

CHAPTER 6

International Comparisons of Education

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

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

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

This chapter includes additional information on performance scores of 15-year-olds in the areas of reading, mathe-

tics, 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 the Guide to Sources in appendix A and in the publications cited in the source notes.

Population

Among the reporting OECD countries, Iceland had the largest percentage of young people ages 5 to 14 (16 percent in 2002) (table 387). The closest followers were New Zealand (15 percent) and the United States (15 percent). Countries with relatively small numbers of persons in this age group included Greece, Spain, Japan, and Italy (all at 10 percent). In 1999, Turkey had the largest percentage of young people ages 5 to 14 among reporting OECD countries (21 percent).

Enrollments

In 1997, about 1.2 billion students were enrolled in schools around the world (table 385). Of these students, 668 million were in elementary-level programs, 398 million were in secondary programs, and 88 million were in higher education programs. Between 1990 and 1997, enrollment changes varied from region to region. Changes in elementary enrollment ranged from increases of 24 percent in Africa, 17 percent in Oceania, 13 percent in Central and South America, 12 percent in Asia, and 8 percent in Northern America (defined in UNESCO tabulations as including the United States, Canada, Greenland, Bermuda, St. Pierre, and Miquelon) to a 5 percent decrease in Europe (figure 26). Over the same period, enrollment increases at the secondary level outpaced increases at the primary (elementary) level, especially in Africa (38 percent), Oceania (68 percent), Asia (31 percent), and Central and South America (31 percent). At the secondary level, enrollment increased by 10 percent in Europe and by 15 percent in Northern America.

At the postsecondary level, developing areas of the world also had substantial increases in enrollment between 1990 and 1997 (table 385 and figure 26). Postsecondary enrollment rose by 99 percent in Oceania, by 68 percent in Africa, by 49 percent in Asia, by 30 percent in Central and South America, by 15 percent in Europe, and by 3 percent in Northern America (figure 26). These increases are due to both growth in the proportion of the people attending postsecondary institutions and increases in the populations.

Postsecondary enrollment varied among countries due partially to differing definitions of postsecondary education and at what age it begins. In 2002, the OECD countries with the highest proportion of 22- to 25-year-olds enrolled in postsecondary education were Finland (39 percent), followed by the Republic of Korea (32 percent), Denmark (29 percent), Sweden (28 percent), Norway (27 percent), and Poland (26 percent) (table 388). The United States' proportion was 25 percent.

In 2003–04, there were about 573,000 foreign students studying at U.S. colleges and universities (table 408). Fifty-seven percent of these students were from Asian countries. Between 1990 and 2003, the proportion of students at U.S. colleges who were nonresident aliens rose from 2.8 to 3.5 percent (table 205).

Achievement

In 2003, U.S. fourth-grade students scored 518 in mathematics, on average, exceeding the international average of 495 for the 25 participating countries (table 393). U.S. fourth-graders were outperformed by their peers in 11 countries, including four Asian countries (Chinese Taipei, Hong Kong SAR, Japan, and Singapore) and seven European countries (Flemish Belgium, England, Hungary, Latvia, Lithuania, the Netherlands, and the Russian Federation). On the other hand, U.S. fourth-graders outscored students in 13 countries. In 2003, U.S. eighth-grade students scored 504 in mathematics, on average, exceeding the international average of 466 for the 45 participating countries (table 394). U.S. eighth-graders were outperformed by their peers in nine countries, including five Asian countries (Chinese Taipei, Hong Kong SAR, Japan, Korea, and Singapore) and four European countries (Flemish Belgium, Estonia, Hungary, and the Netherlands). On the other hand, U.S. eighth-graders outscored students in 25 countries. These average scale scores are from the TIMSS assessment, with possible scores ranging from 1 to 1,000.

In 2003, U.S. performance in mathematics literacy among 15-year-old students was lower than the average performance for 20 of the other 28 OECD countries for which comparable PISA results were reported (table 391). In problem solving, U.S. performance on PISA was lower than 22 of the other 28 OECD countries. The U.S. average score in reading literacy was not measurably different from the OECD average, and the U.S. average score in science literacy was below the OECD average.

Degrees

Ratios of bachelor's degrees conferred per 100 persons at the typical age of graduation in 2003 ranged from 14 in Mexico and 17 in the Czech Republic to 55 in Australia and 56 in Finland (table 403 and figure 27). The ratio for the United States was 33. In 2003, women had higher bachelor's degree ratios than men in 18 out of 21 countries reporting data.

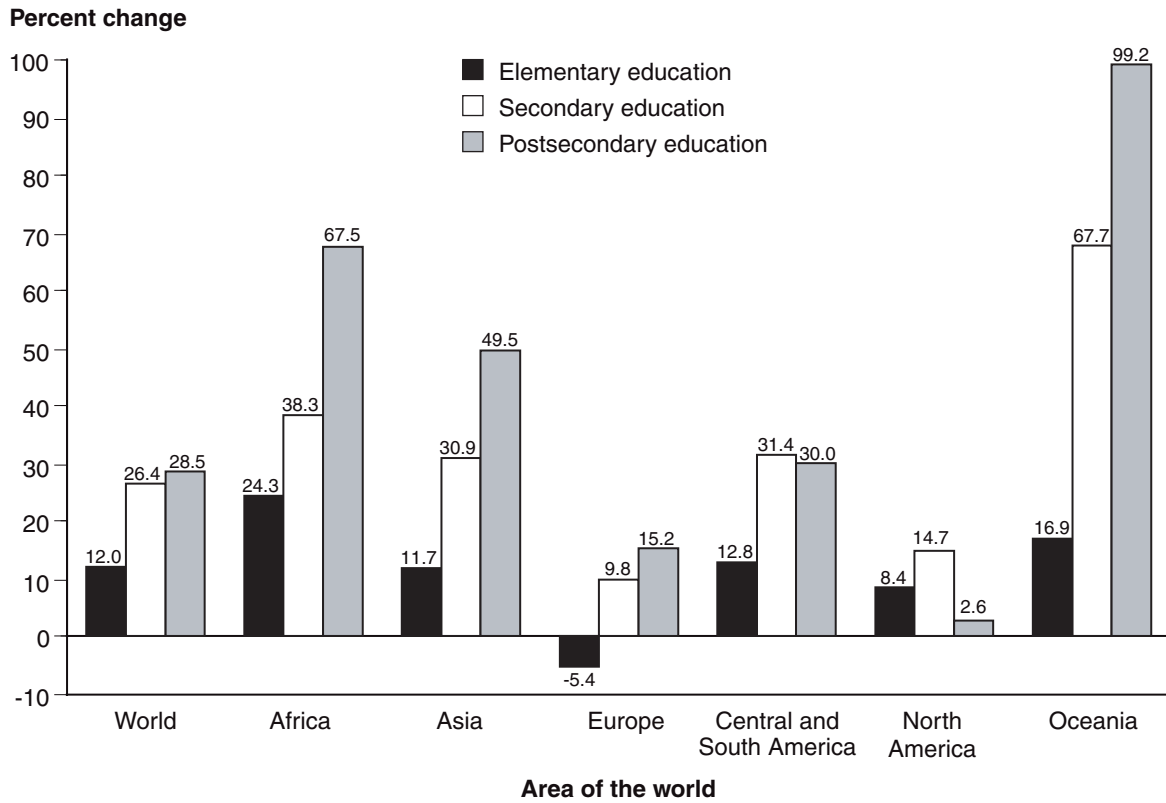
The percentages of undergraduate degrees awarded in science fields (including natural sciences, mathematics and computer science, and engineering) reported by OECD countries ranged from 11 to 38 percent for 2003 (table 404). Austria, France, Germany, Japan, Korea, Spain, Sweden, and Switzerland were 30 percent or higher, while Belgium, the Czech Republic, Hungary, Italy, Mexico, New Zealand, Poland, and the United States were 20 percent or less. The proportion of graduate degrees awarded in science fields also ranged widely across countries in 2003 (table 405). Among the countries with the highest proportions were Korea (46 percent), Japan (39 percent), Germany (36 percent), and Spain (36 percent). Among the countries with the lowest proportions were Poland (4 percent), Hungary (7 percent), the Czech Republic (12 percent), Italy (13 percent), and the United States (14 percent).

Finances

In 2002, per student expenditures at the elementary level of education were at least \$7,500 in five OECD countries (table 406). Specifically, Luxembourg spent approximately \$10,600 per student at the elementary level, the United States spent approximately \$8,000, Switzerland spent approximately \$7,800, Denmark spent approximately \$7,700, and Norway spent approximately \$7,500. At the secondary level, five countries had expenditures of over \$8,800 per student: Luxembourg (approximately \$15,200), Switzerland (\$11,900), Norway (approximately \$10,200), the United States (approximately \$9,100), and Austria (approximately \$8,900). The following five countries had expenditures of at least \$13,700 per student in higher education: Switzerland (approximately \$23,700), the United States (approximately \$20,500), Sweden (approximately \$15,700), Denmark (approximately \$15,200), and Norway (approximately \$13,700). 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.

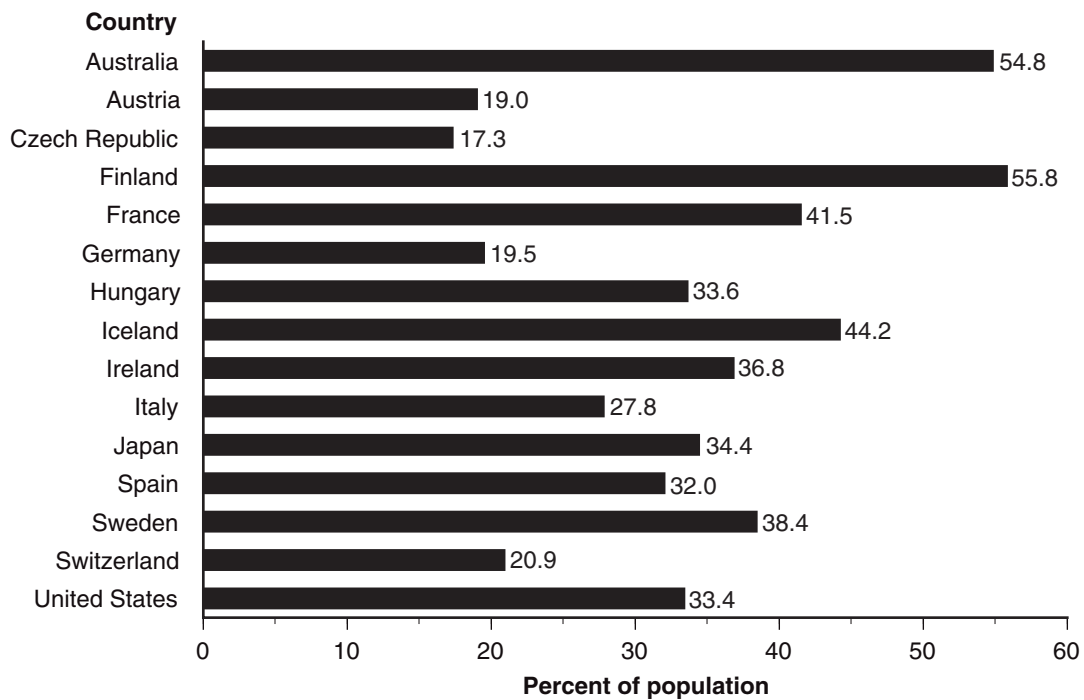
A comparison of public direct expenditures on education as a percentage of gross domestic product (GDP) in OECD countries shows that national investment in education in 2002 ranged from 3.4 percent in Turkey and 3.5 percent in Japan to 6.8 percent in Iceland and 6.8 percent in Denmark (table 407 and figure 28). Among reporting countries, the average public investment in education in 2002 was 4.9 percent of GDP. In the United States, the public expenditure on education as a percentage of GDP was 5.3 percent. The percentage of expenditures on education in the Russian Federation, a non-OECD country, was 4.0 percent.

Figure 26. Percentage change in enrollment, by selected areas of the world and level of education: 1990 through 1997



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

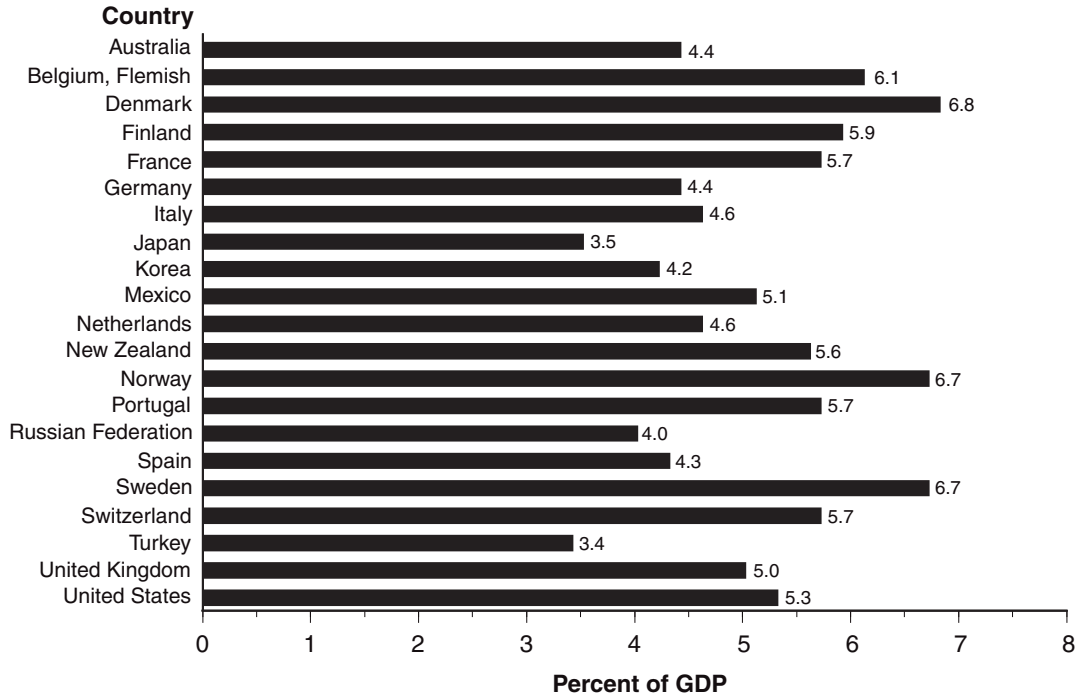
Figure 27. Bachelor's degree recipients as a percentage of the population of the typical ages of graduation, by country: 2003



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: 2002



NOTE: Includes all government expenditures for education institutions, plus public subsidies to households for living costs which are not spent at educational institutions.
 SOURCE: Organization for Economic Cooperation and Development (OECD), *Education at a Glance, 2005*.

Table 385. Selected population and enrollment statistics, school enrollment, and teachers, by major areas of the world: Selected years, 1980 through 1997

Selected characteristic	Major areas of the world						
	World total ¹	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 (primary) 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 (primary) 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	¹¹ 5.1	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 (primary) 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 (primary) 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	¹¹ 5.1	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 (primary) 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 (primary) 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
1996							
Population, all ages, ⁷ in thousands.....	5,767,443	738,740	3,488,028	728,561	484,309	299,250	28,555
Enrollment, all levels, in thousands.....	1,130,667	134,843	663,394	137,522	120,429	67,122	7,357
First (primary) level ⁸	659,106	98,356	400,405	46,866	83,596	26,736	3,147
Second level ⁹	386,386	32,127	229,981	69,103	27,815	24,355	3,005
Third level ¹⁰	85,175	4,360	33,008	21,554	9,018	16,031	1,204
Teachers, all levels, in thousands.....	53,081	4,642	27,596	10,107	5,983	4,305	447
First (primary) level ⁸	24,622	2,881	13,630	2,842	3,446	1,661	162
Second level ⁹	22,375	1,538	11,719	5,556	1,785	1,552	224
Third level ¹⁰	6,084	223	2,247	1,709	752	1,093	61
1997							
Enrollment, all levels, in thousands.....	1,154,721	138,714	679,366	137,645	123,778	67,689	7,528
First (primary) level ⁸	668,450	100,226	406,661	46,304	85,177	26,906	3,176
Second level ⁹	398,116	33,708	237,861	69,547	29,153	24,746	3,101
Third level ¹⁰	88,156	4,780	34,844	21,794	9,448	16,038	1,251
Teachers, all levels, in thousands.....	54,120	4,754	28,288	10,141	6,138	4,342	456
First (primary) level ⁸	24,818	2,927	13,763	2,814	3,474	1,674	165
Second level ⁹	23,017	1,585	12,185	5,568	1,874	1,577	228
Third level ¹⁰	6,284	242	2,339	1,759	789	1,092	62

¹Enrollment and teacher data exclude the Democratic People's Republic of Korea.²Excludes Rodrigues and other small islands.³Includes 5 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.

NOTE: Detail may not sum to totals because of rounding. Public expenditure data not available for 1995 through 1997.

SOURCE: United Nations Educational, Scientific, and Cultural Organization (UNESCO), *Statistical Yearbook, 1999*. (This table was prepared July 2000.)

Table 386. Selected population and enrollment statistics for countries with populations over 10 million, by continent: Selected years, 1980 through 2002

Country ¹	Midyear population in millions					Persons per square kilometer	Enrollment in thousands				Gross enrollment ratio ⁵			
							First level ²							
	1980	1990	2000	2002	2002		1980	1990	2000	2002	1980	1990	2000	2002
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
World total⁶	4,447	5,282	6,054	6,201	48	541,556	596,853	587,775	671,849	96	99	97	108	
Africa														
Algeria ⁷	19	25	30	31	13	3,119	4,189	4,721	4,613	94	100	112	109	
Angola	7	9	13	14	11	1,301	990	1,178	—	175	92	87	—	
Burkina Faso	7	9	11	12	43	202	504	901	1,012	17	33	44	46	
Cameroon	9	11	15	16	33	1,379	1,964	2,689	2,799	98	101	108	108	
Cote d'Ivoire	8	12	16	17	53	1,025	1,415	2,047	2,046	75	67	79	78	
Democratic Rep. of the Congo	27	37	51	54	24	4,196	4,562	—	—	92	70	—	—	
Egypt	44	56	64	66	67	4,663	6,964	8,786	7,874	73	94	100	87	
Ethiopia	36	48	64	67	67	2,131	2,466	6,651	7,623	37	33	64	63	
Ghana	11	15	19	20	88	1,378	1,945	2,478	2,679	79	75	80	86	
Kenya	17	23	30	31	55	3,927	5,392	8,700	7,354	115	95	84	92	
Madagascar	6	9	13	16	28	1,724	1,571	2,308	2,856	130	103	103	120	
Malawi	9	11	11	11	114	810	1,401	1,401	2,847	60	68	—	140	
Mali	7	8	11	11	9	291	395	1,127	1,295	26	26	61	58	
Morocco	19	24	29	30	66	2,172	2,484	3,842	4,101	83	67	94	110	
Mozambique ⁷	12	14	18	18	24	1,387	1,260	2,316	2,705	—	67	92	103	
Niger	6	8	11	12	9	229	369	657	858	25	29	35	44	
Nigeria	72	96	127	133	146	12,117	13,607	—	24,563	109	91	—	119	
Senegal	6	8	10	10	52	420	708	1,160	1,420	46	59	75	80	
South Africa	29	37	43	44	36	22,433	6,952	7,445	7,466	90	122	111	106	
Sudan	19	24	—	—	—	—	—	—	—	50	53	59	60	
Tunisia	6	8	10	10	63	1,464	2,043	2,800	3,028	102	113	117	111	
Uganda	13	17	22	23	119	2,292	2,470	6,559	7,029	50	74	136	141	
United Republic of Tanzania	19	25	34	35	40	3,368	3,379	8,420	7,083	93	70	63	27 97	
Zambia	6	8	10	10	14	1,042	1,461	1,590	1,732	90	99	78	82	
Zimbabwe	7	10	12	13	34	1,235	2,116	—	2,362	85	116	95	16 93	
Asia														
Afghanistan ⁷	16	15	—	—	—	1,116	623	500	3,267	34	27	15	92	
Bangladesh	88	110	130	136	1,042	8,240	11,940	17,668	17,562	61	72	100	96	
Cambodia	6	9	12	12	71	1,328	1,330	2,431	2,772	—	121	110	124	
China	999	1,155	1,281	1,281	137	146,270	122,414	125,757	121,662	113	125	114	115	
Hong Kong, China (SAR)	5	6	7	7	—	540	525	494	497	107	102	109	108	
India	689	851	1,016	1,048	353	73,873	99,118	—	127,772	83	97	—	109	
Indonesia	151	183	210	212	117	25,537	29,754	28,690	29,051	107	115	110	112	
Iran, Islamic Republic of	39	59	64	66	40	4,799	9,370	7,968	7,029	29 98	112	86	92	
Iraq	13	18	—	—	—	2,616	3,328	—	4,281	113	111	—	—	
Japan	117	124	127	127	349	11,827	9,373	7,395	10 7,326	101	100	101	101	
Kazakhstan	15	17	15	15	5	1,064	1,197	1,190	1,120	84	87	99	102	
Korea, North (DPR)	18	20	—	—	—	—	—	—	4,148	—	—	—	—	
Korea, South (Republic of)	38	43	47	48	483	5,658	4,869	4,030	—	110	105	101	104	
Malaysia	14	18	23	24	74	2,009	2,456	3,018	3,009	93	94	98	93	
Myanmar	34	41	46	49	74	4,148	5,385	4,782	4,889	91	106	89	92	
Nepal	14	19	24	24	169	1,068	2,789	3,623	3,929	86	108	118	119	
Pakistan	85	119	138	145	188	30 5,474	30 11,451	12 14,562	14,045	40	61	75	68	
Philippines	48	61	76	80	268	8,034	10,427	12,760	12,971	112	111	113	112	
Saudi Arabia	10	16	21	22	10	1,027	1,877	2,308	2,342	61	73	68	67	
Sri Lanka ⁸	15	17	19	19	293	2,081	2,112	—	8 16 1,702	103	106	—	8 16 111	
Syrian Arab Republic	9	12	16	17	93	1,556	2,452	2,835	2,985	100	108	109	115	
Thailand	47	56	61	62	121	7,393	6,957	6,179	16 6,113	99	99	95	97	
Turkey	44	56	65	70	90	5,656	6,862	8,015	8,704	96	99	8 101	8 91	
Uzbekistan	16	21	25	25	61	1,391	1,778	—	2,513	81	81	—	103	
Viet Nam	54	67	79	81	247	7,887	8,862	9,751	8,841	109	103	106	101	
Yemen	8	12	18	19	35	—	24 2,679	8 2,644	2,950	—	24 79	8 79	83	
Europe														
Belarus ⁷	10	10	10	10	48	750	615	8 551	437	104	95	8 109	102	
Belgium	10	10	10	10	314	842	719	772	762	104	101	105	105	
Czech Republic	10	10	10	10	132	647	546	631	567	96	96	104	102	
France	54	57	59	59	108	4,610	4,149	3,858	3,792	111	108	105	104	
Germany	78	79	82	82	231	3,636	3,431	3,519	3,304	—	101	104	99	
Greece	10	10	11	11	82	901	813	636	646	103	98	99	10 99	
Hungary	11	10	10	10	110	1,162	1,131	490	464	96	95	102	100	
Italy	56	57	58	58	197	4,423	3,056	2,810	2,779	100	103	101	101	
Netherlands ⁷	14	15	16	16	477	1,333	1,082	1,282	1,291	100	102	108	108	
Poland ⁷	36	38	39	39	127	4,167	5,189	3,221	10 3,105	100	98	100	100	
Portugal	10	10	10	10	110	1,240	1,020	802	770	123	123	121	10 116	
Romania	22	23	22	22	97	3,308	1,253	1,090	991	104	91	99	99	
Russian Federation	139	148	146	144	9	6,009	7,596	5,702	5,417	102	109	109	118	
Spain	38	39	39	41	82	3,610	2,820	2,505	2,488	109	109	105	108	
Ukraine	50	52	50	49	84	3,592	3,991	—	1,961	102	89	—	93	
United Kingdom ⁷	56	58	60	59	244	4,911	4,533	4,596	10 4,536	103	104	99	10 101	
North America														
Canada	25	28	31	31	3	2,185	2,376	2,456	8 10 2,482	99	103	100	8 10 100	
Cuba	10	11	—	—	—	1,469	888	1,007	925	106	98	102	98	
Guatemala	7	9	11	12	111	803	1,165	1,909	2,076	71	78	102	106	
Mexico	68	83	98	101	53	14,666	14,402	14,793	14,857	120	114	113	110	
United States	230	254	282	288	31	20,420	22,429	25,298	10 24,855	99	102	101	10 98	
South America														
Argentina	28	33	37	38	14	3,917	4,965	4,898	4,914	106	106	120	119	
Brazil	122	148	170	174	21	22,598	28,944	20,212	19,380	98	106	155	147	
Chile	11	13	15	16	21	2,185	1,991	1,799	1,714	109	100	103	16 98	
Colombia	27	33	42	44	42	4,168	4,247	5,221	5,193	112	102	112	110	
Ecuador	8	10	13	13	47	1,534	1,846	1,955	1,967	117	116	115	117	
Peru	17	22	26	27	21	3,161	3,855	4,338	4,283	114	118	127	118	
Venezuela	15	20	24	25	28	3,158	4,053	3,347	3,450	93	96	102	104	
Oceania														
Australia ⁷	15	17	19	20	3	1,718	1,583	1,906	1,934	112	108	102	104	

—Not available.

#Rounds to zero.

¹Selection based on total population for midyear 1997.²First-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. The year shown in this column is the one in which the school or academic year starts. 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

Table 386. Selected population and enrollment statistics for countries with populations over 10 million, by continent: Selected years, 1980 through 2002—Continued

Second level ³								Third level ⁴							
Enrollment in thousands				Gross enrollment ratio ⁵				Enrollment in thousands				Gross enrollment ratio ⁵			
1980	1990	2000	2002	1980	1990	2000	2002	1980	1990	2000	2002	1980	1990	2000	2002
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
264,379	315,008	390,616	495,989	47	52	65	80	51,037	68,613	87,090	119,332	12	14	14	19
1,029	2,176	2,991	3,548	33	61	71	80	79	286	—	8 683	6	11	—	8 21
191	186	8 400	10 414	21	12	8 18	10 19	2	7	—	13	#	1	—	1
28	99	199	237	3	7	10	11	2	—	—	8 16	#	1	—	8 1
234	500	—	820	18	28	—	31	12	33	68	81	2	3	5	5
198	361	8 664	—	19	22	8 23	—	20	13 30	—	—	3	—	—	—
862	13 1,097	—	—	24	13 21	—	—	28	80	—	—	1	2	—	—
2,929	5,507	8 8,324	8 8,384	50	76	8 86	8 85	716	14 15 628	—	2,154	16	16	—	29
426	866	8 1,495	8 1,858	9	14	8 18	8 20	14	34	87	148	#	1	2	2
693	—	1,031	16 1,277	41	36	16 42	16 42	8	17 10	64	16 70	2	1	3	3
428	18 618	8 1,251	10 1,390	20	24	8 31	8 33	13	17 35	99	8 10 99	1	2	3	8 10 3
—	18 323	—	—	—	18	—	—	23	36	31	33	3	3	2	—
26	61	8 488	8 518	5	8	8 36	8 33	3	5	—	3	3	1	—	—
—	84	—	351	5	7	—	20	19 4	5	—	8 2	1	1	—	8 2
20 797	1,194	—	1,758	20 26	35	—	43	112	256	310	336	6	11	10	11
18 90	160	352	499	8	8	12	16	22 1	25 5	8 10	—	#	—	8 1	—
39	77	8 108	125	5	7	8 6	7	1	—	13	8 10 14	#	1	1	8 10 1
1,865	2,908	—	6,313	18	25	—	36	150	17 24 208	—	948	3	23 24 4	—	8
96	—	8 263	310	11	16	8 18	19	14	19	8	—	3	3	—	—
—	2,742	4,142	8 4,312	—	74	8 7	8 88	—	25 439	645	675	5	13	15	15
384	732	—	1,291	16	24	—	35	29	14 60	—	—	2	3	—	—
293	565	8 1,143	1,149	27	45	78	78	32	69	207	263	5	9	22	27
18 26 73	18 26 245	—	8 688	5	13	—	8 20	6	18	63	8 74	1	1	3	—
79	167	8 279	—	3	5	—	—	—	13 7	—	31	0	0	—	1
102	190	8 283	351	16	24	8 24	24	—	15	8 25	—	1	2	—	—
75	661	18 758	8	50	44	16 36	8	8	49	8 49	8 16 56	1	5	8 4	8 16 4
137	182	—	10 362	10	9	—	10	—	24	20	—	—	2	1	—
2,659	3,593	10,329	11,024	18	19	46	47	240	434	879	877	3	4	7	6
18	264	397	560	—	32	19	25	1	7	25	43	1	1	3	3
56,778	52 386	90,723	95,625	46	49	68	70	1,663	3,822	12,144	15,186	2	3	13	10 26
469	18 28 431	478	8 10 480	64	80	78	8 10 78	17 12	85	128	10 134	10	13 19	25	10 26
32,748	18 54,180	—	81,240	30	44	—	53	3,545	4,951	—	11,295	5	6	12	12
5,722	10,965	14,828	15,873	29	44	57	61	543	13 1,773	3,018	3,441	4	9	15	21
2,718	5,085	9,091	10,024	29 45	55	78	78	184	14 312	734	1,714	26 4	10	10	16
1,033	18 1,024	—	1,478	57	47	43	43	107	29 170	—	8 10 318	9	29 12	—	8 10 14
9,558	11,026	8,606	10 8,394	93	97	102	103	2,412	13 2,899	3,972	10 3,967	31	30	48	10 49
1,996	2,144	2,032	2,067	93	98	88	92	525	8 446	537	8 603	34	40	45	45
—	—	2,032	—	—	—	—	—	—	—	—	—	—	—	—	—
4,286	4,560	3,959	3,662	78	90	94	90	648	1,691	3,003	3,210	15	39	78	85
1,084	1,456	2,205	2,300	48	56	70	70	58	121	549	632	4	7	28	29
1,066	1,281	8 2,318	2,383	22	23	8 39	39	163	13 196	553	8 10 555	5	4	12	8 10 12
512	709	1 3,500	1,822	22	33	51	45	14 34	94	103	125	3	5	5	5
2,166	4,345	18 5,772	5,734	14	23	18 25	23	29 268	—	—	401	29 2	3	3	3
2,929	4,034	5,386	6,069	64	73	77	84	1,276	1,709	2,432	2,427	24	28	31	30
349	893	1,914	1,969	44	68	67	67	62	75	—	525	7	12	25	—
1,267	2,082	—	2,320	55	74	—	8 16 74	29 62	13 31 55	—	—	3	3	—	—
604	914	1,125	1,284	46	52	43	48	140	—	—	—	17	18	—	—
1,920	2,230	5,577	16 5,010	29	30	82	16 77	19 911	23 1,156	2,096	16 2,251	15	23 19	35	16 39
2,218	3,808	—	8 5,742	35	47	—	8 79	246	750	1,607	1,918	5	13	24	28
2,879	3,195	—	4,161	105	99	—	95	516	603	—	394	28	30	—	16
18 3,847	6 3,236	8,321	9,266	42	32	67	72	115	130	750	8 797	2	2	10	8 10
—	24 212	—	1,373	—	24	23	47	—	13 53	—	—	—	13 4	—	—
760	968	8 981	998	98	93	8 84	91	340	335	438	489	39	48	56	62
836	769	—	1,181	91	103	—	161	196	32 276	359	375	26	40	58	61
29 1,161	1,268	1,004	1,000	99	91	95	97	32 118	8 118	260	287	17	16	30	36
5,014	5,522	5,876	5,859	85	99	108	109	1,077	1,699	2,032	2,119	25	40	54	56
8,457	7,398	8,388	8,447	—	98	99	100	1,624	2,049	—	2,335	27	34	—	51
740	851	743	—	81	93	98	—	121	283	478	528	17	36	63	68
357	514	—	1,030	70	79	—	106	101	102	331	390	14	14	40	51
5,308	5,118	4,473	4,528	72	83	96	99	1,118	1,452	1,812	1,913	27	32	50	57
1,391	1,402	1,403	1,415	93	120	124	122	360	479	504	527	29	40	55	58
1,674	1,888	3,974	—	77	81	101	—	589	545	1,775	10 1,906	18	22	56	10 60
398	670	813	10 797	37	67	114	10 115	92	186	388	10 397	11	23	50	10 53
1,148	2,838	2,249	8 2,218	94	92	82	85	193	193	533	8 644	12	10	27	35
12,991	13,956	13,858	8 14,486	86	93	83	85	5,700	5,100	7,224	8 8,151	64	52	64	8 69
3,977	4,755	3,183	3,053	87	104	113	117	698	1,222	1,834	1,841	23	37	59	62
3,408	3,408	—	4,824	94	94	—	97	1,684	1,652	2,296	2,296	42	47	—	62
5,342	4,336	8,374	10 9,577	83	85	156	10 178	827	1,258	2,067	10 2,241	19	30	60	10 64
2,323	2,292	2,621	8 10 2,622	88	101	106	8 105	1,173	1,917	1,212	8 10 1,193	57	95	59	8 10 58
1,146	1,002	837	938	81	89	85	93	152	242	178	236	17	21	25	34
172	13 295	504	608	19	13 23	37	43	51	23 70	—	112	8	8	9	—
4,742	6,704	9,357	10,188	49	53	75	79	930	1,311	2,048	2,237	14	15	21	10 81
21,585	19,270	23,087	10 23,196	91	93	95	10 93	12,097	13,710	13,596	10 15,928	56	75	73	—
1,327	2,160	3,832	3,976	56	71	97	100	491	13 1,008	—	2,027	22	13 38	—	60
2,819	3,499	26,097	26,789	33	38	108	110	1,409	36 1,540	2,781	3,579	11	11	17	21
538	720	1,391	16 1,557	53	73	85	16 91	145	13 262	452	16 567	12	13 21	38	16 45
1,733	13 2,378	3,569	3,723	39	50	70	71	272	487	934	990	9	13	23	24
592	18 37 786	936	973	53	55	57	59	270	207	—	—	—	35	20	—
1,203	1,698	8 2,376	2,540	59	67	86	90	306	678	—	8 831	17	30	—	8 32
222	281	8 1,544	1,866	21	35	59	70	307	550	8 681	8 983	21	29	8 29	8 40
1,100	1,278	2,589	2,514	71	82	161	154	38 324	38 485	845	1,012	25	36	63	74

¹⁷Excludes nonuniversity institutions (such as teacher training colleges and technical colleges) and excludes distance-learning universities.

¹⁸General education enrollment only. Excludes teacher training and vocational education enrollments.

¹⁹Data for 1981–82.

²⁰Does not include professional schools.

²¹Includes initiation classes where students learn Portuguese.

²²Estimated.

²³Data for 1992–93.

²⁴Data for 1993–94.

²⁵Not including the former Independent States of Transkei, Bophuthatswana, Venda, and Ciskei.

²⁶Data refer to government aided and maintained schools only.

²⁷Data for 2004–05.

²⁸Day schools only.

²⁹Data for 1985–86.

³⁰Includes preprimary education.

³¹Excludes some nonuniversity institutions.

³²Includes full-time students only.

³³Data include both former East and West Germany.

³⁴As from 1980, change in structure.

³⁵Not including part-time students at community colleges.

Table 387. School-age populations as a percentage of total population, by age group and country: Selected years, 1985 through 2002

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

—Not available.

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

Table 388. Percentage of population enrolled in secondary and postsecondary institutions, by age group and country: Selected years, 1985 through 2002

Country	Secondary schools, 16 years old, ¹ 2002	Secondary schools, 17 years old, ¹ 2002	Postsecondary institutions											
			18 to 21 years old				22 to 25 years old				26 to 29 years old			
			1985	1990	1999	2002	1985	1990	1999	2002	1985	1990	1999	2002
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Australia.....	92	80	—	—	31	35	—	—	15	20	—	—	8	10
Austria.....	91	78	—	—	15	14	—	—	20	17	—	—	12	8
Belgium ²	99	101	25	—	42	42	7	—	15	18	2	—	3	5
Canada.....	—	—	—	—	27	—	—	—	18	—	—	—	7	—
Czech Republic.....	100	98	—	—	17	20	—	—	12	16	—	—	4	5
Denmark.....	91	83	7	7	8	10	16	18	27	29	8	9	15	16
Finland.....	96	94	9	14	23	21	17	21	35	39	8	10	18	19
France.....	97	89	19	25	35	35	10	12	20	20	4	4	5	5
Germany ³	99	93	9	9	11	12	—	16	19	20	9	10	11	12
Greece.....	93	70	—	—	54	46	—	—	7	24	—	—	2	11
Hungary.....	90	85	—	—	20	24	—	—	14	18	—	—	5	7
Iceland.....	91	81	—	—	7	10	—	—	21	23	—	—	9	11
Ireland.....	92	72	—	21	33	—	—	—	11	—	—	—	3	—
Italy.....	86	79	—	—	22	24	—	—	21	21	—	—	7	8
Japan.....	97	93	—	—	—	—	—	—	—	—	—	—	—	—
Korea, Republic of.....	95	89	—	—	51	56	—	—	26	32	—	—	6	7
Mexico.....	47	34	—	—	12	15	—	—	8	7	—	—	1	3
Netherlands.....	100	83	14	18	26	28	12	13	20	22	6	5	5	6
New Zealand.....	85	65	—	21	29	30	—	15	14	17	—	—	8	8
Norway.....	94	93	9	14	19	17	14	17	28	27	6	8	12	13
Poland.....	94	91	—	—	21	26	—	—	21	26	—	—	5	7
Portugal.....	81	70	6	—	25	25	5	—	17	20	2	—	6	8
Spain.....	95	82	15	21	32	35	11	14	24	24	4	5	8	8
Sweden.....	97	96	8	9	16	17	11	11	25	28	7	6	12	13
Switzerland.....	89	85	6	6	10	10	11	12	17	18	5	6	9	9
Turkey.....	—	—	—	7	14	—	—	4	9	—	—	2	4	—
United Kingdom.....	87	74	15	16	29	30	7	11	12	12	—	—	6	6
United States ⁴	84	79	37	41	44	46	15	17	18	25	8	9	11	11

—Not available.

¹Includes full-time and part-time enrollment.²Data for Flemish Belgium only.³Data for 1985 are for the former West Germany.⁴Postsecondary includes higher education only.

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. It includes both full-time and part-time students. ISCED 3 corresponds to secondary education in the United States. ISCED 5A (first and second award), ISCED 5B, and ISCED 6 correspond to 2-year and 4-year college undergraduate and graduate programs in the

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

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education at a Glance*, selected years, 1987 through 2004; and Education Online Database, 2002. Retrieved May 25, 2005 from <http://stats.oecd.org/WBOS/Default.aspx>. U.S. Department of Commerce, Census Bureau, Current Population Survey (CPS), October 2000 through October 2003. (This table was prepared July 2005.)

Table 389. Pupils per teacher in public and private elementary and secondary schools, by level of education and country: Selected years, 1985 to 2003

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

—Not available.

¹Public schools only.²Includes only general programs in lower and upper secondary education.³Data for 1985 are for the former West Germany.

NOTE: In this table, U.S. data for elementary correspond 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 2005*. (This table was prepared October 2005.)

Table 390. Civic knowledge and civic engagement of 14-year-old students, by country: 1999

Country	Civics scale score	Percentage of students who say that they are very likely or likely to vote in national elections	Percentage of students who believe that it is important or very important that a good citizen:				
			Votes in every election	Joins a political party	Engages in political discussions	Participates in activities to benefit people in the community	Takes part in activities to protect the environment
1	2	3	4	5	6	7	8
OECD countries							
Australia.....	102 (0.8)	85 (1.0)	89 (0.8)	17 (1.0)	34 (1.1)	80 (1.0)	74 (1.1)
Belgium (French) ¹	95 (0.9)	69 (2.0)	82 (1.4)	24 (1.0)	39 (1.4)	54 (2.0)	71 (1.7)
Czech Republic.....	103 (0.8)	65 (1.7)	66 (1.1)	18 (1.0)	29 (1.4)	78 (0.9)	84 (1.0)
Denmark ¹	100 (0.5)	91 (0.7)	60 (1.0)	17 (0.8)	44 (0.9)	86 (0.8)	83 (0.7)
England.....	99 (0.6)	80 (1.0)	76 (1.1)	20 (0.9)	42 (1.3)	78 (1.0)	76 (1.1)
Finland.....	109 (0.7)	87 (0.7)	59 (1.2)	13 (0.8)	23 (1.1)	60 (1.0)	74 (1.0)
Germany ²	100 (0.5)	67 (1.1)	69 (0.9)	18 (0.7)	43 (1.2)	85 (0.9)	72 (1.2)
Greece.....	108 (0.8)	86 (0.9)	94 (0.6)	49 (1.0)	59 (1.0)	90 (0.7)	89 (0.7)
Hungary.....	102 (0.6)	91 (0.7)	81 (0.9)	29 (0.9)	21 (0.8)	89 (0.6)	77 (1.0)
Italy.....	105 (0.8)	80 (1.1)	84 (0.7)	32 (1.0)	49 (1.0)	82 (0.7)	79 (0.8)
Norway ¹	103 (0.5)	87 (0.7)	71 (0.9)	21 (0.8)	37 (1.0)	83 (0.8)	91 (0.6)
Poland.....	111 (1.7)	88 (1.2)	91 (0.8)	35 (1.2)	53 (1.4)	90 (0.8)	77 (0.8)
Portugal.....	96 (0.7)	88 (0.8)	71 (0.9)	36 (1.1)	40 (1.0)	94 (0.6)	92 (0.6)
Slovak Republic.....	105 (0.7)	93 (0.6)	91 (0.7)	23 (1.3)	51 (1.0)	87 (0.8)	87 (0.8)
Sweden.....	99 (0.8)	75 (1.4)	78 (1.0)	21 (0.9)	37 (1.5)	83 (1.2)	81 (1.3)
Switzerland.....	98 (0.8)	55 (1.3)	68 (1.2)	23 (1.1)	42 (1.2)	76 (0.9)	70 (1.2)
United States.....	106 (1.2)	85 (1.0)	83 (0.9)	48 (1.4)	58 (1.1)	88 (0.8)	83 (0.8)
Non-OECD countries							
Chile.....	88 (0.7)	74 (1.0)	91 (0.6)	46 (1.0)	34 (1.1)	88 (0.7)	90 (0.5)
Russian Federation ³	100 (1.3)	82 (1.0)	80 (1.2)	22 (1.4)	28 (1.4)	83 (1.1)	81 (1.3)
Slovenia.....	101 (0.5)	84 (1.0)	80 (0.8)	30 (0.9)	38 (1.0)	78 (0.8)	73 (1.0)

¹Overall participation rate less than 85 percent.

²National Desired Population does not cover all International Desired Population.

³Did not meet age/grade specification.

NOTE: The international mean for these scales was set at 100 with a standard deviation of 20. Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), IEA Civic Education Study, 2001. (This table was prepared August 2002.)

Table 391. Average mathematics literacy, reading literacy, science literacy, and problem-solving scores of 15-year-olds, by sex and country: 2003

Country	Mathematics literacy			Reading literacy			Science literacy			Problem solving		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1	2	3	4	5	6	7	8	9	10	11	12	13
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..... ³	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.....	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												
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 1000. Standard errors appear in parentheses.

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

Table 392. Mean scores and percentage distribution of 15-year-olds scoring at each mathematics literacy proficiency level, by country: 2003

Country	Mean score	Percentage distribution at levels of proficiency							
		Below Level 1 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 (0.96)	24.3 (0.95)	20.8 (0.87)	12.9 (0.80)	5.3 (0.53)	
Denmark.....	514 (2.74)	4.7 (0.50)	10.7 (0.62)	20.6 (0.89)	26.2 (0.88)	21.9 (0.83)	11.8 (0.86)	4.1 (0.50)	
Finland.....	544 (1.87)	1.5 (0.23)	5.3 (0.38)	16.0 (0.57)	27.7 (0.65)	26.1 (0.89)	16.7 (0.64)	6.7 (0.46)	
France.....	511 (2.50)	5.6 (0.68)	11.0 (0.77)	20.2 (0.82)	25.9 (0.99)	22.1 (0.97)	11.6 (0.72)	3.5 (0.40)	
Germany.....	503 (3.32)	9.2 (0.84)	12.4 (0.81)	19.0 (1.05)	22.6 (0.82)	20.6 (1.02)	12.2 (0.87)	4.1 (0.48)	
Greece.....	445 (3.90)	17.8 (1.21)	21.2 (1.15)	26.3 (1.04)	20.2 (1.01)	10.6 (0.87)	3.4 (0.53)	0.6 (0.17)	
Hungary.....	490 (2.84)	7.8 (0.80)	15.2 (0.81)	23.8 (1.05)	24.3 (0.93)	18.2 (0.90)	8.2 (0.73)	2.5 (0.42)	
Iceland.....	515 (1.42)	4.5 (0.40)	10.5 (0.55)	20.2 (1.02)	26.1 (0.88)	23.2 (0.81)	11.7 (0.61)	3.7 (0.36)	
Ireland.....	503 (2.45)	4.7 (0.57)	12.1 (0.84)	23.6 (0.83)	28.0 (0.82)	20.2 (1.06)	9.1 (0.76)	2.2 (0.33)	
Italy.....	466 (3.08)	13.2 (1.19)	18.7 (0.93)	24.7 (1.03)	22.9 (0.84)	13.4 (0.73)	5.5 (0.43)	1.5 (0.19)	
Japan.....	534 (4.02)	4.7 (0.65)	8.6 (0.72)	16.3 (0.80)	22.4 (1.02)	23.6 (1.24)	16.1 (0.96)	8.2 (1.14)	
Korea, Republic of.....	542 (3.24)	2.5 (0.32)	7.1 (0.65)	16.6 (0.80)	24.1 (0.98)	25.0 (1.08)	16.7 (0.81)	8.1 (0.93)	
Luxembourg.....	493 (0.97)	7.4 (0.41)	14.3 (0.65)	22.9 (0.87)	25.9 (0.79)	18.7 (0.85)	8.5 (0.59)	2.4 (0.31)	
Mexico.....	385 (3.64)	38.1 (1.71)	27.9 (1.02)	20.8 (0.87)	10.1 (0.84)	2.7 (0.39)	0.4 (0.10)	# (†)	
Netherlands.....	538 (3.13)	2.6 (0.65)	8.4 (0.95)	18.0 (1.11)	23.0 (1.14)	22.6 (1.34)	18.2 (1.09)	7.3 (0.58)	
New Zealand.....	523 (2.26)	4.9 (0.44)	10.1 (0.63)	19.2 (0.71)	23.2 (0.90)	21.9 (0.80)	14.1 (0.80)	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									
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. Standard errors appear in parentheses. Possible scores range from 0 to 1000. Detail may not sum to totals because of rounding.

SOURCE: Organization for Economic Cooperation and Development, *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: PISA 2003 Results From the U.S. Perspective*. (This table was prepared March 2005.)

Table 393. Average fourth-grade mathematics scores, by content areas, index of time students spend doing mathematics homework in a normal school week, and country: 2003

Country	Average score by content area						Index of time students spend doing mathematics homework (TMH) in a normal school week					
	Mathematics overall	Number 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, Rep. 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 394. Average eighth-grade mathematics scores, by content areas, index of time students spend doing mathematics homework in a normal school week, and country: 2003

Country	Average score by content area						Index of time students spend doing mathematics homework (TMH) in a normal school week					
	Mathematics overall	Number 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 394. Average eighth-grade mathematics scores, by content areas, index of time students spend doing mathematics homework in a normal school week, and country: 2003—Continued

Country	Average score by content area						Index of time students spend doing mathematics homework (TMH) in a normal school week					
	Mathematics overall	Number 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 395. Percentage of lesson time spent on various mathematics activities, yearly mathematics instructional time, and mathematics instructional time as a percentage of total instructional time in eighth grade, by country: 2003

Country	Percentage of time in mathematics lessons students spend on various activities in a typical week									Students' average yearly mathematics instructional time, in hours	Mathematics instructional time as a percent of total instructional time
	Reviewing homework	Listening to lecture-style presentations	Working problems with teacher's guidance	Working problems on their own without teacher's guidance	Listening to teachers reteach and clarify content/procedures	Taking tests and quizzes	Participating in classroom management tasks not related to the lesson's content/purpose	Other student activities			
1	2	3	4	5	6	7	8	9	10	11	
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.....	¹ 10 (0.5)	¹ 14 (0.8)	¹ 26 (1.1)	¹ 19 (0.9)	¹ 13 (0.6)	¹ 11 (0.6)	¹ 4 (0.3)	¹ 4 (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)	¹ 136 (2.9)	¹ 13 (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)	² 123 (2.2)	13 (0.3)	
Botswana.....	¹ 13 (0.9)	¹ 16 (1.1)	¹ 19 (1.1)	¹ 21 (1.2)	¹ 11 (0.8)	¹ 10 (0.7)	¹ 6 (0.5)	¹ 5 (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)	¹ 96 (1.7)	¹ 11 (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)	¹ 160 (4.1)	¹ 14 (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.....	¹ 22 (0.4)	¹ 16 (0.5)	¹ 20 (0.5)	¹ 14 (0.4)	¹ 12 (0.4)	¹ 10 (0.5)	¹ 5 (0.2)	¹ 2 (0.2)	² 75 (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.....	¹ 11 (0.4)	¹ 16 (0.9)	¹ 20 (0.8)	¹ 18 (0.7)	¹ 12 (0.7)	¹ 12 (0.4)	¹ 7 (0.4)	¹ 6 (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)	² 145 (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)	² 112 (2.0)	11 (0.2)	
Indonesia ⁶	¹ 12 (0.5)	¹ 25 (1.1)	¹ 20 (0.9)	¹ 14 (0.9)	¹ 12 (0.5)	¹ 12 (0.7)	¹ 3 (0.4)	¹ 3 (0.5)	² 169 (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)	² 115 (3.5)	12 (0.4)	
Israel ⁷	¹ 14 (0.6)	¹ 15 (0.8)	¹ 22 (0.7)	¹ 21 (0.8)	¹ 11 (0.4)	¹ 10 (0.5)	¹ 5 (0.5)	¹ 3 (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)	¹ 132 (1.7)	¹ 13 (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	² 6 (0.3)	² 30 (1.2)	² 19 (0.6)	² 20 (0.7)	² 9 (0.4)	² 8 (0.4)	² 5 (0.3)	² 3 (0.5)	² 109 (1.2)	9 (0.1)	
Latvia.....	1 8 (0.6)	1 12 (0.7)	1 25 (1.1)	1 22 (0.9)	1 11 (0.6)	1 15 (0.7)	1 2 (0.2)	1 4 (0.4)	² 122 (1.4)	13 (0.3)	
Lebanon.....	² 24 (1.6)	² 17 (0.9)	² 23 (1.1)	² 8 (0.8)	² 10 (0.6)	² 11 (0.6)	² 4 (0.4)	² 4 (0.4)	‡ (†)	‡ (†)	
Lithuania ⁵	9 (0.5)	7 (0.6)	30 (1.2)	26 (0.9)	11 (0.7)	14 (0.6)	1 (0.2)	2 (0.2)	¹ 122 (0.9)	11 (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)	¹ 80 (1.2)	9 (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.....	² 9 (0.6)	² 15 (1.0)	² 23 (1.0)	² 18 (0.9)	² 11 (0.8)	² 14 (0.8)	² 4 (0.7)	² 5 (0.6)	‡ (†)	‡ (†)	
Morocco ^{6,9}	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	
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)	² 94 (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.....	¹ 13 (0.6)	¹ 23 (1.0)	¹ 18 (0.8)	¹ 16 (0.9)	¹ 11 (0.5)	¹ 9 (0.3)	¹ 6 (0.3)	¹ 6 (0.4)	² 127 (2.3)	14 (0.3)	
Philippines.....	¹ 9 (0.4)	¹ 20 (0.9)	¹ 16 (0.8)	¹ 15 (1.0)	¹ 11 (0.5)	¹ 16 (0.7)	¹ 7 (0.3)	¹ 6 (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)	¹ 120 (2.1)	¹ 13 (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)	¹ 128 (2.1)	¹ 15 (0.3)	
Saudi Arabia.....	¹ 15 (1.0)	¹ 16 (1.6)	¹ 13 (1.0)	¹ 8 (0.7)	¹ 23 (2.2)	¹ 12 (1.0)	¹ 6 (0.4)	¹ 7 (0.8)	² 110 (1.0)	11 (0.2)	
Scotland ⁴	1 8 (0.3)	1 22 (0.7)	1 26 (1.3)	1 22 (1.5)	1 8 (0.5)	1 4 (0.3)	1 6 (0.5)	1 3 (0.5)	² 142 (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)	² 107 (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 395. Percentage of lesson time spent on various mathematics activities, yearly mathematics instructional time, and mathematics instructional time as a percentage of total instructional time in eighth grade, by country: 2003—Continued

Country	Percentage of time in mathematics lessons students spend on various activities in a typical week								Students' average yearly mathematics instructional time, in hours	Mathematics instructional time as a percent of total instructional time
	Reviewing homework	Listening to lecture-style presentations	Working problems with teacher's guidance	Working problems on their own without teacher's guidance	Listening to teachers reteach and clarify content/procedures	Taking tests and quizzes	Participating in classroom management tasks not related to the lesson's content/purpose	Other student activities		
1	2	3	4	5	6	7	8	9	10	11
Slovak Republic.....	8 (0.3)	17 (0.7)	27 (0.9)	17 (0.7)	13 (0.5)	12 (0.4)	3 (0.3)	3 (0.3)	¹ 126 (1.9)	¹ 14 (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.....	² 15 (0.9)	² 13 (0.7)	² 19 (0.9)	² 18 (0.9)	² 11 (0.6)	² 12 (0.6)	² 7 (0.4)	² 5 (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)	¹ 91 (1.6)	¹ 10 (0.2)
Tunisia.....	¹ 18 (0.9)	¹ 14 (1.0)	¹ 17 (0.9)	¹ 18 (0.9)	¹ 14 (0.8)	¹ 13 (0.7)	¹ 4 (0.4)	¹ 4 (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)	² 135 (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 396. Average size and scores of eighth-grade mathematics classes and Index of Teachers' Emphasis on Mathematics Homework (EMH), by country: 2003

Country	Overall average class size	Percentage distribution and mean scores of mathematics classes, by average class size								Index of Teachers' Emphasis on Mathematics Homework (EMH) 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.....	⁵ 27 (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)	⁶ 65 (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 (0.0)	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 (0.0)	‡ (†)	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.....	⁵ 37 (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	⁵ 34 (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	⁸ 37 (0.4)	1 (0.9)	‡ (†)	20 (3.0)	569 (4.6)	57 (4.6)	594 (2.9)	22 (3.5)	600 (7.0)	¹⁴ 9 (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.....	⁵ 24 (0.5)	56 (4.5)	449 (6.0)	38 (4.6)	460 (7.0)	5 (2.5)	485 (25.2)	1 (0.6)	‡ (†)	⁶ 43 (4.8)	451 (6.1)	52 (5.0)	463 (7.9)	5 (1.9)	468 (10.1)
Morocco ^{11,15}	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	‡ (†)	¹⁴ 54 (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 (0.0)	‡ (†)	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	⁵ 27 (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 396. Average size and scores of eighth-grade mathematics classes and Index of Teachers' Emphasis on Mathematics Homework (EMH), by country: 2003—Continued

Country	Overall average class size	Percentage distribution and mean scores of mathematics classes, by average class size								Index of Teachers' Emphasis on Mathematics Homework (EMH) 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.....	⁸ 45 (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)	⁶ 26 (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	⁵ 24 (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 8th grade or equivalent in most countries. Possible scores range from 0 to 1000. Detail may not sum to totals because of rounding. Standard errors appear in parentheses.

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

Table 397. Eighth-grade students' perceptions about mathematics and hours spent on leisure activities, by country: 2003

Country	Index of students' self-confidence in learning mathematics (SCM) 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	Average achievement	Percent	Average achievement	Percent	Average achievement									
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)	

See notes at end of table.

Table 397. Eighth-grade students' perceptions about mathematics and hours spent on leisure activities, by country: 2003—Continued

Country	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	Average achievement	Percent	Average achievement	Percent	Average achievement									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
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 international 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. 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 398. 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		One to two hours		Three 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 = .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 Education Achievement's 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), *Mathematics and Science Achievement in the Final Year of Secondary School: IEA's Trends in International Mathematics and Science Study, 1998*, by Ina V. S. Mullis et. al. (This table was prepared October 1998.)

Table 399. Average fourth-grade science scores in content areas and average time spent teaching science in school, by country: 2003

Country	Average score by content area				Average yearly science instructional time in hours		Science instructional time as a percent of total instructional time ⁷					
	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.....	² 521	(4.2)	² 523	(3.8)	² 518	(3.9)	² 518	(4.1)	³ 45	(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)	³ 46	(1.4)	5	(0.2)
Czech Republic.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
England.....	² 540	(3.6)	² 532	(3.1)	² 546	(3.2)	² 535	(3.5)	‡	(†)	‡	(†)
Greece.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Hong Kong, SAR ⁴	² 542	(3.1)	² 535	(2.6)	² 548	(2.7)	² 536	(2.7)	³ 77	(5.4)	8	(0.5)
Hungary.....	530	(3.0)	536	(2.5)	526	(2.7)	526	(3.7)	³ 54	(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)	⁵ 73	(2.3)	⁵ 8	(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)	^{2,7} 516	(2.0)	^{2,7} 512	(2.5)	^{2,7} 503	(3.2)	53	(1.6)	6	(0.2)
Netherlands.....	² 525	(2.0)	² 547	(1.8)	² 505	(1.9)	² 503	(2.3)	³ 33	(1.8)	3	(0.2)
New Zealand.....	520	(2.5)	520	(2.3)	516	(2.3)	522	(2.3)	³ 65	(3.5)	7	(0.4)
Norway.....	466	(2.6)	480	(2.2)	456	(2.3)	473	(2.8)	⁵ 38	(1.8)	⁵ 4	(0.2)
Philippines.....	332	(9.4)	330	(9.0)	343	(9.6)	324	(9.2)	⁵ 176	(3.2)	⁵ 16	(0.4)
Portugal.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Russian Federation.....	526	(5.2)	526	(4.7)	527	(5.2)	527	(6.0)	³ 33	(1.2)	5	(0.2)
Scotland.....	² 502	(2.9)	² 506	(3.1)	² 503	(2.6)	² 498	(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)	⁵ 75	(2.2)	⁵ 9	(0.3)
Thailand.....	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)	—	(†)
Tunisia.....	314	(5.7)	290	(5.9)	324	(5.3)	336	(4.8)	‡	(†)	‡	(†)
United States.....	² 536	(2.5)	² 537	(2.2)	² 531	(2.3)	² 535	(2.5)	⁵ 83	(3.0)	⁵ 8	(0.3)

—Not available.

†Not applicable.

‡Does not meet reporting standards.

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. 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 Ina V. S. Mullis et al. (This table was prepared October 2005.)

Table 400. Average eighth-grade science scores in content areas and average time spent studying out of school, by country: 2003

Country	Average score by content area						Index of time students spend doing science homework (TSH) in a normal school week ¹					
	Science overall	Life science	Chemistry	Physics	Earth science	Environmental science	High TSH		Medium TSH		Low TSH	
							Percent	Average achievement	Percent	Average achievement	Percent	Average achievement
1	2	3	4	5	6	7	8	9	10	11	12	13
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)	² 453 (3.3)	² 466 (4.2)	479 (3.2)	² 460 (3.7)	² 417 (4.4)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Australia.....	527 (3.8)	³ 532 (3.8)	³ 506 (3.8)	³ 521 (3.7)	³ 531 (4.2)	³ 536 (3.4)	9 (0.8)	520 (6.4)	35 (1.6)	530 (3.3)	56 (2.0)	530 (4.4)
Bahrain.....	438 (1.8)	² 445 (1.9)	² 441 (2.6)	² 443 (2.0)	² 440 (2.4)	² 439 (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)	³ 526 (2.4)	³ 503 (2.0)	³ 514 (2.5)	³ 508 (2.5)	³ 523 (2.7)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Botswana.....	365 (2.8)	² 370 (2.7)	² 348 (3.1)	² 371 (3.2)	² 361 (3.1)	² 381 (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)	³ 485 (5.0)	³ 491 (4.9)	² 464 (5.0)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Chile.....	413 (2.9)	² 427 (2.7)	² 405 (3.3)	² 401 (3.1)	² 435 (3.1)	² 436 (2.9)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Chinese Taipei.....	571 (3.5)	³ 563 (3.1)	³ 584 (4.0)	³ 569 (3.3)	³ 548 (3.1)	³ 560 (3.1)	⁴ 12 (1.2)	⁴ 588 (4.6)	⁴ 37 (1.3)	⁴ 581 (4.0)	⁴ 51 (2.1)	⁴ 561 (3.5)
Cyprus.....	441 (2.0)	² 437 (2.2)	² 443 (2.6)	² 450 (1.7)	² 447 (2.1)	² 441 (2.3)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
England ⁵	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)	† (†)
Egypt.....	421 (3.9)	² 425 (3.7)	² 442 (3.8)	² 414 (4.1)	² 403 (4.4)	² 430 (4.0)	23 (0.7)	416 (4.4)	64 (0.8)	436 (4.0)	13 (0.6)	430 (6.6)
Estonia.....	552 (2.5)	³ 547 (2.4)	³ 552 (2.1)	³ 544 (2.4)	³ 558 (2.9)	³ 540 (2.2)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Ghana.....	255 (5.9)	² 256 (5.6)	² 276 (6.6)	² 239 (5.4)	² 254 (5.6)	² 267 (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)	³ 551 (2.9)	³ 542 (2.6)	³ 555 (2.8)	³ 549 (2.9)	³ 555 (2.6)	6 (0.5)	548 (4.6)	43 (1.4)	563 (2.9)	50 (1.4)	554 (3.9)
Hungary.....	543 (2.8)	³ 536 (2.7)	³ 560 (3.1)	³ 536 (2.7)	³ 537 (3.1)	³ 528 (2.9)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Indonesia ⁸	420 (4.1)	² 424 (3.9)	² 391 (3.8)	² 430 (4.0)	² 431 (3.8)	² 454 (3.4)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Iran, Islamic Republic of.....	453 (2.3)	² 447 (2.6)	² 445 (2.7)	² 445 (3.0)	² 468 (2.9)	³ 487 (2.1)	8 (0.7)	451 (5.6)	42 (1.4)	457 (2.9)	49 (1.7)	452 (2.7)
Israel ⁹	¹⁰ 488 (3.1)	³ 491 (3.0)	³ 499 (3.4)	³ 484 (2.9)	³ 485 (3.0)	³ 486 (2.9)	13 (0.9)	480 (4.7)	43 (1.6)	485 (4.3)	44 (2.0)	505 (3.4)
Italy.....	491 (3.1)	³ 498 (3.2)	³ 487 (3.3)	470 (3.2)	³ 513 (3.2)	³ 497 (3.0)	14 (1.0)	489 (5.9)	41 (1.1)	487 (3.7)	45 (1.4)	496 (3.7)
Japan.....	552 (1.7)	³ 549 (2.0)	³ 552 (2.1)	³ 564 (1.9)	³ 530 (2.1)	³ 537 (2.0)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Jordan.....	475 (3.8)	475 (4.0)	478 (4.4)	² 465 (3.8)	472 (4.0)	³ 492 (3.2)	19 (0.9)	466 (4.2)	52 (1.2)	478 (3.9)	29 (1.5)	499 (5.0)
Korea, Rep. of ¹¹	558 (1.6)	³ 558 (1.6)	³ 529 (2.5)	³ 579 (1.6)	³ 540 (1.9)	³ 544 (1.4)	4 (0.4)	549 (6.3)	26 (1.7)	562 (2.4)	70 (2.0)	559 (1.9)
Latvia.....	513 (2.9)	³ 511 (2.5)	³ 514 (3.2)	³ 512 (2.4)	³ 514 (2.8)	³ 508 (3.3)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Lebanon.....	393 (4.3)	² 360 (5.0)	² 433 (4.9)	² 419 (4.0)	² 395 (4.0)	² 374 (5.1)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Lithuania ³	519 (2.1)	517 (2.4)	³ 534 (2.3)	³ 519 (2.7)	³ 512 (2.7)	³ 507 (2.0)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Macedonia ⁹	449 (3.6)	² 448 (3.8)	² 467 (3.9)	² 458 (3.1)	² 440 (4.3)	² 442 (3.7)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Malaysia.....	510 (3.7)	³ 504 (3.7)	³ 514 (3.8)	³ 519 (3.6)	³ 502 (3.8)	³ 513 (3.2)	20 (1.0)	513 (4.4)	49 (0.9)	510 (3.6)	31 (1.3)	510 (4.6)
Moldova.....	472 (3.4)	² 466 (3.7)	479 (3.9)	479 (3.7)	475 (4.0)	² 454 (3.8)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Morocco ^{7,8}	¹⁰ 396 (2.5)	² 390 (2.6)	² 402 (2.7)	² 410 (2.7)	² 397 (3.4)	² 396 (3.3)	¹² 14 (0.7)	¹² 391 (5.3)	¹² 47 (1.1)	¹² 396 (3.4)	¹² 39 (1.3)	¹² 408 (3.5)
Netherlands ⁷	536 (3.1)	³ 536 (3.3)	³ 514 (2.6)	³ 538 (3.4)	³ 534 (3.2)	³ 539 (2.8)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
New Zealand.....	520 (5.0)	³ 523 (5.1)	³ 501 (5.6)	³ 515 (4.7)	³ 525 (4.8)	³ 525 (3.9)	10 (1.3)	519 (6.2)	41 (1.6)	531 (6.9)	48 (2.0)	518 (5.1)
Norway.....	494 (2.2)	³ 496 (2.5)	³ 485 (3.0)	³ 488 (2.6)	³ 517 (2.7)	³ 496 (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)	² 435 (3.6)	² 444 (3.9)	² 432 (3.6)	² 439 (3.0)	² 444 (3.7)	21 (1.1)	433 (4.4)	56 (1.3)	442 (3.4)	23 (1.3)	441 (4.8)
Philippines ¹³	377 (5.8)	² 387 (5.8)	² 342 (6.1)	² 380 (4.7)	² 377 (5.7)	² 403 (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)	³ 514 (3.3)	³ 527 (4.0)	³ 511 (3.4)	³ 518 (3.3)	³ 491 (3.2)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Saudi Arabia.....	398 (4.0)	² 412 (3.9)	² 382 (4.8)	² 394 (3.9)	² 394 (4.0)	² 410 (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)	³ 512 (3.3)	³ 499 (3.2)	³ 515 (3.0)	³ 515 (3.8)	³ 511 (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)	² 468 (2.6)	474 (3.2)	471 (2.6)	471 (3.0)	² 457 (2.4)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)
Singapore.....	578 (4.3)	³ 569 (4.0)	³ 582 (4.2)	³ 579 (3.4)	³ 549 (3.9)	³ 568 (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 400. Average eighth-grade science scores in content areas and average time spent studying out of school, by country: 2003—Continued

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

¹²Met guidelines for sample participation rates only after replacement schools were included.

¹³Students study only biology at grade 8.

NOTE: 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 Science Report*, by Ina V. S. Mullis et al. (This table was prepared October 2005.)

Table 401. Instructional practices and time spent teaching science in eighth grade, by country: 2003

Country	Percent of students reported doing the same activity about half the lessons or more						Students' average yearly instructional time in hours					Science instructional time as a percent of total instructional time ¹				
	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	General integrated science	Earth science	Chemistry	Biology	Physics
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
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)	12 (0.1)	6 (0.1)	7 (0.1)	6 (0.1)	7 (0.1)
Australia.....	54 (1.6)	49 (1.7)	60 (2.2)	68 (2.1)	75 (1.5)	42 (1.1)	² 132 (3.6)	— (†)	— (†)	— (†)	— (†)	13 (0.4)	— (†)	— (†)	— (†)	— (†)
Bahrain.....	83 (0.8)	63 (0.8)	64 (0.8)	66 (1.1)	68 (0.9)	64 (0.9)	119 (1.1)	— (†)	— (†)	— (†)	— (†)	14 (0.1)	— (†)	— (†)	— (†)	— (†)
Belgium (Flemish).....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	² 52 (3.2)	— (†)	² 55 (3.3)	² 58 (2.7)	— (†)	5 (0.3)	— (†)	6 (0.3)	6 (0.3)
Botswana.....	61 (0.9)	45 (0.8)	48 (1.0)	50 (1.1)	61 (0.9)	71 (0.8)	‡ (†)	— (†)	— (†)	— (†)	— (†)	‡ (†)	— (†)	— (†)	— (†)	— (†)
Bulgaria.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	³ 53 (2.2)	³ 63 (2.9)	² 65 (3.2)	³ 64 (3.3)	— (†)	³ 6 (0.2)	³ 8 (0.4)	8 (0.4)	³ 8 (0.4)
Chile.....	57 (1.3)	56 (1.4)	54 (1.5)	61 (1.4)	69 (1.0)	62 (0.7)	³ 118 (2.2)	— (†)	— (†)	— (†)	— (†)	³ 11 (0.3)	— (†)	— (†)	— (†)	— (†)
Chinese Taipei.....	⁴ 48 (1.1)	⁴ 24 (0.9)	⁴ 36 (1.3)	⁴ 37 (1.5)	⁴ 37 (1.1)	⁴ 40 (1.0)	— (†)	— (†)	— (†)	— (†)	⁵ 134 (2.0)	— (†)	— (†)	— (†)	— (†)	⁵ 12 (0.2)
Cyprus.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	² 53 (0.7)	² 34 (1.6)	— (†)	² 52 (0.8)	— (†)	6 (0.1)	4 (0.2)	— (†)	6 (0.1)
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)	‡ (†)	5 (0.3)	6 (0.4)	8 (0.5)	6 (0.2)
Ghana.....	73 (1.2)	54 (1.3)	55 (1.3)	54 (1.5)	64 (1.5)	75 (1.0)	‡ (†)	— (†)	— (†)	— (†)	— (†)	‡ (†)	— (†)	— (†)	— (†)	— (†)
Hong Kong, SAR ⁶	66 (1.2)	35 (1.0)	71 (1.5)	75 (1.2)	67 (1.2)	61 (0.8)	² 103 (4.0)	— (†)	— (†)	— (†)	— (†)	11 (0.4)	— (†)	— (†)	— (†)	— (†)
Hungary.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	² 58 (2.5)	² 59 (2.1)	² 61 (2.8)	² 57 (2.5)	— (†)	6 (0.2)	5 (0.2)	6 (0.2)	5 (0.2)
Indonesia.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	² 93 (3.6)	² 93 (3.3)	— (†)	— (†)	— (†)	7 (0.3)	7 (0.3)
Iran, Islamic Republic of.....	87 (1.0)	66 (1.4)	77 (1.2)	73 (1.5)	78 (1.0)	70 (1.0)	² 106 (3.7)	— (†)	— (†)	— (†)	— (†)	11 (0.4)	— (†)	— (†)	— (†)	— (†)
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)	² 69 (1.1)	— (†)	— (†)	— (†)	— (†)	7 (0.1)	— (†)	— (†)	— (†)	— (†)
Japan.....	66 (1.5)	51 (1.7)	75 (1.7)	79 (1.6)	69 (1.5)	27 (1.1)	³ 99 (1.5)	— (†)	— (†)	— (†)	— (†)	³ 9 (0.1)	— (†)	— (†)	— (†)	— (†)
Jordan.....	67 (1.5)	56 (1.4)	55 (1.7)	53 (1.6)	66 (1.3)	70 (1.1)	135 (0.8)	— (†)	— (†)	— (†)	— (†)	15 (0.2)	— (†)	— (†)	— (†)	— (†)
Korea, Rep. of.....	31 (1.0)	14 (0.8)	20 (1.1)	39 (1.3)	44 (1.3)	36 (0.9)	² 103 (2.7)	— (†)	— (†)	— (†)	— (†)	9 (0.2)	— (†)	— (†)	— (†)	— (†)
Latvia.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	‡ (†)	² 64 (4.2)	² 56 (4.1)	— (†)	— (†)	‡ (†)	7 (0.4)	6 (0.4)
Lebanon.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	‡ (†)	— (†)	— (†)	— (†)	— (†)
Lithuania.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	³ 59 (0.4)	³ 65 (1.2)	³ 46 (3.5)	³ 60 (0.8)	— (†)	³ 6 (0.1)	³ 6 (0.2)	³ 4 (0.4)	³ 6 (0.1)
Macedonia.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	³ 53 (1.4)	³ 64 (2.5)	³ 59 (2.0)	³ 79 (1.5)	— (†)	³ 6 (0.2)	³ 7 (0.3)	³ 7 (0.3)	³ 9 (0.2)
Malaysia.....	83 (1.1)	46 (1.3)	71 (1.7)	77 (1.3)	73 (1.0)	72 (1.0)	119 (1.8)	— (†)	— (†)	— (†)	— (†)	12 (0.2)	— (†)	— (†)	— (†)	— (†)
Moldova.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	‡ (†)	— (†)	— (†)	— (†)	— (†)
Morocco.....	82 (1.2)	62 (1.3)	³ 61 (1.2)	50 (1.3)	74 (1.0)	36 (1.2)	— (†)	⁷ — (†)	⁸ — (†)	⁷ ‡ (†)	⁸ ‡ (†)	— (†)	⁷ — (†)	⁸ — (†)	⁷ ‡ (†)	⁸ ‡ (†)
Netherlands.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	² 54 (1.7)	⁸ — (†)	² 58 (1.8)	^{2,8} 68 (2.4)	— (†)	5 (0.1)	⁸ — (†)	5 (0.2)	⁸ 6 (0.2)
New Zealand.....	60 (2.0)	50 (2.1)	56 (2.5)	66 (2.3)	73 (1.8)	45 (1.3)	132 (2.4)	— (†)	— (†)	— (†)	— (†)	14 (0.3)	— (†)	— (†)	— (†)	— (†)
Norway.....	40 (1.5)	34 (1.6)	49 (2.2)	49 (2.2)	56 (1.9)	31 (0.9)	92 (2.5)	— (†)	— (†)	— (†)	— (†)	11 (0.3)	— (†)	— (†)	— (†)	— (†)
Palestinian National Authority.....	70 (1.2)	56 (1.2)	57 (1.0)	54 (1.5)	66 (1.2)	69 (0.9)	² 101 (1.8)	— (†)	— (†)	— (†)	— (†)	11 (0.2)	— (†)	— (†)	— (†)	— (†)
Philippines ⁹	74 (0.9)	58 (1.2)	57 (1.0)	62 (1.1)	72 (1.0)	76 (0.8)	202 (4.2)	— (†)	— (†)	— (†)	— (†)	18 (0.5)	— (†)	— (†)	— (†)	— (†)
Romania.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	³ 60 (1.1)	³ 67 (2.4)	³ 38 (2.6)	³ 67 (2.4)	— (†)	³ 6 (0.2)	³ 7 (0.2)	³ 4 (0.3)	³ 7 (0.3)
Russian Federation.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	³ 49 (0.7)	³ 59 (1.2)	³ 49 (0.8)	³ 49 (0.9)	— (†)	³ 6 (0.1)	³ 7 (0.2)	³ 6 (0.1)	³ 6 (0.1)

See notes at end of table.

Table 401. Instructional practices and time spent teaching science in eighth grade, by country: 2003—Continued

Country	Percent of students reported doing the same activity about half the lessons or more						Students' average yearly instructional time in hours					Science instructional time as a percent of total instructional time ¹				
	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	General integrated science	Earth science	Chemistry	Biology	Physics
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Saudi Arabia	68 (1.3)	50 (1.3)	51 (1.4)	43 (1.4)	60 (1.3)	67 (1.0)	² 106 (1.6)	— (†)	— (†)	— (†)	— (†)	11 (†)	— (†)	— (†)	— (†)	— (†)
Scotland.....	69 (1.4)	54 (1.3)	74 (1.4)	81 (1.2)	83 (1.1)	47 (1.0)	‡ (†)	— (†)	— (†)	— (†)	— (†)	‡ (†)	— (†)	— (†)	— (†)	— (†)
Serbia	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	² 53 (2.2)	² 61 (3.7)	² 53 (1.0)	² 56 (2.5)	— (†)	7 (0.3)	8 (0.5)	7 (0.1)	7 (0.3)
Singapore	49 (0.9)	31 (0.6)	55 (1.0)	57 (0.8)	68 (0.8)	58 (0.7)	107 (1.9)	— (†)	— (†)	— (†)	— (†)	12 (0.2)	— (†)	— (†)	— (†)	— (†)
Slovak Republic	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	³ 66 (3.9)	³ 76 (3.8)	³ 72 (5.2)	³ 70 (4.5)	— (†)	³ 7 (0.4)	³ 8 (0.4)	³ 8 (0.5)	³ 7 (0.4)
Slovenia.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	59 (1.1)	56 (0.7)	³ 57 (0.5)	— (†)	— (†)	6 (0.1)	5 (0.1)	³ 5 (0.1)
South Africa	72 (1.1)	64 (1.2)	63 (1.1)	70 (1.1)	73 (0.7)	77 (0.7)	‡ (†)	— (†)	— (†)	— (†)	— (†)	‡ (†)	— (†)	— (†)	— (†)	— (†)
Sweden.....	— (†)	— (†)	— (†)	— (†)	— (†)	— (†)	³ 131 (7.6)	— (†)	— (†)	— (†)	— (†)	14 (0.8)	— (†)	— (†)	— (†)	— (†)
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)	² 135 (2.2)	— (†)	— (†)	— (†)	— (†)	² 13 (0.2)	— (†)	— (†)	— (†)	— (†)

—Not available.

†Not applicable.

‡Reporting standards not met.

¹Computed as the relation of science instructional time to the total instructional time averaged across students.

²Data are available for at least 50 but less than 70 percent of the students.

³Data are available for at least 70 but less than 85 percent of the students.

⁴Students who reported doing science investigations were asked about natural science; data pertain to grade 8 physics/chemistry courses for these students as well.

⁵Data reported in the physics panel are for grade 8 science and chemistry teachers.

⁶SAR = Special Administrative Region.

⁷Data reported in biology panel are for grade 8 biology/earth science teachers.

⁸Data reported in physics panel are for grade 8 physics/chemistry teachers.

⁹Students study only biology at grade 8.

NOTE: Data are for eighthgrade 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 402. 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 = .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 Education Achievement's 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), *Mathematics and Science Achievement in the Final Year of Secondary School: IEA's Third International Mathematics and Science Study, 1998*, by Ina V. S. Mullis et al. (This table was prepared October 1998.)

Table 403. Number of bachelor's degree recipients per 100 persons of the typical age of graduation, by sex and country: 2002 and 2003

Country	Male and female		Male		Female	
	2002	2003	2002	2003	2002	2003
1	2	3	4	5	6	7
Australia.....	50.7	54.8	43.0	46.7	58.8	63.4
Austria.....	18.0	19.0	17.9	18.7	18.1	19.4
Belgium ¹	19.2	—	18.7	—	19.7	—
Canada.....	—	—	—	—	—	—
Czech Republic.....	15.4	17.3	14.3	15.9	16.6	18.8
Denmark.....	34.4	38.6	23.4	25.1	45.7	52.3
Finland.....	51.8	55.8	37.7	40.4	66.4	72.2
France.....	39.0	41.5	32.9	34.9	45.3	48.4
Germany.....	19.2	19.5	19.3	19.3	19.1	19.7
Hungary.....	31.1	33.6	23.2	24.6	39.3	43.2
Iceland.....	40.0	44.2	27.2	29.4	53.1	59.1
Ireland.....	30.9	36.8	25.6	29.7	36.2	44.0
Italy.....	22.4	27.8	19.2	24.0	25.6	31.6
Japan.....	34.1	34.4	40.2	40.1	27.6	28.5
Korea, Republic of.....	31.5	31.7	31.6	32.1	31.3	31.2
Mexico.....	16.5	14.3	15.6	13.3	17.4	15.3
Netherlands.....	38.6	42.5	34.4	36.4	42.9	48.7
New Zealand.....	41.6	39.0	31.8	29.1	51.3	49.1
Norway.....	41.1	42.0	29.7	30.0	52.8	54.2
Portugal.....	—	—	—	—	—	—
Spain.....	33.1	32.0	26.4	25.5	40.0	38.9
Sweden.....	35.2	38.4	26.5	28.6	44.1	48.5
Switzerland.....	20.8	20.9	23.3	23.5	18.3	18.4
Turkey.....	—	—	—	—	—	—
United Kingdom.....	—	—	—	—	—	—
United States.....	36.1	33.4	29.7	27.6	42.9	39.4

—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 pro-

gression 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 November 1, 2005, from <http://stats.oecd.org/WBOS/Default.aspx>. (This table was prepared November 2005.)

Table 404. Percentage of bachelor's degrees awarded in science, by field and country: Selected years, 1985 through 2003

Country	All science degrees ¹					Natural sciences ²					Mathematics and computer science ³					Engineering				
	1985	1990	1995	2000	2003	1985	1990	1995	2000	2003	1985	1990	1995	2000	2003	1985	1990	1995	2000	2003
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Australia.....	—	—	19.3	21.1	23.7	—	—	9.9	7.6	5.5	—	—	3.8	5.1	10.2	—	—	5.6	8.5	8.0
Austria.....	16.8	19.6	21.1	25.7	26.5	5.0	5.3	6.0	5.0	5.3	4.1	5.2	5.3	3.4	3.4	7.7	9.0	9.9	17.3	17.8
Belgium ⁴	—	—	—	—	24.6	4.6	—	—	—	7.0	1.7	—	—	—	2.8	—	—	—	—	14.9
Canada.....	17.1	16.4	16.7	20.0	—	4.9	6.0	6.5	8.1	—	4.5	4.2	3.8	4.3	—	7.7	6.2	6.4	7.6	—
Czech Republic.....	—	—	—	29.5	30.2	—	—	—	4.2	4.7	—	—	—	8.4	4.2	—	—	—	—	16.9
Denmark.....	—	—	—	10.5	11.4	6.3	4.4	2.5	6.8	3.2	—	—	—	3.1	1.1	16.2	21.7	17.0	0.6	7.1
Finland.....	39.3	33.5	37.2	32.2	28.8	7.7	4.1	4.0	3.9	2.6	6.3	5.9	6.9	3.3	4.5	25.3	23.4	26.3	24.9	21.8
France.....	—	—	—	30.1	27.1	—	—	—	12.2	9.0	—	—	—	5.5	4.7	—	—	—	—	12.5
Germany ⁵	23.8	31.3	31.6	31.7	30.1	5.0	7.2	6.7	6.4	6.0	2.3	3.5	5.2	4.9	5.8	16.5	20.5	19.7	20.3	18.3
Hungary.....	—	—	—	12.6	—	—	—	—	1.1	—	—	—	—	1.2	—	—	—	—	—	10.4
Iceland.....	—	—	—	16.5	17.3	—	—	—	6.0	4.7	—	—	—	4.0	6.6	—	—	—	—	6.5
Ireland.....	28.8	34.1	32.3	29.3	27.0	12.8	14.1	16.9	11.5	8.4	4.0	6.3	4.7	7.2	9.6	12.0	13.7	10.7	10.6	8.9
Italy.....	19.5	19.7	19.5	27.5	25.6	8.1	7.6	6.8	5.9	5.1	3.1	3.9	3.8	3.2	2.9	8.3	8.3	8.9	18.4	17.6
Japan.....	22.7	23.5	22.8	18.9	18.2	2.4	2.4	3.4	—	0.0	—	—	—	—	0.0	20.3	21.0	19.3	18.9	18.2
Korea, Republic of.....	—	—	—	36.9	37.8	—	—	—	6.3	6.6	—	—	—	4.3	3.9	—	—	—	—	26.3
Mexico.....	—	—	—	23.0	28.1	—	—	—	2.2	2.5	—	—	—	6.7	8.9	—	—	—	—	14.1
Netherlands.....	21.8	21.1	—	16.2	—	8.5	7.1	—	3.2	—	1.2	1.6	1.6	1.9	—	12.1	12.4	—	—	11.1
New Zealand.....	20.5	19.5	—	17.8	20.4	11.7	8.2	—	11.2	5.8	5.5	5.5	—	1.9	8.7	3.3	5.8	3.2	4.7	5.8
Norway.....	—	12.9	16.8	11.6	16.5	2.5	2.1	3.1	0.7	0.4	1.8	0.6	0.5	3.4	6.5	—	10.2	13.2	7.5	9.7
Poland.....	—	—	—	16.7	17.0	—	—	—	2.7	2.6	—	—	—	2.0	3.0	—	—	—	—	12.0
Portugal.....	—	—	15.0	17.5	18.2	6.5	6.7	2.2	1.7	2.9	—	—	2.8	3.6	2.4	—	10.5	9.9	12.2	12.9
Spain.....	13.9	15.0	18.2	22.7	24.7	5.5	5.7	4.3	5.3	4.7	1.3	2.6	4.5	4.3	4.6	7.0	6.7	9.4	13.1	15.4
Sweden.....	15.4	24.0	26.4	27.7	—	2.6	4.1	3.9	3.7	—	1.6	4.7	5.5	3.7	—	11.3	15.2	17.0	20.3	—
Switzerland.....	20.2	23.0	22.3	25.1	23.9	10.3	11.2	10.4	6.0	5.6	2.1	3.7	3.7	1.8	3.6	7.9	8.1	8.3	17.3	14.7
Turkey.....	23.0	20.6	20.9	24.1	21.7	3.6	4.6	5.1	7.4	6.4	1.6	2.1	2.7	3.6	3.8	17.8	13.8	13.1	13.1	11.5
United Kingdom.....	—	—	—	28.5	31.2	—	—	—	12.5	13.0	—	—	—	5.8	8.5	—	—	—	—	10.2
United States.....	21.7	16.9	—	17.1	17.6	6.3	5.1	—	6.6	6.0	5.5	4.0	3.3	3.9	5.2	9.8	7.8	6.7	6.6	6.4

—Not available.

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.⁵Data for 1985 are for the former West Germany.

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

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

Table 405. Percentage of graduate degrees awarded in science, by field and country: Selected years, 1985 through 2003

Country	All science degrees ¹						Natural sciences ²						Mathematics and computer science ³						Engineering					
	1985	1990	1996	1999	2000	2003	1985	1990	1996	1999	2000	2003	1985	1990	1996	1999	2000	2003	1985	1990	1996	1999	2000	2003
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Australia.....	—	—	14.0	17.9	15.2	15.5	—	—	5.4	6.3	4.0	3.6	—	—	3.8	3.8	4.9	7.2	—	—	4.7	7.7	6.3	4.7
Austria.....	43.3	37.7	38.8	38.4	39.2	35.4	14.2	12.3	17.5	15.0	16.7	14.9	7.3	4.6	4.7	3.6	4.7	5.3	21.7	20.8	16.6	19.8	17.7	15.1
Belgium ⁴	—	—	—	17.6	—	18.8	—	—	—	7.0	—	9.5	—	—	—	2.4	—	4.9	—	—	—	8.3	—	4.4
Canada.....	19.7	20.0	22.3	23.0	22.4	—	7.5	7.8	7.7	7.9	7.4	—	2.8	3.4	3.5	3.6	4.1	—	9.4	8.8	11.2	11.5	10.9	—
Czech Republic.....	—	—	—	21.3	21.0	12.4	—	—	—	5.6	5.3	3.5	—	—	—	6.3	7.9	2.2	—	—	—	9.3	7.7	6.7
Denmark.....	16.0	22.2	12.3	—	30.2	27.8	4.1	5.8	3.1	—	9.8	8.1	2.7	4.8	1.5	—	2.5	4.1	9.2	11.6	7.8	—	15.4	15.7
Finland.....	47.6	30.6	28.3	31.1	28.7	28.1	24.0	14.7	11.6	8.5	11.3	10.3	6.3	5.4	4.0	3.9	2.4	3.5	17.2	10.5	12.7	18.7	14.9	14.3
France.....	—	—	—	21.0	26.4	34.4	—	—	—	6.4	13.5	17.1	—	—	—	1.6	5.6	8.5	—	—	—	13.0	7.3	8.9
Germany ⁵	27.7	33.2	38.6	38.9	38.1	36.0	18.7	23.5	25.5	25.2	24.9	22.2	1.8	2.3	3.5	4.0	3.7	4.2	7.2	7.4	9.5	9.8	9.5	9.6
Hungary.....	—	—	—	13.5	9.9	7.7	—	—	—	4.8	1.7	1.7	—	—	—	1.2	0.7	1.1	—	—	—	7.6	7.5	4.9
Iceland.....	—	—	—	30.7	35.9	20.5	—	—	—	20.0	19.4	10.3	—	—	—	—	—	1.0	—	—	—	10.7	16.5	9.2
Ireland.....	31.4	34.5	23.1	24.8	28.1	21.0	18.9	19.5	10.9	4.0	6.9	5.1	2.6	5.8	3.0	16.0	15.2	10.0	9.9	9.3	9.2	4.8	6.0	6.0
Italy.....	—	—	—	13.1	11.7	12.8	—	—	—	1.0	0.3	2.8	—	—	—	6.5	5.8	3.9	—	—	—	5.6	5.7	6.1
Japan.....	50.1	54.6	—	42.4	51.7	38.5	9.5	9.5	10.2	—	—	0.0	—	—	—	0.0	0.0	40.5	45.1	44.4	42.4	41.9	38.5	—
Korea, Republic of.....	—	—	—	48.3	48.4	45.6	—	—	—	8.8	8.5	10.2	—	—	—	4.1	5.7	3.1	—	—	—	35.4	34.3	32.3
Mexico.....	—	—	—	22.7	31.4	20.0	—	—	—	14.3	18.9	6.8	—	—	—	2.0	4.1	2.5	—	—	—	6.4	8.4	10.8
Netherlands.....	—	28.9	18.6	17.6	—	24.2	20.6	17.7	4.4	—	—	3.9	—	1.5	3.7	8.7	—	0.7	7.5	9.7	10.6	8.8	1.2	19.7
New Zealand.....	45.1	22.6	16.7	24.4	20.5	16.7	24.6	13.8	12.7	13.4	11.6	6.7	5.4	4.7	1.1	1.5	1.4	6.0	15.1	4.0	3.0	9.4	7.5	4.1
Norway.....	40.1	33.4	38.3	21.0	22.0	22.0	17.9	8.0	8.7	15.0	14.9	11.8	3.5	2.1	1.9	4.3	4.6	5.6	18.7	23.3	27.7	—	2.5	4.7
Poland.....	—	—	—	3.1	3.3	4.1	—	—	—	0.6	0.7	0.8	—	—	—	0.9	0.7	0.6	—	—	—	1.7	1.9	2.7
Portugal.....	—	—	—	—	39.3	—	—	—	—	—	11.7	—	—	—	—	—	9.4	—	—	—	—	—	18.2	—
Spain.....	35.6	26.9	36.0	40.1	36.1	35.8	28.6	19.7	24.8	24.8	23.9	22.7	1.8	1.4	4.1	4.2	5.4	5.7	5.1	5.7	7.1	11.1	6.8	7.3
Sweden.....	48.0	48.5	32.3	41.5	40.5	32.2	21.2	19.4	9.2	14.4	14.3	11.4	6.8	9.2	5.9	4.1	4.0	3.8	20.0	19.9	17.1	23.0	22.2	17.0
Switzerland.....	30.7	30.2	40.1	41.5	42.7	32.6	20.3	22.0	25.8	11.4	11.7	9.8	2.8	1.7	4.1	17.0	19.5	12.6	7.6	6.5	10.1	13.1	11.6	10.2
Turkey.....	35.8	24.0	—	29.8	25.7	22.9	6.6	7.6	—	8.0	7.6	6.9	2.8	3.3	—	3.0	3.0	3.2	26.3	13.2	—	18.7	15.2	12.7
United Kingdom.....	—	—	—	21.8	21.7	22.1	—	—	—	6.0	7.4	7.5	—	—	—	4.7	5.0	6.2	—	—	—	11.0	9.2	8.4
United States.....	13.5	14.5	13.8	13.7	13.0	13.7	4.5	4.2	4.0	3.8	3.4	3.4	2.8	3.4	3.2	3.1	3.4	4.0	6.3	6.9	6.7	6.8	6.2	6.4

—Not available.

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.⁵Data for 1985 are for the former West Germany.

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

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

Table 406. Public and private education expenditures per student, by level of education and country: Selected years, 1999 through 2002

Country	Elementary				Secondary				Higher education			
	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002
1	2	3	4	5	6	7	8	9	10	11	12	13
	Current dollars											
Australia.....	\$4,858	\$4,967	\$5,052	\$5,169	\$6,850	\$6,894	\$7,239	\$7,375	\$11,725	\$12,854	\$12,688	\$12,416
Austria.....	6,568	6,560	6,571	7,015	8,504	8,578	8,562	8,887	12,070	10,851	11,274	12,448
Belgium.....	4,351	4,310	5,321	5,665	6,789	6,889	7,912	8,272	10,055	10,771	11,589	12,019
Canada.....	—	—	—	—	¹ 5,981	¹ 5,947	—	—	15,211	14,983	—	—
Czech Republic.....	1,769	1,827	1,871	2,077	3,402	3,239	3,448	3,628	5,688	5,431	5,555	6,236
Denmark.....	6,721	7,074	7,572	7,727	7,626	7,726	8,113	8,003	10,657	11,981	14,280	15,183
Finland.....	4,138	4,317	4,708	5,087	5,863	6,094	6,537	7,121	8,114	8,244	10,981	11,768
France.....	4,108	4,486	4,777	5,033	7,141	7,636	8,107	8,472	7,831	8,373	8,837	9,276
Germany.....	3,818	4,198	4,237	4,537	6,603	6,826	6,620	7,025	10,393	10,898	10,504	10,999
Greece.....	² 2,176	² 3,318	3,299	3,803	² 2,904	² 3,859	3,768	4,058	² 4,260	² 3,402	4,280	4,731
Hungary ²	2,179	2,245	2,592	3,016	2,368	2,446	2,633	3,184	5,861	7,024	7,122	8,205
Iceland.....	—	² 5,854	6,373	7,171	—	² 6,518	7,265	7,229	—	² 7,994	7,674	8,251
Ireland.....	3,018	3,385	3,743	4,180	4,383	4,638	5,245	5,725	9,673	11,083	10,003	9,809
Italy ²	5,354	5,973	6,783	7,231	6,518	7,218	8,258	7,598	7,552	8,065	8,347	8,636
Japan.....	5,240	5,507	5,771	6,117	6,039	6,266	6,534	6,952	10,278	10,914	11,164	11,716
Korea, Republic of.....	2,838	3,155	3,714	3,553	3,419	4,069	5,159	5,882	5,356	6,118	6,618	6,047
Luxembourg.....	—	—	7,873	10,611	—	—	11,091	15,195	—	—	—	—
Mexico.....	1,096	1,291	1,357	1,467	1,480	1,615	1,915	1,768	4,789	4,688	4,341	6,074
Netherlands.....	4,162	4,325	4,862	5,558	5,670	5,912	6,403	6,823	12,285	11,934	12,974	13,101
New Zealand.....	—	—	—	4,536	—	—	—	5,698	—	—	—	—
Norway.....	² 5,920	² 6,550	7,404	7,508	² 7,628	² 8,476	9,040	10,154	² 12,096	² 13,353	13,189	13,739
Poland ²	2,094	2,105	2,322	2,585	1,343	—	—	—	3,877	3,222	3,579	4,834
Portugal.....	3,478	3,672	4,181	4,940	5,181	5,349	5,976	6,921	4,802	4,766	5,199	6,960
Slovak Republic.....	—	1,308	1,252	1,471	2,163	1,927	1,874	2,193	5,325	4,949	5,285	4,756
Spain.....	3,635	3,941	4,168	4,592	4,864	5,185	5,442	6,010	5,707	6,666	7,455	8,020
Sweden.....	5,736	6,336	6,295	7,143	5,911	6,339	6,482	7,400	14,222	15,097	15,188	15,715
Switzerland ²	6,663	6,631	6,889	7,776	9,756	9,780	10,916	11,900	17,997	18,450	20,230	23,714
Turkey ²	—	—	—	—	—	—	—	—	4,328	4,121	—	—
United Kingdom.....	3,627	3,877	4,415	5,150	5,608	5,991	5,933	6,505	9,554	9,657	10,753	11,822
United States.....	6,582	6,995	7,560	8,049	8,157	8,855	8,779	9,098	19,220	20,358	22,234	20,545
	Constant 2004 dollars											
Australia.....	\$5,508	\$5,449	\$5,389	\$5,428	\$7,767	\$7,563	\$7,721	\$7,744	\$13,294	\$14,101	\$13,533	\$13,037
Austria.....	7,447	7,196	7,009	7,366	9,642	9,410	9,132	9,332	13,686	11,903	12,025	13,071
Belgium.....	4,933	4,728	5,676	5,948	7,698	7,557	8,439	8,686	11,401	11,816	12,361	12,620
Canada.....	—	—	—	—	¹ 6,782	¹ 6,524	—	—	17,247	16,436	—	—
Czech Republic.....	2,006	2,004	1,996	2,181	3,857	3,553	3,678	3,810	6,449	5,958	5,925	6,548
Denmark.....	7,621	7,760	8,077	8,114	8,647	8,475	8,654	8,403	12,083	13,143	15,231	15,943
Finland.....	4,692	4,736	5,022	5,341	6,648	6,685	6,973	7,477	9,200	9,044	11,713	12,357
France.....	4,658	4,921	5,095	5,285	8,097	8,377	8,647	8,896	8,879	9,185	9,426	9,740
Germany.....	4,329	4,605	4,519	4,764	7,487	7,488	7,061	7,376	11,784	11,955	11,204	11,549
Greece.....	² 2,467	² 3,640	3,519	3,993	² 3,293	² 4,233	4,019	4,261	² 4,830	² 3,732	4,565	4,968
Hungary ²	2,471	2,463	2,765	3,167	2,685	2,683	2,808	3,343	6,646	7,705	7,597	8,615
Iceland.....	—	² 6,422	6,798	7,530	—	² 7,150	7,749	7,591	—	² 8,769	8,185	8,664
Ireland.....	3,422	3,713	3,992	4,389	4,970	5,088	5,594	6,011	10,968	12,158	10,669	10,300
Italy ²	6,071	6,552	7,235	7,593	7,390	7,918	8,808	7,978	8,563	8,847	8,903	9,068
Japan.....	5,941	6,041	6,156	6,423	6,847	6,874	6,969	7,300	11,654	11,972	11,908	12,302
Korea, Republic of.....	3,218	3,461	3,961	3,731	3,877	4,464	5,503	6,176	6,073	6,711	7,059	6,350
Luxembourg.....	—	—	8,398	11,142	—	—	11,830	15,955	—	—	—	—
Mexico.....	1,243	1,416	1,447	1,540	1,678	1,772	2,043	1,856	5,430	5,143	4,630	6,378
Netherlands.....	4,719	4,744	5,186	5,836	6,429	6,485	6,830	7,164	13,929	13,091	13,838	13,756
New Zealand.....	—	—	—	4,763	—	—	—	5,983	—	—	—	—
Norway.....	² 6,712	² 7,185	7,897	7,884	² 8,649	² 9,298	9,642	10,662	² 13,715	² 14,648	14,068	14,426
Poland ²	2,374	2,309	2,477	2,714	1,523	—	—	—	4,396	3,534	3,817	5,076
Portugal.....	3,944	4,028	4,460	5,187	5,874	5,868	6,374	7,267	5,445	5,228	5,545	7,308
Slovak Republic.....	—	1,435	1,335	1,545	2,453	2,114	1,999	2,303	6,038	5,429	5,637	4,994
Spain.....	4,122	4,323	4,446	4,822	5,515	5,688	5,805	6,311	6,471	7,312	7,952	8,421
Sweden.....	6,504	6,950	6,714	7,500	6,702	6,954	6,914	7,770	16,126	16,561	16,200	16,501
Switzerland ²	7,555	7,274	7,348	8,165	11,062	10,728	11,643	12,495	20,406	20,239	21,578	24,900
Turkey ²	—	—	—	—	—	—	—	—	4,907	4,521	—	—
United Kingdom.....	4,112	4,253	4,709	5,408	6,359	6,572	6,328	6,830	10,833	10,594	11,469	12,413
United States.....	7,463	7,673	8,064	8,452	9,249	9,714	9,364	9,553	21,793	22,332	23,715	21,573

—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 2005. (This table was prepared February 2006.)

Table 407. Total public direct expenditures on education as a percentage of the gross domestic product, by level and country: Selected years, 1985 through 2002

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

—Not available.

¹Includes preprimary and other expenditures not classified by level.²Includes public subsidies to households attributable for educational institutions and includes direct expenditure on educational institutions from international sources.³Data are for Flemish Belgium only.⁴Direct expenditure on higher education institutions from international sources exceeds 1.5 percent of all public expenditure.⁵Public subsidies to households not included in public expenditure.⁶Postsecondary non-higher education included in both secondary and higher education.⁷Data for 1985 are for the former West Germany.

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 2005. (This table was prepared October 2005.)

Table 408. 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 2003-04

Continent, region, and country	1980-81		1985-86		1990-91		1995-96		2000-01		2001-02		2002-03		2003-04	
	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
Total	311,880	100.0	343,780	100.0	407,530	100.0	453,787	100.0	547,867	100.0	582,996	100.0	586,323	100.0	572,509	100.0
Africa	38,180	12.2	34,190	9.9	23,800	5.8	20,844	4.59	34,217	6.2	37,724	6.5	40,193	6.9	38,150	6.7
Eastern Africa.....	6,260	2.0	6,730	2.0	7,590	1.9	7,596	1.67	13,516	2.5	15,331	2.6	15,996	2.7	14,831	2.6
Central Africa.....	1,130	0.4	1,540	0.4	1,650	0.4	1,346	0.30	1,859	0.3	1,972	0.3	2,371	0.4	2,331	0.4
North Africa.....	7,310	2.3	5,980	1.7	4,540	1.1	3,422	0.75	5,184	0.9	5,593	1.0	5,218	0.9	4,487	0.8
Southern Africa.....	1,480	0.5	2,360	0.7	2,840	0.7	2,657	0.59	3,304	0.6	3,443	0.6	3,017	0.5	2,679	0.5
West Africa.....	22,000	7.1	17,580	5.1	7,180	1.8	5,818	1.28	10,346	1.9	11,385	2.0	13,590	2.3	13,821	2.4
Nigeria.....	17,350	5.6	13,710	4.0	3,710	0.9	2,093	0.46	3,820	0.7	4,499	0.8	5,816	1.0	6,140	1.1
Asia	94,640	30.3	156,830	45.6	229,830	56.4	259,893	57.27	302,058	55.1	324,812	55.7	332,298	56.7	324,006	56.6
East Asia.....	51,650	16.6	80,720	23.5	146,020	35.8	166,717	36.74	189,371	34.6	196,813	33.8	199,666	34.1	189,874	33.2
China.....	2,770	0.9	13,980	4.1	39,600	9.7	39,613	8.73	59,939	10.9	63,211	10.8	64,757	11.0	61,765	10.8
Hong Kong.....	9,660	3.1	10,710	3.1	12,630	3.1	12,018	2.65	7,627	1.4	7,757	1.3	8,076	1.4	7,353	1.3
Japan.....	13,500	4.3	13,360	3.9	36,610	9.0	45,531	10.03	46,497	8.5	46,810	8.0	45,960	7.8	40,835	7.1
Korea, Republic of.....	6,150	2.0	18,660	5.4	23,360	5.7	36,231	7.98	45,685	8.3	49,046	8.4	51,519	8.8	52,484	9.2
Taiwan.....	19,460	6.2	23,770	6.9	33,530	8.2	32,702	7.21	28,566	5.2	28,930	5.0	28,017	4.8	26,178	4.6
South and Central Asia.....	14,540	4.7	25,800	7.5	42,370	10.4	45,401	10.00	71,765	13.1	86,131	14.8	93,767	16.0	98,138	17.1
India.....	9,250	3.0	16,070	4.7	28,860	7.1	31,743	7.00	54,664	10.0	66,836	11.5	74,603	12.7	79,736	13.9
Pakistan.....	2,990	1.0	5,440	1.6	7,730	1.9	6,427	1.42	6,948	1.3	8,644	1.5	8,123	1.4	7,325	1.3
South East Asia.....	28,450	9.1	50,310	14.6	41,440	10.2	47,774	10.53	40,916	7.5	41,868	7.2	38,865	6.6	35,994	6.3
Indonesia.....	3,250	1.0	8,210	2.4	9,520	2.3	12,820	2.83	11,625	2.1	11,614	2.0	10,432	1.8	8,880	1.6
Malaysia.....	6,010	1.9	23,020	6.7	13,610	3.3	14,015	3.09	7,795	1.4	7,395	1.3	6,595	1.1	6,483	1.1
Philippines.....	—	—	3,920	1.1	4,270	1.0	3,127	0.69	3,139	0.6	3,295	0.6	3,576	0.6	3,467	0.6
Singapore.....	—	—	3,930	1.1	4,500	1.1	4,098	0.90	4,166	0.8	4,141	0.7	4,189	0.7	3,955	0.7
Thailand.....	6,550	2.1	6,940	2.0	7,090	1.7	12,165	2.68	11,187	2.0	11,606	2.0	9,982	1.7	8,937	1.6
Europe	25,330	8.1	34,310	10.0	49,640	12.2	67,358	14.84	80,584	14.7	81,579	14.0	78,001	13.3	74,134	12.9
Eastern Europe.....	1,670	0.5	1,770	0.5	4,780	1.2	18,032	3.97	27,674	5.1	29,591	5.1	29,167	5.0	27,710	4.8
Western Europe.....	23,660	7.6	32,540	9.5	44,860	11.0	49,326	10.87	52,910	9.7	51,988	8.9	48,834	8.3	46,424	8.1
France.....	—	—	3,680	1.1	5,630	1.4	5,710	1.26	7,273	1.3	7,401	1.3	7,223	1.2	6,818	1.2
Germany ¹	3,310	1.1	4,730	1.4	7,000	1.7	9,017	1.99	10,128	1.8	9,613	1.6	9,302	1.6	8,745	1.5
Greece.....	3,750	1.2	4,440	1.3	4,360	1.1	3,365	0.74	2,768	0.5	2,599	0.4	2,341	0.4	2,126	0.4
Spain.....	—	—	1,740	0.5	4,300	1.1	4,809	1.06	4,156	0.8	4,048	0.7	3,633	0.6	3,631	0.6
United Kingdom.....	4,440	1.4	5,940	1.7	7,300	1.8	7,799	1.72	8,139	1.5	8,414	1.4	8,326	1.4	8,439	1.5
Latin America	49,810	16.0	45,480	13.2	47,580	11.7	47,253	10.41	63,634	11.6	68,358	11.7	68,950	11.8	69,658	12.2
Caribbean.....	10,650	3.4	11,100	3.2	12,610	3.1	10,737	2.37	14,423	2.6	13,879	2.4	14,895	2.5	15,606	2.7
Central America.....	12,970	4.2	12,740	3.7	15,950	3.9	14,220	3.13	16,764	3.1	18,826	3.2	18,856	3.2	19,264	3.4
Mexico.....	6,730	2.2	5,460	1.6	6,740	1.7	8,687	1.91	10,670	1.9	12,518	2.1	12,801	2.2	13,329	2.3
South America.....	26,190	8.4	21,640	6.3	19,020	4.7	22,296	4.91	32,447	5.9	35,653	6.1	35,199	6.0	34,788	6.1
Brazil.....	—	—	2,840	0.8	3,900	1.0	5,497	1.21	8,846	1.6	8,972	1.5	8,388	1.4	7,799	1.4
Colombia.....	—	—	4,010	1.2	3,180	0.8	3,462	0.76	6,765	1.2	8,068	1.4	7,771	1.3	7,533	1.3
Venezuela.....	11,750	3.8	7,040	2.0	2,890	0.7	4,456	0.98	5,217	1.0	5,627	1.0	5,333	0.9	5,575	1.0
Middle East	84,710	27.2	52,720	15.3	33,420	8.2	30,563	6.74	36,858	6.7	38,545	6.6	34,803	5.9	31,852	5.6
Iran.....	47,550	15.2	14,210	4.1	6,260	1.5	2,628	0.58	1,844	0.3	2,216	0.4	2,258	0.4	2,321	0.4
Jordan.....	6,140	2.0	6,590	1.9	4,320	1.1	2,222	0.49	2,187	0.4	2,417	0.4	2,173	0.4	1,853	0.3
Lebanon.....	6,770	2.2	7,090	2.1	3,900	1.0	1,554	0.34	2,005	0.4	2,435	0.4	2,364	0.4	2,179	0.4
Saudi Arabia.....	10,440	3.3	6,900	2.0	3,590	0.9	4,191	0.92	5,273	1.0	5,579	1.0	4,175	0.7	3,521	0.6
Turkey.....	—	—	2,460	0.7	4,080	1.0	7,678	1.69	10,983	2.0	12,091	2.1	11,601	2.0	11,398	2.0
North America ²	14,790	4.7	16,030	4.7	18,950	4.6	23,644	5.21	25,888	4.7	27,039	4.6	27,227	4.6	27,650	4.8
Canada.....	14,320	4.6	15,410	4.5	18,350	4.5	23,005	5.07	25,279	4.6	26,514	4.5	26,513	4.5	27,017	4.7
Oceania	4,180	1.3	4,030	1.2	4,230	1.0	4,202	0.93	4,624	0.8	4,852	0.8	4,811	0.8	4,534	0.8
Stateless ³	240	0.1	190	0.1	80	#	30	#	10	#	87	#	33	#	19	#

—Not available.

#Rounds to zero.

¹Data for 1980-81 and 1985-86 are for West Germany (Federal Republic of Germany before unification).²Excludes Mexico and Central America, which are included with Latin America.³Home 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*, various years. (This table was prepared March 2005.)

