

## Appendix 12G: Mathematics Item Parameters from the eTIMSS 2019 Non-Invariant Model Calibration—Grade 4

ME01_01	ME51043	0.	
ME01_02	ME51040	0.	0.415(0.040)
ME01_03			

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> )
ME04_04 ME71040	0.058	1.496 (0.111)	0.483 (0.036)	0.100 (0.017)		
ME04_05 ME71068	0.046	0.491 (0.072)	0.735 (0.170)	0.148 (0.051)		
ME04_06A ME71075A	0.034	1.266 (0.061)	0.353 (0.027)			
ME04_06B ME71075B	0.067	1.360 (0.070)	0.823 (0.031)			
ME04_07 ME71080	0.038	1.534 (0.149)	0.508 (0.050)	0.271 (0.024)		
ME04_08 ME71211	0.035	0.625 (0.040)	0.139 (0.047)			
ME04_09 ME71178	0.040	0.848 (0.048)	0.576 (0.041)			
ME04_10B ME71135B	0.080	0.790 (0.045)	-0.220 (0.042)			
ME04_11 ME71201	0.128	0.743 (0.055)	1.599 (0.092)			
ME04_12 ME71175	0.039	0.790 (0.037)	-0.097 (0.030)		0.675 (0.050)	-0.675 (0.044)
ME05_01 ME51206	0.078	0.774 (0.074)				
ME05_02 ME51052	0.078	0.144 (0.046)	0.262 (0.053)			
ME05_03 ME51049	0.078	0.046 (0.029)	0.175 (0.025)			
ME05_04 ME51045	0.078	0.029 (0.029)				
ME05_05 ME51098	0.078	0.056 (0.056)	0.136 (0.023)			
ME05_06 ME51030	0.078	0.050 (0.050)				
ME05_07 ME51502	0.078	0.15 (0.066)	0.130 (0.020)			
ME05_08 ME51224	0.078	0.003 (0.128)	0.256 (0.050)			
ME05_09 ME51207	0.078	0.860 (0.124)	0.333 (0.040)			
ME05_10 ME51427	0.078	0.728 (0.055)	0.160 (0.024)			
ME05_11 ME51533	0.078	0.181 (0.030)				
ME05_12 ME51080	0.078	0.231 (0.031)				
ME06_01 ME61018	0.029	0.944 (0.049)	0.106 (0.034)			
ME06_02 ME61274	0.028	0.743 (0.081)	-0.456 (0.180)	0.267 (0.067)		
ME06_03 ME61248	0.032	0.910 (0.040)	0.408 (0.025)		0.443 (0.038)	-0.443 (0.042)
ME06_04 ME61039	0.021	1.103 (0.055)	0.238 (0.030)			
ME06_05 ME61079	0.100	1.253 (0.066)	0.917 (0.035)			
ME06_06 ME61179	0.055	1.284 (0.107)	0.197 (0.057)	0.191 (0.029)		
ME06_07 ME61052	0.048	1.101 (0.086)	0.215 (0.057)	0.116 (0.027)		
ME06_08 ME61207	0.048	1.595 (0.115)	0.428 (0.035)	0.103 (0.017)		
ME06_09 ME61236	0.070	0.789 (0.045)	0.432 (0.040)			
ME06_10 ME61266	0.033	0.494 (0.020)	0.716 (0.040)		-0.892 (0.081)	0.892 (0.090)
ME06_11 ME61106	0.043	1.040 (0.106)	0.095 (0.094)	0.276 (0.041)		
ME07_01 ME51401	0.04	0.045 (0.045)				
ME07_02 ME51075	0.05	0.187 (0.187)		0.020 (0.020)		
ME07_03 ME51402	0.01	0.049 (0.049)				
ME07_04 ME51226	0.03	0.152 (0.152)		0.257 (0.023)		
ME07_05 ME51131	0.02	0.716 (0.716)				
ME07_06 ME51103	0.01	0.279 (0.279)		0.277 (0.032)		
ME07_07 ME51217	0.02	1.20 (1.20)		0.031 (0.031)		
ME07_08 ME51079	0.11	0.083 (0.083)				



TIMSS & PIRLS

BO

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> )
ME10_12A ME71187A	0.073	0.720(0.044)	-0.692(0.058)			
ME10_12B ME71187B	0.085	0.660(0.042)	-0.042(0.047)			
ME11_01 ME61178	0.073	0.720(0.044)	-0.692(0.058)			
ME11_02 ME61246	0.073	0.720(0.044)	-0.692(0.058)	0.138(0.027)		
ME11_03 ME61271	0.073	0.720(0.044)	-0.692(0.058)			
ME11_04 ME61256	0.073	0.720(0.044)	-0.692(0.058)			
ME11_05 ME61182	0.073	0.720(0.044)	-0.692(0.058)			
ME11_06 ME61049	0.073	0.720(0.044)	-0.692(0.058)	0.354(0.053)		
ME11_07 ME61232	0.073	0.720(0.044)	-0.692(0.058)	0.312(0.037)		
ME11_08 ME61095	0.073	0.720(0.044)	-0.692(0.058)			
ME11_09 ME61264	0.073	0.720(0.044)	-0.692(0.058)		-0.177(0.063)	0.177(0.068)
ME11_10 ME61108	0.073	0.720(0.044)	-0.692(0.058)	0.210(0.049)		
ME11_11A ME61211A	0.073	0.720(0.044)	-0.692(0.058)			
ME11_11B ME61211B	0.073	0.720(0.044)	-0.692(0.058)	0.273(0.023)		
ME12_01 ME71001	0.029	0.815(0.076)	-0.897(0.164)	0.234(0.069)		
ME12_02 ME71010	0.037	0.585(0.038)	-0.299(0.054)			
ME12_03 ME71062	0.039	1.412(0.179)	1.248(0.056)	0.179(0.017)		
ME12_04A ME71216A	0.099	1.422(0.066)	-0.113(0.026)			
ME12_04B ME71216B	0.076	1.024(0.053)	0.460(0.033)			
ME12_05 ME71117	0.083	0.673(0.040)	-0.066(0.045)			
ME12_06 ME71071	0.043	0.883(0.113)	0.480(0.106)	0.296(0.039)		
ME12_07 ME71098	0.045	0.698(0.035)	0.928(0.038)		0.178(0.049)	-0.178(0.065)
* ME12_08 ME71069	—	1.096(0.057)	0.565(0.032)			
ME12_09A ME71134A	0.104	1.785(0.124)	0.218(0.033)	0.115(0.019)		
ME12_09B ME71134B	0.125	1.486(0.073)	0.53-B	0.125	1.486(0.073)	1.041.425 (4 (565))

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
ME14_01 ME71024	0.035	0.877 (0.047)	0.266 (0.036)			
ME14_02 ME71008	0.028	1.132 (0.085)	-0.182 (0.065)	0.137 (0.033)		
ME14_03 ME71165	0.050	1.212 (0.103)	0.309 (0.055)	0.167 (0.026)		
ME14_04 ME71049	0.106	0.749 (0.042)	0.007 (0.041)			
ME14_05 ME71063	0.042	0.845 (0.046)	0.239 (0.037)			
ME14_06 ME71079	0.050	1.303 (0.142)	0.887 (0.053)	0.216 (0.021)		
ME14_07 ME71081	0.032	1.012 (0.051)	-0.036 (0.032)			
ME14_08 ME71094	0.048	0.697 (0.097)	0.563 (0.133)	0.238 (0.046)		
ME14_09 ME71177	0.057	0.521 (0.037)	0.201 (0.055)			
ME14_10 ME71206	0.049	0.592 (0.066)	-0.329 (0.193)	0.195 (0.064)		
ME14_11A ME71138A	0.025	0.753 (0.043)	0.007 (0.041)			
ME14_11B ME71138B	0.079	1.013 (0.058)	0.994 (0.045)			
ME14_12 ME71203	0.044	0.911 (0.135)	1.242 (0.084)	0.207 (0.026)		
ME14_13 ME71205	0.064	1.201 (0.061)	0.531 (0.030)			

## Appendix 12H: Science Item Parameters from the eTIMSS 2019 Non-Invariant Model Calibration— Grade 4

SE01_01	SE51054	0.276			0.276(0.057)
SE01_02	SE51024	0.276			
SE01_03A	SE51132A	0.276			
SE01_03B	SE51132B	0.276			
SE01_04	SE51040	0.276			
SE01_05	SE51193	0.257			0.257(0.047)
SE01_06	SE51063	0.217			0.217(0.028)
SE01_07	SE51012	0.268			0.268(0.034)
SE01_08	SE51115	0.279			0.279(0.055)
SE01_09	SE51180	0.279			0.279(0.055)
SE01_10	SE51106	0.192			0.192(0.029)
SE01_11	SE51148	0.231			0.231(0.039)
SE02_01	SE71002	0.079	0.615(0.042)	0.352(0.047)	
SE02_02	SE71402	0.035	1.133(0.107)	-0.188(0.093)	0.293(0.044)
SE02_03	SE71017	0.030	0.671(0.043)	0.153(0.044)	
SE02_04	SE71077	0.031	1.005(0.053)	0.155(0.031)	
SE02_05	SE71072	0.073	0.895(0.120)	0.679(0.092)	0.264(0.037)
SE02_06	SE71054	0.053	0.808(0.047)	0.024(0.039)	
SE02_07	SE71115	0.019	0.993(0.134)	0.783(0.079)	0.273(0.032)
SE02_08	SE71140	0.045	0.925(0.090)	-0.100(0.104)	0.226(0.046)
SE02_09	SE71128	0.035	0.978(0.119)	0.183(0.113)	0.360(0.044)
SE02_10	SE71147	0.029	1.069(0.100)	-0.194(0.096)	0.260(0.045)
SE02_11A	SE71920A	0.124	0.535(0.043)		

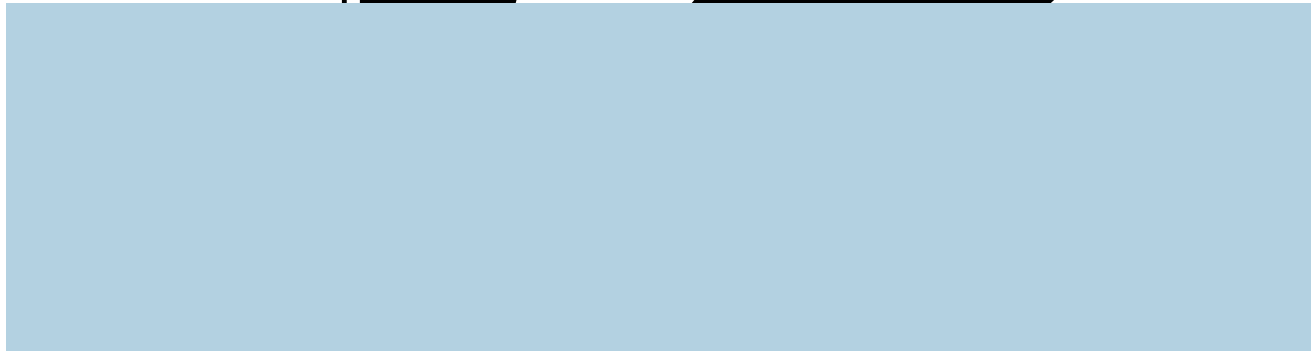
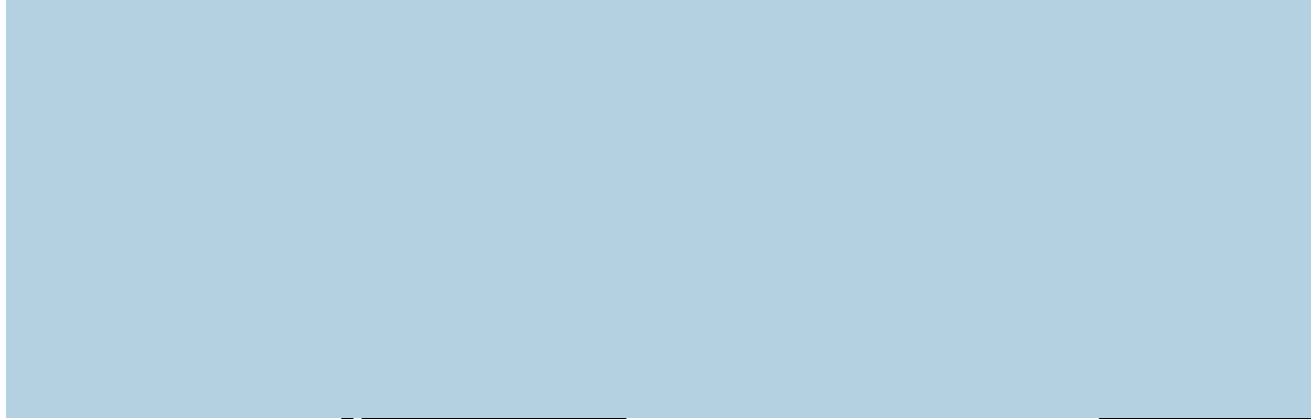
Item	RMSD	Slope (a <sub>i</sub> )	Location (b <sub>i</sub> )	Guessing (c <sub>i</sub> )	Step 1 (d <sub>i1</sub> )	Step 2 (d <sub>i2</sub> )
SE04_01 SE71013	0.037	1.128(0.104)	-0.646(0.116)	0.305(0.056)		
SE04_02 SE71902	0.090	0.338(0.041)	1.971(0.220)			
SE04_03 SE71076	0.046	1.022(0.086)	-0.605(0.105)	0.207(0.051)		
SE04_04 SE71041	0.068	0.862(0.042)	0.827(0.029)		0.288(0.039)	-0.288(0.051)
SE04_05 SE71046	0.051	0.907(0.051)	0.272(0.034)			
SE04_06 SE71095	0.036	0.555(0.040)	0.142(0.052)			
SE04_07 SE71129	0.028	0.806(0.090)	-0.581(0.181)	0.322(0.067)		
SE04_08 SE71102	0.069	1.019(0.058)	0.685(0.035)			
SE04_09 SE71124	0.038	0.963(0.107)	0.398(0.086)	0.234(0.038)		
SE04_10 SE71112	0.044	0.703(0.074)	-0.915(0.207)	0.257(0.074)		
SE04_11 SE71265	0.080	0.355(0.082)	0.211(0.502)	0.317(0.095)		
SE04_12 SE71223	0.059	0.423(0.056)	-2.841(0.458)	0.234(0.092)		

SE05_01 SE51044	0.05		0.071			
SE05_03 SE51003	0.09		(0.119)	0.133(0.042)		
SE05_04 SE51168	0.02		5(0.062)			
SE05_05 SE51010	0.02		8(0.039)			
SE05_06 SE51035	0.02		75(0.060)	0.233(0.021)		
SE05_07 SE51059	0.03		130(0.058)			
SE05_08 SE51142	0.04		605(0.141)	0.235(0.050)		
SE05_09A SE51131A	0.04		0.064(0.088)	0.193(0.040)		
SE05_09B SE51131B	0.06		0.697(0.077)	0.151(0.033)		
SE05_10 SE51151	0.04		-0.949(0.065)			
SE05_11 SE51157	0.02		1.035(0.093)	0.214(0.035)		

SE06_01 SE61071	0.033	0.245(0.047)	-1.669(0.687)	0.248(0.095)		
SE06_02 SE61138	0.026	0.558(0.040)	0.079(0.052)			
SE06_03A SE61016A	0.054	0.949(0.104)	0.535(0.076)	0.1971 Td(0.485126)(0.558)	3.5 (095)	10.525.7613-1.535 Td [(S)
SE05_09B SE511347	0.			0.1971 T52(0.9052)	Td [(0.)3.5 (1320)	

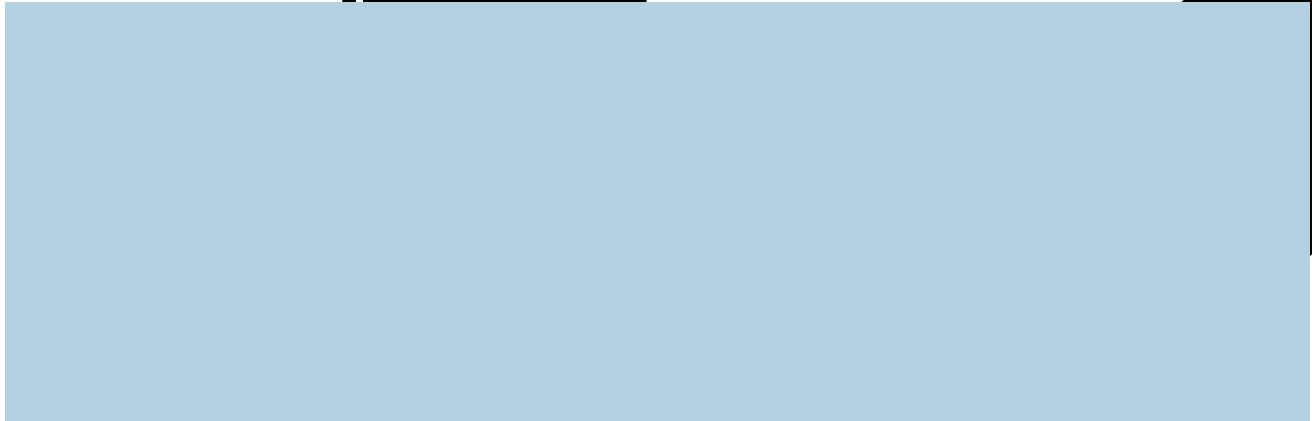
SE05\_09AS SE610782 (0.0927 (0

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
SE07_07 SE51200	0.					
SE07_08 SE51075	0.					
SE07_09 SE51065	0.			0.299(0.061)		
SE07_10 SE51191	0.			0.241(0.026)		
SE07_11 SE51099	0.			0.218(0.040)		
SE07_12 SE51175	0.					





Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
*						



Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
SE14_01 SE71063	0.071	0.420(0.036)	0.078(0.067)			
SE14_02 SE71900	0.072	0.517(0.078)	-0.138(0.271)	0.269(0.074)		
SE14_04 SE71043	0.030	0.693(0.054)	1.435(0.088)			
SE14_05 SE71005	0.038	0.818(0.047)	-0.588(0.052)			
SE14_06 SE71118	0.057	1.170(0.142)	0.992(0.056)	0.187(0.023)		
SE14_07 SE71139	0.030	1.011(0.114)	0.020(0.112)	0.354(0.045)		
SE14_08 SE71114	0.044	0.711(0.044)	-0.596(0.058)			
SE14_09 791.142)	0.020					

## Appendix 12I: Mathematics Item Parameters from the eTIMSS 2019 Non-Invariant Model Calibration—Grade 8

ME01_01	ME52024	0.1			0.231(0.029)		
ME01_02A	ME52058A	0.1					
ME01_02B	ME52058B	0.1					
ME01_03	ME52125	0.1			0.124(0.025)		
ME01_04	ME52229	0.1					
ME01_05	ME52063	0.1			0.196(0.024)		
ME01_06	ME52072	0.1			0.165(0.037)		
ME01_07A	ME52146A	0.1					
ME01_07B	ME52146B	0.1					
ME01_08	ME52092	0.1			0.186(0.018)		
ME01_09	ME52046	0.1			0.143(0.023)		
ME01_10	ME52083	0.1			0.200(0.024)		
ME01_11	ME52082	0.1			0.203(0.038)		
ME01_12	ME52161	0.1			0.200(0.052)		
ME01_13A	ME52418A	0.1			0.139(0.020)		
ME01_13B	ME52418B	0.1			0.245(0.027)		
ME02_01	ME72007	0.049	0.760(0.038)	1.016(0.040)		-0.143(0.061)	0.143(0.075)
ME02_02	ME72025	0.038	1.636(0.175)	0.678(0.053)	0.223(0.025)		
ME02_03	ME72017	0.080	1.377(0.091)	1.223(0.044)			
ME02_04	ME72190	0.057	0.969(0.059)	-0.005(0.042)			
ME02_05	ME72068	0.039	1.357(0.140)	0.131(0.078)	0.250(0.039)		
ME02_06	ME72076	0.052	1.297(0.140)	0.766(0.061)	0.175(0.026)		
ME02_07	ME72056	0.033	1.288(0.074)	0.555(0.034)			
ME02_08	ME72098	0.038	1.906(0.111)	0.765(0.028)	0.074(0.035)	0.010(0.023)	0.259(0.075)

ME2.338



TIMSS & PIRLS

BO



Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
ME09_01 ME62329	0.049			0.233 (0.082)	-0.800 (0.064)	0.057 (0.013)
ME09_02 ME62151	0.077					
ME09_03 ME62346	0.059					
ME09_04 ME62212	0.077			0.139 (0.018)		
ME09_05 ME62056	0.077					
ME09_06 ME62317	0.077					
ME09_07 ME62350	0.077			0.120 (0.016)		
ME09_08 ME62078	0.077					
ME09_09 ME62284	0.077			0.300 (0.054)		
ME09_10 ME62245	0.077			0.191 (0.024)		
ME09_11 ME62287	0.077					
ME09_12A ME62345A	0.077				0.400 (0.057)	-0.400 (0.066)
ME09_13 ME62115	0.077			0.186 (0.018)		
ME10_01 ME72187	0.117	0.923 (0.057)	0.014 (0.043)			
ME10_02 ME72022	0.055	1.508 (0.213)	1.210 (0.062)	0.253 (0.021)		
ME10_04 ME72045	0.042	1.294 (0.073)	0.525 (0.034)			
ME10_05 ME72049	0.121	0.797 (0.053)	-0.347 (0.055)			
ME10_06 ME72069	0.119	1.640 (0.091)	0.178 (0.028)			
ME10_07 ME72074	0.065	1.543 (0.094)	0.984 (0.035)			
ME10_08 ME72013	0.064	1.325 (0.126)	0.731 (0.052)	0.111 (0.022)		
ME10_09 ME72095	0.079	1.258 (0.074)	0.740 (0.037)			
ME10_10 ME72109	0.080	1.664 (0.112)	1.286 (0.040)			
ME10_11 ME72125	0.038	2.069 (0.183)	0.718 (0.035)	0.099 (0.015)		
ME10_12 ME72196	0.057	1.311 (0.076)	0.679 (0.035)			
ME10_13 ME72237	0.051	0.729 (0.095)	0.081 (0.178)	0.237 (0.064)		
ME10_14 ME72232	0.057	0.592 (0.046)	-0.101 (0.065)			
ME10_15 ME7220099	0.128	1.286	0.09942D676 -17535 Td [(1.)3.4 (664)]TJ 2.648 0 Td 15]TJ 2.648 0 Td [( )TJ 5.338 7			

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
[Redacted content]						

[Redacted content]						
--------------------	--	--	--	--	--	--

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
ME14_13 ME72147	0.031	1.398(0.090)	1.214(0.042)			
ME14_14 ME72154	0.041	1.166(0.123)	0.098(0.094)	0.235(0.046)		
ME14_15 ME72192	0.034	0.899(0.110)	0.418(0.117)	0.220(0.047)		
ME14_16 ME72161	0.064	1.083(0.067)	0.814(0.042)			



## Appendix 12J: Science Item Parameters from the eTIMSS 2019 Non-Invariant Model Calibration Grade 8

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 SE52006	0.0				0.706(0.084)	-0.706(0.066)
SE01_02 SE52069	0.0			0.359(0.040)		
SE01_03 SE52012	0.0			0.223(0.042)		
SE01_04 SE52021	0.0					
SE01_05Z SE52095Z	0.0					
SE01_07 SE52054	0.0					
SE01_08 SE52150	0.0			0.213(0.033)		
SE01_09A SE52243A	0.0					
SE01_09B SE52243B	0.0					
SE01_09C SE52243C	0.0			0.149(0.043)		
SE01_10 SE52206	0.0			0.162(0.036)		
SE01_11A SE52112A	0.0			0.221(0.057)		
SE01_11B SE52112B	0.0					
SE01_12 SE52294	0.0			0.221(0.049)		
SE02_01 SE72072	0.027	0.909(0.119)	0.517(0.106)	0.222(0.044)		
SE02_02 SE72029	0.051	1.336(0.192)	0.802(0.076)	0.339(0.032)		
SE02_03 SE72902	0.067	1.230(0.073)	0.236(0.033)			
SE02_04 SE72077	0.067	0.709(0.104)	0.441(0.154)	0.224(0.055)		
SE02_05A SE72900A	0.045	0.865(0.062)	0.875(0.051)			
SE02_05B SE72900B	0.094	0.678(0.070)	1.953(0.147)			
SE02_06 SE72103	0.081	0.715(0.052)	0.160(0.052)			
SE02_07 SE72110	0.037	0.883(0.062)	0.800(0.048)			
SE02_08 SE72130	0.066	0.752(0.058)	0.963(0.061)			
SE02_09 SE72148	0.069	1.290(0.159)	0.939(0.059)	0.179(0.026)		
SE02_10 SE72200	0.029	0.906(0.118)	0.786(0.087)	0.164(0.036)		
SE02_11 SE72232	0.040	1.517(0.086)	0.303(0.029)			
SE02_12 SE72275	0.034	1.064(0.101)	-0.333(0.101)	0.182(0.049)		
SE02_13 SE72244	0.030	1.010(0.065)	0.513(0.039)			
SE02_14 SE72301	0.068	0.646(0.128)	1.091(0.151)	0.220(0.050)		
SE02_15 SE72721	0.068	1.186(0.116)	0.097(0.080)	0.190(0.040)		
SE02_16 SE72335	0.038	1.145(0.164)	0.747(0.087)	0.301(0.036)		
SE03_01 SE62055	0.04	1.071(0.141)				
SE03_02 SE62007	0.02	1.035(0.13)				
SE03_03 SE62275	0.05	0.937(0.07)				
SE03_04 SE62225	0.03	1.255(0.07)		0.290(0.025)		
SE03_05 SE62111	0.02	1.054(0.07)			-0.040(0.078)	0.040(0.082)
SE03_06A SE62116A	0.02	1.17(0.07)				
SE03_06B SE62116B	0.08	1.068(0.041)				

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
SE03_06C SE62116C	0.000					
SE03_07 SE62262	0.000			0.270(0.032)		
SE03_08 SE62035	0.000			0.200(0.030)		
SE03_09 SE62144	0.000			0.205(0.056)		
SE03_10 SE62162	0.000					
SE03_11 SE62233	0.000			0.327(0.036)		
SE03_13 SE62171	0.000			0.232(0.072)		
SE04_01 SE72002	0.046	1.019(0.105)	0.127(0.093)	0.188(0.042)		
* SE04_02 SE72403	—	0.615(0.048)	0.088(0.060)			
SE04_03 SE72021	0.046	1.289(0.144)	0.372(0.076)	0.262(0.036)		
SE04_04 SE72082	0.068	0.695(0.051)	0.091(0.054)			
SE04_05 SE72066	0.071	1.048(0.119)	0.458(0.083)	0.196(0.037)		
SE04_06 SE72063	0.039	0.731(0.190)	1.811(0.176)	0.194(0.035)		
SE04_07 SE72102	0.078	0.760(0.054)	0.370(0.049)			
SE04_08A SE72141A	0.040	1.010(0.070)	0.985(0.048)			
SE04_08B SE72141B	0.095	0.712(0.036)	0.907(0.038)		-0.336(0.066)	0.336(0.076)
SE04_09 SE72921	0.073	1.209(0.090)	1.315(0.054)			
SE04_10 SE72234	0.063	1.325(0.175)	1.159(0.057)	0.151(0.021)		
SE04_11 SE72251	0.055	1.099(0.172)	1.081(0.078)	0.238(0.030)		
SE04_12 SE72284	0.060	0.587(0.047)	-0.037(0.065)			
SE04_13 SE72345	0.038	0.803(0.045)	0.485(0.034)		0.638(0.053)	-0.638(0.056)
SE04_14 SE72349	0.025	1.125(0.116)	0.145(0.087)	0.210(0.041)		
SE04_15 SE72363	0.051	0.740(0.103)	0.224(0.159)	0.245(0.057)		
SE05_01 SE52076	0.042		0.509(0.135)	0.311(0.040)		
SE05_02 SE52272	0.071		-0.079(0.041)			
SE05_03A SE52085A	0.042		1.280(0.058)			
SE05_03B SE52085B	0.000		-0.077(0.044)			
SE05_04 SE52094	0.033		0.927(0.068)			
SE05_05 SE52248	0.033		1.631(0.142)			
SE05_06 SE52146	0.022		0.402(0.070)	0.402(0.070)		
SE05_07 SE52282	0.055		0.822(0.123)	0.822(0.123)		
SE05_08 SE52299	0.042		0.372(0.149)	0.372(0.149)		
SE05_09 SE52144	0.033		0.000(0.155)	0.000(0.155)		
SE05_10 SE52214	0.022		0.000(0.065)	0.000(0.065)		
SE05_12 SE52101	0.033		0.000(0.050)	0.000(0.050)		
SE05_13 SE52113	0.066		0.000(0.181)	0.000(0.181)		
SE05_14 SE52107	0.042		0.000(0.169)	0.233(0.039)		
SE06_01 SE62090	0.047	1.084(0.129)	0.265(0.100)	0.272(0.044)		
SE06_02 SE62274	0.031	0.575(0.029)	0.794(0.050)		1.266(0.069)	-1.266(0.089)

\* eTIMSS items without a paper TIMSS counterpart

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
SE06_02 SE62284	0.040	0.284(0.081)	0.284(0.281)	0.242(0.084)	0.150(0.075)	0.150(0.075)

[Redacted content]

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
SE08_15 SE72347	0.046	0.862(0.166)	1.337(0.106)	0.216(0.035)		
SE08_16 SE72351	0.048	0.738(0.060)	1.146(0.071)			
SE08_17 SE72367	0.050	0.998(0.131)	0.821(0.080)	0.183(0.034)		
SE09_01 SE62099	0.046			0.192(0.042)		
SE09_02 SE62095	0.046				-0.064(0.085)	0.064(0.098)
SE09_03 SE62106	0.046			0.185(0.059)		
SE09_04 SE62064	0.046					
SE09_05 SE62132	0.046			0.229(0.049)		
SE09_06 SE62163	0.046					
SE09_07 SE62153	0.046			0.316(0.028)		
SE09_08 SE62018	0.046				-0.568(0.086)	0.568(0.112)
SE09_09 SE62143	0.046					
SE09_10 SE62276	0.046					
SE09_11 SE62050	0.046					
SE09_12 SE62205	0.046			0.144(0.025)		
SE09_13 SE62190	0.046			0.155(0.042)		
SE09_14A SE62024A	0.046			0.219(0.052)		
SE09_14B SE62024B	0.046					
SE10_01 SE72033	0.043	0.786(0.034)	0.303(0.030)		-0.463(0.066)	0.463(0.065)
SE10_02 SE72440	0.046	0.647(0.049)	-0.231(0.064)			
SE10_03 SE72032	0.032	1.284(0.192)	0.950(0.073)	0.299(0.029)		
SE10_04 SE72031	0.056	0.857(0.134)	1.131(0.092)	0.164(0.033)		
SE10_05 SE72086	0.114	0.622(0.049)	-0.700(0.085)			
SE10_06 SE72005	0.024	0.917(0.050)	0.707(0.031)		0.230(0.047)	-0.230(0.055)
SE10_08 SE72123	0.069	0.724(0.114)	0.411(0.169)	0.276(0.058)		
SE10_09 SE72116	0.029	0.563(0.121)	1.151(0.179)	0.213(0.055)		
SE10_10 SE72920	0.062	0.534(0.032)	0.967(0.054)		1.002(0.071)	-1.002(0.097)
SE10_11 SE72294	0.099	0.725(0.053)	0.526(0.052)			
SE10_12 SE72231	0.075	0.868(0.146)	1.140(0.098)	0.203(0.035)		
SE10_13 SE72261	0.063	0.856(0.057)	-0.204(0.050)			
SE10_14 SE72220	0.060	1.429(0.231)	1.435(0.069)	0.169(0.019)		
SE10_15 SE72348	0.065	0.589(0.049)	-0.876(0.098)			
SE10_16 SE72720	0.032	0.426(0.126)	2.036(0.290)	0.166(0.055)		
SE11_01 SE62279	0.032					
SE11_02 SE62112	0.022					
SE11_03 SE62119	0.032					
SE11_04 SE62093	0.032				0.206(0.082)	-0.206(0.074)
SE11_05 SE62089	0.032			0.171(0.021)		
SE11_06 SE62006	0.022					
SE11_07 SE62067	0.046					
SE11_08 SE62247	0.032			0.273(0.037)		

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
SE11_09 SE62177	0.198			0.198(0.037)		
SE11_10 SE62186	0.243			0.243(0.022)		
SE11_11A SE62211A	0.198					
SE11_11B SE62211B	0.198					
SE11_13 SE62033	0.198					
SE11_14 SE62037	0.315			0.315(0.052)		
SE11_15 SE62242	0.198					
SE12_01 SE72078	0.025	0.943(0.061)	0.385(0.041)			
SE12_02 SE72460	0.049	0.861(0.140)	0.708(0.128)	0.298(0.046)		
SE12_03 SE72000	0.047	0.640(0.031)	0.313(0.035)		-0.347(0.073)	0.347(0.073)
SE12_05 SE72901	0.042	0.438(0.105)	1.004(0.290)	0.239(0.074)		
SE12_06 SE72038	0.082	0.858(0.124)	0.769(0.105)	0.208(0.041)		
SE12_07 SE72120	0.085	0.723(0.122)	0.772(0.144)	0.239(0.051)		
SE12_08 SE72143	0.149	0.894(0.062)	0.783(0.048)			
SE12_09 SE72523	0.029	0.598(0.037)	0.353(0.040)		0.386(0.070)	-0.386(0.071)
SE12_10 SE72168	0.094	1.265(0.137)	0.591(0.063)	0.181(0.030)		
SE12_11 SE72205	0.076	0.763(0.114)	0.634(0.131)	0.219(0.049)		
SE12_12 SE72293	0.028	1.096(0.071)	0.821(0.041)			
SE12_13A SE72280A	0.062	1.174(0.076)	0.925(0.041)			
SE12_13B SE72280B	0.044	1.155(0.122)	-0.309(0.113)	0.276(0.055)		
SE12_14 SE72370	0.049	1.288(0.142)	0.234(0.082)	0.269(0.040)		
SE13_01A SE62091A	0.198		-0.484(0.126)	0.279(0.061)		
SE13_01B SE62091B	0.198		-0.500(0.207)	0.229(0.073)		
SE13_02 SE62100	0.198		0.526(0.040)			
SE13_03 SE62097	0.033		0.396(0.108)	0.226(0.046)		
SE13_04 SE62101	0.042		0.033(0.043)			0.072
SE13_06 SE62128	0.042		0.117(0.042)			
SE13_07 SE62047	0.042		0.368(0.075)			
SE13_08 SE62042	0.066		0.861(0.076)			
SE13_09 SE62250	0.022		1.366(0.117)			
SE13_10 SE62246	0.033		1.163(0.204)			
SE13_11 SE62056	0.033		0.500(0.075)			
SE13_12 SE62235	0.033		0.000(0.117)			
SE13_13 SE62180	0.022		0.000(0.121)			
SE13_14 SE62022	0.042		0.000(0.050)			
SE13_15 SE62243	0.056		0.000(0.033)		-0.227(0.078)	0.227(0.069)
SE14_01 SE72011	0.097	1.238(0.127)	-0.090(0.093)	0.253(0.047)		
SE14_02 SE72905	0.090	0.482(0.044)	-0.097(0.078)			
SE14_03 SE72049	0.056	0.629(0.108)	0.434(0.207)	0.266(0.065)		
SE14_04 SE72016	0.069	1.031(0.051)	0.690(0.027)		0.033(0.045)	-0.033(0.050)
SE14_05 SE72451	0.053	0.868(0.057)	-0.137(0.049)			

Item	RMSD	Slope ( $a_i$ )	Location ( $b_i$ )	Guessing ( $c_i$ )	Step 1 ( $d_{i1}$ )	Step 2 ( $d_{i2}$ )
SE14_06 SE72074	0.094	0.878(0.060)	0.608(0.045)			
SE14_07 SE72091	0.038	1.150(0.160)	0.821(0.079)	0.264(0.033)		
SE14_08 SE72109	0.062	0.693(0.052)	0.487(0.053)			
SE14_09 SE72140	0.036	0.808(0.141)	0.915(0.124)	0.262(0.045)		
SE14_10 SE72132	0.036	1.007(0.083)	1.540(0.077)			
SE14_11 SE72209	0.038	0.940(0.118)	0.548(0.097)	0.202(0.041)		
SE14_12 SE72210	0.043	0.479(0.035)	1.126(0.065)		0.604(0.079)	-0.604(0.107)
SE14_13 SE72249	0.039	0.788(0.116)	0.998(0.098)	0.149(0.036)		
SE14_14 SE72323	0.051	0.687(0.115)	0.690(0.157)	0.234(0.054)		
SE14_15 SE72368	0.138	0.744(0.088)	-0.236(0.167)	0.214(0.063)		
SE14_16 SE72303	0.078	0.786(0.144)	1.364(0.109)	0.165(0.035)		