

## TIMSS 2011

# The TIMSS 2011 Safe and Orderly School Scale, Fourth Grade

The Safe and Orderly School (SOS) scale was created based on teachers' degree of agreement with the five statements described below. See [Creating and Interpreting TIMSS and PIRLS 2011 Context Questionnaire Scales](#) for more information on how the scales were formed.

**Exhibit 1: Items in the TIMSS 2011 Safe and Orderly School Scale, Fourth Grade**

**Thinking about your current school, indicate the extent to which you agree or disagree with each of the following statements.**

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
ATBG07A 1) This school is located in a safe neighborhood	○	○	○	○
ATBG07B 2) I feel safe at this school	○	○	○	○
ATBG07C 3) This school's security policies and practices are sufficient	○	○	○	○
ATBG07D 4) The students behave in an orderly manner	○	○	○	○
ATBG07E 5) The students are respectful of the teachers	○	○	○	○

**Exhibit 2: Item Parameters for the TIMSS 2011 Safe and Orderly School Scale, Fourth Grade<sup>1</sup>**

Item	delta	tau_1	tau_2
ATBG07A	-2.26237	-1.12460	1.12460
ATBG07B	-3.17099	-1.29869	1.29869
ATBG07C	-2.15923	-1.47798	1.47798
ATBG07D	-0.81209	-1.96331	1.96331
ATBG07E	-1.29088	-1.92179	1.92179

<sup>1</sup> For the purpose of scaling, the categories "Disagree a little" and "Disagree a lot" were combined because there were very few respondents in each of these categories.

### Exhibit 3: Scale Transformation Constants

#### Scale Transformation Constants

$$A = 10.16412$$

$$B = 0.99938$$

$$\text{Transformed Scale Score} = 10.16412 + 0.99938 \cdot \text{Logit Scale Score}$$

### Exhibit 4: Equivalence Table of the Raw Score and the Transformed Scale Score

Raw Score	Transformed Scale Score	Cutpoint	Raw Score	Transformed Scale Score	Cutpoint
0	4.10350		6	8.71051	
1	5.45215		7	9.43748	
2	6.23413	6.3	8	10.28418	10.2
3	6.86733		9	11.28901	
4	7.45783		10	12.78819	
5	8.06028				

### Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Safe and Orderly School Scale, Fourth Grade

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item				
			ATBG07A	ATBG07B	ATBG07C	ATBG07D	ATBG07E
Armenia	0.78	54	0.75	0.78	0.78	0.73	0.62
Australia	0.84	61	0.77	0.80	0.70	0.83	0.81
Austria	0.76	52	0.77	0.71	0.70	0.72	0.69
Azerbaijan	0.65	43	0.70	0.74	0.62	0.54	0.64
Bahrain	0.76	52	0.69	0.75	0.76	0.74	0.67
Belgium (Flemish)	0.71	48	0.65	0.74	0.72	0.69	0.64
Chile	0.83	60	0.76	0.80	0.83	0.76	0.72
Chinese Taipei	0.84	61	0.79	0.84	0.80	0.71	0.76
Croatia	0.72	50	0.71	0.74	0.71	0.70	0.68
Czech Republic	0.76	52	0.57	0.74	0.73	0.78	0.78
Denmark	0.72	48	0.63	0.60	0.59	0.80	0.81
England	0.78	55	0.68	0.76	0.61	0.85	0.78
Finland	0.79	55	0.70	0.76	0.65	0.82	0.77
Georgia	0.67	44	0.70	0.78	0.79	0.50	0.50
Germany	0.78	54	0.73	0.72	0.71	0.79	0.72
Hong Kong SAR	0.74	50	0.57	0.72	0.64	0.82	0.77
Hungary	0.76	51	0.68	0.78	0.68	0.71	0.73
Iran, Islamic Rep. of	0.74	50	0.67	0.80	0.73	0.71	0.62
Ireland	0.80	58	0.69	0.75	0.71	0.86	0.80
Italy	0.77	52	0.79	0.84	0.75	0.59	0.61
Japan	0.71	47	0.74	0.69	0.63	0.73	0.63
Kazakhstan	0.80	56	0.67	0.79	0.76	0.78	0.75
Korea, Rep. of	0.87	66	0.78	0.86	0.86	0.79	0.76
Kuwait	0.72	48	0.60	0.74	0.78	0.70	0.63

**Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Safe and Orderly School Scale, Fourth Grade (Continued)**

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item				
			ATBG07A	ATBG07B	ATBG07C	ATBG07D	ATBG07E
Lithuania	0.78	54	0.56	0.80	0.79	0.75	0.74
Malta	0.79	55	0.59	0.76	0.76	0.79	0.80
Morocco	0.83	60	0.82	0.86	0.80	0.75	0.62
Netherlands	0.72	48	0.62	0.66	0.66	0.78	0.75
New Zealand	0.76	52	0.70	0.65	0.64	0.80	0.79
Northern Ireland	0.75	52	0.63	0.69	0.70	0.79	0.80
Norway	0.71	47	0.51	0.45	0.66	0.87	0.83
Oman	0.74	50	0.69	0.75	0.71	0.68	0.69
Poland	0.75	50	0.70	0.66	0.71	0.76	0.71
Portugal	0.83	60	0.79	0.83	0.76	0.79	0.69
Qatar	0.73	49	0.56	0.71	0.74	0.77	0.69
Romania	0.81	58	0.72	0.78	0.79	0.79	0.71
Russian Federation	0.81	57	0.76	0.80	0.77	0.74	0.70
Saudi Arabia	0.77	52	0.73	0.76	0.76	0.73	0.63
Serbia	0.83	60	0.77	0.78	0.82	0.77	0.72
Singapore	0.81	58	0.74	0.78	0.77	0.75	0.76
Slovak Republic	0.71	47	0.49	0.77	0.68	0.72	0.74
Slovenia	0.81	58	0.70	0.72	0.76	0.80	0.81
Spain	0.81	57	0.69	0.78	0.72	0.79	0.78
Sweden	0.87	67	0.78	0.82	0.83	0.85	0.81
Thailand	0.82	59	0.79	0.81	0.83	0.70	0.71
Tunisia	0.81	57	0.83	0.84	0.83	0.68	0.58
Turkey	0.87	66	0.83	0.83	0.83	0.80	0.77
United Arab Emirates	0.73	49	0.59	0.71	0.72	0.75	0.72
United States	0.82	60	0.72	0.79	0.75	0.82	0.78
Yemen	0.77	53	0.78	0.79	0.80	0.64	0.60
<b>Sixth Grade Participants</b>							
Botswana	0.81	57	0.77	0.83	0.77	0.66	0.71
Honduras	0.82	58	0.79	0.85	0.74	0.71	0.73
Yemen	0.75	50	0.77	0.79	0.73	0.66	0.59
<b>Benchmarking Participants</b>							
Alberta, Canada	0.79	55	0.68	0.66	0.71	0.80	0.85
Ontario, Canada	0.81	58	0.76	0.72	0.78	0.81	0.75
Quebec, Canada	0.82	60	0.74	0.79	0.68	0.82	0.82
Abu Dhabi, UAE	0.71	47	0.63	0.69	0.69	0.75	0.68
Dubai, UAE	0.73	49	0.57	0.69	0.74	0.72	0.76
Florida, US	0.90	73	0.85	0.85	0.82	0.89	0.86
North Carolina, US	0.83	61	0.69	0.79	0.83	0.83	0.74

**Exhibit 6: Relationship Between the TIMSS 2011 Safe and Orderly School Scale, Fourth Grade, and TIMSS 2011 Achievement**

Country	Pearson's Correlation with Achievement				Variance in Achievement Accounted for by Difference Between Regions of the Scale ( $\eta^2$ )	
	(r)		(r <sup>2</sup> )		Mathematics	Science
	Mathematics	Science	Mathematics	Science		
Armenia	0.02	0.02	0.00	0.00	0.00	0.00
Australia	0.26	0.26	0.07	0.07	0.05	0.05
Austria	0.14	0.14	0.02	0.02	0.01	0.01
Azerbaijan	0.05	0.01	0.00	0.00	0.00	0.00
Bahrain	0.16	0.16	0.03	0.03	0.02	0.02
Belgium (Flemish)	0.10	0.12	0.01	0.02	0.02	0.02
Chile	0.27	0.28	0.07	0.08	0.06	0.06
Chinese Taipei	0.02	0.04	0.00	0.00	0.00	0.01
Croatia	-0.04	-0.04	0.00	0.00	0.00	0.00
Czech Republic	0.01	0.02	0.00	0.00	0.00	0.00
Denmark	0.09	0.10	0.01	0.01	0.01	0.04
England	0.19	0.21	0.04	0.05	0.03	0.04
Finland	0.14	0.15	0.02	0.02	0.02	0.02
Georgia	0.08	0.08	0.01	0.01	0.00	0.00
Germany	0.13	0.17	0.02	0.03	0.01	0.02
Hong Kong SAR	0.00	0.14	0.00	0.02	0.00	0.03
Hungary	0.23	0.22	0.05	0.05	0.03	0.03
Iran, Islamic Rep. of	0.14	0.13	0.02	0.02	0.02	0.01
Ireland	0.21	0.22	0.04	0.05	0.05	0.06
Italy	0.04	0.05	0.00	0.00	0.00	0.01
Japan	0.06	0.08	0.00	0.01	0.00	0.00
Kazakhstan	0.07	0.06	0.01	0.00	0.00	0.00
Korea, Rep. of	0.11	0.10	0.01	0.01	0.01	0.01
Kuwait	0.06	0.04	0.00	0.00	0.01	0.00
Lithuania	0.07	0.08	0.00	0.01	0.00	0.00
Malta	0.10	0.12	0.01	0.02	0.01	0.01
Morocco	0.17	0.17	0.03	0.03	0.04	0.04
Netherlands	0.08	0.10	0.01	0.01	0.00	0.00
New Zealand	0.28	0.28	0.08	0.08	0.07	0.07
Northern Ireland	0.13	0.14	0.02	0.02	0.01	0.02
Norway	0.10	0.11	0.01	0.01	0.01	0.01
Oman	0.19	0.16	0.04	0.03	0.02	0.02
Poland	-0.05	-0.04	0.00	0.00	0.00	0.00
Portugal	0.16	0.15	0.02	0.02	0.02	0.02
Qatar	0.14	0.12	0.02	0.01	0.01	0.00
Romania	0.02	0.01	0.00	0.00	0.00	0.01
Russian Federation	0.05	0.04	0.00	0.00	0.01	0.01
Saudi Arabia	0.16	0.09	0.03	0.01	0.04	0.00

**Exhibit 6: Relationship Between TIMSS 2011 Fourth Grade Safe and Orderly School Scale and TIMSS 2011 Achievement (Continued)**

Country	Pearson's Correlation with Achievement				Variance in Achievement Accounted for by Difference Between Regions of the Scale ( $\eta^2$ )	
	(r)		(r <sup>2</sup> )		Mathematics	Science
	Mathematics	Science	Mathematics	Science		
Serbia	0.01	0.01	0.00	0.00	0.01	0.01
Singapore	0.11	0.13	0.01	0.02	0.01	0.02
Slovak Republic	0.06	0.06	0.00	0.00	0.00	0.00
Slovenia	0.04	0.04	0.00	0.00	0.00	0.00
Spain	0.22	0.18	0.05	0.03	0.05	0.04
Sweden	0.21	0.26	0.04	0.07	0.04	0.06
Thailand	0.10	0.11	0.01	0.01	0.05	0.05
Tunisia	0.11	0.13	0.01	0.02	0.01	0.01
Turkey	0.22	0.21	0.05	0.05	0.04	0.04
United Arab Emirates	0.19	0.14	0.04	0.02	0.01	0.00
United States	0.20	0.22	0.04	0.05	0.03	0.04
Yemen	0.02	-0.10	0.00	0.01	0.02	0.01
<b>International Median</b>	<b>0.11</b>	<b>0.12</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>
<b>Sixth Grade Participants</b>						
Botswana	0.20	0.17	0.04	0.03	0.04	0.03
Honduras	-0.02	-0.03	0.00	0.00	0.00	0.01
Yemen	-0.02	-0.04	0.00	0.00	0.00	0.00
<b>Benchmarking Participants</b>						
Alberta, Canada	0.14	0.12	0.02	0.02	0.01	0.01
Ontario, Canada	0.14	0.14	0.02	0.02	0.02	0.02
Quebec, Canada	0.05	0.08	0.00	0.01	0.00	0.00
Abu Dhabi, UAE	0.18	0.10	0.03	0.01	0.01	0.00
Dubai, UAE	0.16	0.17	0.03	0.03	0.01	0.01
Florida, US	0.19	0.21	0.03	0.04	0.03	0.03
North Carolina, US	0.21	0.20	0.04	0.04	0.04	0.04