Exhibit 3: Scale Transformation Constants

Scale Transformation Constants	
A = 10.41262	Transformed Scale Score = 10.41262 + 1.39969 · Logit Scale Score
B = 1.39969	

Exhibit 4: Equivalence Table of the Raw Score and the Transformed Scale Score

Raw Score	Transformed Scale Score	Cutpoint	Raw Score	Transformed Scale Score	Cutpoint
0	4.21775		11	9.23526	
1	5.58135		12	9.61981	
2	6.23695		13	10.10488	10.1
3	6.70196		14	10.81939	
4	7.08013		15	12.35378	
5	7.41232				
6	7.71752				
7	8.01626				
8	8.30182				
9	8.59651				
10	8.90342	8.1			

Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Students Like Learning Mathematics Scale, Fourth Grade

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item				
			ASBM01A	ASBM01B*	ASBM01C*	ASBM01D	ASBM01E
Armenia	0.67	44	0.70	0.45	0.47	0.79	0.82
Australia	0.89	71	0.88	0.77	0.85	0.78	0.91
Austria	0.89	70	0.88	0.80	0.84	0.77	0.91
Azerbaijan	0.44	40	0.75	0.07	0.45	0.75	0.81
Bahrain	0.77	54	0.78	0.59	0.71	0.72	0.85
Belgium (Flemish)	0.90	72	0.91	0.84	0.88	0.67	0.92
Chile	0.83	60	0.84	0.68	0.79	0.69	0.87
Chinese Taipei	0.90	72	0.87	0.81	0.83	0.83	0.90
Croatia	0.90	73	0.89	0.79	0.85	0.81	0.91
Czech Republic	0.86	65	0.89	0.68	0.84	0.70	0.90
Denmark	0.88	69	0.88	0.76	0.81	0.81	0.90
England	0.87	67	0.88	0.75	0.81	0.74	0.90
Finland	0.92	75	0.88	0.81	0.89	0.83	0.92
Georgia	0.70	49	0.76	0.62	0.67	0.60	0.82
Germany	0.88	69	0.87	0.79	0.82	0.77	0.90
Hong Kong SAR	0.87	66	0.86	0.70	0.80	0.80	0.89
Hungary	0.86	66	0.87	0.74	0.79	0.74	0.90
Iran, Islamic Rep. of	0.77	54	0.78	0.70	0.69	0.68	0.82

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item				
			ASBM01A	ASBM01B*	ASBM01C*	ASBM01D	ASBM01E
Sixth Grade Participants							
Botswana	0.67	44	0.71	0.57	0.68	0.61	0.74
Honduras	0.67	46	0.77	0.51	0.60	0.64	0.81
Yemen	0.61	42	0.75	0.48	0.44	0.68	0.80
Benchmarking Participants							
Alberta, Canada	0.88	68	0.88	0.74	0.83	0.75	0.91

Exhibit 6: Relationship Between the TIMSS 2011 Students Like Learning Mathematics Scale, Fourth Grade, and TIMSS 2011 Mathematics Achievement (Continued)

Country	Pearson's Correlation with Mathematics Achievement		Variance in Mathematics Achievement Accounted for by Difference Between Regions of the Scale (^{2})
	(r)	(r²)	
Iran, Islamic Rep. of	0.23	0.05	0.06
Ireland	0.10	0.01	0.01
Italy	0.18	0.03	0.03
Japan	0.25	0.06	0.06
Kazakhstan	0.20	0.04	0.03
Korea, Rep. of	0.24	0.06	0.05
Kuwait	0.23	0.05	0.07
Lithuania	0.22	0.05	0.04
Malta	0.26	0.07	0.07
Morocco	0.32	0.10	0.09
Netherlands	0.15	0.02	0.02
New Zealand	0.05	0.00	0.00
Northern Ireland	0.14	0.02	0.02
Norway	0.11	0.01	0.02
Oman	0.37	0.14	0.12
Poland	0.19	0.04	0.04
Portugal	0.30	0.09	0.07
Qatar	0.29	0.08	0.10
Romania	0.29	0.08	0.08
Russian Federation	0.20	0.04	0.04
Saudi Arabia	0.25	0.06	0.07
Serbia	0.15	0.02	0.02
Singapore	0.25	0.06	0.06
Slovak Republic	0.22	0.05	0.04
Slovenia	0.14	0.02	0.02
Spain	0.21	0.04	0.05
Sweden	0.05	0.00	0.00
Thailand	0.27	0.07	0.08
Tunisia	0.32	0.10	0.10
Turkey	0.36	0.13	0.13
United Arab Emirates	0.24	0.06	0.07
United States	0.12	0.01	0.02
Yemen	0.30	0.09	0.08
International Median	0.22	0.05	0.05

Exhibit 6: Relationship Between the TIMSS 2011 Students Like Learning Mathematics Scale, Fourth Grade, and TIMSS 2011 Mathematics Achievement (Continued)

Country	Pearson's Correlation with Mathematics Achievement		Variance in Mathematics Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	(r)	(r²)	
Sixth Grade Participants			
Botswana	0.38	0.15	0.15
Honduras	0.18	0.03	0.06
Yemen	0.28	0.08	0.08
Benchmarking Participants			
Alberta, Canada	0.18	0.03	0.03
Ontario, Canada	0.17	0.03	0.03
Quebec, Canada	0.23	0.05	0.05
Abu Dhabi, UAE	0.25	0.06	0.09
Dubai, UAE	0.21	0.04	0.05
Florida, US	0.12	0.02	0.02
North Carolina, US	0.11	0.01	0.01