

## TIMSS 2011

# Summary Statistics and Standard Errors for Proficiency in Science at the Eighth Grade

**Exhibit 1: Summary Statistics and Standard Errors for Proficiency in Overall Science at the Eighth Grade**

Country	Sample Size	Overall Science			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
Armenia	5846	436.925	95.238	2.980	3.120
Australia	7556	519.265	83.746	4.753	4.802
Bahrain	4640	452.425	102.372	1.754	1.979
Chile	5835	461.466	73.376	2.251	2.486
Chinese Taipei	5042	563.805	83.632	2.265	2.313
England	3842	532.997	84.571	4.788	4.905
Finland	4266	552.352	65.167	2.415	2.470
Georgia	4563	419.936	89.585	2.764	2.952
Ghana	7323	305.993	112.315	5.082	5.233
Hong Kong SAR	4015	535.059	75.115	3.286	3.382
Hungary	5178	522.394	83.151	3.072	3.096
Indonesia	5795	405.612	78.759	4.142	4.461
Iran, Islamic Rep. of	6029	474.385	90.335	3.829	4.016
Israel	4699	515.696	94.370	4.016	4.033
Italy	3979	501.111	75.880	2.306	2.484
Japan	4414	557.729	75.882	2.219	2.437
Jordan	7694	449.000	103.281	3.980	4.043
Kazakhstan	4390	489.911	79.251	4.114	4.259
Korea, Rep. of	5166	560.163	77.296	1.971	2.017
Lebanon	3974	406.016	97.571	4.856	4.889
Lithuania	4747	513.869	76.302	2.261	2.565
Macedonia, Rep. of	4062	407.498	113.708	5.166	5.359
Malaysia	5733	426.494	101.192	6.171	6.260
Morocco	8986	375.887	85.577	1.890	2.209
New Zealand	5336	512.037	85.363	4.607	4.640
Norway	3862	494.374	73.066	2.553	2.641
Oman	9542	419.842	111.257	2.933	3.240
Palestinian Nat'l Auth.	7812	420.455	105.007	3.181	3.207
Qatar	4422	418.664	121.410	3.320	3.360
Romania	5523	464.695	85.925	3.295	3.503
Russian Federation	4893	542.459	76.642	3.196	3.247

**Exhibit 1: Summary Statistics and Standard Errors for Proficiency in Overall Science at the Eighth Grade (Continued)**

Country	Sample Size	Overall Science			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
Saudi Arabia	4344	436.352	82.325	3.712	3.851
Singapore	5927	589.994	96.729	4.320	4.344
Slovenia	4415	542.822	75.690	2.458	2.727
Sweden	5573	509.499	80.616	2.420	2.523
Syrian Arab Republic	4413	426.412	83.947	3.758	3.865
Thailand	6124	450.892	79.687	3.875	3.941
Tunisia	5128	438.561	66.930	2.257	2.468
Turkey	6928	482.988	102.976	3.398	3.420
Ukraine	3378	500.992	83.079	3.322	3.433
United Arab Emirates	14089	464.559	96.985	2.197	2.392
United States	10477	524.602	81.401	2.485	2.552
<b>Ninth Grade Participants</b>					
Botswana	5400	404.445	103.697	3.013	3.573
Honduras	4418	368.765	79.028	3.434	3.984
South Africa	11969	331.574	113.615	3.115	3.659
<b>Benchmarking Participants</b>					
Alberta, Canada	4799	545.602	67.926	2.225	2.375
Ontario, Canada	4756	521.294	68.569	2.392	2.492
Quebec, Canada	6149	519.915	66.828	2.489	2.536
Abu Dhabi, UAE	4373	461.409	93.857	3.930	4.039
Dubai, UAE	5571	485.071	102.790	2.216	2.543
Alabama, US	2113	485.370	87.559	6.070	6.228
California, US	2614	498.517	84.254	4.487	4.574
Colorado, US	2167	541.949	77.550	4.279	4.416
Connecticut, US	2099	531.600	87.638	4.553	4.564
Florida, US	1712	529.889	85.068	7.138	7.304
Indiana, US	2260	532.804	75.617	4.670	4.773
Massachusetts, US	2075	566.776	81.041	5.078	5.131
Minnesota, US	2500	553.274	72.174	4.586	4.643
North Carolina, US	2103	531.534	81.714	6.215	6.273

**Exhibit 2: Summary Statistics and Standard Errors for Proficiency in Biology at the Eighth Grade**

Country	Sample Size	Biology			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
Armenia	5846	420.124	105.299	3.059	3.221
Australia	7556	526.990	86.820	4.641	4.729
Bahrain	4640	448.676	109.939	1.809	2.055
Chile	5835	461.662	83.156	2.433	2.544
Chinese Taipei	5042	556.917	87.995	2.435	2.494
England	3842	533.041	87.112	4.814	4.931
Finland	4266	548.162	70.425	2.639	2.901
Georgia	4563	435.067	96.922	3.145	3.255
Ghana	7323	289.909	128.494	5.443	6.249
Hong Kong SAR	4015	535.039	82.361	3.463	3.512
Hungary	5178	519.540	80.379	2.881	3.031
Indonesia	5795	409.762	83.449	4.714	4.730
Iran, Islamic Rep. of	6029	466.121	90.908	3.600	3.771
Israel	4699	523.011	100.610	4.011	4.057
Italy	3979	503.426	79.470	2.240	2.954
Japan	4414	560.709	77.625	2.142	2.295
Jordan	7694	447.264	107.550	4.077	4.343
Kazakhstan	4390	483.476	87.956	4.145	4.320
Korea, Rep. of	5166	560.957	77.694	1.991	2.364
Lebanon	3974	395.320	103.072	5.133	5.216
Lithuania	4747	516.790	81.799	2.555	2.780
Macedonia, Rep. of	4062	399.743	125.332	5.511	5.954
Malaysia	5733	426.934	102.833	6.056	6.209
Morocco	8986	377.641	91.071	1.971	3.012
New Zealand	5336	514.247	91.177	4.575	4.681
Norway	3862	491.291	74.618	2.470	2.486
Oman	9542	407.365	121.974	3.141	3.588
Palestinian Nat'l Auth.	7812	406.893	115.706	3.483	3.884
Qatar	4422	411.384	128.966	3.447	4.199
Romania	5523	458.367	89.464	3.471	3.781
Russian Federation	4893	536.844	79.807	3.210	3.308
Saudi Arabia	4344	429.689	88.009	3.550	4.460
Singapore	5927	594.420	104.437	4.557	4.783
Slovenia	4415	531.835	77.266	2.454	2.739
Sweden	5573	512.535	82.881	2.668	2.996
Syrian Arab Republic	4413	424.721	96.572	4.126	4.288
Thailand	6124	459.910	83.818	4.154	4.312
Tunisia	5128	449.246	73.704	2.687	2.995
Turkey	6928	483.758	110.275	3.643	3.732
Ukraine	3378	492.373	82.039	3.011	3.103

**Exhibit 2: Summary Statistics and Standard Errors for Proficiency in Biology  
at the Eighth Grade (Continued)**

Country	Sample Size	Biology			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
United Arab Emirates	14089	463.119	101.081	2.231	2.388
United States	10477	530.247	85.509	2.498	2.538
<b>Ninth Grade Participants</b>					
Botswana	5400	401.042	114.469	3.477	3.903
Honduras	4418	363.703	87.572	3.586	3.894
South Africa	11969	317.878	127.342	3.329	3.469
<b>Benchmarking Participants</b>					
Alberta, Canada	4799	554.383	77.530	2.610	2.697
Ontario, Canada	4756	531.025	76.302	2.514	2.579
Quebec, Canada	6149	524.766	72.381	2.789	2.879
Abu Dhabi, UAE	4373	459.404	96.934	3.870	4.265
Dubai, UAE	5571	484.918	106.437	2.492	2.693
Alabama, US	2113	490.535	92.081	6.036	6.138
California, US	2614	499.688	87.669	4.492	4.714
Colorado, US	2167	550.604	83.707	4.406	4.594
Connecticut, US	2099	539.042	93.113	4.652	4.999
Florida, US	1712	528.759	89.113	7.521	7.861
Indiana, US	2260	540.247	83.237	4.960	5.004
Massachusetts, US	2075	575.081	87.857	5.115	5.243
Minnesota, US	2500	563.104	79.093	5.341	5.486
North Carolina, US	2103	541.233	84.804	5.725	6.048

**Exhibit 3: Summary Statistics and Standard Errors for Proficiency in Chemistry at the Eighth Grade**

Country	Sample Size	Chemistry			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
Armenia	5846	452.071	101.647	2.887	3.858
Australia	7556	501.153	87.918	5.023	5.117
Bahrain	4640	447.576	115.777	1.930	2.666
Chile	5835	447.047	71.521	2.288	2.961
Chinese Taipei	5042	585.307	100.832	3.117	3.871
England	3842	528.714	90.051	4.863	5.173
Finland	4266	553.643	67.907	2.253	2.470
Georgia	4563	394.951	95.927	2.824	3.206
Ghana	7323	330.763	119.563	5.248	5.862
Hong Kong SAR	4015	525.954	75.609	3.259	3.606
Hungary	5178	534.495	87.398	3.211	3.358
Indonesia	5795	378.131	83.197	4.173	4.931
Iran, Islamic Rep. of	6029	469.180	96.478	3.962	4.364
Israel	4699	513.562	100.860	4.439	5.108
Italy	3979	491.279	76.560	2.254	3.074
Japan	4414	560.035	78.896	2.310	2.552
Jordan	7694	462.634	111.463	4.180	4.427
Kazakhstan	4390	508.457	89.982	4.434	4.831
Korea, Rep. of	5166	550.984	80.122	2.121	2.191
Lebanon	3974	434.728	107.981	5.161	5.322
Lithuania	4747	517.134	76.976	2.056	2.255
Macedonia, Rep. of	4062	415.790	116.714	5.199	5.475
Malaysia	5733	426.073	106.058	6.391	6.598
Morocco	8986	374.316	92.861	2.032	2.159
New Zealand	5336	501.038	91.889	4.706	5.135
Norway	3862	487.970	77.568	2.670	2.845
Oman	9542	408.063	121.767	3.004	3.494
Palestinian Nat'l Auth.	7812	432.433	109.691	3.256	3.977
Qatar	4422	415.645	136.816	3.542	4.087
Romania	5523	468.939	97.459	4.097	4.306
Russian Federation	4893	553.534	82.094	3.398	3.475
Saudi Arabia	4344	427.706	94.856	4.041	4.390
Singapore	5927	590.353	100.601	4.454	4.730
Slovenia	4415	557.587	83.016	2.605	3.248
Sweden	5573	502.298	82.897	2.530	2.683
Syrian Arab Republic	4413	424.009	84.960	3.422	3.736
Thailand	6124	436.254	86.213	4.441	4.581
Tunisia	5128	433.729	72.032	2.284	3.327
Turkey	6928	476.917	114.639	3.767	4.008
Ukraine	3378	511.521	91.647	3.683	3.900

**Exhibit 3: Summary Statistics and Standard Errors for Proficiency in Chemistry at the Eighth Grade (Continued)**

Country	Sample Size	Chemistry			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
United Arab Emirates	14089	463.754	107.378	2.136	2.222
United States	10477	519.753	90.632	2.616	2.639
<b>Ninth Grade Participants</b>					
Botswana	5400	402.950	107.927	3.300	3.610
Honduras	4418	367.848	81.636	3.169	3.453
South Africa	11969	335.882	115.303	3.072	3.840
<b>Benchmarking Participants</b>					
Alberta, Canada	4799	521.187	68.922	2.095	2.581
Ontario, Canada	4756	494.900	70.910	2.447	2.538
Quebec, Canada	6149	515.178	73.591	2.924	3.103
Abu Dhabi, UAE	4373	460.697	104.559	3.663	3.911
Dubai, UAE	5571	487.375	111.974	2.250	2.328
Alabama, US	2113	479.759	92.203	6.233	6.582
California, US	2614	503.424	107.146	5.808	6.010
Colorado, US	2167	528.118	85.251	4.847	5.149
Connecticut, US	2099	520.259	95.159	5.192	5.347
Florida, US	1712	524.539	91.791	8.102	8.240
Indiana, US	2260	526.148	80.380	4.939	4.994
Massachusetts, US	2075	567.967	89.190	5.594	5.952
Minnesota, US	2500	538.338	76.381	4.943	4.989
North Carolina, US	2103	531.151	92.686	6.376	7.154

**Exhibit 4: Summary Statistics and Standard Errors for Proficiency in Physics at the Eighth Grade**

Country	Sample Size	Physics			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
Armenia	5846	440.599	108.023	3.178	3.660
Australia	7556	510.909	84.371	4.781	5.125
Bahrain	4640	456.625	98.023	1.713	1.797
Chile	5835	452.799	75.489	2.221	2.572
Chinese Taipei	5042	552.372	86.589	2.528	3.390
England	3842	533.320	83.192	4.523	4.580
Finland	4266	540.066	70.976	2.383	2.688
Georgia	4563	401.093	103.127	3.484	4.238
Ghana	7323	292.015	127.715	5.631	5.929
Hong Kong SAR	4015	538.587	78.095	3.205	3.599
Hungary	5178	525.056	94.014	3.449	3.720
Indonesia	5795	396.939	89.006	4.935	5.439
Iran, Islamic Rep. of	6029	483.312	92.860	3.953	4.149
Israel	4699	513.826	98.656	4.007	4.083
Italy	3979	490.387	81.646	2.322	2.815
Japan	4414	558.104	83.313	2.364	2.748
Jordan	7694	446.118	104.690	3.976	4.209
Kazakhstan	4390	488.717	87.625	4.205	4.234
Korea, Rep. of	5166	576.532	85.744	2.208	2.824
Lebanon	3974	405.294	103.468	5.141	5.426
Lithuania	4747	502.828	81.448	2.512	3.258
Macedonia, Rep. of	4062	398.303	125.395	5.335	5.988
Malaysia	5733	434.854	106.123	6.379	6.582
Morocco	8986	348.807	99.680	1.961	2.507
New Zealand	5336	508.784	81.376	4.323	4.591
Norway	3862	481.287	81.878	3.054	3.628
Oman	9542	426.652	111.376	2.779	3.320
Palestinian Nat'l Auth.	7812	432.493	112.009	3.537	3.754
Qatar	4422	426.479	120.105	3.271	3.843
Romania	5523	456.234	96.297	3.885	3.917
Russian Federation	4893	546.902	84.453	3.260	3.496
Saudi Arabia	4344	436.997	91.757	3.972	4.157
Singapore	5927	601.677	93.951	4.123	4.184
Slovenia	4415	532.063	79.895	2.594	2.849
Sweden	5573	497.972	89.794	2.503	3.174
Syrian Arab Republic	4413	425.798	89.852	4.178	4.399
Thailand	6124	429.570	86.984	4.251	4.550
Tunisia	5128	435.969	70.592	2.323	2.570
Turkey	6928	494.082	106.847	3.541	3.658
Ukraine	3378	502.716	93.863	3.458	3.820

**Exhibit 4: Summary Statistics and Standard Errors for Proficiency in Physics at the Eighth Grade (Continued)**

Country	Sample Size	Physics			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
United Arab Emirates	14089	461.318	95.462	2.071	2.322
United States	10477	513.311	80.482	2.388	2.499
<b>Ninth Grade Participants</b>					
Botswana	5400	417.030	104.315	3.102	3.571
Honduras	4418	351.312	84.683	3.265	3.653
South Africa	11969	351.328	103.698	2.667	3.653
<b>Benchmarking Participants</b>					
Alberta, Canada	4799	545.273	66.757	2.180	2.408
Ontario, Canada	4756	521.477	68.777	2.423	2.746
Quebec, Canada	6149	501.548	74.512	2.805	3.165
Abu Dhabi, UAE	4373	458.956	93.138	3.721	3.893
Dubai, UAE	5571	481.906	100.539	2.027	2.123
Alabama, US	2113	475.961	89.432	5.594	5.931
California, US	2614	486.551	80.170	4.448	4.566
Colorado, US	2167	530.087	82.296	4.244	5.298
Connecticut, US	2099	520.309	91.515	4.875	5.409
Florida, US	1712	529.996	86.641	7.085	7.180
Indiana, US	2260	521.692	76.211	4.935	5.148
Massachusetts, US	2075	554.579	84.108	5.478	5.740
Minnesota, US	2500	541.361	74.024	4.865	5.612
North Carolina, US	2103	510.040	82.485	5.886	5.953



**Exhibit 5: Summary Statistics and Standard Errors for Proficiency in Earth Science at the Eighth Grade**

Country	Sample Size	Earth Science			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
Armenia	5846	421.347	102.957	3.001	3.305
Australia	7556	533.249	97.229	5.214	5.438
Bahrain	4640	451.165	101.120	1.605	1.761
Chile	5835	476.135	76.600	2.257	2.774
Chinese Taipei	5042	568.387	81.892	2.145	2.850
England	3842	536.456	95.126	4.978	5.291
Finland	4266	574.160	74.067	2.546	2.974
Georgia	4563	417.499	101.684	3.471	3.657
Ghana	7323	265.470	123.933	5.535	6.484
Hong Kong SAR	4015	539.297	83.078	3.587	3.748
Hungary	5178	510.983	93.353	3.230	3.313
Indonesia	5795	411.771	95.296	4.860	5.577
Iran, Islamic Rep. of	6029	476.931	103.055	3.859	3.916
Israel	4699	504.442	94.336	4.210	4.402
Italy	3979	512.800	93.014	2.661	3.848
Japan	4414	548.349	80.652	2.379	2.784
Jordan	7694	435.641	103.699	3.750	4.200
Kazakhstan	4390	471.739	88.144	4.496	4.856
Korea, Rep. of	5166	547.562	86.410	2.156	3.243
Lebanon	3974	364.848	112.957	5.644	6.377
Lithuania	4747	516.545	85.984	2.531	3.504
Macedonia, Rep. of	4062	402.757	118.627	5.470	6.460
Malaysia	5733	401.333	113.308	6.270	6.455
Morocco	8986	376.689	92.209	1.811	3.255
New Zealand	5336	522.580	94.389	4.766	4.832
Norway	3862	515.702	86.965	3.290	3.549
Oman	9542	431.272	110.541	2.758	3.038
Palestinian Nat'l Auth.	7812	406.135	98.504	2.898	3.251
Qatar	4422	407.805	128.712	3.397	3.763
Romania	5523	470.147	90.791	3.405	3.626
Russian Federation	4893	535.142	85.199	3.480	3.688
Saudi Arabia	4344	441.060	80.258	3.277	3.550
Singapore	5927	566.091	99.931	4.267	4.533
Slovenia	4415	560.057	90.920	2.874	3.183
Sweden	5573	519.716	91.298	2.762	2.835
Syrian Arab Republic	4413	414.266	94.810	4.592	4.774
Thailand	6124	465.773	80.459	3.871	4.075
Tunisia	5128	413.933	78.057	2.258	3.560
Turkey	6928	468.498	95.683	3.013	3.488
Ukraine	3378	494.746	99.140	3.505	3.603

**Exhibit 5: Summary Statistics and Standard Errors for Proficiency in Earth Science at the Eighth Grade (Continued)**

Country	Sample Size	Earth Science			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
United Arab Emirates	14089	466.344	98.289	2.294	2.492
United States	10477	533.133	92.494	2.689	2.771
<b>Ninth Grade Participants</b>					
Botswana	5400	384.388	107.573	2.943	4.248
Honduras	4418	374.304	95.915	4.035	4.893
South Africa	11969	293.867	138.875	3.647	3.796
<b>Benchmarking Participants</b>					
Alberta, Canada	4799	559.279	83.104	2.480	2.730
Ontario, Canada	4756	528.303	82.439	2.748	3.374
Quebec, Canada	6149	535.650	71.076	2.648	2.883
Abu Dhabi, UAE	4373	460.968	94.345	4.112	4.681
Dubai, UAE	5571	486.763	105.171	2.358	3.149
Alabama, US	2113	487.223	103.710	7.661	7.894
California, US	2614	499.216	95.485	4.646	4.758
Colorado, US	2167	555.230	89.221	4.331	4.556
Connecticut, US	2099	541.550	102.829	5.507	5.581
Florida, US	1712	536.063	97.110	7.484	7.655
Indiana, US	2260	540.285	88.117	5.536	5.765
Massachusetts, US	2075	577.446	96.021	5.121	5.951
Minnesota, US	2500	573.894	91.519	6.095	6.213
North Carolina, US	2103	539.807	93.599	6.073	6.514

**Exhibit 6: Summary Statistics and Standard Errors for Proficiency in Science Knowing at the Eighth Grade**

Country	Sample Size	Science Knowing			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
Armenia	5846	463.762	94.812	3.039	3.101
Australia	7556	514.074	93.509	5.341	5.401
Bahrain	4640	457.438	105.891	1.765	3.643
Chile	5835	475.726	77.761	2.451	3.156
Chinese Taipei	5042	568.919	81.261	2.354	2.707
England	3842	533.491	94.657	5.024	5.069
Finland	4266	564.285	68.375	2.461	2.977
Georgia	4563	427.560	92.227	2.920	3.863
Ghana	7323	291.832	138.801	5.812	6.140
Hong Kong SAR	4015	544.494	73.619	3.180	3.346
Hungary	5178	510.508	83.150	3.040	3.275
Indonesia	5795	401.769	92.381	5.247	5.374
Iran, Islamic Rep. of	6029	479.339	94.160	4.039	4.68
Israel	4699	517.671	97.621	4.195	4.227
Italy	3979	512.132	80.328	2.279	2.738
Japan	4414	540.803	75.253	2.270	2.676
Jordan	7694	452.989	108.430	4.114	4.328
Kazakhstan	4390	482.797	91.432	4.776	5.021
Korea, Rep. of	5166	553.510	82.192	2.065	2.904
Lebanon	3974	381.266	111.473	5.602	5.789
Lithuania	4747	515.774	76.763	2.227	2.320
Macedonia, Rep. of	4062	416.634	123.373	5.932	5.969
Malaysia	5733	402.748	117.024	6.935	6.997
Morocco	8986	362.762	94.160	1.952	2.745
New Zealand	5336	511.351	93.087	4.849	4.951
Norway	3862	489.986	74.064	2.257	2.571
Oman	9542	416.421	123.614	2.857	3.425
Palestinian Nat'l Auth.	7812	430.883	109.948	3.425	3.570
Qatar	4422	417.950	128.558	3.137	4.333
Romania	5523	457.098	93.082	3.543	3.949
Russian Federation	4893	557.063	83.077	3.622	3.908
Saudi Arabia	4344	447.540	90.532	4.144	4.391
Singapore	5927	587.730	108.442	4.767	4.904
Slovenia	4415	550.531	79.026	2.443	2.660
Sweden	5573	511.717	77.917	2.266	2.450
Syrian Arab Republic	4413	440.856	83.309	3.877	4.285
Thailand	6124	442.624	92.350	4.508	4.656
Tunisia	5128	424.451	67.858	2.112	2.304
Turkey	6928	489.829	115.645	3.745	3.757
Ukraine	3378	505.334	90.699	3.754	3.896

**Exhibit 6: Summary Statistics and Standard Errors for Proficiency in Science Knowing at the Eighth Grade (Continued)**

Country	Sample Size	Science Knowing			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
United Arab Emirates	14089	471.229	103.124	2.354	2.454
United States	10477	527.117	91.451	2.621	2.842
<b>Ninth Grade Participants</b>					
Botswana	5400	397.328	125.123	3.642	3.672
Honduras	4418	373.265	88.517	3.739	4.442
South Africa	11969	282.160	143.881	3.650	4.056
<b>Benchmarking Participants</b>					
Alberta, Canada	4799	542.130	70.597	2.380	2.780
Ontario, Canada	4756	512.897	71.658	2.598	2.888
Quebec, Canada	6149	519.498	69.645	2.434	2.716
Abu Dhabi, UAE	4373	465.903	99.150	3.922	4.249
Dubai, UAE	5571	492.038	109.325	2.462	2.833
Alabama, US	2113	490.181	102.930	7.433	7.596
California, US	2614	494.508	97.162	5.002	5.593
Colorado, US	2167	542.466	93.468	4.579	4.971
Connecticut, US	2099	537.061	98.329	5.295	5.401
Florida, US	1712	540.883	92.429	7.382	7.572
Indiana, US	2260	536.824	86.541	5.388	5.411
Massachusetts, US	2075	575.688	96.787	6.154	6.497
Minnesota, US	2500	552.039	80.956	5.090	5.225
North Carolina, US	2103	536.065	93.856	6.562	6.680

**Exhibit 7: Summary Statistics and Standard Errors for Proficiency in Science Applying at the Eighth Grade**

Country	Sample Size	Science Applying			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
Armenia	5846	428.397	101.944	3.209	3.384
Australia	7556	517.113	82.267	4.772	4.797
Bahrain	4640	449.505	99.108	1.400	2.002
Chile	5835	453.798	71.910	2.191	2.294
Chinese Taipei	5042	569.891	90.103	2.596	2.694
England	3842	531.198	84.018	4.673	4.741
Finland	4266	548.779	67.952	2.484	2.506
Georgia	4563	417.746	93.346	3.012	3.790
Ghana	7323	295.495	118.877	5.520	6.276
Hong Kong SAR	4015	528.769	77.737	3.376	3.456
Hungary	5178	532.167	87.976	3.308	3.486
Indonesia	5795	397.631	82.108	4.332	4.681
Iran, Islamic Rep. of	6029	469.921	91.132	3.863	3.899
Israel	4699	511.702	93.288	4.001	4.069
Italy	3979	500.079	76.400	2.153	2.356
Japan	4414	560.867	81.004	2.249	2.428
Jordan	7694	450.728	100.411	3.854	4.037
Kazakhstan	4390	491.006	81.059	4.102	4.148
Korea, Rep. of	5166	561.082	82.307	1.967	2.023
Lebanon	3974	408.209	99.491	4.811	5.230
Lithuania	4747	512.140	76.707	2.134	2.257
Macedonia, Rep. of	4062	407.806	113.370	5.133	5.374
Malaysia	5733	424.237	103.067	6.188	6.205
Morocco	8986	380.536	86.101	1.680	1.870
New Zealand	5336	509.162	83.941	4.214	4.287
Norway	3862	495.639	77.594	2.757	3.027
Oman	9542	419.444	112.389	2.799	3.306
Palestinian Nat'l Auth.	7812	421.510	108.621	3.412	3.626
Qatar	4422	420.053	119.974	2.887	3.487
Romania	5523	467.802	87.591	3.405	3.646
Russian Federation	4893	538.823	79.389	3.376	3.466
Saudi Arabia	4344	432.179	85.068	3.731	3.894
Singapore	5927	589.051	97.501	4.295	4.399
Slovenia	4415	542.080	80.213	2.544	2.576
Sweden	5573	507.824	84.215	2.555	2.636
Syrian Arab Republic	4413	426.186	88.183	3.913	4.351
Thailand	6124	451.186	80.635	3.960	4.145
Tunisia	5128	437.176	68.252	2.224	2.242
Turkey	6928	477.526	103.740	3.369	3.444
Ukraine	3378	495.956	87.532	3.542	3.810

**Exhibit 7: Summary Statistics and Standard Errors for Proficiency in Science Applying at the Eighth Grade (Continued)**

Country	Sample Size	Science Applying			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
United Arab Emirates	14089	464.245	96.201	2.104	2.112
United States	10477	522.479	79.842	2.258	2.312
<b>Ninth Grade Participants</b>					
Botswana	5400	403.759	103.036	3.067	3.340
Honduras	4418	368.613	78.760	3.221	4.010
South Africa	11969	335.487	110.612	2.814	3.460
<b>Benchmarking Participants</b>					
Alberta, Canada	4799	543.087	67.948	2.366	2.473
Ontario, Canada	4756	517.784	71.303	2.277	2.377
Quebec, Canada	6149	517.675	65.026	2.396	2.806
Abu Dhabi, UAE	4373	460.687	92.633	3.666	3.883
Dubai, UAE	5571	485.874	101.164	2.123	2.733
Alabama, US	2113	484.364	85.035	5.917	6.272
California, US	2614	498.188	81.475	4.314	4.442
Colorado, US	2167	538.226	75.658	4.132	4.402
Connecticut, US	2099	526.964	87.880	4.659	4.976
Florida, US	1712	525.763	85.994	7.061	7.226
Indiana, US	2260	530.902	74.588	4.517	4.536
Massachusetts, US	2075	561.137	76.028	4.623	4.786
Minnesota, US	2500	553.000	71.863	4.697	4.889
North Carolina, US	2103	528.246	78.554	5.783	6.092

**Exhibit 8: Summary Statistics and Standard Errors for Proficiency in Science Reasoning at the Eighth Grade**

Country	Sample Size	Science Reasoning			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
Armenia	5846	419.337	104.255	2.867	3.580
Australia	7556	526.080	84.549	4.968	5.232
Bahrain	4640	448.683	110.771	1.546	1.889
Chile	5835	459.172	79.890	2.528	2.772
Chinese Taipei	5042	550.914	84.574	2.434	2.932
England	3842	536.817	84.689	4.697	4.754
Finland	4266	547.489	68.120	2.467	3.427
Georgia	4563	412.380	97.697	2.915	3.591
Ghana	7323	314.749	104.559	4.675	4.943
Hong Kong SAR	4015	537.945	83.071	3.862	4.062
Hungary	5178	518.122	87.352	3.267	3.377
Indonesia	5795	413.266	82.301	4.268	5.185
Iran, Islamic Rep. of	6029	475.192	94.055	3.751	3.860
Israel	4699	519.144	102.222	4.159	4.392
Italy	3979	488.791	83.080	2.537	2.719
Japan	4414	567.791	77.975	2.186	2.331
Jordan	7694	441.222	111.265	4.359	4.453
Kazakhstan	4390	487.320	88.312	3.942	4.207
Korea, Rep. of	5166	563.563	75.250	1.720	2.207
Lebanon	3974	408.242	103.190	5.295	5.591
Lithuania	4747	512.912	85.940	2.394	2.645
Macedonia, Rep. of	4062	390.589	123.188	5.263	5.950
Malaysia	5733	439.054	96.330	5.481	5.843
Morocco	8986	366.355	97.141	1.845	2.266
New Zealand	5336	515.121	88.322	4.458	4.722
Norway	3862	494.322	77.159	2.852	3.049
Oman	9542	417.134	110.545	2.920	3.003
Palestinian Nat'l Auth.	7812	404.383	109.056	3.426	3.579
Qatar	4422	409.259	130.894	3.312	4.405
Romania	5523	460.129	94.519	3.837	3.886
Russian Federation	4893	532.679	81.240	3.237	3.283
Saudi Arabia	4344	423.618	84.216	3.460	3.504
Singapore	5927	592.313	95.045	4.233	4.493
Slovenia	4415	535.540	80.947	2.506	2.680
Sweden	5573	509.774	84.453	2.323	2.859
Syrian Arab Republic	4413	401.580	98.027	4.380	5.064
Thailand	6124	452.963	75.931	3.899	4.220
Tunisia	5128	446.358	75.407	2.407	2.680
Turkey	6928	483.393	100.547	3.180	3.388
Ukraine	3378	499.775	87.671	3.513	3.938

**Exhibit 8: Summary Statistics and Standard Errors for Proficiency in Science Reasoning at the Eighth Grade**

Country	Sample Size	Science Reasoning			
		Mean Proficiency	Standard Deviation	Jackknife Sampling Error	Overall Standard Error
United Arab Emirates	14089	455.932	101.204	2.287	2.552
United States	10477	523.547	80.750	2.390	2.469
<b>Ninth Grade Participants</b>					
Botswana	5400	404.070	101.363	2.805	3.212
Honduras	4418	357.889	86.846	3.986	4.560
South Africa	11969	338.141	118.299	2.992	5.026
<b>Benchmarking Participants</b>					
Alberta, Canada	4799	551.652	75.565	2.611	2.636
Ontario, Canada	4756	532.447	72.969	2.654	3.108
Quebec, Canada	6149	521.907	75.394	2.804	3.054
Abu Dhabi, UAE	4373	454.869	97.107	4.020	4.386
Dubai, UAE	5571	479.277	106.843	2.325	2.549
Alabama, US	2113	479.582	91.358	5.750	6.554
California, US	2614	498.732	87.253	4.577	4.886
Colorado, US	2167	545.278	82.403	4.178	4.683
Connecticut, US	2099	530.391	89.348	4.876	5.035
Florida, US	1712	524.156	88.080	7.435	7.540
Indiana, US	2260	530.378	77.408	4.993	5.189
Massachusetts, US	2075	566.508	89.422	5.789	5.852
Minnesota, US	2500	555.581	75.840	4.892	4.986
North Carolina, US	2103	530.473	87.913	6.166	6.618