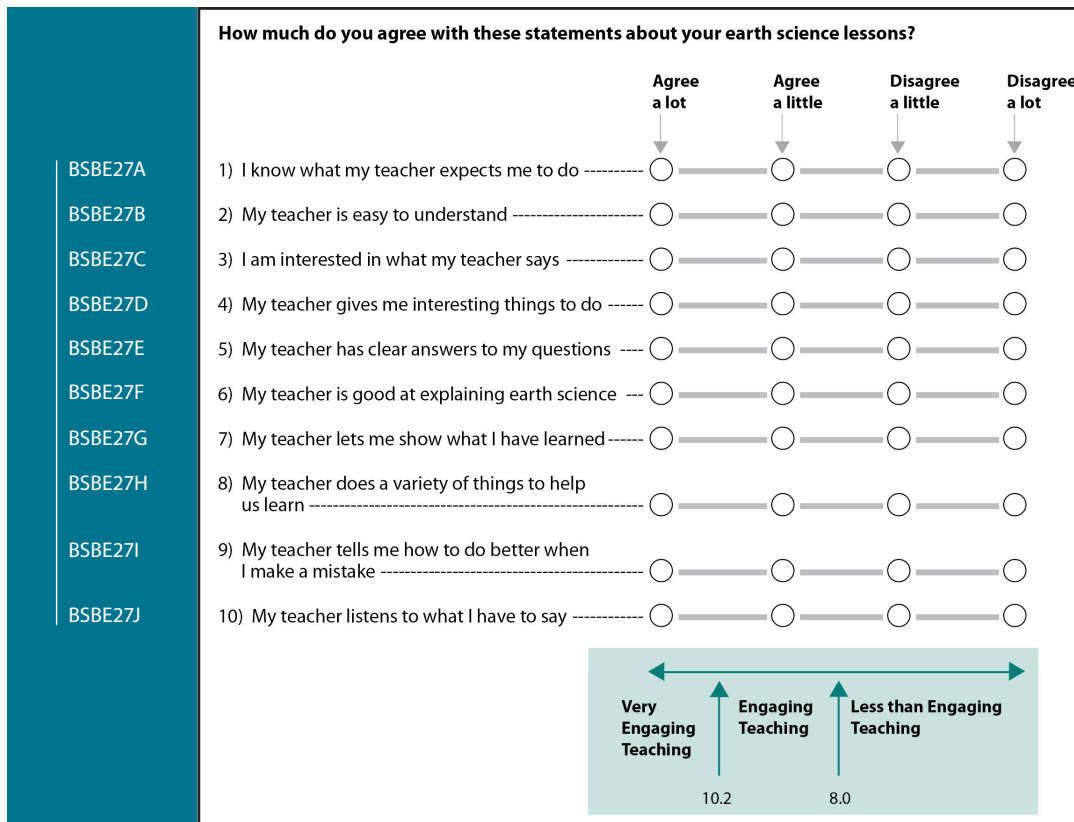


# Students' Views on Engaging Teaching in Earth Science Lessons Scale, Eighth Grade

The Students' Views on Engaging Teaching in Earth Science Lessons (EEL) 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 Earth Science Lessons Scale, Eighth Grade



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

Item	delta	tau_1	tau_2	tau_3	Infit
BSBE27A	0.12956	-1.71093	-0.75256	2.46349	1.42
BSBE27B	0.04083	-1.71141	-0.72731	2.43872	0.93
BSBE27C	0.01333	-1.54955	-0.64003	2.18958	1.03
BSBE27D	0.54229	-1.90692	-0.45837	2.36529	1.01
BSBE27E	-0.17994	-1.42332	-0.85640	2.27972	0.78
BSBE27F	-0.40825	-1.23286	-0.88078	2.11364	0.81
BSBE27G	0.18214	-1.75319	-0.75123	2.50442	0.99
BSBE27H	-0.06175	-1.60758	-0.65571	2.26329	0.89
BSBE27I	-0.05005	-1.56783	-0.79721	2.36504	0.88
BSBE27J	-0.20816	-1.24758	-0.97820	2.22578	0.93

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

Scale Transformation Constants	
A = 8.234304	Transformed Scale Score = 8.234304 + 0.852159 • Logit Scale Score
B = 0.852159	

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 Earth Science Lessons  
Scale, Eighth Grade**

Raw Score	Transformed Scale Score	Cutpoint
0	4.33255	
1	5.27283	
2	5.71900	
3	6.02192	
4	6.25730	
5	6.45433	
6	6.62742	
7	6.78489	
8	6.93215	
9	7.07301	
10	7.20936	
11	7.34636	
12	7.48448	
13	7.62603	
14	7.77348	
15	7.93005	8.0
16	8.09752	
17	8.28072	
18	8.48271	
19	8.70699	
20	8.95182	
21	9.21199	
22	9.47927	
23	9.74797	
24	10.01797	
25	10.29453	10.2
26	10.58780	
27	10.91210	
28	11.30030	
29	11.83049	
30	12.85381	

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 Earth Science Lessons Scale, Eighth Grade**

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item									
			BS8E27A	BS8E27B	BS8E27C	BS8E27D	BS8E27E	BS8E27F	BS8E27G	BS8E27H	BS8E27I	BS8E27J
Georgia	0.93	63	0.64	0.82	0.71	0.76	0.85	0.82	0.83	0.81	0.83	0.82
Hungary	0.94	67	0.74	0.82	0.81	0.81	0.86	0.85	0.82	0.81	0.82	0.81
Kazakhstan	0.94	68	0.67	0.80	0.85	0.84	0.86	0.85	0.85	0.81	0.85	0.83
Lebanon	-	-	-	-	-	-	-	-	-	-	-	-
Lithuania	0.95	69	0.75	0.85	0.84	0.82	0.87	0.86	0.77	0.85	0.84	0.83
Malta	0.95	70	0.79	0.86	0.84	0.83	0.85	0.85	0.82	0.84	0.83	0.82
Morocco	0.91	54	0.56	0.66	0.70	0.75	0.80	0.78	0.76	0.80	0.76	0.76
Russian Federation	0.94	67	0.70	0.83	0.84	0.80	0.87	0.84	0.80	0.84	0.84	0.81
Slovenia	0.95	71	0.78	0.84	0.82	0.84	0.88	0.88	0.84	0.85	0.85	0.83
Sweden	-	-	-	-	-	-	-	-	-	-	-	-

A dash (-) indicates comparable data not available.

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

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

Country	Pearson's Correlation with Science Achievement		Variance in Science Achievement Accounted for by Difference Between Regions of the Scale ( $\eta^2$ )
	(r)	(r <sup>2</sup> )	
Georgia	0.14	0.02	0.02
Hungary	-0.01	0.00	0.00
Kazakhstan	0.10	0.01	0.01
Lebanon	-	-	-
Lithuania	0.08	0.01	0.01
Malta	0.11	0.01	0.01
Morocco	0.07	0.00	0.00
Russian Federation	0.03	0.00	0.00
Slovenia	0.06	0.00	0.00
Sweden	-	-	-
International Median	0.07	0.01	0.01

A dash (-) indicates comparable data not available.

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