.)