

Students' Sense of School Belonging Scale, Fourth Grade

The Students' Sense of School Belonging (SSB) scale was created based on students' degree of agreement with the seven statements described below.

Items in the TIMSS 2015 Students' Sense of School Belonging, Fourth Grade

		What do you think about your school? Tell how much you agree with these statements.			
		Agree a lot	Agree a little	Disagree a little	Disagree a lot
ASBG11A	1) I like being in school -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBG11B	2) I feel safe when I am at school -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBG11C	3) I feel like I belong at this school -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBG11D	4) I like to see my classmates at school -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBG11E	5) Teachers at my school are fair to me -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBG11F	6) I am proud to go to this school -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASBG11G	7) I learn a lot in school -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

←	→
High Sense of School Belonging	Little Sense of School Belonging
↑	↑
9.1	6.8
Sense of School Belonging	

Item Parameters for the TIMSS 2015 Students' Sense of School Belonging Scale, Fourth Grade

Item	delta	tau_1	tau_2	tau_3	Infit
ASBG11A	0.56254	-0.33789	-0.81923	1.15712	1.06
ASBG11B	0.18287	-0.43736	-0.56824	1.00560	1.01
ASBG11C	0.30843	-0.24942	-0.47527	0.72469	1.02
ASBG11D	-0.64754	0.09352	-0.52319	0.42967	1.13
ASBG11E	0.05958	-0.20049	-0.59003	0.79052	1.10
ASBG11F	0.13972	-0.12324	-0.60389	0.72713	0.94
ASBG11G	-0.60560	-0.08268	-0.71676	0.79944	1.00

Scale Transformation Constants for the TIMSS 2015 Students' Sense of School Belonging Scale, Fourth Grade

Scale Transformation Constants

A = 7.050578

B = 1.530558

Transformed Scale Score = 7.050578 + 1.530558 • Logit Scale Score

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015



**Equivalence Table of Raw and Transformed Scale Scores for the TIMSS
2015 Students' Sense of School Belonging Scale, Fourth Grade**

Raw Score	Transformed Scale Score	Cutpoint
0	2.69267	
1	3.96448	
2	4.56327	
3	4.97987	
4	5.31312	
5	5.59808	
6	5.85633	
7	6.09696	
8	6.32653	
9	6.55299	
10	6.77277	6.8
11	6.99462	
12	7.22296	
13	7.46316	
14	7.72193	
15	8.00589	
16	8.33009	
17	8.71486	
18	9.19396	9.1
19	9.83052	
20	10.76714	
21	12.63595	

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015



Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2015 Students' Sense of School Belonging Scale, Fourth Grade

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item						
			ASBG11A	ASBG11B	ASBG11C	ASBG11D	ASBG11E	ASBG11F	ASBG11G
Australia	0.82	49	0.70	0.73	0.74	0.51	0.69	0.82	0.66
Bahrain	0.80	46	0.69	0.70	0.73	0.59	0.59	0.76	0.65
Belgium (Flemish)	0.77	43	0.71	0.67	0.74	0.53	0.64	0.75	0.51
Bulgaria	0.79	45	0.65	0.69	0.72	0.54	0.63	0.78	0.68
Canada	0.82	48	0.70	0.71	0.73	0.60	0.68	0.80	0.63
Chile	0.81	48	0.69	0.71	0.73	0.61	0.65	0.80	0.64
Chinese Taipei	0.78	44	0.72	0.69	0.69	0.57	0.65	0.65	0.68
Croatia	0.78	45	0.67	0.72	0.67	0.48	0.65	0.77	0.68
Cyprus	0.81	48	0.71	0.67	0.73	0.48	0.70	0.81	0.69
Czech Republic	0.77	43	0.64	0.66	0.61	0.53	0.69	0.78	0.66
Denmark	0.83	49	0.73	0.76	0.77	0.60	0.63	0.78	0.63
England	0.82	48	0.72	0.71	0.75	0.45	0.69	0.81	0.69
Finland	0.82	49	0.76	0.74	0.69	0.57	0.65	0.77	0.69
France	0.68	36	0.63	0.61	0.66	0.48	0.44	0.78	0.57
Georgia	0.77	45	0.57	0.58	0.46	0.79	0.65	0.80	0.79
Germany	0.80	46	0.70	0.72	0.73	0.59	0.63	0.78	0.60
Hong Kong SAR	0.85	52	0.76	0.79	0.81	0.59	0.67	0.75	0.69
Hungary	0.76	42	0.64	0.67	0.73	0.50	0.66	0.77	0.53
Indonesia	0.79	45	0.62	0.60	0.70	0.72	0.66	0.69	0.70
Iran, Islamic Rep. of	0.66	38	0.66	0.67	0.68	0.64	0.66	0.35	0.61
Ireland	0.79	46	0.66	0.74	0.74	0.50	0.67	0.79	0.62
Italy	0.77	43	0.68	0.66	0.69	0.49	0.67	0.78	0.59
Japan	0.83	50	0.76	0.74	0.69	0.64	0.67	0.79	0.67
Jordan	0.80	46	0.68	0.65	0.72	0.64	0.61	0.74	0.68
Kazakhstan	0.75	42	0.62	0.56	0.67	0.59	0.65	0.73	0.67
Korea, Rep. of	0.83	50	0.75	0.72	0.64	0.66	0.65	0.79	0.70
Kuwait	0.77	42	0.67	0.66	0.69	0.56	0.57	0.74	0.63
Lithuania	0.77	43	0.68	0.65	0.68	0.57	0.66	0.76	0.55
Morocco	0.75	42	0.62	0.62	0.63	0.61	0.63	0.72	0.69
Netherlands	0.80	47	0.74	0.69	0.73	0.61	0.66	0.77	0.58
New Zealand	0.82	48	0.71	0.71	0.76	0.52	0.65	0.81	0.67
Northern Ireland	0.79	47	0.66	0.73	0.73	0.50	0.71	0.77	0.64
Norway (5)	0.81	48	0.65	0.73	0.78	0.57	0.63	0.79	0.64
Oman	0.80	46	0.64	0.64	0.68	0.65	0.65	0.75	0.71
Poland	0.79	45	0.74	0.68	0.71	0.42	0.64	0.80	0.63
Portugal	0.75	42	0.72	0.65	0.70	0.47	0.50	0.81	0.62
Qatar	0.84	50	0.75	0.72	0.76	0.58	0.67	0.80	0.65
Russian Federation	0.75	41	0.72	0.61	0.69	0.47	0.62	0.75	0.59
Saudi Arabia	0.80	46	0.67	0.68	0.71	0.60	0.68	0.75	0.65
Serbia	0.76	42	0.70	0.66	0.72	0.51	0.62	0.79	0.48
Singapore	0.81	47	0.75	0.70	0.76	0.51	0.65	0.80	0.61
Slovak Republic	0.79	44	0.67	0.68	0.74	0.41	0.68	0.78	0.60
Slovenia	0.81	48	0.70	0.69	0.74	0.45	0.69	0.81	0.69
South Africa (5)	0.75	41	0.63	0.66	0.67	0.65	0.48	0.70	0.69
Spain	0.77	43	0.66	0.67	0.66	0.52	0.65	0.76	0.66
Sweden	0.81	47	0.68	0.69	0.76	0.60	0.58	0.80	0.66
Turkey	0.60	34	0.59	0.64	0.64	0.60	0.34	0.62	0.58
United Arab Emirates	0.81	47	0.67	0.69	0.72	0.59	0.66	0.77	0.67
United States	0.82	49	0.69	0.72	0.76	0.57	0.69	0.82	0.63
Benchmarking Participants									
Buenos Aires, Argentina	0.76	43	0.69	0.67	0.64	0.49	0.66	0.77	0.62
Ontario, Canada	0.81	48	0.70	0.70	0.74	0.57	0.68	0.81	0.63
Quebec, Canada	0.80	46	0.70	0.70	0.72	0.58	0.66	0.78	0.58
Norway (4)	0.78	45	0.66	0.67	0.76	0.52	0.60	0.80	0.65
Abu Dhabi, UAE	0.80	46	0.64	0.69	0.72	0.62	0.65	0.75	0.67
Dubai, UAE	0.81	47	0.70	0.69	0.71	0.55	0.67	0.80	0.64
Florida, US	0.82	49	0.70	0.72	0.76	0.59	0.66	0.83	0.59

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015

Relationship Between the TIMSS 2015 Students' Sense of School Belonging Scale, Fourth Grade, and TIMSS 2015 Achievement

Country	Pearson's Correlation with Achievement				Variance in Achievement Accounted for by Difference Between Regions of the Scale (η^2)	
	(r)		(r ²)		Mathematics	Science
	Mathematics	Science	Mathematics	Science		
Australia	0.11	0.10	0.01	0.01	0.01	0.01
Bahrain	0.10	0.12	0.01	0.01	0.01	0.02
Belgium (Flemish)	0.08	0.10	0.01	0.01	0.01	0.02
Bulgaria	0.02	-0.01	0.00	0.00	-0.01	0.01
Canada	0.07	0.08	0.01	0.01	0.01	0.01
Chile	0.16	0.12	0.02	0.02	0.02	0.01
Chinese Taipei	0.11	0.08	0.01	0.01	0.01	0.01
Croatia	0.05	0.03	0.00	0.00	0.00	0.00
Cyprus	0.02	0.03	0.00	0.00	0.00	0.00
Czech Republic	-0.03	-0.05	0.00	0.00	0.01	0.00
Denmark	0.14	0.12	0.02	0.01	0.02	0.01
England	0.12	0.12	0.01	0.01	0.01	0.01
Finland	0.08	0.07	0.01	0.01	0.01	0.01
France	0.04	0.07	0.00	0.01	0.01	0.01
Georgia	0.09	0.04	0.01	0.00	0.02	0.01
Germany	0.07	0.06	0.00	0.00	0.01	0.00
Hong Kong SAR	0.16	0.13	0.03	0.02	0.02	0.01
Hungary	0.09	0.05	0.01	0.00	0.01	0.00
Indonesia	0.09	0.08	0.01	0.01	0.02	0.02
Iran, Islamic Rep. of	-0.12	-0.12	0.01	0.02	0.01	0.02
Ireland	0.10	0.06	0.01	0.00	0.01	0.01
Italy	0.06	0.03	0.00	0.00	0.01	0.01
Japan	0.16	0.13	0.03	0.02	0.03	0.02
Jordan	0.06	-	0.00	-	0.01	-
Kazakhstan	0.11	0.16	0.01	0.02	0.01	0.02
Korea, Rep. of	0.13	0.06	0.02	0.00	0.01	0.00
Kuwait	-0.01	0.07	0.00	0.00	0.00	0.01
Lithuania	0.07	0.06	0.00	0.00	0.01	0.01
Morocco	0.14	0.19	0.02	0.04	0.02	0.05
Netherlands	0.09	0.13	0.01	0.02	0.01	0.02
New Zealand	0.03	0.02	0.00	0.00	0.01	0.00
Northern Ireland	0.10	0.06	0.01	0.00	0.02	0.01
Norway (5)	0.09	0.05	0.01	0.00	0.01	0.01
Oman	0.11	0.13	0.01	0.02	0.02	0.02
Poland	-0.05	-0.06	0.00	0.00	0.00	0.00
Portugal	0.11	0.05	0.01	0.00	0.01	0.00
Qatar	0.13	0.16	0.02	0.02	0.02	0.03
Russian Federation	0.08	0.01	0.01	0.00	0.01	0.00
Saudi Arabia	0.16	0.17	0.03	0.03	0.03	0.03
Serbia	-0.04	-0.08	0.00	0.01	0.00	0.00
Singapore	0.08	0.05	0.01	0.00	0.01	0.00
Slovak Republic	-0.08	-0.08	0.01	0.01	0.01	0.01
Slovenia	-0.03	-0.02	0.00	0.00	0.00	0.00
South Africa (5)	0.16	-	0.03	-	0.04	-
Spain	0.03	0.04	0.00	0.00	0.00	0.01
Sweden	0.07	0.08	0.00	0.01	0.01	0.01
Turkey	0.22	0.20	0.05	0.04	0.04	0.04
United Arab Emirates	0.13	0.16	0.02	0.03	0.02	0.03
United States	0.14	0.13	0.02	0.02	0.02	0.02
International Median	0.09	0.07	0.01	0.01	0.01	0.01
Benchmarking Participants						
Buenos Aires, Argentina	-0.01	-0.01	0.00	0.00	0.00	0.00
Ontario, Canada	0.10	0.09	0.01	0.01	0.01	0.01
Quebec, Canada	0.04	0.04	0.00	0.00	0.00	0.00
Norway (4)	0.12	0.13	0.02	0.02	0.01	0.01
Abu Dhabi, UAE	0.11	0.13	0.01	0.02	0.02	0.02
Dubai, UAE	0.15	0.18	0.02	0.03	0.03	0.04
Florida, US	0.18	0.17	0.03	0.03	0.03	0.03

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015

A dash (-) indicates comparable data not available.