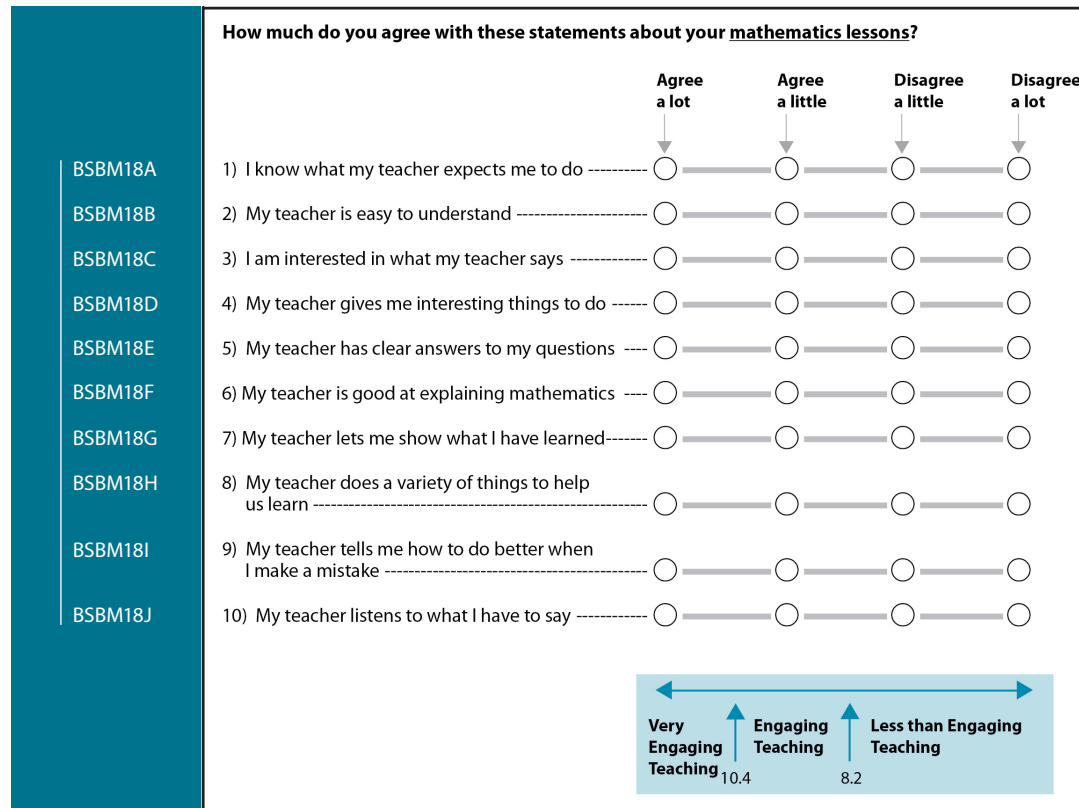


# Students' Views on Engaging Teaching in Mathematics Lessons Scale, Eighth Grade

The Students' Views on Engaging Teaching in Mathematics Lessons (EML) scale was created based on students' degree of agreement with the ten statements described below.

## Items in the TIMSS 2015 Students' Views on Engaging Teaching in Mathematics Lessons Scale, Eighth Grade



**Item Parameters for the TIMSS 2015 Students' Views on Engaging Teaching in Mathematics Lessons Scale, Eighth Grade**

Item	delta	tau_1	tau_2	tau_3	Infit
BSBM18A	-0.20590	-1.33968	-0.59371	1.93339	1.39
BSBM18B	0.05569	-1.36981	-0.40937	1.77918	0.96
BSBM18C	0.09829	-1.52269	-0.25840	1.78109	1.06
BSBM18D	0.77545	-1.62386	-0.16029	1.78415	1.06
BSBM18E	-0.10037	-1.22616	-0.38485	1.61101	0.86
BSBM18F	-0.28381	-0.96873	-0.40509	1.37382	0.85
BSBM18G	0.25944	-1.42466	-0.37697	1.80163	1.05
BSBM18H	-0.15383	-1.17293	-0.38347	1.55640	0.94
BSBM18I	-0.30578	-1.07352	-0.46176	1.53528	0.93
BSBM18J	-0.13918	-1.03166	-0.50207	1.53373	0.99

**Scale Transformation Constants for the TIMSS 2015 Students' Views on Engaging Teaching in Mathematics Lessons Scale, Eighth Grade**

Scale Transformation Constants

A = 8.296036

B = 1.105518

Transformed Scale Score = 8.296036 + 1.105518 • 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' Views on Engaging Teaching in Mathematics Lessons  
Scale, Eighth Grade**

Raw Score	Transformed Scale Score	Cutpoint
0	3.54710	
1	4.77380	
2	5.35650	
3	5.75348	
4	6.05996	
5	6.31688	
6	6.54073	
7	6.74318	
8	6.93105	
9	7.10903	
10	7.28056	
11	7.44836	
12	7.61467	
13	7.78151	
14	7.95117	
15	8.12401	8.2
16	8.30286	
17	8.48885	
18	8.68366	
19	8.88834	
20	9.10416	
21	9.33228	
22	9.57401	
23	9.83140	
24	10.10784	
25	10.40917	10.4
26	10.74435	
27	11.13328	
28	11.61366	
29	12.28584	
30	13.60366	

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' Views on Engaging Teaching in Mathematics Lessons Scale, Eighth Grade**

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item									
			BSBM18A	BSBM18B	BSBM18C	BSBM18D	BSBM18E	BSBM18F	BSBM18G	BSBM18H	BSBM18I	BSBM18J
Australia	0.94	64	0.68	0.84	0.80	0.79	0.85	0.86	0.75	0.81	0.82	0.80
Bahrain	0.92	59	0.64	0.79	0.71	0.77	0.82	0.82	0.74	0.80	0.80	0.78
Botswana (9)	0.86	44	0.52	0.68	0.67	0.67	0.72	0.72	0.65	0.65	0.67	0.67
Canada	0.93	61	0.66	0.83	0.76	0.76	0.83	0.85	0.75	0.79	0.78	0.78
Chile	0.94	64	0.68	0.81	0.76	0.79	0.85	0.84	0.78	0.82	0.82	0.82
Chinese Taipei	0.92	58	0.70	0.78	0.77	0.75	0.78	0.76	0.78	0.78	0.77	0.74
Egypt	0.88	48	0.49	0.62	0.70	0.73	0.76	0.74	0.68	0.72	0.71	0.71
England	0.93	61	0.67	0.82	0.77	0.78	0.83	0.85	0.73	0.79	0.78	0.78
Georgia	0.89	52	0.49	0.75	0.54	0.69	0.81	0.80	0.78	0.78	0.74	0.77
Hong Kong SAR	0.94	65	0.72	0.82	0.81	0.79	0.85	0.84	0.81	0.81	0.82	0.80
Hungary	0.91	55	0.63	0.76	0.70	0.74	0.79	0.81	0.74	0.77	0.77	0.72
Iran, Islamic Rep. of	0.90	52	0.54	0.72	0.74	0.70	0.77	0.78	0.75	0.73	0.74	0.72
Ireland	0.92	57	0.62	0.84	0.73	0.74	0.84	0.84	0.71	0.73	0.76	0.74
Israel	0.92	59	0.62	0.80	0.75	0.75	0.83	0.82	0.78	0.75	0.80	0.78
Italy	0.89	51	0.52	0.73	0.66	0.67	0.79	0.80	0.73	0.73	0.73	0.74
Japan	0.91	55	0.57	0.81	0.78	0.75	0.76	0.80	0.61	0.78	0.78	0.75
Jordan	0.89	50	0.51	0.69	0.66	0.71	0.79	0.77	0.69	0.77	0.75	0.71
Kazakhstan	0.92	59	0.57	0.76	0.79	0.78	0.81	0.79	0.80	0.78	0.80	0.79
Korea, Rep. of	0.92	58	0.61	0.77	0.78	0.77	0.78	0.80	0.65	0.81	0.82	0.81
Kuwait	0.89	49	0.52	0.71	0.67	0.72	0.79	0.77	0.68	0.73	0.69	0.71
Lebanon	0.91	55	0.56	0.76	0.74	0.72	0.80	0.77	0.75	0.77	0.78	0.76
Lithuania	0.91	56	0.60	0.80	0.73	0.72	0.81	0.80	0.67	0.78	0.76	0.77
Malaysia	0.91	55	0.62	0.78	0.78	0.73	0.77	0.79	0.70	0.77	0.75	0.72
Malta	0.93	61	0.69	0.81	0.77	0.78	0.82	0.84	0.74	0.78	0.79	0.77
Morocco	0.88	48	0.43	0.62	0.62	0.68	0.75	0.75	0.76	0.78	0.73	0.72
New Zealand	0.93	62	0.66	0.82	0.77	0.78	0.84	0.84	0.75	0.79	0.80	0.78
Norway (9)	0.92	59	0.60	0.82	0.72	0.75	0.81	0.83	0.76	0.77	0.79	0.78
Oman	0.86	45	0.44	0.66	0.69	0.61	0.74	0.73	0.68	0.71	0.71	0.69
Qatar	0.93	62	0.68	0.81	0.76	0.78	0.84	0.82	0.77	0.81	0.81	0.79
Russian Federation	0.91	56	0.57	0.75	0.77	0.74	0.81	0.80	0.73	0.80	0.77	0.75
Saudi Arabia	0.91	54	0.57	0.74	0.72	0.73	0.79	0.77	0.68	0.79	0.78	0.76
Singapore	0.92	59	0.68	0.81	0.79	0.77	0.81	0.82	0.74	0.74	0.78	0.75
Slovenia	0.91	56	0.65	0.73	0.65	0.72	0.81	0.82	0.75	0.78	0.78	0.77
South Africa (9)	0.86	44	0.49	0.70	0.67	0.69	0.68	0.73	0.68	0.64	0.68	0.68
Sweden	0.92	59	0.63	0.82	0.70	0.72	0.82	0.83	0.76	0.82	0.76	0.77
Thailand	0.90	52	0.51	0.76	0.71	0.76	0.75	0.76	0.73	0.76	0.73	0.72
Turkey	0.89	52	0.60	0.77	0.69	0.51	0.80	0.79	0.73	0.72	0.76	0.76
United Arab Emirates	0.92	59	0.62	0.80	0.74	0.76	0.82	0.81	0.77	0.76	0.78	0.77
United States	0.94	64	0.67	0.83	0.78	0.79	0.85	0.86	0.77	0.81	0.81	0.80
<b>Benchmarking Participants</b>												
Buenos Aires, Argentina	0.92	59	0.59	0.77	0.72	0.75	0.82	0.84	0.76	0.81	0.80	0.76
Ontario, Canada	0.93	61	0.67	0.82	0.78	0.77	0.83	0.84	0.75	0.80	0.78	0.79
Quebec, Canada	0.92	57	0.62	0.83	0.73	0.71	0.82	0.84	0.73	0.76	0.78	0.75
Norway (8)	0.91	57	0.58	0.80	0.71	0.74	0.80	0.83	0.74	0.77	0.77	0.77
Abu Dhabi, UAE	0.92	59	0.62	0.80	0.73	0.77	0.82	0.81	0.77	0.76	0.78	0.77
Dubai, UAE	0.92	59	0.63	0.80	0.76	0.78	0.82	0.82	0.75	0.75	0.78	0.77
Florida, US	0.93	62	0.65	0.83	0.78	0.77	0.84	0.84	0.75	0.79	0.81	0.78

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

**Relationship Between the TIMSS 2015 Students' Views on Engaging Teaching in Mathematics Lessons Scale, Eighth Grade, and TIMSS 2015 Mathematics Achievement**

Country	Pearson's Correlation with Mathematics Achievement		Variance in Mathematics Achievement Accounted for by Difference Between Regions of the Scale ( $\eta^2$ )
	(r)	(r <sup>2</sup> )	
Australia	0.16	0.03	0.03
Bahrain	0.13	0.02	0.02
Botswana (9)	0.18	0.03	0.04
Canada	0.10	0.01	0.01
Chile	0.12	0.01	0.01
Chinese Taipei	0.24	0.06	0.05
Egypt	0.13	0.02	0.02
England	0.14	0.02	0.02
Georgia	0.17	0.03	0.02
Hong Kong SAR	0.13	0.02	0.01
Hungary	0.10	0.01	0.01
Iran, Islamic Rep. of	0.07	0.01	0.01
Ireland	0.04	0.00	0.00
Israel	0.03	0.00	0.00
Italy	0.08	0.01	0.01
Japan	0.18	0.03	0.02
Jordan	0.09	0.01	0.01
Kazakhstan	0.16	0.03	0.02
Korea, Rep. of	0.23	0.05	0.03
Kuwait	0.05	0.00	0.00
Lebanon	0.11	0.01	0.01
Lithuania	0.12	0.01	0.01
Malaysia	0.12	0.01	0.01
Malta	0.12	0.01	0.01
Morocco	0.07	0.01	0.01
New Zealand	0.14	0.02	0.02
Norway (9)	0.19	0.04	0.03
Oman	0.16	0.03	0.03
Qatar	0.20	0.04	0.04
Russian Federation	0.13	0.02	0.01
Saudi Arabia	0.12	0.01	0.01
Singapore	0.13	0.02	0.02
Slovenia	0.20	0.04	0.03
South Africa (9)	0.04	0.00	0.00
Sweden	0.17	0.03	0.03
Thailand	0.01	0.00	0.00
Turkey	0.14	0.02	0.02
United Arab Emirates	0.19	0.04	0.03
United States	0.12	0.01	0.02
<b>International Median</b>	<b>0.13</b>	<b>0.02</b>	<b>0.02</b>
<b>Benchmarking Participants</b>			
Buenos Aires, Argentina	0.05	0.00	0.00
Ontario, Canada	0.11	0.01	0.02
Quebec, Canada	0.15	0.02	0.02
Norway (8)	0.14	0.02	0.02
Abu Dhabi, UAE	0.14	0.02	0.02
Dubai, UAE	0.16	0.03	0.02
Florida, US	0.08	0.01	0.01

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