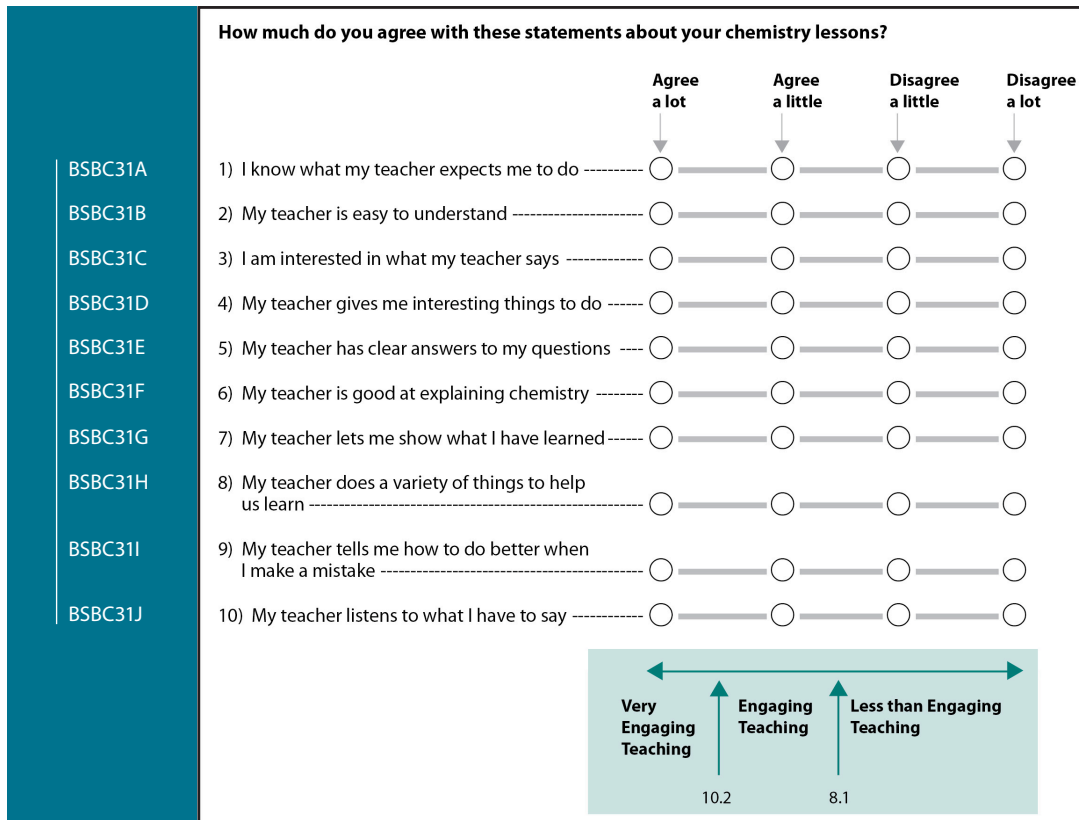


# Students' Views on Engaging Teaching in Chemistry Lessons Scale, Eighth Grade

The Students' Views on Engaging Teaching in Chemistry Lessons (ECL) 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 Chemistry Lessons Scale, Eighth Grade



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

Item	delta	tau_1	tau_2	tau_3	Infit
BSBC31A	0.07176	-1.72687	-0.68347	2.41034	1.45
BSBC31B	0.30353	-1.76760	-0.59269	2.36029	0.92
BSBC31C	0.02753	-1.65415	-0.55147	2.20562	1.06
BSBC31D	0.40206	-1.79741	-0.49080	2.28821	0.99
BSBC31E	-0.12482	-1.51666	-0.72854	2.24520	0.76
BSBC31F	-0.24239	-1.32402	-0.74195	2.06597	0.79
BSBC31G	0.09528	-1.85543	-0.68204	2.53747	0.99
BSBC31H	-0.14875	-1.57374	-0.70570	2.27944	0.91
BSBC31I	-0.13601	-1.57060	-0.74049	2.31109	0.90
BSBC31J	-0.24819	-1.29577	-0.93241	2.22818	0.98

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

**Scale Transformation Constants**

A = 8.279016

B = 0.837128

Transformed Scale Score = 8.279016 + 0.837128 • 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 Chemistry Lessons Scale, Eighth Grade**

Raw Score	Transformed Scale Score	Cutpoint
0	4.41027	
1	5.34346	
2	5.78855	
3	6.09314	
4	6.32976	
5	6.52799	
6	6.70220	
7	6.86069	
8	7.00882	
9	7.15041	
10	7.28758	
11	7.42475	
12	7.56282	
13	7.70401	
14	7.85062	
15	8.00558	8.1
16	8.17066	
17	8.35004	
18	8.54624	
19	8.76229	
20	8.99643	
21	9.24435	
22	9.49933	
23	9.75669	
24	10.01650	
25	10.28369	10.2
26	10.56787	
27	10.88289	
28	11.26098	
29	11.77870	
30	12.78091	

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 Chemistry Lessons Scale, Eighth Grade**

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item									
			B58C31A	B58C31B	B58C31C	B58C31D	B58C31E	B58C31F	B58C31G	B58C31H	B58C31I	B58C31J
Georgia	0.94	68	0.67	0.85	0.74	0.81	0.87	0.86	0.86	0.86	0.85	0.85
Hungary	0.95	67	0.75	0.83	0.80	0.82	0.86	0.86	0.81	0.81	0.84	0.79
Kazakhstan	0.95	70	0.69	0.81	0.86	0.85	0.88	0.86	0.87	0.83	0.87	0.85
Lebanon	0.94	64	0.67	0.82	0.81	0.81	0.83	0.82	0.82	0.81	0.82	0.80
Lithuania	0.95	70	0.76	0.86	0.84	0.83	0.89	0.87	0.79	0.85	0.84	0.83
Malta	0.95	70	0.74	0.87	0.82	0.85	0.88	0.87	0.81	0.83	0.86	0.80
Morocco	0.91	56	0.56	0.69	0.71	0.77	0.80	0.79	0.77	0.81	0.77	0.77
Russian Federation	0.95	69	0.72	0.83	0.85	0.84	0.88	0.87	0.82	0.84	0.85	0.82
Slovenia	0.95	69	0.78	0.81	0.81	0.83	0.88	0.86	0.83	0.86	0.83	0.83
Sweden	0.94	66	0.70	0.86	0.76	0.80	0.87	0.86	0.80	0.84	0.81	0.79

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

**Relationship Between the TIMSS 2015 Students' Views on Engaging Teaching in Chemistry 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	0.17	0.03	0.03
Hungary	0.01	0.00	0.00
Kazakhstan	0.14	0.02	0.02
Lebanon	0.17	0.03	0.03
Lithuania	0.05	0.00	0.01
Malta	0.20	0.04	0.03
Morocco	0.08	0.01	0.00
Russian Federation	0.12	0.02	0.01
Slovenia	0.17	0.03	0.03
Sweden	0.09	0.01	0.01
International Median	0.13	0.02	0.02

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

