

## Appendix 12K: Mathematics Item Parameters from the Final eTIMSS 2019 Adjusted Model Calibration—Grade 4

ME01_01	ME51043	0.0					
* ME01_02	ME51040	0.0			0.422		
* ME01_03	ME51008	0.0					
* ME01_04A	ME51031A	0.0					
* ME01_04B	ME51031B	0.0					
* ME01_05	ME51508	0.0					
* ME01_06A	ME51216A	0.0			0.237		
ME01_06B	ME51216B	0.0			0.167	0.278 (0.060)	
* ME01_07	ME51221	0.0				0.168	
* ME01_08	ME51115	0.0				0.113	
* ME01_09A	ME51507A	0.0					
* ME01_09B	ME51507B	0.0					
* ME02_01	ME71219	0.042	0.709	-1.072	0.032		
* ME02_02	ME71021	0.056	1.146	0.191	0.089		
ME02_03	ME71167	0.025	1.557 (0.084)	1.073 (0.032)			
* ME02_04	ME71041	0.026	1.375	-0.220	0.143		
* ME02_05	ME71162	0.050	0.479	1.545		-0.840	0.840
ME02_06	ME71078	0.040	0.456 (0.037)	-0.848 (0.096)			
* ME02_07	ME71090	0.021	1.102	0.277	0.164		
* ME02_08	ME71151	0.057	0.593	0.990		-1.236	1.236
ME02_09	ME71119	0.033	0.675 (0.043)	-0.847 (0.069)			
ME02_10A	ME71217A	0.041	0.946 (0.054)	-0.888 (0.054)			
ME02_11	ME71142	0.030	1.132 (0.058)	-0.385 (0.035)			
* ME02_12	ME71204	0.063	1.334	0.569			
* ME03_01	ME61026	0.04		-0.740			
* ME03_02	ME61273	0.02		0.335			
* ME03_03	ME61034	0.02		0.694			
* ME03_04	ME61040	0.03		0.683			
* ME03_05	ME61228	0.05		0.9		-0.255	0.255
* ME03_06	ME61166	0.07		0.7			
* ME03_07	ME61171	0.01		0.0			
ME03_08	ME61080	0.02		0.0 (0.043)			
* ME03_09	ME61222	0.05		0.53		0.323	
ME03_10	ME61076	0.02		0.454 (0.076)			
ME03_11	ME61084	0.01		0.076 (0.076)			

\* Invariant item—i





TIMSS & PIRLS

BO

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
ME10_08 ME71179	0.021	1.080 (0.063)	1.095 (0.045)			
* ME10_09 ME71067	0.035	0.543	1.054		-1.542	1.542
* ME10_10A ME71147A	0.054	1.302	-0.335			
* ME10_10B ME71147B	0.091	0.886	0.392			
ME10_11 ME71189	0.050	0.910 (0.056)	-1.247 (0.069)			
ME10_12A ME71187A	0.035	0.724 (0.044)	-0.645 (0.057)			
* ME10_12B ME71187B	0.069	0.676	-0.261			
* ME11_01 ME61178	0.000					
* ME11_02 ME61246	0.000			0.090		
* ME11_03 ME61271	0.000					
* ME11_04 ME61256	0.000					
* ME11_05 ME61182	0.000					
* ME11_06 ME61049	0.000			0.310		
* ME11_07 ME61232	0.000			0.321		
ME11_08 ME61095	0.020		(0.035)			
ME11_09 ME61264	0.020		0.034)		-0.183 (0.063)	0.183
* ME11_10 ME61108	0.030		0.147	0.182		
* ME11_11A ME61211A	0.030		0.241			
* ME11_11B ME61211B	0.020		0.719	0.276		
* ME12_01 ME71001	0.045	0.857	-0.986	0.087		
* ME12_02 ME71010	0.068	0.694	-0.093			
* ME12_03 ME71062	0.045	1.337	1.262	0.129		
* ME12_04A ME71216A	0.057	1.253	-0.288			
* ME12_04B ME71216B	0.044	0.831	0.388			
ME12_05 ME71117	0.027	0.676 (0.040)	-0.064 (0.045)			
* ME12_06 ME71071	0.031	1.248	0.610	0.332		
* ME12_07 ME71098	0.035	0.729	0.855		0.060	-0.060
ME12_08 ME71069	0.034	1.088 (0.056)	0.568 (0.033)			
ME12_09A ME71134A	0.024	1.785 (0.124)	0.215 (0.033)	0.114 (0.019)		
ME12_09B ME71134B	0.025	1.483 (0.072)	0.535 (0.026)			
ME12_10 ME71202	0.030	0.562 (0.038)	-0.521 (0.064)			
ME12_11 ME71190	0.031	1.009 (0.051)	-0.142 (0.034)			
* ME12_12 ME71218	0.036	1.098	1.289			
ME13_01 ME61240	0.020		(0.044)			
ME13_02 ME61254	0.030		(0.048)			
* ME13_03 ME61244	0.030		0.071	0.240		
* ME13_04 ME61041	0.040		0.009	0.242		
* ME13_05 ME61173	0.050		0.706			
* ME13_06 ME61252	0.020		0.157	0.113		

\* Invariant item—item parameters

Item		RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
* ME13_07	ME61261	0.033					
	ME13_08	ME61224	0.032				
* ME13_09	ME61077	0.032			0.093		
* ME13_10A	ME61069A	0.032					
* ME13_10B	ME61069B	0.032					
* ME14_01	ME71024	0.023	0.921	0.254			
* ME14_02	ME71008	0.053	1.118	-0.105	0.128		
* ME14_03	ME71165	0.025	1.277	0.294	0.190		
	ME14_04	ME71049	0.030	0.770 (0.043)	0.006 (0.039)		
* ME14_05	ME71063	0.054	1.050	0.314			
* ME14_06	ME71079	0.023	1.179	0.790	0.192		
* ME14_07	ME71081	0.034	1.007	-0.012			
* ME14_08	ME71094	0.045	1.007	0.741	0.280		
	ME14_09	ME71177	0.025	0.531 (0.038)	0.196 (0.054)		
* ME14_10	ME71206	0.038	0.681	-0.526	0.125		
	ME14_11A	ME71138A	0.025	0.770 (0.044)	0.004 (0.040)		
* ME14_11B	ME71138B	0.037	0.984	0.841			
* ME14_12	ME71203	0.055	0.653	1.272	0.106		
* ME14_13	ME71205	0.030	1.108	0.460			

\* Invariant item—item parameters were fixed from the paper TIMSS concurrent calibration. Item parameters are transformation parameters. The value is the value.

## Appendix 12L: Science Item Parameters from the Final eTIMSS 2019 Adjusted Model Calibration—Grade 4

Item	RMSD	Slope (a <sub>i</sub> )	Location (b <sub>i</sub> )	Guessing (c <sub>i</sub> )	Step 1 (d <sub>i1</sub> )	Step 2 (d <sub>i2</sub> )
* SE01_01 SE51054	0.0			0.261		
* SE01_02 SE51024	0.0					
* SE01_03A SE51132A	0.0					
* SE01_03B SE51132B	0.0					
* SE01_04 SE51040	0.0					
* SE01_05 SE51193	0.0			0.274		
* SE01_06 SE51063	0.0			0.222		
* SE01_07 SE51012	0.0			0.253		
* SE01_08 SE51115	0.0					
* SE01_09 SE51180	0.0			0.360		
* SE01_10 SE51106	0.0			0.215		
* SE01_11 SE51148	0.0			0.241		
* SE02_01 SE71002	0.065	0.572	0.102			
* SE02_02 SE71402	0.025	1.119	-0.194	0.299		
SE02_03 SE71017	0.028	0.683 (0.044)	0.193 (0.043)			
* SE02_04 SE71077	0.054	1.100	0.285			
* SE02_05 SE71072	0.079	1.212	0.845	0.232		
* SE02_06 SE71054	0.081	0.941	0.272			
* SE02_07 SE71115	0.034	0.848	0.856	0.249		
* SE02_08 SE71140	0.055	0.703	-0.012	0.240		
* SE02_09 SE71128	0.023	0.852	0.075	0.330		
* SE02_10 SE71147	0.045	0.883	-0.165	0.241		
SE02_11A SE71920A	0.033	0.551 (0.043)	0.899 (0.068)			
* SE02_11B SE71920B	0.018	0.956	0.671			
SE02_12 SE71268	0.020	0.923 (0.117)	0.866 (0.073)	0.180 (0.031)		
* SE03_01 SE61141	0.02		0.577			
SE03_02 SE61023	0.03	0.46	-0.304 (0.046)			
* SE03_03 SE61054	0.04		0.702	0.369		-1.489
* SE03_04 SE61007	0.03		-0.1			
* SE03_05 SE61006	0.04					
* SE03_06 SE61108	0.02					
* SE03_07 SE61109	0.03					
* SE03_08 SE61080	0.03			0.264		
* SE03_09 SE61088	0.02					
* SE03_10 SE61151	0.02					
* SE03_11 SE61150	0.04					
* SE03_12 SE61169	0.05	1.0		0.268		

\* Invariant item—item parameters were fixed from the paperTIMSS concurrent calibration; location parameters are transformations of the TIMSS value.



TIMSS & PIRLS

BO



TIMSS & PIRLS

BO



Item

Step 1 ( $d_{11}$ )

Step 2 ( $d_{12}$ )



TIMSS & PIRLS

BO

## Appendix 12M: Mathematics Item Parameters from the Final eTIMSS 2019 Adjusted Model Calibration—Grade 8

* ME01_01	ME52024	0.0	0.232		
* ME01_02A	ME52058A	0.0			
* ME01_02B	ME52058B	0.0			
* ME01_03	ME52125	0.0	0.098		0.5511.263
ME01_04	ME52229	0.0			
* ME01_05	ME52063	0.0	0.196		
* ME01_06	ME52072	0.0	0.146		
* ME01_07A	ME52146A	0.0			
* ME01_07B	ME52146B	0.0		0.0370.859	
* ME01_08	ME52092	0.0			

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
* ME03_06 ME62351	0.056			0.207		
* ME03_07 ME62223	0.053			0.188		
* ME03_08 ME62027	0.057					
* ME03_09 ME62174	0.058			0.319		
* ME03_10 ME62244	0.052					
* ME03_11 ME62261	0.057			0.132		
ME03_12 ME62300	0.056				-0.386 (0.069)	0.386 (0.072)
* ME03_13 ME62254	0.057					
* ME03_14A ME62132A	0.057					
* ME03_14B ME62132B	0.057			0.263		
ME04_01 ME72178	0.018	1.184 (0.070)	0.793 (0.040)			
* ME04_02 ME72234	0.059	0.959	1.052	0.258		
ME04_03 ME72020	0.032	0.739 (0.035)	0.029 (0.033)		-0.192 (0.067)	0.192 (0.063)
* ME04_04 ME72027	0.076	1.225	0.321	0.154		
* ME04_05 ME72052	0.078	0.814	1.664			
* ME04_06 ME72067	0.034	1.318	0.106	0.218		
* ME04_07A ME72083A	0.085	1.406	0.019			
* ME04_07B ME72083B	0.054	0.776	0.579	0.076		
* ME04_08A ME72108A	0.053	0.728	0.099			
ME04_08B ME72108B	0.017	1.085 (0.067)	0.963 (0.046)			
ME04_09 ME72181	0.032	0.956 (0.062)	1.043 (0.052)			
* ME04_10 ME72126	0.043	0.679	1.010		-0.811	0.811
ME04_11 ME72164	0.026	0.639 (0.052)	1.498 (0.096)			
ME04_12A ME72185A	0.022	1.376 (0.081)	0.799 (0.036)			
ME04_12B ME72185B	0.018	1.251 (0.075)	0.726 (0.038)			
ME05_01 ME52413	0.022		0.346 (0.069)	0.188		
* ME05_02 ME52134	0.044		-0.161	0.078		
* ME05_03 ME52078	0.033		0.993			
* ME05_04 ME52034	0.022		0.659			
* ME05_05A ME52174A	0.044		0.323			
* ME05_05B ME52174B	0.011		1.130			
* ME05_06 ME52130	0.044		1.081			
* ME05_07 ME52073	0.033		0.000			
* ME05_08 ME52110	0.022					
* ME05_09 ME52105	0.033					
* ME05_10 ME52407	0.022					
ME05_11 ME52036	0.033	0.999 (0.052)				
* ME05_12 ME52502	0.033	0.7165				

\* Invariant item—i

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
* ME05_13 ME52117	0.036					
* ME05_14 ME52426	0.042			0.142		
* ME06_01 ME62150	0.045	1.111	-0.193			
* ME06_02 ME62335	0.045	1.377	0.004	0.175		
* ME06_03 ME62219	0.034	2.050	0.961	0.218		
ME06_04 ME62002	0.030	0.447 (0.042)	0.846 (0.091)			
* ME06_05 ME62149	0.043	1.089	0.617	0.111		
* ME06_06 ME62241	0.024	1.708	0.743			
* ME06_08 ME62105	0.058	0.757	0.960		-1.718	1.718
* ME06_09 ME62040	0.039	0.769	1.057	0.224		
* ME06_10 ME62288	0.030	0.776	1.250		-0.880	0.880
* ME06_11 ME62173	0.027	1.119	0.922			
* ME06_12 ME62133	0.018	1.315	0.726	0.214		
* ME06_13A ME62123A	0.028	1.562	0.464	0.306		
* ME06_13B ME62123B	0.031	1.444	0.814	0.138		
* ME07_01 ME52079	0.038		0.74	0.271		
* ME07_02 ME52204	0.038		0.06	0.180		
ME07_03 ME52364	0.044		0.235 (0.038)			
ME07_04 ME52215	0.029		0.126 (0.043)			
* ME07_05 ME52147	0.029		0.872	0.275		
* ME07_06 ME52067	0.044		0.176	0.263		
* ME07_07 ME52068	0.033		1.374	0.132		
* ME07_08 ME52087	0.033		1.249			
ME07_09 ME52048	0.033		0.669 (0.053)			
* ME07_10 ME52039	0.029		0.382			
* ME07_11 ME52208	0.033		1.221	0.098		
* ME07_12A ME52419A	0.055		-0.264	0.098		
* ME07_12B ME52419B	0.033		-0.562			
* ME07_13 ME52115	0.033		0.457			
* ME07_14 ME52421	0.055		0.751			
* ME08_01 ME72002	0.039	1.517	0.652			
* ME08_02 ME72188	0.044	1.280	0.880	0.138		
* ME08_03 ME72035	0.033	1.132	0.661			
ME08_04 ME72055	0.020	1.260 (0.077)	0.968 (0.040)			
* ME08_05 ME72222	0.093	0.603	0.761	0.098		
* ME08_06 ME72090	0.044	1.211	0.987	0.198		
* ME08_07 ME72233	0.025	1.075	0.802	0.367		
* ME08_08A ME72106A	0.047	1.068	-0.188			
ME08_08B ME72106B	0.020	1.537 (0.091)	0.887 (0.034)			

\* Invariant item—item parameters are invariant with respect to the paper TIMSS concurrent calibration; location parameters are transformations of the fixed location parameter.

Item	RMSD	Slope (a <sub>i</sub> )	Location (b <sub>i</sub> )	Guessing (c <sub>i</sub> )	Step 1 (d <sub>1i</sub> )	Step 2 (d <sub>2i</sub> )
ME08_08C ME72106C	0.014	1.770 (0.114)	1.160 (0.035)			
* ME08_09A ME72128A	0.025	0.999	0.654			
* ME08_09B ME72128B	0.082	0.892	1.144		0.042	-0.042
ME08_10 ME72119	0.022	1.038 (0.062)	0.342 (0.039)			
* ME08_11A ME72153A	0.072	1.021	0.488			
* ME08_11B ME72153B	0.021	1.548	1.340			
* ME08_12 ME72172	0.037	1.048	0.204	0.060		
ME09_01 ME62329	0.014	1.000 (0.000)	0.231 (0.082)			
* ME09_02 ME62151	0.014	1.000 (0.000)	0.231 (0.082)			
* ME09_03 ME62346	0.014	1.000 (0.000)	0.231 (0.082)			
* ME09_04 ME62212	0.014	1.000 (0.000)	0.231 (0.082)	0.124		
* ME09_05 ME62056	0.014	1.000 (0.000)	0.231 (0.082)			
* ME09_06 ME62317	0.014	1.000 (0.000)	0.231 (0.082)			
* ME09_07 ME62350	0.014	1.000 (0.000)	0.231 (0.082)	0.129		
* ME09_08 ME62078	0.014	1.000 (0.000)	0.231 (0.082)			
* ME09_09 ME62284	0.014	1.000 (0.000)	0.231 (0.082)	0.290		
* ME09_10 ME62245	0.014	1.000 (0.000)	0.231 (0.082)	0.204		
ME09_11 ME62287	0.014	1.000 (0.000)	0.231 (0.082)	0.345 (0.057)		
* ME09_12A ME62345A	0.014	1.000 (0.000)	0.231 (0.082)	0.557	0.267	
* ME09_13 ME62115	0.014	1.000 (0.000)	0.231 (0.082)	0.468	0.202	
ME10_01 ME72187	0.041	0.909 (0.056)	-0.001 (0.044)			
* ME10_02 ME72022	0.024	1.631	1.180	0.279		
* ME10_04 ME72045	0.038	1.307	0.571			
ME10_05 ME72049	0.051	0.794 (0.053)	-0.361 (0.055)			
ME10_06 ME72069	0.045	1.615 (0.089)	0.163 (0.029)			
* ME10_07 ME72074	0.041	1.162	1.036			
* ME10_08 ME72013	0.032	1.126	0.704	0.120		
* ME10_09 ME72095	0.038	1.416	0.623			
* ME10_10 ME72109	0.039	1.467	1.194			
* ME10_11 ME72125	0.098	2.017	0.930	0.107		
* ME10_12 ME72196	0.021	1.376	0.653			
* ME10_13 ME72237	0.061	0.963	0.065	0.194		
ME10_14 ME72232	0.050	0.593 (0.046)	-0.112 (0.065)			
* ME10_15 ME72206	0.025	1.330	1.399			
* ME11_01 ME62271	0.051	1.000 (0.000)	0.231 (0.082)			
* ME11_02 ME62152	0.031	1.000 (0.000)	0.231 (0.082)			



Item	RMSD	Slope (a <sub>i</sub> )	Location (b <sub>i</sub> )	Guessing (c <sub>i</sub> )	Step 1 (d <sub>1i</sub> )	Step 2 (d <sub>2i</sub> )
ME14_03	ME72026	0.045	0.800 (0.054)	0.640 (0.049)		
* ME14_04A	ME72041A	0.045	1.268	0.214		
* ME14_04B	ME72041B	0.052	1.471	0.474		
* ME14_05	ME72223	0.083	1.948	0.773	0.250	
* ME14_06	ME72094	0.085	1.172	0.077		
* ME14_07	ME72059	0.084	1.363	0.726		
* ME14_08	ME72080	0.050	1.587	0.984	0.118	
ME14_09	ME72081	0.033	1.119 (0.072)	1.124 (0.047)		
ME14_10	ME72140	0.029	0.784 (0.053)	0.170 (0.048)		
ME14_11	ME72120	0.018	1.453 (0.090)	1.091 (0.038)		
* ME14_12(M)	13.40(E)3.9(14_11)1.3380(E)3.14_1112690.00785200.007828593517.7999(M)13.4(E)1.9(14_12)19.394(E)1.9(14_11)1.3380(E)1.9860					



## Appendix 12N: Science Item Parameters from the Final eTIMSS 2019 Adjusted Model Calibration—Grade 8

Item	Slope (a <sub>i</sub> )	Step 1 (d <sub>i1</sub> )	Step 2 (d <sub>i2</sub> )		
* SE01_01 SE52006	0.035	0.620	-0.620		
* SE01_02 SE52069	0.032		0.325		
* SE01_03 SE52012	0.032		0.163		
* SE01_04 SE52021	0.032				
SE01_05Z SE52095Z	0.032		(0)		
* SE01_07 SE52054	0.032				
* SE01_08 SE52150	0.032		0.181		
* SE01_09A SE52243A	0.032				
* SE01_09B SE52243B	0.032				
* SE01_09C SE52243C	0.032		0.200		
* SE01_10 SE52206	0.032		0.207		
* SE01_11A SE52112A	0.032		0.221		
* SE01_11B SE52112B	0.032		0.221		
* SE01_12 SE52294	0.029		0.206		
* SE02_01 SE72072	0.035	0.824	0.585	0.216	
* SE02_02 SE72029	0.065	1.324	1.125	0.364	
* SE02_03 SE72902	0.040	1.017	0.213		
* SE02_04 SE72077	0.046	0.685	0.463	0.300	
* SE02_05A SE72900A	0.042	0.959	0.951		
* SE02_05B SE72900B	0.067	0.954	1.428		
* SE02_06 SE72103	0.068	0.500	-0.011		
SE02_07 SE72110	0.024	0.868 (0.061)	0.817 (0.049)		
SE02_08 SE72130	0.031	0.720 (0.056)	0.995 (0.064)		
* SE02_09 SE72148	0.074	0.679	1.226	0.132	
* SE02_10 SE72200	0.034	0.854	0.739	0.103	
SE02_11 SE72232	0.030	1.479 (0.084)	0.311 (0.029)		
* SE02_12 SE72275	0.038	1.016	-0.454	0.117	
* SE02_13 SE72244	0.032	0.950	0.565		
* SE02_14 SE72301	0.076	0.936	1.267	0.220	
SE02_15 SE72721	0.029	1.153 (0.113)	0.095 (0.083)	0.189 (0.040)	
* SE02_16 SE72335	0.036	0.859	0.620	0.199	
* SE03_01 SE62055	0.032	0.722	0.522		
* SE03_02 SE62007	0.040	0.776	0.205		
* SE03_03 SE62275	0.040	0.588			
* SE03_04 SE62225	0.022	0.7004		0.259	
* SE03_05 SE62111	0.032	0.587		0.033	-0.033
* SE03_06A SE62116A	0.032	1.100	0.926		
* SE03_06B SE62116B	0.032	1.100	0.926		

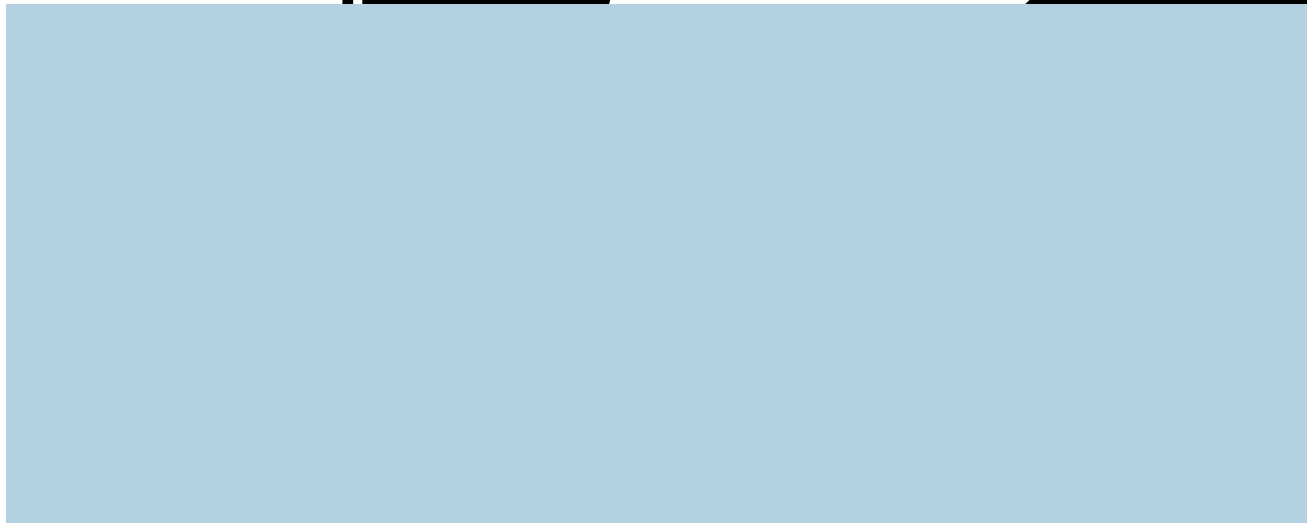
Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
* SE03_06C SE62116C	0.033					
* SE03_07 SE62262	0.033			0.277		
* SE03_08 SE62035	0.033			0.199		
* SE03_09 SE62144	0.033			0.163		
* SE03_10 SE62162	0.033					
* SE03_11 SE62233	0.033			0.343		
* SE03_13 SE62171	0.033			0.185		
* SE04_01 SE72002	0.060	1.393	0.307	0.212		
SE04_02 SE72403	0.033	0.618 (0.048)	0.086 (0.060)			
* SE04_03 SE72021	0.058	0.896	0.404	0.221		
SE04_04 SE72082	0.057	0.704 (0.051)	0.089 (0.053)			
SE04_05 SE72066	0.028	1.053 (0.119)	0.446 (0.083)	0.194 (0.037)		
* SE04_06 SE72063	0.035	0.582	2.063	0.200		
* SE04_07 SE72102	0.087	0.482	0.612			
* SE04_08A SE72141A	0.026	1.069	0.944			
* SE04_08B SE72141B	0.065	0.731	0.669		-0.141	0.141
* SE04_09 SE72921	0.053	0.766	1.439			
* SE04_10 SE72234	0.085	1.141	1.540	0.167		
* SE04_11 SE72251	0.024	1.064	0.922	0.208		
* SE04_12 SE72284	0.050	0.786	0.009			
SE04_13 SE72345	0.035	0.823 (0.045)	0.478 (0.033)		0.632 (0.052)	-0.632 (0.055)
* SE04_14 SE72349	0.042	1.086	0.150	0.178		
* SE04_15 SE72363	0.076	0.613	0.140	0.101		
* SE05_01 SE52076	0.033		0.411	0.257		
* SE05_02 SE52272	0.055		-0.007			
* SE05_03A SE52085A	0.033		1.232			
* SE05_03B SE52085B	0.055		0.009			
* SE05_04 SE52094	0.033		1.030			
* SE05_05 SE52248	0.022		1.615			
* SE05_06 SE52146	0.044		0.411			
* SE05_07 SE52282	0.077		0.857			
* SE05_08 SE52299	0.066		0.390			
* SE05_09 SE52144	0.033		0.000			
* SE05_10 SE52214	0.022					
* SE05_12 SE52101	0.033					
* SE05_13 SE52113	0.044					
* SE05_14 SE52107	0.044			0.197		
* SE06_01 SE62090	0.043	1.011	0.180	0.304		
* SE06_02 SE62274	0.059	0.577	0.879		1.149	-1.149

\* Invariant item—item parameters are invariant to transformations from the paper TIMSS concurrent calibration; location parameters are transformations of the fixed location.

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
* SE06_03 SE62284	0.061	0.375	0.478	0.172		
* SE06_04A SE62098A	0.040	0.639	0.500		-0.050	0.050
* SE06_04B SE62098B	0.030	0.798	1.337		-0.091	0.091
* SE06_05 SE62032	0.052	1.742	1.504	0.287		
* SE06_06 SE62043	0.028	0.907	0.981			
* SE06_07 SE62158	0.031	0.697	0.678	0.299		
* SE06_08 SE62159	0.036	0.983	0.400	0.204		
* SE06_09 SE62005	0.020	1.250	0.666			
* SE06_10 SE62075	0.025	0.990	0.770	0.314		
* SE06_11 SE62004	0.049	1.806	0.885	0.173		
* SE06_12 SE62175	0.059	0.739	0.674			
SE06_13A SE62173A	0.036	0.647 (0.051)	0.253 (0.056)			
* SE06_13B SE62173B	0.026	0.808	1.862	0.203		
* SE07_01A SE52090A	0.022	0.393		0.393		
* SE07_01B SE52090B	0.022					
* SE07_02 SE52262	0.022		0.227			
* SE07_03 SE52267	0.038		0.216			
* SE07_04 SE52273	0.038		0.174			
SE07_05Z SE52015Z	0.038		0.399 (0.057)			
* SE07_06 SE52051	0.077		0.815			
* SE07_07 SE52026	0.044		0.468	0.350		
* SE07_08 SE52130	0.022		1.202	0.215		
* SE07_09 SE52028	0.022		0.620	0.282		
* SE07_10 SE52189	0.038		0.450			
* SE07_11 SE52217	0.044		1.059	0.283		
* SE07_12 SE52038	0.038		0.977	0.299		
* SE07_13 SE52099	0.022		0.884			
* SE07_14 SE52118	0.038		1.293			
* SE08_01 SE72070	0.063	0.568	-0.193	0.207		
SE08_02 SE72400	0.035	0.878 (0.058)	-0.151 (0.049)			
* SE08_03 SE72024	0.048	0.891	-0.027	0.113		
* SE08_04 SE72462	0.036	0.490	0.792	0.198		
SE08_05 SE72443	0.026	0.969 (0.121)	0.320 (0.111)	0.249 (0.047)		
* SE08_06 SE72903	0.023	0.796	0.821		-0.090	0.090
* SE08_07 SE72145	0.041	0.949	1.441			
* SE08_08 SE72100	0.047	0.560	0.647	0.195		
* SE08_10 SE72137	0.082	0.836	0.435	0.194		
* SE08_11 SE72298	0.069	0.814	0.626			
* SE08_12 SE72215	0.057	0.515	1.031		-0.538	0.538

\* Invariant item—item parameters are invariant from the paper TIMSS concurrent calibration; location parameters are transformations of fixed location. SE72298

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
SE08_13 SE72260	0.031	0.667 (0.051)	0.356 (0.054)			
SE08_14 SE72265	0.028	0.692 (0.051)	0.191 (0.053)			
* SE08_15 SE72347	0.026	1.061	1.184	0.186		
* SE08_16 SE72351	0.025	0.847	0.997			
* SE08_17 SE72367	0.020	1.114	0.705	0.156		
* SE09_01 SE62099	0.0			0.146		
* SE09_02 SE62095	0.0				-0.076	0.076
* SE09_03 SE62106	0.0			0.116		
* SE09_04 SE62064	0.0					
* SE09_05 SE62132	0.0			0.289		
* SE09_06 SE62163	0.0					





TIMSS & PIRLS

BO

Item	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
------	-----------------	--------------------	------------------	---------------------	---------------------