



Item Parameters for the TIMSS 2015 Students Confident in Science Scale, Fourth Grade

Item	delta	tau_1	tau_2	tau_3	Infit
ASBS06A	-0.39055	-0.49625	-0.66696	1.16321	1.02
ASBS06B*	0.20690	-0.51673	0.11786	0.39887	0.99
ASBS06C*	0.09646	-0.33652	0.05023	0.28629	0.95
ASBS06D	-0.24028	-0.68647	-0.30807	0.99454	1.03
ASBS06E	0.14669	-0.81490	-0.26498	1.07988	1.27
ASBS06F*	0.12712	-0.23193	0.04516	0.18677	0.93
ASBS06G*	0.05366	-0.19671	0.12470	0.07201	0.99

\*Reverse coded

Scale Transformation Constants for the TIMSS 2015 Students Confident in Science Scale, Fourth Grade

Scale Transformation Constants	
A = 8.285794	
B = 1.489538	

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 Confident in Science Scale, Fourth Grade

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

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item						
			ASBS06A	ASBS06B	ASBS06C	ASBS06D	ASBS06E	ASBS06F	ASBS06G
Australia	0.84	51	0.72	0.77	0.79	0.71	0.50	0.75	0.73
Bahrain	0.72	39	0.08	0.81	0.79	0.35	0.26	0.85	0.76
Belgium (Flemish)	0.85	52	0.77	0.75	0.80	0.67	0.54	0.78	0.73
Bulgaria	0.82	48	0.60	0.76	0.77	0.64	0.53	0.77	0.75
Canada	0.83	51	0.70	0.78	0.77	0.71	0.45	0.79	0.74
Chile	0.76	42	0.51	0.74	0.72	0.53	0.31	0.79	0.77
Chinese Taipei	0.83	50	0.68	0.75	0.68	0.71	0.55	0.78	0.78
Croatia	0.87	57	0.75	0.79	0.75	0.74	0.66	0.81	0.77
Cyprus	0.85	52	0.73	0.72	0.75	0.72	0.65	0.72	0.75
Czech Republic	0.87	57	0.75	0.76	0.81	0.75	0.62	0.81	0.74
Denmark	0.86	55	0.78	0.73	0.79	0.79	0.61	0.75	0.73
England	0.85	54	0.75	0.77	0.82	0.73	0.46	0.79	0.76
Finland	0.82	49	0.76	0.76	0.81	0.75	0.53	0.76	0.47
France	0.85	54	0.75	0.72	0.76	0.74	0.58	0.78	0.78
Georgia	0.74	40	0.29	0.80	0.80	0.31	0.21	0.82	0.78
Germany	0.84	52	0.69	0.77	0.78	0.71	0.56	0.79	0.72
Hong Kong SAR	0.81	47	0.65	0.72	0.81	0.65	0.49	0.79	0.65
Hungary	0.86	55	0.77	0.77	0.80	0.72	0.68	0.78	0.66
Indonesia	0.73	39	0.29	0.77	0.78	0.38	0.21	0.79	0.78
Iran, Islamic Rep. of	0.76	41	0.32	0.69	0.80	0.44	0.36	0.83	0.80
Ireland	0.82	49	0.71	0.77	0.77	0.69	0.38	0.77	0.73
Italy	0.78	44	0.67	0.68	0.57	0.70	0.57	0.75	0.68
Japan	0.83	51	0.70	0.73	0.83	0.70	0.46	0.77	0.74
Jordan	0.72	40	-0.02	0.82	0.82	0.21	0.22	0.85	0.80
Kazakhstan	0.82	48	0.60	0.76	0.76	0.63	0.58	0.77	0.71
Korea, Rep. of	0.86	55	0.80	0.77	0.80	0.69	0.57	0.78	0.76
Kuwait	0.72	39	0.17	0.78	0.76	0.40	0.34	0.81	0.75
Lithuania	0.81	48	0.69	0.75	0.79	0.60	0.51	0.78	0.66
Morocco	0.72	37	0.31	0.75	0.75	0.40	0.30	0.77	0.74
Netherlands	0.84	52	0.70	0.75	0.80	0.67	0.44	0.79	0.81
New Zealand	0.77	43	0.63	0.69	0.75	0.61	0.41	0.75	0.69
Northern Ireland	0.84	52	0.71	0.73	0.80	0.72	0.47	0.79	0.75
Norway (5)	0.82	48	0.72	0.75	0.75	0.71	0.49	0.74	0.67
Oman	0.70	37	0.11	0.78	0.72	0.33	0.25	0.82	0.77
Poland	0.83	50	0.72	0.77	0.66	0.73	0.58	0.76	0.72
Portugal	0.76	42	0.64	0.65	0.73	0.67	0.54	0.59	0.72
Qatar	0.77	43	0.30	0.82	0.77	0.42	0.37	0.84	0.78
Russian Federation	0.87	57	0.73	0.79	0.82	0.76	0.63	0.79	0.76
Saudi Arabia	0.72	40	0.00	0.81	0.81	0.24	0.20	0.85	0.80
Serbia	0.82	49	0.63	0.74	0.75	0.65	0.59	0.76	0.74
Singapore	0.86	55	0.74	0.80	0.79	0.70	0.55	0.80	0.75
Slovak Republic	0.85	53	0.73	0.73	0.79	0.71	0.57	0.79	0.74
Slovenia	0.86	54	0.74	0.75	0.73	0.73	0.64	0.79	0.74
South Africa (5)	-	-	-	-	-	-	-	-	-
Spain	0.82	49	0.67	0.75	0.75	0.64	0.58	0.76	0.72
Sweden	0.81	48	0.69	0.71	0.76	0.71	0.47	0.77	0.70
Turkey	0.77	43	0.50	0.75	0.79	0.49	0.41	0.79	0.73
United Arab Emirates	0.77	42	0.39	0.77	0.75	0.50	0.40	0.81	0.74
United States	0.82	49	0.67	0.78	0.77	0.64	0.43	0.80	0.74
Benchmarking Participants									
Buenos Aires, Argentina	0.74	40	0.54	0.70	0.74	0.50	0.38	0.72	0.73
Ontario, Canada	0.84	52	0.70	0.79	0.80	0.69	0.44	0.80	0.75
Quebec, Canada	0.83	50	0.74	0.75	0.70	0.75	0.47	0.78	0.73
Norway (4)	0.81	48	0.70	0.74	0.75	0.71	0.51	0.74	0.65
Abu Dhabi, UAE	0.74	40	0.27	0.78	0.76	0.41	0.33	0.82	0.75
Dubai, UAE	0.81	47	0.58	0.78	0.75	0.60	0.50	0.79	0.73
Florida, US	0.84	52	0.67	0.77	0.79	0.68	0.49	0.80	0.77

\*Reverse coded

A dash (-) indicates comparable data not available.



Australia  
Bahrain  
Belgium (Flemish)  
Bulgaria  
Canada  
Chile  
Chinese Taipei  
Croatia  
Cyprus  
Czech Republic  
Denmark  
England  
Finland  
France  
Georgia  
Germany  
Hong Kong SAR  
Hungary  
Indonesia  
Iran, Islamic Rep. of  
Ireland  
Italy  
Japan  
Jordan  
Kazakhstan  
Korea, Rep. of  
Kuwait

