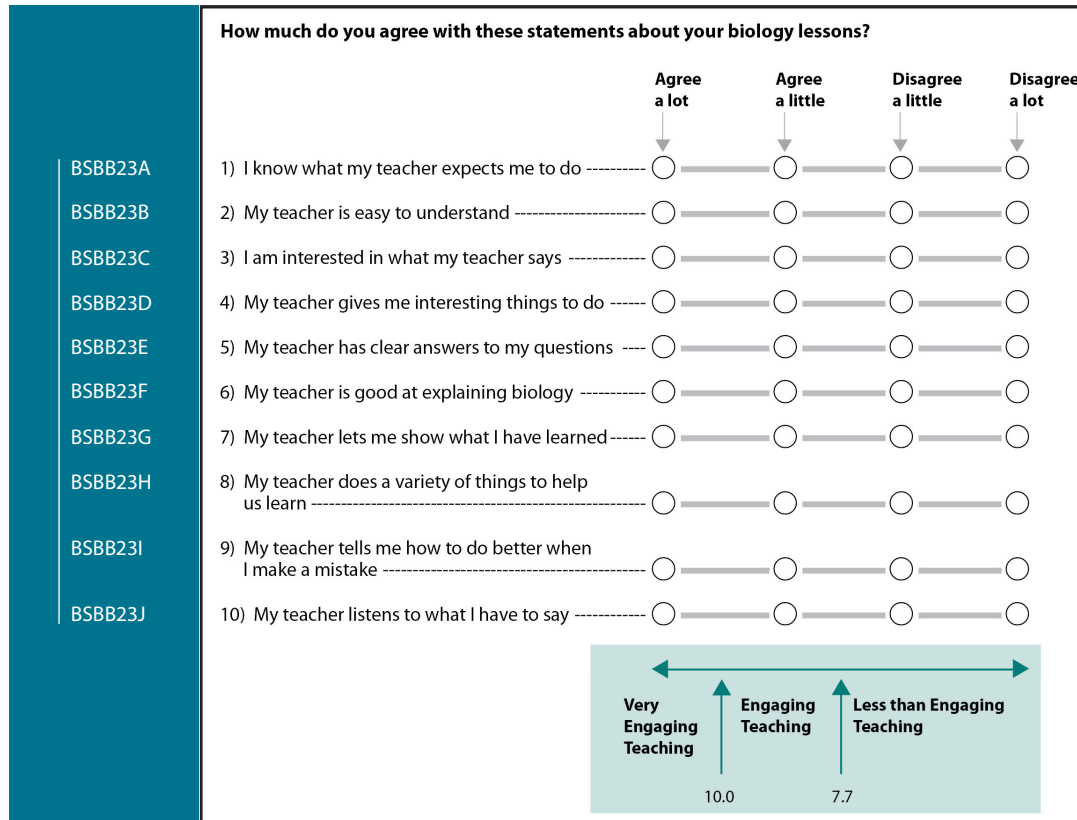


# Students' Views on Engaging Teaching in Biology Lessons Scale, Eighth Grade

The Students' Views on Engaging Teaching in Biology Lessons (EBL) 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 Biology Lessons Scale, Eighth Grade



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

Item	delta	tau_1	tau_2	tau_3	Infit
BSBB23A	0.23712	-1.80522	-0.57382	2.37904	1.35
BSBB23B	0.09871	-1.66400	-0.60548	2.26948	0.89
BSBB23C	-0.05390	-1.55671	-0.51000	2.06671	1.04
BSBB23D	0.50295	-1.83407	-0.36609	2.20016	1.04
BSBB23E	-0.13674	-1.46308	-0.64174	2.10482	0.78
BSBB23F	-0.40148	-1.23377	-0.73035	1.96412	0.79
BSBB23G	0.15844	-1.78687	-0.61699	2.40386	1.00
BSBB23H	-0.16665	-1.62319	-0.56659	2.18978	0.88
BSBB23I	-0.01693	-1.59071	-0.58844	2.17915	0.91
BSBB23J	-0.22152	-1.30447	-0.81869	2.12316	0.93

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

Scale Transformation Constants	
A = 7.952108	Transformed Scale Score = 7.952108 + 0.927987 • Logit Scale Score
B = 0.927987	

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 Biology Lessons Scale,  
Eighth Grade**

Raw Score	Transformed Scale Score	Cutpoint
0	3.68279	
1	4.72056	
2	5.21810	
3	5.55682	
4	5.82253	
5	6.04443	
6	6.23952	
7	6.41702	
8	6.58151	
9	6.74042	
10	6.89504	
11	7.04799	
12	7.20164	
13	7.35828	
14	7.52021	
15	7.69015	7.7
16	7.86991	
17	8.06292	
18	8.27115	
19	8.49677	
20	8.73848	
21	8.99364	
22	9.25822	
23	9.52944	
24	9.80777	
25	10.09786	10.0
26	10.40930	
27	10.75637	
28	11.17501	
29	11.74935	
30	12.86128	

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 Biology Lessons Scale, Eighth Grade**

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item									
			BS8B23A	BS8B23B	BS8B23C	BS8B23D	BS8B23E	BS8B23F	BS8B23G	BS8B23H	BS8B23I	BS8B23J
Georgia	0.92	61	0.61	0.81	0.64	0.72	0.84	0.83	0.83	0.83	0.81	0.81
Hungary	0.92	59	0.72	0.78	0.77	0.68	0.82	0.83	0.76	0.76	0.78	0.79
Kazakhstan	0.94	66	0.66	0.79	0.84	0.82	0.85	0.83	0.83	0.81	0.84	0.82
Lebanon	0.93	61	0.64	0.79	0.78	0.78	0.81	0.80	0.78	0.81	0.81	0.79
Lithuania	0.94	65	0.73	0.83	0.80	0.79	0.85	0.84	0.74	0.82	0.82	0.82
Malta	0.95	67	0.74	0.86	0.82	0.84	0.86	0.85	0.76	0.80	0.82	0.82
Morocco	0.90	53	0.52	0.64	0.70	0.73	0.79	0.78	0.79	0.79	0.75	0.75
Russian Federation	0.93	62	0.65	0.79	0.82	0.78	0.83	0.81	0.74	0.81	0.81	0.78
Slovenia	0.95	67	0.76	0.81	0.80	0.82	0.87	0.86	0.80	0.84	0.82	0.81
Sweden	0.94	65	0.66	0.85	0.77	0.79	0.87	0.86	0.78	0.84	0.79	0.80

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

**Relationship Between the TIMSS 2015 Students' Views on Engaging Teaching in Biology 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)	( $r^2$ )	
Georgia	0.17	0.03	0.02
Hungary	0.03	0.00	0.01
Kazakhstan	0.12	0.01	0.01
Lebanon	0.17	0.03	0.03
Lithuania	-0.06	0.00	0.00
Malta	0.21	0.04	0.05
Morocco	0.06	0.00	0.00
Russian Federation	0.03	0.00	0.00
Slovenia	0.04	0.00	0.00
Sweden	0.07	0.01	0.01
International Median	0.07	0.00	0.01

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