

Highlights From TIMSS 2007:

Mathematics and Science Achievement of U.S. Fourth-
and Eighth-Grade Students in an International Context

Standard Error Tables

December 2008

Table E-1. Standard errors for average mathematics scores of fourth-grade students, by country: 1995 and 2007

Country	1995		2007	
	Average score	s.e.	Average score	s.e.
TIMSS average	500	0.0	500	0.0
Hong Kong SAR ¹	557	4.0	607	3.6
Singapore	590	4.5	599	3.7
Chinese Taipei	—	†	576	1.7
Japan	567	1.9	568	2.1
Kazakhstan ²	—	†	549	7.1
Russian Federation	—	†	544	4.9
England	484	3.3	541	2.9
Latvia ²	499	4.6	537	2.3
Netherlands ³	549	3.0	535	2.1
Lithuania ²	—	†	530	2.4
United States ^{4,5}	518	3.0	529	2.4
Germany	—	†	525	2.3
Denmark ⁴	—	†	523	2.4
Australia	495	3.4	516	3.5
Hungary	521	3.6	510	3.5
Italy	—	†	507	3.1
Austria	531	2.9	505	2.0
Sweden	—	†	503	2.5
Slovenia	462	3.1	502	1.8
Armenia	—	†	500	4.3
Slovak Republic	—	†	496	4.5
Scotland ⁴	493	4.2	494	2.2
New Zealand	469	4.4	492	2.3
Czech Republic	541	3.1	486	2.8
Norway	476	3.0	473	2.5
Ukraine	—	†	469	2.9
Georgia ²	—	†	438	4.2
Iran, Islamic Rep. of	387	5.0	402	4.1
Algeria	—	†	378	5.2
Colombia	—	†	355	5.0
Morocco	—	†	341	4.7
El Salvador	—	†	330	4.1
Tunisia	—	†	327	4.5
Kuwait ⁶	—	†	316	3.6
Qatar	—	†	296	1.0
Yemen	—	†	224	6.0

— Not available.

† Not applicable.

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

²In 2007, National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

³In 2007, nearly satisfied guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁴In 2007, met guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁵In 2007, National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

⁶In 2007, Kuwait tested the same cohort of students as other countries, but later in the year, at the beginning of the next school year.

NOTE: Countries are ordered by 2007 average score. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995 and 2007.

Table E-2. Standard errors for average mathematics scores of eighth-grade students, by country: 1995 and 2007

Country	1995		2007	
	Average score	s.e.	Average score	s.e.
TIMSS average	500	0.0	500	0.0
Chinese Taipei	—	†	598	4.5
Korea, Rep. of	581	2.0	597	2.7
Singapore	609	4.0	593	3.8
Hong Kong SAR ^{1,2}	569	6.1	572	5.8
Japan	581	1.6	570	2.4
Hungary	527	3.2	517	3.5
England ²	498	3.0	513	4.8
Russian Federation	524	5.3	512	4.1
United States ^{2,3}	492	4.7	508	2.8
Lithuania ⁴	472	4.1	506	2.3
Czech Republic	546	4.5	504	2.4
Slovenia	494	2.9	501	2.1
Armenia	—	†	499	3.5
Australia	509	3.7	496	3.9
Sweden	540	4.3	491	2.3
Malta	—	†	488	1.2
Scotland ²	493	5.7	487	3.7
Serbia ^{3,4}	—	†	486	3.3
Italy	—	†	480	3.0
Malaysia	—	†	474	5.0
Norway	498	2.2	469	2.0
Cyprus	468	2.2	465	1.6
Bulgaria	527	5.8	464	5.0
Israel ⁵	—	†	463	3.9
Ukraine	—	†	462	3.6
Romania	474	4.6	461	4.1
Bosnia and Herzegovina	—	†	456	2.7
Lebanon	—	†	449	4.0
Thailand	—	†	441	5.0
Turkey	—	†	432	4.8
Jordan	—	†	427	4.1
Tunisia	—	†	420	2.4
Georgia ⁴	—	†	410	6.0
Iran, Islamic Rep. of	418	3.9	403	4.1
Bahrain	—	†	398	1.6
Indonesia	—	†	397	3.8
Syrian Arab Republic	—	†	395	3.8
Egypt	—	†	391	3.6
Algeria	—	†	387	2.1
Colombia	332	5.6	380	3.6
Oman	—	†	372	3.4
Palestinian Nat'l Auth.	—	†	367	3.5
Botswana	—	†	364	2.3
Kuwait ⁶	—	†	354	2.3
El Salvador	—	†	340	2.8
Saudi Arabia	—	†	329	2.9
Ghana	—	†	309	4.4
Qatar	—	†	307	1.4

— Not available.

† Not applicable.

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²In 2007, met guidelines for sample participation rates only after substitute schools were included (see appendix A).

³In 2007, National Target Population did not include all of the International Target Population (see appendix A).

⁴In 2007, National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

⁵In 2007, National Defined Population covered less than 90 percent of National Target Population (but at least 77 percent, see appendix A).

⁶In 2007, Kuwait tested the same cohort of students as other countries, but later in the year, at the beginning of the next school year.

NOTE: Countries are ordered by 2007 average score. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995 and 2007.

Table E-3. Standard errors for average mathematics content and cognitive domain scores of fourth-grade students, by country: 2007

Country	Content domain						Cognitive domain					
	Number		Geometric shapes and measures		Data display		Knowing		Applying		Reasoning	
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.
TIMSS average	500*	0.0	500*	0.0	500*	0.0	500*	0.0	500*	0.0	500*	0.0
Hong Kong SAR ¹	606*	3.8	599*	3.1	585*	2.7	599*	3.4	617*	3.5	589*	3.5
Singapore	611*	4.3	570*	3.7	583*	3.2	590*	3.7	620*	4.0	578*	3.8
Chinese Taipei	581*	1.9	556*	2.2	567*	2.0	569*	1.7	584*	1.7	566*	1.9
Japan	561*	2.2	566*	2.2	578*	2.8	566*	2.0	565*	2.1	563*	2.1
Kazakhstan ²	556*	6.6	542*	7.4	522*	5.8	547*	7.2	559*	7.3	539*	6.1
Russian Federation	546*	4.4	538*	5.1	530*	4.9	547*	4.8	538	4.5	540*	4.8
England	531	3.2	548*	2.7	547	2.5	540*	3.1	544	3.6	537*	3.1
Latvia ²	536*	2.1	532*	2.6	536*	3.0	540*	2.5	530*	2.2	537*	2.5
Netherlands ³	535*	2.2	522	2.3	543	2.3	540*	2.0	525*	2.2	534*	2.4
Lithuania ²	533*	2.3	518	2.4	530*	2.9	539*	2.4	520*	2.8	526	2.5
United States ^{4,5}	524	2.7	522	2.5	543	2.4	524	2.6	541	2.6	523	2.2
Germany	521	2.2	528	2.0	534*	3.1	531*	2.2	514*	2.0	528	2.5
Denmark ⁴	509*	2.9	544*	2.6	529*	3.4	528	2.5	513*	2.7	524	2.1
Australia	496*	3.7	536*	3.1	534*	3.1	523	3.5	509*	4.2	516	3.4
Hungary	510*	3.7	510*	3.3	504*	3.5	507*	3.5	511*	3.4	509*	3.8
Italy	505*	3.2	509*	3.0	506*	3.4	501*	2.9	514*	3.2	509*	3.1
Austria	502*	2.2	509*	2.4	508*	2.6	507*	1.8	505*	2.0	506*	2.1
Sweden	490*	2.5	508*	2.3	529*	2.7	508*	2.2	482*	2.5	519	2.5
Slovenia	485*	1.9	522	1.8	518*	2.5	504*	1.9	497*	1.8	505*	2.1
Armenia	522	4.0	483*	4.7	458*	4.3	493*	4.1	518*	4.8	489*	4.7
Slovak Republic	495*	3.9	499*	4.3	492*	4.2	498*	4.0	492*	3.9	499*	4.0
Scotland ⁴	481*	2.6	503*	2.6	516*	2.2	500*	2.4	489*	2.6	497*	2.2
New Zealand	478*	2.7	502*	2.3	513*	2.6	495*	2.3	482*	2.5	503*	2.8
Czech Republic	482*	2.8	494*	2.8	493*	3.3	496*	2.7	473*	2.4	493*	3.4
Norway	461*	2.8	490*	3.0	487*	2.6	479*	2.8	461*	2.9	489*	2.7
Ukraine	480*	2.9	457*	2.8	462*	3.2	466*	3.1	472*	3.0	474*	3.2
Georgia ²	464*	3.8	415*	4.8	414*	4.6	433*	4.5	450*	4.0	437*	4.2
Iran, Islamic Rep. of	398*	3.6	429*	3.3	400*	4.0	405*	3.7	410*	3.6	410*	3.8
Algeria	391*	5.0	383*	4.5	361*	5.2	376*	5.2	384*	5.4	387*	4.8
Colombia	360*	4.3	361*	4.8	363*	5.9	357*	5.1	360*	5.2	372*	4.9
Morocco	353*	4.7	365*	4.3	316*	6.1	346*	4.7	354*	4.8	—	†
El Salvador	317*	3.9	333*	4.3	367*	3.5	339*	3.7	312*	4.1	356*	4.0
Tunisia	352*	4.5	334*	4.5	307*	4.8	329*	4.8	343*	4.9	—	†
Kuwait ⁶	321*	3.5	316*	3.6	318*	4.7	305*	4.1	326*	4.6	—	†
Qatar	292*	1.2	296*	1.4	326*	1.6	296*	1.2	293*	1.3	—	†
Yemen	—	†	—	†	—	†	—	†	—	†	—	†

— Not available. Average achievement could not be estimated.

† Not applicable.

* $p < .05$. Average score is significantly different from U.S. average score.

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

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³Nearly satisfied guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁴Met guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁵National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

NOTE: Countries are ordered by 2007 overall mathematics average scale score. The tests for significance take into account the standard error for the reported difference. Thus, a small difference between the United States and one country may be significant while a large difference between the United States and another country may not be significant. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-4. Standard errors for average mathematics content and cognitive domain scores of eighth-grade students, by country: 2007

Country	Content domain								Cognitive domain					
	Number		Algebra		Geometry		Data and chance		Knowing		Applying		Reasoning	
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.
TIMSS average	500*	0.0	500	0.0	500*	0.0	500*	0.0	500	0.0	500*	0.0	500*	0.0
Chinese Taipei	577*	4.2	617*	5.4	592*	4.6	566*	3.6	592*	4.2	594*	4.5	591*	4.1
Korea, Rep. of	583*	2.4	596*	3.0	587*	2.3	580*	2.0	595*	2.8	596*	2.5	579*	2.3
Singapore	597*	3.5	579*	3.7	578*	3.4	574*	3.9	593*	3.6	581*	3.4	579*	4.1
Hong Kong SAR ^{1,2}	567*	5.6	565*	5.6	570*	5.5	549*	4.7	569*	5.9	574*	5.4	557*	5.6
Japan	551*	2.3	559*	2.5	573*	2.2	573*	2.2	565*	2.2	560*	2.2	568*	2.4
Hungary	517	3.6	503	3.6	508*	3.6	524	3.3	513*	3.1	518	3.3	513*	3.2
England ²	510	5.0	492	4.6	510*	4.4	547*	5.0	514*	4.9	503*	4.0	518*	4.3
Russian Federation	507	3.8	518*	4.5	510*	4.1	487*	3.8	510	3.7	521	3.9	497	3.6
United States ^{2,3}	510	2.7	501	2.7	480	2.5	531	2.8	503	2.9	514	2.6	505	2.6
Lithuania ⁴	506	2.7	483*	2.7	507*	2.6	523*	2.3	511*	2.4	508	2.5	486*	2.4
Czech Republic	511	2.5	484*	2.4	498*	2.7	512*	2.8	504	2.7	502*	2.5	500	2.6
Slovenia	502*	2.3	488*	2.4	499*	2.4	511*	2.3	503	2.0	500*	2.2	496*	2.5
Armenia	492*	3.1	532*	2.5	493*	4.1	427*	3.9	493*	3.8	507	3.1	489*	3.8
Australia	503	3.7	471*	3.7	487	3.6	525	3.2	500	3.4	487*	3.3	502	3.3
Sweden	507	1.8	456*	2.4	472*	2.5	526	3.0	497	2.0	478*	2.0	490*	2.6
Malta	496*	1.3	473*	1.4	495*	1.1	487*	1.4	492*	1.0	490*	1.6	475*	1.3
Scotland ²	489*	3.7	467*	3.7	485	3.9	517*	3.5	489*	3.7	481*	3.3	495*	3.3
Serbia ^{3,4}	478*	2.9	500	3.2	486	3.6	458*	3.0	478*	3.3	500*	3.2	474*	3.3
Italy	478*	2.8	460*	3.2	490*	3.1	491*	3.1	483*	2.9	476*	3.0	483*	2.8
Malaysia	491*	5.1	454*	4.3	477	5.6	469*	4.1	478*	4.9	477*	4.8	468*	3.8
Norway	488*	2.0	425*	2.8	459*	2.3	505*	2.5	477*	2.2	458*	1.8	475*	2.3
Cyprus	464*	1.6	468*	2.0	458*	2.7	464*	1.6	465*	1.8	468*	1.6	461*	2.1
Bulgaria	458*	4.7	476*	5.1	468*	5.0	440*	4.7	458*	4.8	477*	4.7	455*	4.7
Israel ⁵	469*	3.2	470*	3.9	436*	4.3	465*	4.4	456*	4.1	473*	3.7	462*	4.1
Ukraine	460*	3.7	464*	3.9	467*	3.6	458*	3.5	464*	3.5	471*	3.5	445*	3.8
Romania	457*	3.5	478*	4.6	466*	4.0	429*	3.7	462*	4.0	470*	4.2	449*	4.6
Bosnia and Herzegovina	451*	3.0	475*	3.2	451*	3.5	437*	2.3	440*	2.6	478*	2.9	452*	2.9
Lebanon	454*	3.4	465*	3.2	462*	4.0	407*	4.4	448*	4.6	464*	3.9	429*	4.0
Thailand	444*	4.8	433*	5.0	442*	5.3	453*	4.1	446*	4.7	436*	4.8	456*	4.4
Turkey	429*	4.0	440*	5.1	411*	5.1	445*	4.4	425*	4.5	439*	4.8	441*	4.2
Jordan	416*	4.3	448*	4.1	436*	3.9	425*	3.8	422*	4.1	432*	4.2	440*	3.6
Tunisia	425*	2.6	423*	2.6	437*	2.6	411*	2.3	423*	2.4	421*	2.6	425*	2.3
Georgia ⁴	421*	5.6	421*	6.6	409*	6.7	373*	4.3	401*	5.5	427*	5.8	389*	5.8
Iran, Islamic Rep. of	395*	3.9	408*	3.9	423*	4.4	415*	3.5	402*	4.2	403*	4.1	427*	3.5
Bahrain	388*	2.0	403*	1.8	412*	2.1	418*	2.1	403*	1.9	395*	1.7	413*	2.1
Indonesia	399*	3.7	405*	3.5	395*	4.5	402*	3.6	398*	3.7	397*	4.0	405*	3.3
Syrian Arab Republic	393*	3.4	406*	3.7	417*	3.4	387*	2.7	401*	3.4	393*	4.2	396*	3.4
Egypt	393*	3.1	409*	3.3	406*	3.4	384*	3.1	393*	3.6	392*	3.6	397*	3.4
Algeria	403*	1.7	349*	2.4	432*	2.1	371*	1.7	412*	2.0	371*	1.9	—	†
Colombia	369*	3.5	390*	3.1	371*	3.3	405*	3.8	384*	3.7	364*	3.4	416*	3.3
Oman	363*	2.7	391*	3.2	387*	3.0	389*	3.0	368*	3.0	372*	3.5	397*	3.3
Palestinian Nat'l Auth.	366*	3.2	382*	3.4	388*	3.8	371*	2.9	371*	3.4	365*	3.8	381*	3.5
Botswana	366*	2.9	394*	2.2	325*	3.2	384*	2.6	351*	2.6	376*	2.1	—	†
Kuwait ⁶	347*	3.1	354*	3.0	385*	2.8	366*	3.5	361*	2.7	347*	3.1	—	†
El Salvador	355*	3.0	331*	3.7	318*	3.7	362*	3.0	347*	3.3	336*	3.1	—	†
Saudi Arabia	309*	3.3	344*	2.8	359*	2.6	348*	2.2	335*	2.3	308*	2.6	—	†
Ghana	310*	4.0	358*	3.6	275*	4.9	321*	3.6	297*	4.2	313*	4.6	—	†
Qatar	334*	1.6	312*	1.5	301*	1.8	305*	1.6	305*	1.4	307*	1.4	—	†

— Not available. Average achievement could not be estimated.

† Not applicable.

* $p < .05$. Average score is significantly different from U.S. average score.

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

²Met guidelines for sample participation rates only after substitute schools were included (see appendix A).

³National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

⁴National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

⁵National Defined Population covered less than 90 percent of National Target Population (but at least 77 percent, see appendix A).

⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

NOTE: Countries are ordered by 2007 overall mathematics average scale score. The tests for significance take into account the standard error for the reported difference. Thus, a small difference between the United States and one country may be significant while a large difference between the United States and another country may not be significant. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-5. Standard errors for percentage of U.S. fourth- and eighth-grade students who reached each international mathematics benchmark compared with the international median percentage, by international benchmark: 2007

	Low		Intermediate		High		Advanced	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
Grade four								
TIMSS international median	90	0.0	67	0.0	26	0.0	5	0.0
United States	95*	0.5	77*	1.2	40*	1.3	10*	0.8
Grade eight								
TIMSS international median	75	0.0	46	0.0	15	0.0	2	0.0
United States	92*	0.8	67*	1.4	31*	1.5	6*	0.6

**p* < .05. U.S. percentage is significantly different from the Trends in International Mathematics and Science (TIMSS) international median percentage.

NOTE: The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of the National Target Population (see appendix A). The TIMSS international median represents all participating TIMSS jurisdictions, including the United States. The international median represents the percentage at which half of the participating countries have that percentage of students at or above the median and half have that percentage of students below the median. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-6. Standard errors for mathematics scores of fourth-grade students defining the 10th and the 90th percentiles, by country: 2007

Country	10th percentile		90th percentile	
	Cutpoint score	s.e.	Cutpoint score	s.e.
TIMSS average	366*	0.9	576*	0.7
Singapore	487*	7.1	702*	4.5
Hong Kong SAR ¹	520*	4.0	691*	6.0
Japan	471*	3.0	663*	3.3
Chinese Taipei	488*	2.3	663*	2.3
Kazakhstan ²	435	9.1	653*	7.3
England	429	5.2	647*	4.9
Russian Federation	436	4.7	647*	6.9
Latvia ²	444*	2.2	628	3.9
United States ^{3,4}	430	4.2	625	3.1
Lithuania ²	430	3.3	624	3.6
Hungary	389*	8.4	620	2.9
Australia	408*	6.5	620	2.9
Armenia	385*	5.1	617	8.2
Netherlands ⁵	454*	4.9	612*	2.6
Denmark ³	431	4.2	611*	3.6
Germany	440	3.8	607*	3.2
Italy	406*	5.6	601*	3.8
New Zealand	377*	4.8	598*	2.6
Slovak Republic	389*	9.7	597*	4.5
Scotland ³	389*	3.9	592*	2.7
Austria	416*	2.9	590*	3.7
Slovenia	408*	3.0	589*	3.2
Sweden	417*	4.4	586*	3.0
Czech Republic	392*	6.9	576*	2.8
Ukraine	356*	4.6	573*	2.6
Norway	372*	3.3	566*	3.0
Georgia ²	322*	5.7	549*	4.1
Iran, Islamic Rep. of	290*	4.4	508*	2.9
Algeria	261*	8.0	493*	6.2
Colombia	238*	4.7	470*	5.2
Tunisia	178*	5.5	469*	3.9
Morocco	223*	6.3	466*	6.3
El Salvador	212*	5.7	448*	5.0
Kuwait ⁶	184*	5.3	443*	5.5
Qatar	179*	1.8	413*	1.6
Yemen	81*	7.1	371*	6.8

* $p < .05$. Percentile cutpoint score is significantly different from U.S. cutpoint score.

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

²National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

³Met guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁴National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

⁵Nearly satisfied guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

NOTE: Countries are ordered based on the 90th percentile cutpoint score. Cutpoints are calculated based on distribution of student scores within each country. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-7. Standard errors for mathematics scores of eighth-grade students defining the 10th and 90th percentiles, by country: 2007

Country	10th percentile		90th percentile	
	Cutpoint score	s.e.	Cutpoint score	s.e.
TIMSS average	339*	0.9	559*	0.7
Chinese Taipei	448*	6.5	721*	4.6
Korea, Rep. of	475*	3.9	711*	3.7
Singapore	463*	8.7	706*	4.3
Hong Kong SAR ^{1,2}	438	14.9	681*	4.3
Japan	460*	5.5	677*	4.0
Hungary	405	4.3	624*	5.4
England ²	400	9.0	618	6.8
Russian Federation	402	6.9	617	4.7
Lithuania ³	402	5.3	609	3.6
United States ^{2,4}	408	3.4	607	3.3
Armenia	390*	5.3	601	6.3
Australia	394	8.3	600	7.9
Czech Republic	408	3.2	599	3.6
Malta	359*	2.9	597*	1.8
Serbia ^{3,4}	368*	3.8	597	5.4
Slovenia	409	3.3	594*	3.1
Scotland ²	381*	6.5	590*	4.7
Romania	328*	7.5	587*	4.3
Bulgaria	324*	9.4	586*	4.6
Israel ⁵	328*	8.3	584*	7.3
Sweden	399	4.1	582*	2.8
Turkey	297*	4.9	581*	7.7
Malaysia	372*	8.0	578*	5.9
Cyprus	347*	2.5	575*	5.1
Italy	381*	5.3	574*	6.3
Ukraine	346*	7.0	572*	4.6
Thailand	327*	4.7	562*	11.0
Jordan	290*	7.2	556*	3.9
Norway	382*	2.3	552*	2.3
Bosnia and Herzegovina	352*	3.6	552*	2.6
Lebanon	354*	5.8	549*	3.9
Georgia ³	280*	8.4	532*	10.1
Egypt	258*	4.4	521*	4.5
Iran, Islamic Rep. of	295*	4.7	516*	7.6
Indonesia	286*	8.7	509*	5.4
Tunisia	336*	2.7	508*	2.2
Bahrain	289*	5.3	505*	5.3
Syrian Arab Republic	290*	5.0	502*	6.2
Palestinian Nat'l Auth.	233*	6.4	498*	2.5
Oman	245*	6.5	492*	2.8
Colombia	281*	6.7	477*	3.6
Algeria	311*	3.2	465*	1.9
Botswana	264*	3.6	460*	3.8
Kuwait ⁶	252*	4.6	455*	2.6
El Salvador	248*	2.6	433*	3.2
Saudi Arabia	231*	4.3	429*	4.5
Ghana	192*	5.3	428*	5.5
Qatar	186*	3.1	427*	2.3

* $p < .05$. Percentile cutpoint score is significantly different from U.S. cutpoint score.

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

²Met guidelines for sample participation rates only after substitute schools were included (see appendix A).

³National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

⁴National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

⁵National Defined Population covered less than 90 percent of National Target Population (but at least 77 percent, see appendix A).

⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

NOTE: Countries are ordered based on the 90th percentile cutpoint score. Cutpoints are calculated based on distribution of student scores within each country. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-8. Standard errors for mathematics scores of U.S. fourth- and eighth-grade students defining the 10th and 90th percentiles, by content domain: 2007

	10th percentile		90th percentile	
	Cutpoint score	<i>s.e.</i>	Cutpoint score	<i>s.e.</i>
Grade four				
Number	413	4.2	632	3.2
Geometric shapes and measures	428	4.2	615	3.7
Data display	464	3.2	621	3.0
Grade eight				
Number	406	3.7	615	4.9
Algebra	405	2.9	598	3.3
Geometry	388	2.7	572	3.6
Data and chance	418	3.9	643	3.8

NOTE: The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of the National Target Population (see appendix A). Standard error is noted by *s.e.*

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-9. Standard errors for trends in mathematics scores of U.S. fourth- and eighth-grade students defining the 10th and 90th percentiles: 1995, 1999, 2003, and 2007

	1995		1999		2003		2007	
	Cutpoint score	s.e.	Cutpoint score	s.e.	Cutpoint score	s.e.	Cutpoint score	s.e.
Grade four								
10th percentile	408*	3.3	—	†	417*	3.4	430	4.2
90th percentile	619	3.6	—	†	614*	2.8	625	3.1
Grade eight								
10th percentile	380*	6.5	387*	4.9	400	4.7	408	3.4
90th percentile	594*	5.1	611	5.6	608	4.5	607	3.3

— Not available.

† Not applicable.

* $p < .05$. Percentile cutpoint score is significantly different from 2007 cutpoint score.

NOTE: No fourth-grade assessment was conducted in 1999. In 2007, the United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of the National Target Population (see appendix A). Cutpoints are calculated based on distribution of U.S. student scores. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995, 1999, 2003, and 2007.

Table E-10. Standard errors for average mathematics scores of fourth-grade students, by sex and country: 2007

Country	Total				Male-female difference	
	Male		Female		Score difference	
	Average score	s.e.	Average score	s.e.	difference	s.e.
Colombia	364*	5.5	347	5.2	17	3.9
Italy	514*	3.6	499	3.2	15	2.5
Austria	512*	2.3	498	2.5	14	2.6
Germany	531*	2.5	519	2.5	12	2.1
Netherlands ¹	540*	2.4	530	2.7	10	2.7
El Salvador	334	5.5	325	4.6	9	5.8
Scotland ²	499*	2.8	490	2.6	9	3.1
Norway	477*	3.0	470	3.2	7	3.6
Denmark ²	526	3.2	520	2.9	7	3.7
Slovak Republic	499*	4.7	493	4.6	6	2.7
Sweden	506*	3.1	499	2.4	6	2.4
Czech Republic	489*	3.0	483	3.3	6	2.8
United States ^{2,3}	532*	2.7	526	2.7	6	2.4
Australia	519	3.6	513	4.2	6	3.4
Slovenia	504*	2.1	499	2.4	5	2.6
Hong Kong SAR ⁴	609	4.4	605	3.2	4	2.9
Hungary	511	3.8	508	4.6	3	4.7
Morocco	343	5.4	339	5.0	3	4.6
Chinese Taipei	577	2.0	575	2.0	2	2.1
New Zealand	493	3.1	492	2.4	1	3.0
Japan	568	2.7	568	2.5	#	3.1
England	542	3.6	541	3.2	#	3.7
Lithuania ⁵	530	3.2	530	2.8	#	3.6
Ukraine	469	3.4	469	3.3	#	3.4
Latvia ⁵	536	3.0	539	2.9	-3	3.7
Georgia ⁵	437	4.9	440	4.2	-3	3.7
Algeria	375	5.2	380	5.9	-5	3.8
Singapore	596	4.1	603*	3.8	-6	2.7
Russian Federation	540	4.9	548*	5.5	-7	3.6
Kazakhstan ⁵	545	7.9	553*	6.7	-8	3.7
Armenia	495	3.7	504*	5.7	-9	4.1
Iran, Islamic Rep. of	396	5.5	409	5.2	-14	7.0
Tunisia	319	5.0	337*	4.7	-18	4.1
Yemen	214	6.6	236*	8.0	-22	8.4
Qatar	285	2.1	307*	2.0	-22	3.6
Kuwait ⁶	297	6.2	333*	4.3	-37	7.6

Rounds to zero.

* $p < .05$. Average score is significantly higher than other sex's average score.¹Nearly satisfied guidelines for sample participation rates only after substitute schools were included (see appendix A).²Met guidelines for sample participation rates only after substitute schools were included (see appendix A).³National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).⁴Hong Kong is a Special Administrative Region (SAR) of the People's Republic of China.⁵National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

NOTE: Countries are ordered by male-female difference. Detail may not sum to totals because of rounding. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-11. Standard errors for average mathematics scores of eighth-grade students, by sex and country: 2007

Country	Total				Male-female difference	
	Male		Female		Score difference	
	Average score	s.e.	Average score	s.e.	difference	s.e.
Colombia	396*	4.1	364	4.2	32	4.3
Ghana	319*	4.4	297	5.0	22	3.6
Tunisia	431*	2.7	410	2.8	21	2.4
El Salvador	351*	3.6	331	3.8	21	4.9
Syrian Arab Republic	403*	5.1	387	4.3	16	5.6
Australia	504*	5.4	488	5.5	15	7.7
Lebanon	456*	4.7	443	4.1	13	3.6
Italy	483	3.5	477	3.3	6	3.2
England ¹	516	6.1	511	5.0	6	5.7
Algeria	389*	2.2	384	2.4	5	1.8
Japan	572	3.2	568	3.2	4	4.3
Korea, Rep. of	599	3.1	595	3.3	4	3.4
United States ^{1,2}	510	3.1	507	3.0	4	2.2
Scotland ¹	489	4.4	486	3.8	3	3.5
Slovenia	503	2.6	500	2.7	2	3.2
Hungary	517	3.7	517	4.1	1	3.6
Malta	488	1.7	488	1.5	#	2.2
Turkey	432	5.0	432	5.3	-1	3.9
Chinese Taipei	598	5.3	599	4.6	-1	4.2
Bosnia and Herzegovina	455	2.8	456	3.1	-1	2.5
Czech Republic	503	2.8	505	2.5	-2	2.4
Israel ³	462	4.9	465	4.6	-3	5.4
Sweden	490	2.5	493	2.6	-4	2.5
Norway	467	2.6	471	2.1	-4	2.5
Indonesia	395	4.4	399	4.1	-4	4.0
Armenia	497	3.5	501	4.4	-4	3.7
Georgia ⁴	408	6.7	412	5.9	-4	4.3
Russian Federation	509	4.7	514	4.3	-5	3.8
Ukraine	459	3.9	465	3.9	-5	2.9
Serbia ^{2,4}	483	4.0	489	3.6	-6	3.9
Lithuania ⁴	502	2.3	509*	3.0	-7	2.6
Iran, Islamic Rep. of	400	6.1	407	5.3	-7	8.1
Malaysia	468	5.3	479*	5.6	-11	4.4
Hong Kong SAR ^{1,5}	567	8.0	578	5.0	-11	6.7
Egypt	384	4.6	397*	5.0	-13	6.4
Bulgaria	456	6.3	471*	4.6	-15	5.0
Singapore	586	4.6	600*	4.1	-15	4.4
Botswana	355	3.2	371*	2.4	-15	3.3
Romania	452	4.6	470*	4.2	-18	3.3
Cyprus	455	2.4	476*	2.2	-20	3.2
Jordan	417	5.6	438*	6.4	-20	8.8
Kuwait ⁶	342	4.0	364*	2.7	-22	4.8
Saudi Arabia	319	4.0	341*	3.6	-23	5.0
Thailand	430	5.5	453*	5.3	-23	4.7
Bahrain	382	2.6	414*	2.2	-32	3.6
Palestinian Nat'l Auth.	349	5.4	385*	4.2	-36	6.5
Qatar	288	2.0	325*	2.1	-38	2.9
Oman	344	5.0	399*	3.6	-54	5.6

Rounds to zero.

*p < .05. Average score is significantly higher than other sex's average score.

¹Met guidelines for sample participation rates only after substitute schools were included (see appendix A).

²National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

³National Defined Population covered less than 90 percent of National Target Population (but at least 77 percent, see appendix A)

⁴National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

⁵Hong Kong is a Special Administrative Region (SAR) of the People's Republic of China.

⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

NOTE: Countries are ordered by male-female difference. Detail may not sum to totals because of rounding. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-12. Standard errors for average mathematics and content domain scores of U.S. fourth- and eighth-grade students, by sex: 2007

Grade/content domain	Male		Female	
	Average score	s.e.	Average score	s.e.
Grade four				
Total score	532*	2.7	526	2.7
Number	528*	3.1	520	2.8
Geometric shapes and measures	523	2.7	522	2.6
Data display	544	2.9	543	2.6
Grade eight				
Total score	510	3.1	507	3.0
Number	515*	3.1	506	3.1
Algebra	498	3.2	503	2.9
Geometry	483*	2.8	477	2.7
Data and chance	535*	3.0	527	3.1

* $p < .05$. Average score is significantly higher than other sex's average score.

NOTE: The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of the National Target Population (see appendix A). Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-13. Standard errors for trends in average mathematics scores of U.S. fourth- and eighth-grade students, by sex: 1995, 1999, 2003, and 2007

Grade/sex	1995		1999		2003		2007	
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.
Grade four								
Male	520*	3.1	—	†	522*	2.7	532	2.7
Female	516*	3.0	—	†	514*	2.4	526	2.7
Gap (male-female)	3	1.8	—	†	8	1.8	6	2.4
Grade eight								
Male	495*	5.5	505	4.8	507	3.5	510	3.1
Female	490*	4.7	498	3.8	502	3.4	507	3.0
Gap (male-female)	5	3.1	7	3.5	6	1.9	4	2.2

— Not available.

† Not applicable.

* $p < .05$. Average score is significantly different from 2007 average score.

NOTE: No fourth-grade assessment was conducted in 1999. In 2007, the United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of the National Target Population (see appendix A). Detail may not sum to totals because of rounding. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995, 1999, 2003, and 2007.

Table E-14. Standard errors for average mathematics scores of U.S. fourth- and eighth-grade students, by race/ethnicity: 2007

Race/ethnicity	Grade four		Grade eight	
	Average score	s.e.	Average score	s.e.
White students	550	2.3	533	2.7
Black students	482	4.1	457	3.7
Hispanic students	504	3.4	475	4.6
Asian students	582	7.7	549	5.4
Multiracial students	534	6.5	506	6.8
Other students	504	10.4	498	8.8

NOTE: Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American. Racial categories exclude Hispanic origin. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities are not shown separately because the reporting standards were not met, they are included in the U.S. totals shown throughout the report. The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of the National Target Population (see appendix A). Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-15. Standard errors for trends in average mathematics scores of U.S. fourth- and eighth-grade students, by race/ethnicity: 1995, 1999, 2003, and 2007

Race/ethnicity	Grade four						Grade eight							
	1995		2003		2007		1995		1999		2003		2007	
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.
White students	541*	3.5	542*	2.2	550	2.3	516*	3.5	525	4.6	525	3.0	533	2.7
Black students	457*	4.4	471*	3.4	482	4.1	419*	6.8	444*	5.3	447	5.2	457	3.7
Hispanic students	493	5.7	492*	3.6	504	3.4	443*	3.8	457*	6.3	465	5.4	475	4.6
Asian students	525*	9.0	550*	8.0	582	7.7	514*	12.9	539	10.5	537	8.4	549	5.4
Multiracial students	—	†	535	4.9	534	6.5	—	†	—	†	504	5.4	506	6.8
Other students	510	4.3	479	8.5	504	10.4	471	17.9	490	7.7	473	8.8	498	8.8

— Not available.

† Not applicable.

* $p < .05$. Average score is significantly different from 2007 average score.

NOTE: No fourth-grade assessment was conducted in 1999. Multiracial data were not collected in 1995 and 1999. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American. Racial categories exclude Hispanic origin. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities are not shown separately because the reporting standards were not met, they are included in the U.S. totals shown throughout the report. In 2007, the United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of the National Target Population (see appendix A). The tests for significance take into account the standard error for the reported difference. Thus, a small difference between averages for one student group may be significant while a large difference for another student group may not be significant. See appendix A in this report for more information. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995, 1999, 2003, and 2007.

Table E-16. Standard errors for average mathematics scores of U.S. fourth- and eighth-grade students, by percentage of students in public school eligible for free or reduced-price lunch: 2007

Percentage in school eligible for free or reduced-price lunch	Grade four		Grade eight	
	Average score	<i>s.e.</i>	Average score	<i>s.e.</i>
Less than 10 percent	583	4.7	557	6.4
10 to 24.9 percent	553	3.7	543	4.7
25 to 49.9 percent	537	4.0	514	4.9
50 to 74.9 percent	510	4.1	482	5.1
75 percent or more	479	4.6	465	6.1

NOTE: Analyses are limited to public schools only, based on school reports of the percentage of students in school eligible for the federal free or reduced-price lunch program. The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of the National Target Population (see appendix A). Standard error is noted by *s.e.*

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-17. Standard errors for trends in average mathematics scores of U.S. fourth- and eighth-grade students, by percentage of students in public school eligible for free or reduced-price lunch: 1999, 2003, and 2007

Percentage in school eligible for free or reduced-price lunch	Grade four				Grade eight					
	2003		2007		1999		2003		2007	
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.
Less than 10 percent	566*	5.0	583	4.7	546	11.0	547	7.3	557	6.4
10 to 24.9 percent	543*	3.6	553	3.7	533	3.4	531	7.4	543	4.7
25 to 49.9 percent	533	4.0	537	4.0	495*	7.5	505	5.2	514	4.9
50 to 74.9 percent	499*	3.0	510	4.1	476	6.6	480	5.1	482	5.1
75 percent or more	471	4.2	479	4.6	449	10.8	444	10.4	465	6.1

* $p < .05$. Average score is significantly different from 2007 average score.

NOTE: Information on the percentage of students in school eligible for free or reduced-price lunch was not collected in 1995. No fourth-grade assessment was conducted in 1999. Analyses are limited to public schools only, based on school reports of the percentage of students in school eligible for the federal free or reduced-price lunch program. In 2007, the United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of the National Target Population (see appendix A). Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1999, 2003, and 2007.

Table E-18. Standard deviations of mathematics scores of fourth- and eighth-grade students, by country: 2007

Grade four		Grade eight	
Country	Standard deviation	Country	Standard deviation
Hong Kong SAR ¹	67	Chinese Taipei	106
Singapore	84	Korea, Rep. of	92
Chinese Taipei	69	Singapore	93
Japan	76	Hong Kong SAR ^{1,4}	94
Kazakhstan ²	84	Japan	85
Russian Federation	83	Hungary	85
England	86	England ⁴	84
Latvia ²	72	Russian Federation	83
Netherlands ³	61	United States ^{4,5}	77
Lithuania ²	76	Lithuania ²	80
United States ^{4,5}	75	Czech Republic	74
Germany	68	Slovenia	72
Denmark ⁴	71	Armenia	85
Australia	83	Australia	79
Hungary	91	Sweden	70
Italy	77	Malta	92
Austria	68	Scotland ⁴	80
Sweden	66	Serbia ^{2,5}	89
Slovenia	71	Italy	76
Armenia	90	Malaysia	79
Slovak Republic	85	Norway	66
Scotland ⁴	79	Cyprus	89
New Zealand	86	Bulgaria	102
Czech Republic	71	Israel ⁷	99
Norway	76	Ukraine	89
Ukraine	84	Romania	100
Georgia ²	88	Bosnia and Herzegovina	78
Iran, Islamic Rep. of	84	Lebanon	75
Algeria	90	Thailand	92
Colombia	90	Turkey	109
Morocco	95	Jordan	102
El Salvador	91	Tunisia	67
Tunisia	111	Georgia ²	96
Kuwait ⁶	99	Iran, Islamic Rep. of	86
Qatar	90	Bahrain	84
Yemen	110	Indonesia	87
		Syrian Arab Republic	82
		Egypt	100
		Algeria	59
		Colombia	79
		Oman	95
		Palestinian Nat'l Auth.	102
		Botswana	77
		Kuwait ⁶	79
		El Salvador	73
		Saudi Arabia	76
		Ghana	92
		Qatar	93

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

²National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

³Nearly satisfied guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁴Met guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁵National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

⁷National Defined Population covered less than 90 percent of National Target Population (but at least 77 percent, see appendix A).

NOTE: Countries are ordered by 2007 average score.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-19. Standard deviations of mathematics scores of U.S. fourth- and eighth-grade students, by selected characteristics: 2007

Selected characteristic	Grade four	Grade eight
	Standard deviation	Standard deviation
Sex		
Male	77	78
Female	74	75
Race/ethnicity		
White	68	69
Black	70	70
Hispanic	70	73
Asian	74	68
Multiracial	84	73
Percentage of students eligible for free or reduced-price lunch		
Less than 10 percent	64	65
10 to 24.9 percent	66	68
25 to 49.9 percent	69	71
50 to 74.9 percent	71	71
75 percent or more	72	74

NOTE: Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American. Racial categories exclude Hispanic origin. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities are not shown separately because the reporting standards were not met, they are included in the U.S. totals shown throughout the report. Analyses based on percentage of students eligible for free or reduced-price lunch are limited to public schools only. The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of the National Target Population (see appendix A).
SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-20. Standard errors for average science scores of fourth-grade students, by country: 1995 and 2007

Country	1995		2007	
	Average score	s.e.	Average score	s.e.
TIMSS average	500	0.0	500	0.0
Singapore	523	4.8	587	4.1
Chinese Taipei	—	†	557	2.0
Hong Kong SAR ¹	508	3.3	554	3.5
Japan	553	1.8	548	2.1
Russian Federation	—	†	546	4.8
Latvia ²	486	4.9	542	2.3
England	528	3.1	542	2.9
United States ^{3,4}	542	3.3	539	2.7
Hungary	508	3.4	536	3.3
Italy	—	†	535	3.2
Kazakhstan ²	—	†	533	5.6
Germany	—	†	528	2.4
Australia	521	3.8	527	3.3
Slovak Republic	—	†	526	4.8
Austria	538	3.6	526	2.5
Sweden	—	†	525	2.9
Netherlands ⁵	530	3.2	523	2.6
Slovenia	464	3.1	518	1.9
Denmark ³	—	†	517	2.9
Czech Republic	532	3.0	515	3.1
Lithuania ²	—	†	514	2.4
New Zealand	505	5.3	504	2.6
Scotland	514	4.5	500	2.3
Armenia	—	†	484	5.7
Norway	504	3.7	477	3.5
Ukraine	—	†	474	3.1
Iran, Islamic Rep. of	380	4.6	436	4.3
Georgia ²	—	†	418	4.6
Colombia	—	†	400	5.4
El Salvador	—	†	390	3.4
Algeria	—	†	354	6.0
Kuwait ⁶	—	†	348	4.4
Tunisia	—	†	318	5.9
Morocco	—	†	297	5.9
Qatar	—	†	294	2.6
Yemen	—	†	197	7.2

— Not available.

† Not applicable.

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

²In 2007, National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

³In 2007, met guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁴In 2007, National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

⁵In 2007, nearly satisfied guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁶In 2007, Kuwait tested the same cohort of students as other countries, but later in the year, at the beginning of the next school year.

NOTE: Countries are ordered by 2007 average score. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995 and 2007.

Table E-21. Standard errors for average science scores of eighth-grade students, by country: 1995 and 2007

Country	1995		2007	
	Average score	s.e.	Average score	s.e.
TIMSS average	500	0.0	500	0.0
Singapore	580	5.5	567	4.4
Chinese Taipei	—	†	561	3.7
Japan	554	1.8	554	1.9
Korea, Rep. of	546	2.0	553	2.0
England ¹	533	3.6	542	4.5
Hungary	537	3.1	539	2.9
Czech Republic	555	4.5	539	1.9
Slovenia	514	2.7	538	2.2
Hong Kong SAR ^{1,2}	510	5.8	530	4.9
Russian Federation	523	4.5	530	3.9
United States ^{1,3}	513	5.6	520	2.9
Lithuania ⁴	464	4.0	519	2.6
Australia	514	3.9	515	3.6
Sweden	553	4.4	511	2.6
Scotland ¹	501	5.6	496	3.4
Italy	—	†	495	2.8
Armenia	—	†	488	5.8
Norway	514	2.4	487	2.2
Ukraine	—	†	485	3.5
Jordan	—	†	482	4.0
Malaysia	—	†	471	6.0
Thailand	—	†	471	4.3
Serbia ^{3,4}	—	†	470	3.2
Bulgaria ⁵	—	†	470	5.9
Israel ⁵	—	†	468	4.3
Bahrain	—	†	467	1.7
Bosnia and Herzegovina	—	†	466	2.8
Romania	471	5.1	462	3.9
Iran, Islamic Rep. of	463	3.6	459	3.6
Malta	—	†	457	1.4
Turkey	—	†	454	3.7
Syrian Arab Republic	—	†	452	2.9
Cyprus	452	2.1	452	2.0
Tunisia	—	†	445	2.1
Indonesia	—	†	427	3.4
Oman	—	†	423	3.0
Georgia ⁴	—	†	421	4.8
Kuwait ⁶	—	†	418	2.8
Colombia	365	6.2	417	3.5
Lebanon	—	†	414	5.9
Egypt	—	†	408	3.6
Algeria	—	†	408	1.7
Palestinian Nat'l Auth.	—	†	404	3.5
Saudi Arabia	—	†	403	2.4
El Salvador	—	†	387	2.9
Botswana	—	†	355	3.1
Qatar	—	†	319	1.7
Ghana	—	†	303	5.4

— Not available.

† Not applicable.

¹In 2007, met guidelines for sample participation rates only after substitute schools were included (see appendix A).

²Hong Kong is a Special Administrative Region (SAR) of the People's Republic of China.

³In 2007, National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

⁴In 2007, National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

⁵In 2007, National Defined Population covered less than 90 percent of National Target Population (but at least 77 percent, see appendix A).

⁶In 2007, Kuwait tested the same cohort of students as other countries, but later in the year, at the beginning of the next school year.

NOTE: Countries are ordered by 2007 average score. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995 and 2007.

Table E-22. Standard errors for average science content and cognitive domain scores of fourth-grade students, by country: 2007

Country	Content domain						Cognitive domain					
	Life science		Physical science		Earth science		Knowing		Applying		Reasoning	
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.
TIMSS average	500*	0.0	500*	0.0	500*	0.0	500*	0.0	500*	0.0	500*	0.0
Singapore	582*	4.1	585*	3.9	554*	3.3	579*	3.7	587*	4.1	568*	3.7
Chinese Taipei	541	2.1	559*	2.5	553*	1.9	556*	2.1	536	2.5	571*	2.4
Hong Kong SAR ¹	532	3.5	558*	3.5	560*	3.2	549*	3.0	546	3.2	561*	4.4
Japan	530*	2.0	564*	2.3	529	2.7	542*	2.7	528*	2.2	567*	2.1
Russian Federation	539	4.1	547*	4.6	536	4.3	546*	4.7	542	4.8	542	4.6
Latvia ²	535	2.1	544*	2.4	536	2.2	535	2.4	540	2.2	551*	2.7
England	532*	2.7	543*	2.7	538	2.9	536	2.7	543	2.9	537	2.7
United States ^{3,4}	540	2.5	534	2.4	533	2.6	533	2.8	541	2.3	535	2.6
Hungary	548*	2.9	529	3.3	517*	3.5	531	3.2	540	3.0	529	3.7
Italy	549*	3.0	521*	3.1	526	3.0	539	3.1	530*	3.9	526*	3.8
Kazakhstan ²	528*	5.0	528	5.8	534	5.2	536	4.9	534	5.8	519*	5.3
Germany	529*	2.0	524*	2.5	524*	2.4	526	2.2	527*	2.2	525*	2.3
Australia	528*	3.4	522*	3.1	534	3.2	523*	3.3	529*	3.1	530	3.4
Slovak Republic	532	4.0	513*	4.6	530	4.8	527	4.4	527*	4.4	513*	4.9
Austria	526*	2.0	514*	2.4	532	1.9	526*	2.2	529*	2.0	513*	2.3
Sweden	531*	2.5	508*	2.7	535	2.7	521*	2.9	526*	2.5	527	3.5
Netherlands ⁵	536	2.2	503*	2.3	524*	2.5	525*	2.2	518*	2.5	525*	2.3
Slovenia	511*	2.2	530	1.6	517*	2.5	525*	2.1	511*	1.6	527*	1.8
Denmark ³	527*	2.4	502*	2.5	522*	2.7	515*	2.6	516*	2.9	525*	3.8
Czech Republic	520*	2.9	511*	2.8	518*	2.6	516*	3.1	520*	2.7	510*	2.9
Lithuania ²	516*	1.8	514*	1.4	511*	2.5	515*	2.8	511*	1.7	524*	2.4
New Zealand	507*	2.5	498*	2.5	515*	2.6	500*	2.4	511*	2.5	505*	2.9
Scotland ³	504*	2.2	499*	1.9	508*	2.5	494*	2.4	511*	2.0	501*	2.2
Armenia	489*	5.9	492*	5.1	479*	5.5	487*	5.6	486*	5.2	484*	5.3
Norway	487*	2.5	469*	2.7	497*	2.9	478*	2.8	485*	2.4	480*	3.2
Ukraine	482*	2.5	475*	2.7	474*	3.1	477*	3.2	476*	2.4	478*	3.0
Iran, Islamic Rep. of	442*	4.4	454*	4.2	433*	4.1	451*	4.3	437*	4.3	436*	4.4
Georgia ²	427*	3.5	414*	4.0	432*	5.0	424*	4.1	434*	3.8	388*	4.9
Colombia	408*	5.2	411*	4.9	401*	5.6	404*	5.4	409*	5.5	409*	5.1
El Salvador	410*	3.6	392*	3.8	393*	3.3	393*	3.6	410*	3.9	376*	4.0
Algeria	351*	6.2	377*	5.3	365*	5.7	379*	5.7	350*	5.8	357*	5.8
Kuwait ⁶	353*	4.9	345*	5.2	363*	3.8	338*	4.3	360*	3.9	331*	5.4
Tunisia	323*	5.6	340*	6.4	325*	5.8	329*	6.3	316*	5.9	349*	5.3
Morocco	292*	6.8	324*	5.5	293*	6.2	311*	6.3	291*	5.8	318*	5.4
Qatar	291*	1.4	303*	2.1	305*	2.2	283*	2.7	304*	2.3	293*	2.9
Yemen	—	†	—	†	—	†	—	†	—	†	—	†

— Not available. Average achievement could not be estimated.

† Not applicable.

* $p < .05$. Average score is significantly different from U.S. average score.

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

²National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

³Met guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁴National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

⁵Nearly satisfied guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

NOTE: Countries are ordered by 2007 overall science average scale score. The tests for significance take into account the standard error for the reported difference. Thus, a small difference between the United States and one country may be significant while a large difference between the United States and another country may not be significant. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-24. Standard errors for percentage of U.S. fourth- and eighth-grade students who reached each international science benchmark compared with the international median percentage, by international benchmark: 2007

	Low		Intermediate		High		Advanced	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
Grade four								
TIMSS international median	93	0.0	74	0.0	34	0.0	7	0.0
United States	94	0.6	78*	1.1	47*	1.4	15*	0.9
Grade eight								
TIMSS international median	78	0.0	49	0.0	17	0.0	3	0.0
United States	92*	0.7	71*	1.3	38*	1.4	10*	0.7

* $p < .05$. U.S. percentage is significantly different from the Trends in International Mathematics and Science (TIMSS) international median percentage.

NOTE: The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A). The TIMSS international median represents all participating TIMSS jurisdictions, including the United States. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-25. Standard errors for science scores of fourth-grade students defining 10th and 90th percentiles, by country: 2007

Country	10th percentile		90th percentile	
	Cutpoint score	s.e.	Cutpoint score	s.e.
TIMSS average	359*	1.1	586*	0.9
Singapore	464*	7.0	701*	5.0
Chinese Taipei	457*	3.0	653*	2.2
Russian Federation	443*	4.9	646	4.9
United States ^{1,2}	427	4.3	643	2.8
England	438	3.7	641	4.8
Armenia	336*	8.6	640	15.2
Hungary	425	6.1	637	6.3
Hong Kong SAR ³	466*	4.5	637	4.1
Italy	429	6.3	636	3.8
Japan	459*	3.4	633*	3.4
Slovak Republic	416	8.3	627*	4.0
Australia	423	3.7	626*	1.4
Latvia ⁴	454*	4.5	625*	3.3
Kazakhstan ⁴	433	9.2	623*	3.8
Germany	427	4.3	623*	4.2
Austria	423	4.8	620*	4.1
Sweden	429	4.0	617*	2.4
New Zealand	382*	4.7	614*	3.1
Denmark ¹	417	9.9	610*	1.6
Slovenia	416*	1.7	610*	2.7
Czech Republic	416*	3.5	610*	5.1
Netherlands ⁵	445*	3.6	598*	4.1
Lithuania ⁴	428	3.3	595*	2.2
Scotland ¹	400*	3.7	593*	4.1
Ukraine	364*	5.1	576*	4.2
Norway	374*	7.7	570*	3.4
Iran, Islamic Rep. of	304*	5.5	558*	3.4
Georgia ⁴	306*	7.3	524*	5.2
Colombia	271*	7.9	522*	4.9
El Salvador	267*	6.2	507*	3.4
Kuwait ⁶	182*	8.0	505*	5.9
Tunisia	119*	14.0	497*	4.6
Algeria	220*	10.0	483*	6.8
Morocco	139*	7.5	465*	9.4
Qatar	121*	3.8	464*	2.0
Yemen	20*	8.3	379*	8.6

* $p < .05$. Percentile cutpoint score is significantly different from U.S. cutpoint score.

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

²National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

³Met guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁴National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

⁵Nearly satisfied guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

NOTE: Countries are ordered based on the 90th percentile cutpoint scores. Cutpoints are calculated based on distribution of student scores within each country. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-26. Standard errors for science scores of eighth-grade students defining 10th and 90th percentiles, by country: 2007

Country	10th percentile		90th percentile	
	Cutpoint score	s.e.	Cutpoint score	s.e.
TIMSS average	352*	0.9	573*	0.6
Singapore	421	7.9	694*	3.0
Chinese Taipei	439*	6.4	665*	3.3
England ¹	427*	6.9	649*	4.9
Japan	454*	4.3	648*	3.1
Korea, Rep. of	452*	4.2	646*	2.1
Hungary	437*	5.2	635*	3.5
Czech Republic	447*	2.3	630	3.4
Slovenia	442*	3.2	628	3.3
Russian Federation	427*	6.6	627	5.1
Hong Kong SAR ^{1,2}	419	11.2	625	4.4
United States ^{1,3}	410	3.5	623	2.6
Australia	410	6.0	617	6.2
Lithuania ⁴	414	6.8	616	3.9
Armenia	366*	7.0	612	13.7
Sweden	405	4.1	608*	2.6
Jordan	349*	5.3	601*	5.0
Scotland ¹	388*	5.4	597*	5.1
Bulgaria ⁵	330*	16.9	595*	6.8
Malta	298*	2.9	595*	2.3
Israel ⁵	329*	6.0	591*	4.3
Italy	393*	5.3	590*	3.4
Ukraine	374*	7.3	588*	3.3
Malaysia	357*	9.9	581*	7.6
Norway	389*	5.6	578*	1.7
Thailand	363*	5.7	578*	5.6
Turkey	336*	4.3	577*	4.0
Bahrain	351*	3.8	575*	2.4
Romania	345*	6.3	572*	4.5
Serbia ^{3,4}	359*	6.6	571*	2.5
Iran, Islamic Rep. of	355*	4.0	566*	5.2
Bosnia and Herzegovina	359*	5.5	565*	3.8
Cyprus	339*	3.7	556*	3.1
Syrian Arab Republic	355*	5.1	546*	3.0
Palestinian Nat'l Auth.	255*	8.1	543*	4.4
Oman	293*	5.3	541*	3.3
Lebanon	284*	7.2	539*	5.7
Egypt	275*	5.6	537*	4.3
Kuwait ⁶	298*	4.8	530*	3.2
Georgia ⁴	309*	7.3	527*	4.4
Tunisia	367*	2.2	524*	2.3
Indonesia	330*	4.8	520*	3.9
Colombia	319*	4.7	514*	3.9
Saudi Arabia	300*	5.6	503*	3.4
Algeria	327*	2.6	488*	1.5
Qatar	146*	4.5	480*	2.3
Botswana	220*	4.9	478*	3.0
El Salvador	298*	4.9	477*	3.4
Ghana	163*	8.0	445*	8.6

* $p < .05$. Percentile cutpoint score is significantly different from U.S. cutpoint score.

¹Met guidelines for sample participation rates only after substitute schools were included (see appendix A).

²Hong Kong is a Special Administrative Region (SAR) of the People's Republic of China.

³National Defined Population covers 90 percent to 95 percent of National Target Population (see appendix A).

⁴National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

⁵National Defined Population covered less than 90 percent of National Target Population (but at least 77 percent, see appendix A).

⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

NOTE: Countries are ordered based on the 90th percentile cutpoint scores. Cutpoints are calculated based on distribution of student scores within each country. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-27. Standard errors for science scores of U.S. fourth- and eighth-grade students defining the 10th and 90th percentiles, by content domain: 2007

	10th percentile		90th percentile	
	Cutpoint score	<i>s.e.</i>	Cutpoint score	<i>s.e.</i>
Grade four				
Life science	433	4.6	641	3.8
Physical science	433	4.1	630	3.1
Earth science	433	4.5	630	3.5
Grade eight				
Biology	421	3.8	633	3.5
Chemistry	410	3.8	607	3.1
Physics	399	4.4	603	3.4
Earth science	410	5.0	634	3.5

NOTE: The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A). Standard error is noted by *s.e.*

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-28. Standard errors for trends in science scores of U.S. fourth- and eighth-grade students defining the 10th and 90th percentiles: 1995, 1999, 2003, and 2007

	1995		1999		2003		2007	
	Cutpoint score	s.e.	Cutpoint score	s.e.	Cutpoint score	s.e.	Cutpoint score	s.e.
Grade four								
10th percentile	419	5.3	—	†	426	3.4	427	4.3
90th percentile	654*	4.0	—	†	636	3.1	643	2.8
Grade eight								
10th percentile	384*	9.8	386*	6.9	419	5.2	410	3.5
90th percentile	628	4.3	636*	4.7	628	3.5	623	2.6

— Not available.

† Not applicable.

* $p < .05$. Cutpoint score is significantly different from 2007 cutpoint score.

NOTE: No fourth-grade assessment was conducted in 1999. In 2007, the United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A). Cutpoints are calculated based on distribution of U.S. student scores. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995, 1999, 2003, and 2007.

Table E-29. Standard errors for average science scores of fourth-grade students, by sex and country: 2007

Country	Total				Male-female difference	
	Male		Female		Score difference	s.e.
	Average score	s.e.	Average score	s.e.		
Colombia	408*	6.0	393	5.5	15	3.7
Germany	535*	2.9	520	2.6	15	2.7
Austria	532*	2.9	519	2.7	13	2.6
El Salvador	396*	4.6	383	4.5	13	6.1
Italy	541*	3.7	529	3.2	13	2.6
Netherlands ¹	528*	2.8	518	3.0	11	2.5
Slovak Republic	530*	4.8	521	5.2	8	2.9
Czech Republic	518*	3.4	511	3.7	7	3.3
Denmark ²	520	3.6	514	3.2	6	3.9
Australia	530	3.5	525	4.0	5	3.5
United States ³	541	3.1	536	3.0	5	2.7
Hong Kong SAR ⁴	556	4.3	553	3.6	3	3.7
Hungary	538	3.6	535	4.4	3	4.5
Norway	478	4.2	475	3.8	2	3.9
Chinese Taipei	558	2.4	556	2.3	2	2.5
Scotland ²	501	2.4	500	3.0	2	3.0
Singapore	587	4.4	587	4.4	#	3.0
Slovenia	518	2.4	518	2.4	#	2.8
Japan	547	2.4	548	2.5	-1	2.6
Kazakhstan ⁵	532	6.3	533	5.5	-1	3.6
Sweden	524	3.7	526	2.7	-2	2.9
Ukraine	473	3.5	475	3.4	-2	3.1
England	540	3.4	543	3.1	-3	3.0
Russian Federation	544	5.0	548	5.1	-4	3.2
Lithuania ⁵	512	2.9	516	2.7	-4	3.0
New Zealand	502	3.5	506	2.8	-4	3.5
Latvia ⁵	539	3.0	545	2.8	-6	3.6
Morocco	292	6.8	302	6.4	-10	6.1
Algeria	349	6.0	359*	6.5	-10	3.2
Georgia ⁵	413	5.1	423*	4.7	-10	3.6
Iran, Islamic Rep. of	429	6.0	443	5.6	-14	7.9
Armenia	476	5.2	493*	7.3	-17	5.3
Yemen	188	8.1	209	9.9	-21	10.8
Qatar	281	2.8	307*	2.9	-26	2.7
Tunisia	304	6.2	335*	6.4	-31	4.8
Kuwait ⁶	315	7.3	379*	4.6	-64	8.6

Rounds to zero.

* $p < .05$. Average score is significantly higher than other sex's average score.

¹Nearly satisfied guidelines for sample participation rates only after substitute schools were included (see appendix A).

²Met guidelines for sample participation rates only after substitute schools were included (see appendix A).

³National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

⁴Hong Kong is a Special Administrative Region (SAR) of the People's Republic of China.

⁵National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

NOTE: Countries are ordered by male-female difference. Detail may not sum to totals because of rounding. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-30. Standard errors for average science scores of eighth-grade students, by sex and country: 2007

Country	Total				Male-female difference	
	Male		Female		Score difference	
	Average score	s.e.	Average score	s.e.	difference	s.e.
Colombia	435*	3.7	400	4.4	35	4.5
Ghana	316*	5.6	288	5.9	29	4.2
El Salvador	399*	4.1	377	3.7	22	5.1
Tunisia	455*	2.6	436	2.3	19	2.4
Australia	524*	5.4	505	5.1	18	7.7
Hungary	545*	3.3	533	3.5	12	3.3
United States ^{1,2}	526*	3.2	514	3.0	12	2.3
Syrian Arab Republic	457*	4.2	448	3.3	9	4.7
Czech Republic	543*	2.4	534	2.2	9	2.7
England ¹	546	5.8	537	4.6	9	5.5
Italy	499*	3.1	491	3.3	8	3.1
Korea, Rep. of	557*	2.5	549	2.7	8	3.2
Lebanon	417	6.7	410	6.2	7	4.9
Russian Federation	533	4.2	527	4.3	6	3.4
Scotland ¹	498	4.2	493	3.5	5	3.7
Chinese Taipei	563	4.4	559	3.7	5	3.5
Japan	556	2.5	552	2.8	4	3.8
Bosnia and Herzegovina	467	2.9	464	3.4	3	2.8
Malta	458	2.2	456	1.8	2	2.9
Slovenia	539	2.7	536	2.6	2	3.0
Ukraine	486	3.6	484	3.9	2	3.0
Indonesia	428	3.6	426	3.8	2	3.2
Lithuania ³	519	2.7	518	3.2	1	2.9
Algeria	408	2.2	408	1.9	-1	2.3
Norway	486	3.0	487	2.4	-1	3.2
Sweden	510	2.8	512	3.0	-2	2.8
Serbia ^{1,3}	469	3.8	472	3.7	-3	4.0
Hong Kong SAR ⁴	528	6.6	533	4.5	-5	5.6
Turkey	452	4.0	457	4.0	-5	3.0
Singapore	563	5.2	571	4.7	-8	4.4
Armenia	484	5.2	492	7.1	-8	4.8
Romania	458	4.6	466*	4.1	-8	4.1
Israel ⁵	463	5.2	472	4.9	-9	5.2
Malaysia	466	6.7	475	6.4	-9	5.5
Bulgaria ⁵	464	6.8	477*	6.2	-12	5.9
Iran, Islamic Rep. of	453	5.4	466	4.6	-12	7.2
Cyprus	444	2.4	460*	2.8	-16	3.2
Egypt	400	4.6	417*	4.8	-17	6.3
Thailand	462	4.9	480*	4.5	-18	4.2
Botswana	343	3.6	365*	3.7	-22	4.1
Georgia ³	410	5.2	432*	4.8	-22	3.2
Jordan	466	5.5	499*	5.8	-34	8.2
Palestinian Nat'l Auth.	386	5.1	422*	4.5	-36	6.5
Saudi Arabia	383	3.9	426*	2.9	-43	4.6
Kuwait ⁶	391	4.2	441*	3.4	-49	5.1
Oman	391	4.6	452*	3.6	-61	5.9
Bahrain	437	2.6	499*	1.9	-62	3.0
Qatar	284	2.3	354*	2.3	-70	3.1

* $p < .05$. Average score is significantly higher than other sex's average score.

¹National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

²Met guidelines for sample participation rates only after substitute schools were included (see appendix A).

³National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

⁴Hong Kong is a Special Administrative Region (SAR) of the People's Republic of China.

⁵National Defined Population covered less than 90 percent of National Target Population (but at least 77 percent, see appendix A).

⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

NOTE: Countries are ordered by male-female difference. Detail may not sum to totals because of rounding. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-31. Standard errors for average science and content domain scores of U.S. fourth- and eighth-grade students, by sex: 2007

Grade/content domain	Male		Female	
	Average score	s.e.	Average score	s.e.
Grade four				
Total score	541	3.1	536	3.0
Life science	541	2.9	538	3.0
Physical science	536	2.7	532	2.5
Earth science	536*	2.7	531	2.9
Grade eight				
Total score	526*	3.2	514	3.0
Biology	533*	2.9	527	3.2
Chemistry	512	2.9	508	3.2
Physics	514*	3.1	491	3.2
Earth science	534*	3.7	516	3.5

* $p < .05$. Average score is significantly higher than other sex's average score.

NOTE: The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A). Standard error is noted as s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-32. Standard errors for trends in average science scores of U.S. fourth- and eighth-grade students, by sex: 1995, 1999, 2003, and 2007

Grade/sex	1995		1999		2003		2007	
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.
Grade four								
Male	548	3.4	—	†	538	2.8	541	3.1
Female	536	3.7	—	†	533	2.5	536	3.0
Gap (male-female)	12*	2.5	—	†	5	1.7	5	2.7
Grade eight								
Male	520	5.9	524	5.2	536*	3.4	526	3.2
Female	505	5.5	505	4.6	519	3.2	514	3.0
Gap (male-female)	14	3.0	19	4.1	16	2.1	12	2.3

— Not available.

† Not applicable.

* $p < .05$. Average score is significantly different from 2007 average score.

NOTE: No fourth-grade assessment was conducted in 1999. In 2007, the United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A). Detail may not sum to totals because of rounding. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995, 1999, 2003, and 2007.

Table E-33. Standard errors for average science scores of U.S. fourth- and eighth-grade students, by race/ethnicity: 2007

Race/ethnicity	Grade four		Grade eight	
	Average score	s.e.	Average score	s.e.
White students	567	2.5	551	2.5
Black students	488	3.5	455	3.5
Hispanic students	502	3.6	480	4.6
Asian students	573	7.7	543	6.7
Multiracial students	550	6.4	522	7.0
Other students	508	11.5	512	9.0

NOTE: Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American. Racial categories exclude Hispanic origin. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities are not shown separately because the reporting standards were not met, they are included in the U.S. totals shown throughout the report. The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A). Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-34. Standard errors for trends in average science scores of U.S. fourth- and eighth-grade students, by race/ethnicity: 1995, 1999, 2003, and 2007

Race/ethnicity	Grade four						Grade eight							
	1995		2003		2007		1995		1999		2003		2007	
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.
White students	572	3.0	565	2.2	567	2.5	544	3.3	547	4.0	552	2.6	551	2.5
Black students	462*	5.1	486	3.3	488	3.5	422*	8.3	438*	5.7	461	5.0	455	3.5
Hispanic students	503	5.3	498	3.6	502	3.6	446*	5.0	462*	7.4	482	5.3	480	4.6
Asian students	525*	8.9	543*	6.7	573	7.7	506*	12.6	527	9.3	536	7.5	543	6.7
Multiracial students	—	†	556	4.9	550	6.4	—	†	—	†	532	6.0	522	7.0
Other students	539*	6.3	507	8.9	508	11.5	491	22.2	499	11.3	486	10.5	512	9.0

— Not available.

† Not applicable.

* $p < .05$. Average score is significantly different from 2007 average score.

NOTE: No fourth-grade assessment was conducted in 1999. Multiracial data were not collected in 1995 and 1999. Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American. Racial categories exclude Hispanic origin. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities are not shown separately because the reporting standards were not met, they are included in the U.S. totals shown throughout the report. The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A). The tests for significance take into account the standard error for the reported difference. Thus, a small difference between averages for one student group may be significant while a large difference for another student group may not be significant. See appendix A in this report for more information. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995, 1999, 2003, and 2007.

Table E-35. Standard errors for average science scores of U.S. fourth- and eighth-grade students, by percentage of students in public school eligible for free or reduced-price lunch: 2007

Percentage in school eligible for free or reduced-price lunch	Grade four		Grade eight	
	Average score	<i>s.e.</i>	Average score	<i>s.e.</i>
Less than 10 percent	590	5.2	572	5.9
10 to 24.9 percent	567	3.4	559	4.0
25 to 49.9 percent	550	4.0	528	4.9
50 to 74.9 percent	520	4.7	495	5.5
75 percent or more	477	4.9	466	6.3

NOTE: Analyses are limited to public schools only, based on school reports of the percentage of students in school eligible for the federal free or reduced-price lunch program. The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A). Standard error is noted by *s.e.*

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-36. Standard errors for trends in average science scores of U.S. fourth- and eighth-grade students, by percentage of students in public school eligible for free or reduced-price lunch: 1999, 2003, and 2007

Percentage in school eligible for free or reduced-price lunch	Grade four				Grade eight					
	2003		2007		1999		2003		2007	
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.
Less than 10 percent	580	5.0	590	5.2	568	8.8	571	6.6	572	5.9
10 to 24.9 percent	567	4.0	567	3.4	556	5.0	554	6.8	559	4.0
25 to 49.9 percent	551	4.0	550	4.0	513	8.6	529	5.1	528	4.9
50 to 74.9 percent	519	4.2	520	4.7	484	7.2	504	5.3	495	5.5
75 percent or more	480	4.3	477	4.9	440*	9.8	461	10.2	466	6.3

* $p < .05$. Average score is significantly different from 2007 average score.

NOTE: Information on the percentage of students in school eligible for free or reduced-price lunch was not collected in 1995. No fourth-grade assessment was conducted in 1999. Analyses are limited to public schools only, based on school reports of the percentage of students in school eligible for the federal free or reduced-price lunch program. In 2007, the United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of the National Target Population (see appendix A). Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1999, 2003, and 2007.

Table E-37. Standard deviations of science scores of fourth- and eighth-grade students, by country: 2007

Grade four		Grade eight	
Country	Standard deviation	Country	Standard deviation
Singapore	93	Singapore	104
Chinese Taipei	77	Chinese Taipei	89
Hong Kong SAR ¹	68	Japan	77
Japan	70	Korea, Rep. of	76
Russian Federation	81	England ³	85
Latvia ²	67	Hungary	77
England	80	Czech Republic	71
United States ^{3,4}	84	Slovenia	72
Hungary	85	Hong Kong SAR ^{1,3}	81
Italy	81	Russian Federation	78
Kazakhstan ²	74	United States ^{3,4}	82
Germany	79	Lithuania ²	78
Australia	80	Australia	80
Slovak Republic	87	Sweden	78
Austria	77	Scotland ³	81
Sweden	74	Italy	78
Netherlands ⁵	60	Armenia	101
Slovenia	76	Norway	73
Denmark ³	77	Ukraine	84
Czech Republic	76	Jordan	98
Lithuania ²	65	Malaysia	88
New Zealand	90	Thailand	83
Scotland ³	76	Serbia ^{2,4}	85
Armenia	119	Bulgaria ⁷	103
Norway	77	Israel ⁷	101
Ukraine	83	Bahrain	86
Iran, Islamic Rep. of	97	Bosnia and Herzegovina	79
Georgia ²	85	Romania	88
Colombia	97	Iran, Islamic Rep. of	81
El Salvador	93	Malta	114
Algeria	102	Turkey	92
Kuwait ⁶	123	Syrian Arab Republic	75
Tunisia	141	Cyprus	85
Morocco	124	Tunisia	60
Qatar	129	Indonesia	74
Yemen	130	Oman	96
		Georgia ²	83
		Kuwait ⁶	89
		Colombia	77
		Lebanon	97
		Egypt	99
		Algeria	63
		Palestinian Nat'l Auth.	111
		Saudi Arabia	78
		El Salvador	70
		Botswana	99
		Qatar	126
		Ghana	108

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

²National Target Population did not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

³Met guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁴National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A).

⁵Nearly satisfied guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

⁷National Defined Population covered less than 90 percent of National Target Population (but at least 77 percent, see appendix A).

NOTE: Countries are ordered by 2007 average score.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-38. Standard deviations of science scores of U.S. fourth- and eighth-grade students, by selected characteristics: 2007

Selected characteristic	Grade four	Grade eight
	Standard deviation	Standard deviation
Sex		
Male	86	85
Female	82	79
Race/ethnicity		
White	73	70
Black	76	73
Hispanic	81	77
Asian	81	69
Multiracial	85	77
Percentage of students eligible for free or reduced-price lunch		
Less than 10 percent	67	68
10 to 24.9 percent	72	69
25 to 49.9 percent	76	77
50 to 74.9 percent	82	78
75 percent or more	81	79

NOTE: Reporting standards were not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American. Racial categories exclude Hispanic origin. Students who identified themselves as being of Hispanic origin were classified as Hispanic, regardless of their race. Although data for some race/ethnicities are not shown separately because the reporting standards were not met, they are included in the U.S. totals shown throughout the report. Analyses based on percentage of students eligible for free or reduced-price lunch are limited to public schools only. The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A). SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-39. Standard errors for average mathematics scores of U.S. fourth- and eighth-grade students and the TIMSS scale average: 1995, 1999, 2003, and 2007

	1995		1999		2003		2007	
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.
Grade four								
United States	518*	3.0	—	†	518*	2.4	529*	2.4
TIMSS scale average	500	0.0	—	†	500	0.0	500	0.0
Grade eight								
United States	492	4.7	502	4.0	504	3.3	508*	2.8
TIMSS scale average	500	0.0	500	0.0	500	0.0	500	0.0

—Not available.

† Not applicable.

* $p < .05$. Difference between U.S. average and Trends in International Mathematics and Science Study (TIMSS) scale average is statistically significant.

NOTE: No fourth-grade assessment was conducted in 1999. The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A). Difference calculated by subtracting the TIMSS scale average (500) from the U.S. average mathematics score. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995, 1999, 2003, and 2007.

Table E-40. Standard errors for average science scores of U.S. fourth- and eighth-grade students and the TIMSS scale average: 1995, 1999, 2003, and 2007

	1995		1999		2003		2007	
	Average score	s.e.	Average score	s.e.	Average score	s.e.	Average score	s.e.
Grade four								
United States	542*	3.3	—	†	536*	2.5	539*	2.7
TIMSS scale average	500	0.0	—	†	500	0.0	500	0.0
Grade eight								
United States	513*	5.6	515*	4.6	527*	3.1	520*	2.9
TIMSS scale average	500	0.0	500	0.0	500	0.0	500	0.0

— Not available.

† Not applicable.

* $p < .05$. Difference between U.S. average and Trends in International Mathematics and Science Study (TIMSS) scale average is statistically significant.

NOTE: No fourth-grade assessment was conducted in 1999. The United States met guidelines for sample participation rates only after substitute schools were included. The National Defined Population covered 90 percent to 95 percent of National Target Population (see appendix A). Difference calculated by subtracting the TIMSS scale average (500) from the U.S. average science score. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995, 1999, 2003, and 2007.

Table E-41. Standard errors for the percentage of fourth- and eighth-grade students who reached the TIMSS advanced international benchmark in mathematics, by country: 2007

Grade four			Grade eight		
Country	Percent	s.e.	Country	Percent	s.e.
International median	5	0.0	International median	2	0.0
Singapore	41	2.1	Chinese Taipei	45	1.9
Hong Kong SAR ¹	40	2.2	Korea, Rep. of	40	1.2
Chinese Taipei	24	1.2	Singapore	40	1.9
Japan	23	1.2	Hong Kong SAR ^{1,3}	31	2.1
Kazakhstan ²	19	2.1	Japan	26	1.3
England	16	1.2	Hungary	10	1.0
Russian Federation	16	1.8	England ³	8	1.5
Latvia ²	11	0.8	Russian Federation	8	0.9
United States ^{3,4}	10	0.8	Lithuania ²	6	0.7
Lithuania	10	0.7	United States ^{3,4}	6	0.6
Hungary	9	0.8	Australia	6	1.3
Australia	9	0.8	Armenia	6	0.9
Armenia	8	1.5	Czech Republic	6	0.7
Denmark ³	7	0.7	Turkey	5	0.6
Netherlands ⁵	7	0.7	Serbia ^{2,4}	5	0.8
Germany	6	0.5	Malta	5	0.4
Italy	6	0.7	Bulgaria	4	0.8
New Zealand	5	0.5	Slovenia	4	0.6
Slovak Republic	5	0.7	Israel ⁷	4	0.5
Scotland ³	4	0.5	Romania	4	0.6
Slovenia	3	0.4	Scotland ³	4	0.6
Austria	3	0.3	Thailand	3	0.8
Sweden	3	0.3	Ukraine	3	0.5
Ukraine	2	0.5	Italy	3	0.6
Czech Republic	2	0.4	Malaysia	2	0.5
Norway	2	0.3	Cyprus	2	0.3
Georgia ²	1	0.4	Sweden	2	0.3
Colombia	#	0.1	Jordan	1	0.2
Morocco	#	0.2	Bosnia and Herzegovina	1	0.2
Iran, Islamic Rep. of	#	0.1	Iran, Islamic Rep. of	1	0.2
Algeria	#	0.1	Lebanon	1	0.2
Tunisia	#	0.1	Georgia ²	1	0.3
El Salvador	#	#	Egypt	1	0.1
Kuwait ⁶	#	#	Indonesia	#	0.2
Qatar	#	#	Norway	#	0.1
Yemen	#	#	Palestinian Nat'l Auth.	#	0.1
			Colombia	#	0.0
			Bahrain	#	0.1
			Syrian Arab Republic	#	0.1
			Tunisia	#	0.1
			Oman	#	#
			Qatar	#	#
			Kuwait ⁶	#	#
			Botswana	#	#
			El Salvador	#	#
			Ghana	#	#
			Algeria	#	#
			Saudi Arabia	#	#

Rounds to zero.

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

²National Target Population does not include all of the International Target Population defined by the Trends in International Mathematics and Science Study (TIMSS) (see appendix A).

³Met guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁴National Defined Population covers 90 percent to 95 percent of National Target Population (see appendix A).

⁵Nearly satisfied guidelines for sample participation rates only after substitute schools were included (see appendix A).

⁶Kuwait tested the same cohort of students as other countries, but later in 2007, at the beginning of the next school year.

⁷National Defined Population covers less than 90 percent of National Target Population (but at least 77 percent, see appendix A).

NOTE: The Trends in International Mathematics and Science Study (TIMSS) international median represents all participating TIMSS jurisdictions, including the United States. The international median represents the percentage at which half of the participating countries have that percentage of students at or above the median and half have that percentage of students below the median. Standard error is noted by s.e.

SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.

Table E-42. Standard errors for the percentage of fourth- and eighth-grade students who reached the TIMSS advanced international benchmark in science, by country: 2007

Grade four			Grade eight		
Country	Percent	s.e.	Country	Percent	s.e.
International median	7	0.0	International median	3	0.0
Singapore	36	1.9	Singapore	32	1.6
Chinese Taipei	19	1.0	Chinese Taipei	25	1.5
Russian Federation	16	1.9	Japan	17	0.9
United States ^{1,2}	15	0.9	England ²	17	1.6
England	14	1.2	Korea, Rep. of	17	0.9
Hong Kong SAR ³	14	1.4	Hungary	13	1.1
Hungary	13	1.0	Czech Republic	11	0.9
Italy	13	1.0	Slovenia	11	0.7
Japan	12	1.0	Russian Federation	11	1.0
Armenia	12	1.8	Hong Kong SAR ^{2,3}	10	1.0
Slovak Republic	11	0.8	United States ^{1,2}	10	0.7
Australia	10	0.7	Armenia	8	1.7
Latvia ⁴	10	1.1	Australia	8	1.4
Germany	10	0.7	Lithuania ⁴	8	0.6
Kazakhstan ⁴	10	1.3	Sweden	6	0.6
Austria	9	0.7	Jordan	5	0.6
Sweden	8	0.6	Malta	5	0.3
New Zealand	8	0.5	Bulgaria ⁷	5	0.9
Czech Republic	7	0.7	Scotland ²	5	0.6
Denmark ²	7	0.8	Israel ⁷	5	0.6
Slovenia	6	0.6	Italy	4	0.7
Scotland ²	4	0.6	Turkey	3	0.5
Netherlands ⁵	4	0.8	Ukraine	3	0.4
Lithuania ⁴	3	0.4	Thailand	3	0.8
Ukraine	2	0.3	Malaysia	3	0.7
Iran, Islamic Rep. of	2	0.3	Iran, Islamic Rep. of	2	0.5
Norway	1	0.4	Bahrain	2	0.4
Colombia	1	0.2	Serbia ^{1,4}	2	0.3
Georgia ⁴	1	0.2	Romania	2	0.3
El Salvador	#	0.1	Norway	2	0.2
Kuwait ⁶	#	0.2	Bosnia and Herzegovina	2	0.3
Morocco	#	0.2	Cyprus	1	0.3
Algeria	#	0.1	Palestinian Nat'l Auth.	1	0.2
Tunisia	#	0.1	Lebanon	1	0.4
Qatar	#	#	Syrian Arab Republic	1	0.2
Yemen	#	#	Egypt	1	0.1
			Oman	1	0.2
			Colombia	1	0.1
			Kuwait ⁶	#	0.1
			Georgia ⁴	#	0.1
			Indonesia	#	0.1
			Tunisia	#	0.1
			Saudi Arabia	#	#
			Qatar	#	#
			Ghana	#	#
			El Salvador	#	0.1
			Botswana	#	#
			Algeria	#	#

Rounds to zero.

¹National Defined Population covers 90 percent to 95 percent of National Target Population (see appendix A).

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SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2007.