TIMSS 2011 Item Parameters from Concurrent Calibration

TIMSS 2011 Item Parameters from Concurrent Calibration of Fourth Grade Mathematics

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
Items Released in 2007:											
M01_01	M031286	0.929	(0.051)	0.177	(0.037)						
M01_02	M031106	0.865	(0.049)	0.103	(0.038)						
M01_03	M031282	0.777	(0.029)	0.666	(0.030)			−0.849	(0.068)	0.849	(0.075)
M01_04	M031227	1.165	(0.073)	1.115	(0.050)						
M01_05	M031335	1.096	(0.097)	−0.213	(0.078)	0.208	(0.036)				
M01_06	M031068	1.213	(0.062)	0.117	(0.030)						
M01_07	M031299	1.160	(0.060)	−0.169	(0.032)						
M01_08	M031301	0.992	(0.055)	−0.838	(0.047)						
M01_09	M031271	0.646	(0.045)	−1.783	(0.107)						
M01_10	M031134	0.549	(0.041)	0.779	(0.074)						
M01_11	M031045	1.116	(0.088)	−0.658	(0.081)	0.160	(0.039)				
M02_01	M041014	0.668	(0.063)	−1.178	(0.173)	0.178	(0.060)				
M02_02	M041039	0.776	(0.086)	−0.074	(0.125)	0.234	(0.046)				
M02_03	M041278	0.432	(0.036)	0.294	(0.073)						
M02_04	M041006	1.141	(0.104)	0.388	(0.056)	0.149	(0.024)				
M02_05	M041250	0.939	(0.051)	−0.003	(0.036)						
M02_06	M041094	1.101	(0.141)	0.898	(0.069)	0.231	(0.024)				
M02_07	M041330	0.714	(0.080)	−0.029	(0.128)	0.198	(0.046)				
M02_08A	M041300A	1.032	(0.055)	0.015	(0.034)						
M02_08B	M041300B	1.136	(0.060)	−0.088	(0.032)						
M02_08C	M041300C	0.989	(0.056)	0.337	(0.037)						
M02_08D	M041300D	1.054	(0.060)	0.547	(0.038)						
M02_09	M041173	0.775	(0.110)	1.086	(0.094)	0.152	(0.028)				
M02_10	M041274	0.775	(0.047)	−0.374	(0.048)						
M02_11	M041203	0.845	(0.051)	−0.042	(0.042)						
M03_01	M031235	0.704	(0.044)	0.453	(0.049)						
M03_02	M031285	0.736	(0.047)	0.712	(0.053)						
M03_03	M031050	1.278	(0.147)	0.648	(0.063)	0.275	(0.025)				
M03_04	M031258	0.976	(0.056)	0.660	(0.041)						
M03_05	M031334	1.384	(0.161)	0.844	(0.056)	0.248	(0.021)				
M03_06	M031255	1.001	(0.129)	0.389	(0.101)	0.365	(0.035)				
M03_07	M031041	0.859	(0.048)	0.064	(0.039)						
M03_08A	M031350A	0.933	(0.052)	0.298	(0.038)						

TIMSS 2011 Item Parameters from Concurrent Calibration of Fourth Grade Mathematics

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
M03_08B	M031350B	0.993	(0.054)	−0.170	(0.037)						
M03_08C	M031350C	0.726	(0.047)	0.647	(0.053)						
M03_09	M031274	0.841	(0.049)	−0.547	(0.048)						
M03_10	M031240	0.591	(0.041)	−0.614	(0.067)						
M04_01	M041052	0.837	(0.082)	−0.728	(0.145)	0.254	(0.057)				
M04_02	M041056	0.873	(0.049)	0.220	(0.039)						
M04_03	M041069	1.322	(0.129)	1.050	(0.048)	0.092	(0.014)				
M04_04	M041076	0.928	(0.051)	0.323	(0.037)						
M04_05	M041281	1.160	(0.089)	−0.375	(0.068)	0.146	(0.033)				
M04_06	M041164	0.757	(0.076)	−0.626	(0.155)	0.232	(0.057)				
M04_07	M041146	0.709	(0.043)	−0.568	(0.055)						
M04_08	M041152	1.253	(0.135)	0.674	(0.059)	0.229	(0.024)				
M04_09A	M041258A	0.849	(0.048)	−0.323	(0.043)						
M04_09B	M041258B	0.687	(0.043)	0.278	(0.048)						
M04_10	M041131	0.621	(0.122)	1.581	(0.146)	0.180	(0.034)				
M04_11	M041275	0.505	(0.019)	−0.691	(0.045)			−1.429	(0.113)	1.429	(0.103)
M04_12	M041186	0.935	(0.071)	−0.200	(0.069)	0.091	(0.028)				
M04_13	M041336	1.231	(0.145)	0.939	(0.060)	0.202	(0.022)				
M05_01	M031303	1.224	(0.109)	−0.442	(0.085)	0.268	(0.041)				
M05_02	M031309	1.037	(0.055)	−0.423	(0.038)						
M05_03	M031245	1.733	(0.162)	0.985	(0.038)	0.099	(0.012)				
M05_04A	M031242A	1.094	(0.057)	−0.366	(0.036)						
M05_04B	M031242B	1.158	(0.059)	0.091	(0.031)						
M05_04C	M031242C	1.118	(0.111)	0.092	(0.080)	0.265	(0.035)				
M05_05	M031247	0.531	(0.027)	1.151	(0.056)			−0.404	(0.075)	0.404	(0.097)
M05_06	M031219	0.512	(0.093)	0.732	(0.204)	0.238	(0.057)				
M05_07	M031173	1.418	(0.105)	−0.310	(0.054)	0.145	(0.029)				
M05_08	M031085	0.856	(0.115)	0.656	(0.100)	0.267	(0.035)				
M05_09	M031172	1.375	(0.103)	−0.327	(0.057)	0.145	(0.030)				
M07_01	M031029	1.066	(0.117)	0.418	(0.077)	0.266	(0.031)				
M07_02	M031030	0.834	(0.061)	1.532	(0.085)						
M07_03	M031332	0.987	(0.103)	−0.102	(0.103)	0.296	(0.041)				
M07_04	M031098	1.337	(0.112)	0.191	(0.051)	0.170	(0.025)				
M07_05	M031254	1.161	(0.108)	0.188	(0.066)	0.212	(0.030)				
M07_06	M031038	0.798	(0.073)	−0.758	(0.131)	0.189	(0.051)				
M07_07	M031276	1.354	(0.126)	0.178	(0.059)	0.251	(0.028)				
M07_08	M031064	0.911	(0.105)	0.582	(0.081)	0.210	(0.031)				
M07_09	M031006	0.732	(0.075)	−0.923	(0.177)	0.243	(0.063)				
M07_10	M031330	0.543	(0.041)	−1.862	(0.129)						
M07_11	M031351	0.779	(0.079)	0.182	(0.095)	0.154	(0.036)				
M07_12	M031135	1.061	(0.084)	−0.767	(0.088)	0.157	(0.041)				
Items Common in 2007 and 2011:											
M01_01A	M031346A	1.540	(0.056)	−0.516	(0.021)						

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
M01_01B	M031346B	1.690	(0.060)	0.421	(0.017)						
M01_01C	M031346C	1.313	(0.040)	0.147	(0.014)			0.474	(0.022)	−0.474	(0.022)
M01_02	M031379	1.135	(0.045)	0.785	(0.027)						
M01_03	M031380	1.077	(0.046)	1.084	(0.035)						
M01_05	M031313	0.511	(0.028)	−1.620	(0.089)						
M01_06	M031083	0.884	(0.060)	−0.566	(0.091)	0.212	(0.039)				
M01_07	M031071	0.881	(0.071)	0.615	(0.058)	0.168	(0.023)				
M01_08	M031185	1.375	(0.089)	0.088	(0.043)	0.222	(0.022)				
M03_01	M041010	0.883	(0.067)	−0.435	(0.101)	0.296	(0.039)				
M03_02	M041098	1.505	(0.103)	0.487	(0.035)	0.236	(0.017)				
M03_03	M041064	0.746	(0.031)	−0.593	(0.037)						
M03_04	M041003	0.715	(0.030)	−0.112	(0.032)						
M03_05	M041104	0.930	(0.036)	−0.180	(0.027)						
M03_06	M041299	1.309	(0.051)	0.768	(0.024)						
M03_07	M041329	0.988	(0.088)	0.161	(0.082)	0.385	(0.029)				
M03_08	M041143	0.304	(0.009)	−0.683	(0.045)			−2.121	(0.113)	2.121	(0.105)
M03_09	M041158	0.759	(0.057)	−0.462	(0.111)	0.223	(0.042)				
M03_10	M041328	0.797	(0.033)	−0.439	(0.033)						
M03_11	M041155	0.855	(0.057)	0.069	(0.064)	0.140	(0.027)				
M03_12	M041284	0.689	(0.025)	0.643	(0.026)			0.495	(0.036)	−0.495	(0.045)
M03_13	M041335	0.717	(0.047)	−1.313	(0.131)	0.157	(0.051)				
M03_14	M041184	0.917	(0.056)	−0.792	(0.085)	0.164	(0.038)				
M05_01	M031128	0.396	(0.025)	−1.757	(0.112)						
M05_02	M031016	1.070	(0.042)	0.694	(0.027)						
M05_03	M031183	0.836	(0.027)	0.091	(0.021)			0.740	(0.033)	−0.740	(0.033)
M05_05	M031187	0.679	(0.050)	−0.897	(0.139)	0.198	(0.050)				
M05_06	M031251	1.465	(0.099)	0.476	(0.035)	0.222	(0.016)				
M05_07	M031294	1.136	(0.063)	−0.274	(0.048)	0.132	(0.023)				
M05_08	M031297	0.816	(0.034)	0.503	(0.031)						
M05_09	M031218	1.314	(0.078)	0.006	(0.041)	0.175	(0.021)				
M05_10	M031109	0.737	(0.058)	−0.251	(0.106)	0.216	(0.039)				
M05_11	M031159	0.994	(0.064)	−0.401	(0.071)	0.201	(0.032)				
M05_12	M031133	0.888	(0.038)	−1.313	(0.049)						
M06_01	M041107	0.849	(0.054)	−1.328	(0.113)	0.171	(0.048)				
M06_02	M041011	1.100	(0.068)	−0.402	(0.063)	0.212	(0.030)				
M06_03	M041122	0.465	(0.015)	0.563	(0.030)			−0.768	(0.062)	0.768	(0.067)
M06_04	M041041	0.998	(0.080)	0.166	(0.071)	0.310	(0.028)				
M06_05	M041320	1.793	(0.107)	0.383	(0.027)	0.184	(0.015)				
M06_06A	M041115A	0.818	(0.033)	−0.449	(0.033)						
M06_06B	M041115B	1.082	(0.040)	0.040	(0.023)						
M06_07A	M041160A	0.995	(0.043)	−1.367	(0.047)						
M06_07B	M041160B	1.210	(0.053)	−1.447	(0.044)						
M06_08	M041327	0.579	(0.028)	0.021	(0.038)						

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
M06_09	M041148	0.379	(0.017)	−0.115	(0.038)			0.366	(0.070)	−0.366	(0.066)
M06_10	M041265	0.772	(0.059)	0.657	(0.056)	0.102	(0.021)				
M06_11	M041175	0.826	(0.054)	−1.310	(0.120)	0.177	(0.051)				
M06_12	M041199	1.244	(0.071)	−0.700	(0.058)	0.166	(0.031)				
M07_01	M031210	1.540	(0.123)	0.746	(0.037)	0.284	(0.015)				
M07_02	M031009	0.796	(0.034)	0.484	(0.031)						
M07_03	M031252	0.914	(0.059)	−0.402	(0.075)	0.175	(0.032)				
M07_04	M031316	0.587	(0.033)	−2.323	(0.111)						
M07_05	M031317	1.278	(0.084)	0.641	(0.035)	0.147	(0.015)				
M07_06B	M031079B	1.106	(0.043)	−0.859	(0.033)						
M07_06C	M031079C	0.705	(0.031)	0.406	(0.033)						
M07_07	M031004	0.872	(0.070)	0.997	(0.049)	0.103	(0.017)				
M07_08	M031043	1.173	(0.074)	0.125	(0.046)	0.181	(0.022)				
M07_09	M031325	0.938	(0.039)	0.705	(0.030)						
M07_10	M031088	0.738	(0.052)	−0.784	(0.118)	0.183	(0.045)				
M07_11	M031093	0.519	(0.072)	0.674	(0.166)	0.270	(0.046)				
M07_12	M031155	1.209	(0.083)	0.187	(0.049)	0.235	(0.023)				
M09_01	M041291	0.527	(0.027)	−1.030	(0.061)						
M09_02	M041289	0.936	(0.064)	−0.068	(0.068)	0.206	(0.029)				
M09_03	M041068	1.137	(0.064)	0.550	(0.032)	0.066	(0.013)				
M09_04A	M041065A	1.630	(0.104)	0.630	(0.028)	0.162	(0.013)				
M09_04B	M041065B	1.195	(0.049)	0.961	(0.029)						
M09_05	M041096	1.083	(0.073)	0.466	(0.044)	0.159	(0.019)				
M09_06	M041125	1.195	(0.089)	0.746	(0.040)	0.181	(0.016)				
M09_07	M041135	0.525	(0.052)	−1.023	(0.257)	0.282	(0.072)				
M09_08	M041257	0.709	(0.031)	0.435	(0.034)						
M09_09	M041268	1.660	(0.127)	0.950	(0.032)	0.193	(0.012)				
M09_10	M041151	0.566	(0.055)	−0.408	(0.183)	0.248	(0.054)				
M09_11	M041264	0.649	(0.066)	0.371	(0.113)	0.241	(0.037)				
M09_12	M041182	0.762	(0.037)	−1.806	(0.071)						
M09_13	M041200	0.522	(0.018)	−0.477	(0.031)			−0.223	(0.059)	0.223	(0.051)
M11_01	M041298	1.133	(0.071)	−0.473	(0.064)	0.233	(0.031)				
M11_02	M041007	0.743	(0.064)	0.425	(0.078)	0.187	(0.029)				
M11_03	M041280	0.754	(0.069)	0.646	(0.073)	0.193	(0.027)				
M11_04	M041059	0.901	(0.035)	0.143	(0.026)						
M11_05	M041046	1.292	(0.072)	0.270	(0.033)	0.113	(0.016)				
M11_06	M041048	1.225	(0.090)	0.487	(0.044)	0.242	(0.019)				
M11_07	M041169	0.879	(0.061)	0.022	(0.067)	0.176	(0.028)				
M11_08	M041333	0.970	(0.071)	0.602	(0.048)	0.150	(0.019)				
M11_09	M041262	1.034	(0.090)	0.800	(0.051)	0.230	(0.019)				
M11_10	M041267	0.454	(0.027)	0.738	(0.058)						
M11_11	M041177	0.884	(0.053)	−0.840	(0.082)	0.137	(0.036)				
M11_12	M041271	0.915	(0.057)	−0.501	(0.074)	0.163	(0.033)				

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
M11_13A	M041276A	0.876	(0.035)	−0.052	(0.028)						
M11_13B	M041276B	0.765	(0.034)	0.659	(0.035)						
M13_01	M041004	0.813	(0.056)	−1.627	(0.143)	0.211	(0.060)				
M13_02	M041023	1.376	(0.084)	−1.020	(0.064)	0.233	(0.036)				
M13_03	M041034	0.767	(0.047)	−0.467	(0.080)	0.118	(0.032)				
M13_04	M041087	0.827	(0.033)	0.015	(0.028)						
M13_05	M041124	0.834	(0.033)	−0.218	(0.029)						
M13_06A	M041302A	0.728	(0.050)	−1.209	(0.137)	0.194	(0.053)				
M13_06B	M041302B	0.510	(0.026)	−0.592	(0.051)						
M13_06C	M041302C	0.922	(0.036)	−0.587	(0.032)						
M13_07	M041254	0.761	(0.059)	0.249	(0.075)	0.161	(0.029)				
M13_08	M041153	0.911	(0.061)	0.085	(0.061)	0.161	(0.026)				
M13_09	M041132	0.394	(0.051)	0.750	(0.180)	0.143	(0.046)				
M13_10	M041165	0.335	(0.011)	0.457	(0.039)			−1.297	(0.086)	1.297	(0.091)
M13_11	M041174	0.922	(0.038)	−1.001	(0.040)						
M13_12	M041191	0.807	(0.058)	−1.656	(0.155)	0.230	(0.064)				
Items Introduced in 2011:											
M02_01	M051305	0.834	(0.086)	−0.253	(0.131)	0.180	(0.056)				
M02_02	M051091	1.451	(0.137)	0.530	(0.048)	0.196	(0.023)				
M02_03	M051001	1.023	(0.057)	0.691	(0.039)						
M02_04	M051007	1.179	(0.199)	1.344	(0.083)	0.293	(0.022)				
M02_05	M051203	0.428	(0.036)	0.420	(0.074)						
M02_06	M051601	0.889	(0.049)	−0.385	(0.042)						
M02_07A	M051064A	0.797	(0.046)	−0.236	(0.043)						
M02_07B	M051064B	0.721	(0.045)	−0.994	(0.067)						
M02_08	M051015	0.610	(0.040)	0.179	(0.051)						
M02_09	M051123	0.576	(0.103)	0.806	(0.175)	0.193	(0.058)				
M02_10	M051109	1.087	(0.057)	−0.355	(0.036)						
M02_11	M051117	1.014	(0.120)	0.285	(0.099)	0.303	(0.039)				
M04_01	M051205	0.523	(0.037)	−0.555	(0.069)						
M04_02	M051039	1.068	(0.055)	−0.270	(0.035)						
M04_03	M051055	1.006	(0.058)	0.815	(0.043)						
M04_04	M051006	0.524	(0.025)	1.063	(0.052)			−0.541	(0.078)	0.541	(0.096)
M04_05	M051070	1.121	(0.126)	0.882	(0.060)	0.159	(0.023)				
M04_06	M051018	0.673	(0.098)	0.380	(0.159)	0.216	(0.056)				
M04_07	M051407	0.842	(0.090)	0.033	(0.114)	0.174	(0.048)				
M04_08	M051410	0.946	(0.113)	0.697	(0.078)	0.188	(0.031)				
M04_09	M051059	0.769	(0.049)	−1.229	(0.073)						
M04_10	M051093	0.694	(0.091)	0.537	(0.120)	0.137	(0.046)				
M04_11	M051134	1.141	(0.060)	0.299	(0.032)						
M04_12	M051077	1.099	(0.091)	0.109	(0.062)	0.095	(0.030)				
M08_01	M051206	0.504	(0.038)	−1.014	(0.093)						
M08_02	M051052	0.822	(0.103)	−0.003	(0.150)	0.294	(0.055)				

TIMSS 2011 Item Parameters from Concurrent Calibration of Fourth Grade Mathematics (Continued)

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})	Step 2 (d_{j2})
M08_03	M051049	1.231	(0.099)	−0.111	(0.063)	0.133	(0.034)		
M08_04	M051045	1.004	(0.054)	−0.083	(0.035)				
M08_05	M051098	1.157	(0.124)	0.761	(0.060)	0.180	(0.025)		
M08_06	M051030	1.100	(0.068)	1.155	(0.049)				
M08_07	M051502	0.830	(0.113)	1.114	(0.084)	0.141	(0.029)		
M08_08	M051224	1.267	(0.149)	0.422	(0.077)	0.358	(0.032)		
M08_09	M051207	0.807	(0.139)	0.783	(0.136)	0.370	(0.042)		
M08_10	M051427	0.946	(0.108)	0.620	(0.079)	0.182	(0.033)		
M08_11	M051533	1.070	(0.057)	0.038	(0.033)				
M08_12	M051080	1.082	(0.058)	−0.108	(0.034)				
M10_01	M051140	0.524	(0.071)	−0.119	(0.232)	0.067	(0.079)		
M10_02	M051017	0.831	(0.120)	0.633	(0.114)	0.292	(0.040)		
M10_03	M051111	0.669	(0.046)	0.911	(0.063)				
M10_04	M051089	1.112	(0.061)	0.656	(0.036)				
M10_05	M051094	0.979	(0.103)	0.375	(0.080)	0.194	(0.034)		
M10_06	M051227	0.998	(0.064)	1.181	(0.055)				
M10_07	M051060	0.412	(0.077)	0.251	(0.342)	0.048	(0.101)		
M10_08Z	M051061Z	0.579	(0.041)	0.479	(0.059)				
M10_09	M051129	0.641	(0.081)	−0.317	(0.210)	0.170	(0.075)		
M10_10	M051236	0.753	(0.045)	−0.157	(0.045)				
M10_11A	M051125A	0.823	(0.053)	−1.604	(0.087)				
M10_11B	M051125B	0.637	(0.089)	−0.011	(0.204)	0.207	(0.070)		
M12_01	M051401	0.756	(0.047)	0.406	(0.046)				
M12_02	M051075	1.534	(0.176)	1.005	(0.049)	0.209	(0.018)		
M12_03	M051402	0.882	(0.050)	0.294	(0.038)				
M12_04	M051226	1.436	(0.145)	0.527	(0.054)	0.252	(0.025)		
M12_05	M051131	0.678	(0.042)	−0.131	(0.049)				
M12_06	M051103	1.334	(0.141)	0.307	(0.068)	0.317	(0.030)		
M12_07	M051217	0.931	(0.053)	0.569	(0.040)				
M12_08	M051079	0.798	(0.047)	0.418	(0.043)				
M12_09	M051211	0.707	(0.084)	−0.452	(0.198)	0.206	(0.074)		
M12_10	M051102	1.488	(0.151)	0.648	(0.050)	0.228	(0.022)		
M12_11	M051009	0.737	(0.044)	−0.152	(0.046)				
M12_12	M051100	0.611	(0.082)	0.089	(0.185)	0.142	(0.065)		
M14_01	M051043	0.382	(0.034)	−0.544	(0.093)				
M14_02	M051040	1.098	(0.121)	−0.109	(0.109)	0.342	(0.046)		
M14_03	M051008	1.141	(0.066)	0.950	(0.042)				
M14_04A	M051031A	1.485	(0.074)	0.166	(0.026)				
M14_04B	M051031B	1.604	(0.080)	0.264	(0.024)				
M14_05	M051508	1.120	(0.059)	0.069	(0.032)				
M14_06A	M051216A	1.086	(0.116)	0.482	(0.072)	0.211	(0.032)		
M14_06B	M051216B	0.672	(0.106)	−0.539	(0.316)	0.389	(0.093)		

TIMSS 2011 Item Parameters from Concurrent Calibration of Fourth Grade Mathematics (Continued)

Item		Slope (a$_j$)	Location (b$_j$)	Guessing (c$_j$)	Step 1 (d$_{j1}$)	Step 2 (d$_{j2}$)
M14_07	M051221	0.540 (0.068)	−1.156 (0.359)	0.023 (0.140)		
M14_08	M051115	0.388 (0.081)	1.476 (0.188)	0.000 (0.062)		
M14_09A	M051507A	0.702 (0.045)	−0.782 (0.064)			
M14_09B	M051507B	0.987 (0.058)	0.794 (0.042)			

TIMSS 2011 Item Parameters from Concurrent Calibration of Fourth Grade Science (Continued)

Item		Slope (a$_j$)	Location (b$_j$)	Guessing (c$_j$)	Step 1 (d$_{j1}$)	Step 2 (d$_{j2}$)
Items Released in 2007:						
S01_01A	S031446A	1.006 (0.059)	0.565 (0.038)			
S01_01B	S031446B	0.855 (0.056)	0.775 (0.049)			
S01_01C	S031446C	0.667 (0.044)	−0.253 (0.051)			
S01_02A	S031445A	1.460 (0.075)	0.287 (0.026)			
S01_02B	S031445B	0.994 (0.058)	−0.900 (0.053)			
S01_03	S031447	0.458 (0.031)	0.943 (0.061)		0.497 (0.073)	−0.497 (0.098)
S01_04	S031193	0.447 (0.060)	−0.618 (0.260)	0.197 (0.064)		
S01_05	S031264	0.622 (0.062)	−0.945 (0.168)	0.170 (0.052)		
S01_06	S031347	0.450 (0.060)	−1.300 (0.335)	0.242 (0.078)		
S01_07	S031346	0.691 (0.056)	1.301 (0.090)			
S01_08	S031081	0.498 (0.039)	−1.196 (0.106)			
S02_01	S041007	0.579 (0.073)	−0.187 (0.181)	0.223 (0.055)		
S02_02	S041164	0.875 (0.106)	0.648 (0.080)	0.186 (0.031)		
S02_03	S041018	0.573 (0.031)	−0.394 (0.041)		0.474 (0.072)	−0.474 (0.059)
S02_04	S041160	0.504 (0.135)	1.907 (0.247)	0.187 (0.041)		
S02_05	S041042	0.534 (0.057)	−1.703 (0.257)	0.194 (0.068)		
S02_06	S041079	0.805 (0.073)	−1.152 (0.145)	0.206 (0.054)		
S02_07	S041073	0.475 (0.037)	−0.266 (0.068)			
S02_08	S041217	1.025 (0.107)	0.273 (0.077)	0.222 (0.033)		
S02_09	S041196	0.578 (0.073)	−0.452 (0.211)	0.258 (0.062)		
S02_10	S041211	0.844 (0.049)	−0.223 (0.041)			
S02_11	S041051	0.814 (0.137)	1.029 (0.101)	0.248 (0.033)		
S02_12	S041089	0.900 (0.092)	−0.041 (0.100)	0.225 (0.041)		
S02_13A	S041156A	1.113 (0.096)	−0.332 (0.082)	0.211 (0.039)		
S02_13B	S041156B	1.000 (0.056)	0.043 (0.034)			
S03_01	S031229	1.189 (0.135)	0.540 (0.065)	0.260 (0.028)		
S03_02	S031270	0.498 (0.051)	1.943 (0.177)			
S03_03	S031026	0.475 (0.022)	−0.375 (0.043)		−0.675 (0.092)	0.675 (0.083)
S03_04	S031319	1.064 (0.147)	1.090 (0.071)	0.186 (0.023)		
S03_05A	S031414A	1.254 (0.066)	−0.376 (0.033)			
S03_05B	S031414B	1.145 (0.062)	−0.422 (0.036)			
S03_06	S031078	0.686 (0.090)	0.074 (0.153)	0.273 (0.050)		
S03_07	S031009	0.633 (0.043)	−0.378 (0.057)			
S03_08	S031401	1.208 (0.146)	0.539 (0.069)	0.300 (0.029)		
S03_09A	S031384A	0.716 (0.049)	−1.580 (0.100)			
S03_09B	S031384B	0.780 (0.050)	−0.777 (0.062)			

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
S04_01	S041165	0.576	(0.102)	0.877	(0.151)	0.232	(0.046)				
S04_02	S041023	0.930	(0.053)	0.139	(0.036)						
S04_03	S041047	0.363	(0.049)	−1.536	(0.386)	0.201	(0.076)				
S04_04	S041001	0.287	(0.024)	0.435	(0.072)			0.350	(0.125)	−0.350	(0.134)
S04_05	S041029	0.665	(0.044)	−1.011	(0.076)						
S04_06	S041054	0.508	(0.062)	−1.699	(0.325)	0.261	(0.080)				
S04_07	S041308	0.945	(0.113)	0.481	(0.085)	0.242	(0.034)				
S04_08	S041179	0.771	(0.050)	0.553	(0.046)						
S04_09	S041087	1.162	(0.117)	0.461	(0.060)	0.191	(0.027)				
S04_10	S041205	0.829	(0.085)	0.046	(0.099)	0.190	(0.039)				
S04_11	S041216	0.594	(0.043)	0.182	(0.053)						
S04_12	S041061	0.913	(0.053)	−0.212	(0.040)						
S04_13	S041202	0.465	(0.019)	0.563	(0.041)			−1.505	(0.105)	1.505	(0.111)
S04_14	S041215	0.799	(0.108)	0.775	(0.092)	0.167	(0.035)				
S05_01	S031255	0.711	(0.079)	−0.413	(0.158)	0.255	(0.054)				
S05_02Z	S031240Z	0.527	(0.026)	−0.377	(0.046)			1.166	(0.082)	−1.166	(0.064)
S05_03	S031239	0.597	(0.080)	−0.494	(0.234)	0.319	(0.066)				
S05_04A	S031235A	1.117	(0.061)	0.324	(0.031)						
S05_04B	S031235B	1.167	(0.065)	0.513	(0.032)						
S05_05	S031205	0.476	(0.069)	−0.073	(0.228)	0.209	(0.061)				
S05_06A	S031399A	1.215	(0.065)	0.262	(0.029)						
S05_06B	S031399B	1.102	(0.061)	0.060	(0.032)						
S05_07	S031393	0.700	(0.051)	−1.525	(0.107)						
S05_08	S031278	0.425	(0.038)	−1.042	(0.119)						
S07_01	S031317	0.636	(0.092)	−0.182	(0.211)	0.363	(0.058)				
S07_02	S031190	0.991	(0.059)	0.510	(0.037)						
S07_03	S031431	0.640	(0.137)	1.739	(0.173)	0.155	(0.030)				
S07_04	S031283	0.450	(0.063)	−0.832	(0.314)	0.250	(0.073)				
S07_05	S031426	0.778	(0.088)	−0.304	(0.146)	0.291	(0.050)				
S07_06	S031422	0.840	(0.088)	−1.297	(0.185)	0.332	(0.063)				
S07_07	S031427	0.644	(0.079)	−0.088	(0.159)	0.237	(0.051)				
S07_08	S031075	0.370	(0.097)	0.816	(0.371)	0.317	(0.074)				
S07_09	S031047	0.608	(0.042)	−0.233	(0.056)						
S07_10	S031387	0.730	(0.112)	1.126	(0.099)	0.145	(0.032)				
S07_11Z	S031396Z	0.446	(0.024)	−1.423	(0.084)			−0.426	(0.130)	0.426	(0.092)
Items Common in 2007 and 2011:											
S01_01	S031356	0.869	(0.076)	−1.411	(0.173)	0.462	(0.054)				
S01_02	S031291	1.124	(0.072)	−1.138	(0.087)	0.263	(0.041)				
S01_03	S031230	0.582	(0.046)	−1.952	(0.213)	0.201	(0.064)				
S01_04	S031325	0.501	(0.028)	0.300	(0.044)						
S01_05	S031068	0.839	(0.068)	0.394	(0.066)	0.184	(0.027)				
S01_06	S031418	0.730	(0.063)	0.518	(0.071)	0.149	(0.027)				
S01_07Z	S031197Z	0.471	(0.017)	−0.972	(0.044)			−0.469	(0.075)	0.469	(0.058)

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
S01_08	S031371	0.800	(0.070)	0.500	(0.070)	0.190	(0.028)				
S01_09	S031376	0.928	(0.099)	0.996	(0.059)	0.225	(0.022)				
S01_10	S031044	0.706	(0.032)	0.055	(0.032)						
S01_11Z	S031390Z	0.713	(0.026)	0.069	(0.022)			0.458	(0.038)	−0.458	(0.036)
S03_01	S041117	0.507	(0.048)	−2.715	(0.360)	0.294	(0.092)				
S03_02	S041120	1.532	(0.204)	1.151	(0.053)	0.427	(0.015)				
S03_03	S041003	0.619	(0.031)	0.157	(0.035)						
S03_04	S041224	0.966	(0.033)	0.408	(0.018)			0.441	(0.027)	−0.441	(0.031)
S03_05	S041163	0.499	(0.076)	1.212	(0.128)	0.192	(0.037)				
S03_06	S041039	0.685	(0.032)	−0.196	(0.035)						
S03_07	S041014	1.399	(0.164)	1.356	(0.052)	0.215	(0.013)				
S03_08	S041181	0.525	(0.028)	−0.747	(0.056)						
S03_09	S041174	0.744	(0.034)	0.361	(0.031)						
S03_10	S041049	0.967	(0.077)	0.398	(0.058)	0.213	(0.025)				
S03_11	S041208	0.597	(0.131)	1.425	(0.149)	0.395	(0.035)				
S03_12	S041060	0.953	(0.047)	1.132	(0.042)						
S03_13A	S041201A	1.055	(0.042)	0.103	(0.023)						
S03_13B	S041201B	1.025	(0.043)	0.270	(0.024)						
S05_01	S031340	0.739	(0.076)	0.759	(0.074)	0.201	(0.027)				
S05_02	S031236	0.523	(0.044)	−1.492	(0.220)	0.210	(0.061)				
S05_03Z	S031391Z	0.518	(0.021)	0.312	(0.027)			0.113	(0.049)	−0.113	(0.052)
S05_04	S031361	0.694	(0.067)	0.292	(0.101)	0.244	(0.035)				
S05_05	S031001	0.943	(0.057)	−1.077	(0.086)	0.176	(0.037)				
S05_07	S031410	0.498	(0.067)	0.160	(0.208)	0.317	(0.051)				
S05_08	S031421	0.381	(0.025)	−1.062	(0.087)						
S05_09	S031298	1.162	(0.168)	1.512	(0.075)	0.254	(0.015)				
S05_10	S031076	0.778	(0.035)	0.326	(0.030)						
S05_11	S031275	0.702	(0.110)	1.553	(0.104)	0.201	(0.024)				
S06_01	S041311	0.652	(0.057)	−2.544	(0.274)	0.293	(0.081)				
S06_02	S041178	1.081	(0.103)	0.776	(0.052)	0.268	(0.021)				
S06_03	S041182	0.516	(0.029)	0.296	(0.043)						
S06_04	S041180	1.278	(0.082)	0.082	(0.045)	0.214	(0.023)				
S06_05	S041187	1.351	(0.227)	1.710	(0.091)	0.222	(0.013)				
S06_06A	S041013A	0.474	(0.029)	0.648	(0.053)						
S06_06B	S041013B	0.390	(0.030)	1.693	(0.125)						
S06_07	S041067	0.787	(0.034)	−0.506	(0.036)						
S06_08	S041305	1.117	(0.093)	0.650	(0.046)	0.224	(0.020)				
S06_09	S041048	0.737	(0.033)	0.107	(0.031)						
S06_10	S041110	0.600	(0.029)	−0.445	(0.043)						
S06_11	S041069	1.040	(0.090)	0.281	(0.067)	0.322	(0.027)				
S06_12	S041100	1.076	(0.077)	0.359	(0.048)	0.184	(0.022)				
S06_13	S041092	0.724	(0.064)	−0.011	(0.105)	0.243	(0.038)				
S07_01	S031254	0.494	(0.085)	0.673	(0.205)	0.368	(0.049)				

TIMSS 2011 Item Parameters from Concurrent Calibration of Fourth Grade Science (Continued)

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
S07_02	S031266	1.047	(0.066)	−0.005	(0.052)	0.162	(0.024)				
S07_03	S031233	0.588	(0.029)	−0.623	(0.048)						
S07_04	S031204	0.600	(0.031)	0.454	(0.039)						
S07_05	S031273	1.200	(0.085)	0.182	(0.049)	0.242	(0.024)				
S07_06	S031299	0.572	(0.031)	0.500	(0.042)						
S07_07	S031281	0.755	(0.054)	−1.635	(0.150)	0.219	(0.054)				
S07_08	S031077	0.662	(0.058)	−0.711	(0.159)	0.300	(0.050)				
S07_09	S031311	1.090	(0.076)	−0.034	(0.060)	0.241	(0.028)				
S07_10Z	S031088Z	0.513	(0.014)	0.101	(0.036)			1.686	(0.055)	−1.686	(0.055)
S07_11	S031389	0.968	(0.096)	0.888	(0.055)	0.212	(0.021)				
S09_01	S041009	0.751	(0.060)	−0.896	(0.140)	0.320	(0.047)				
S09_02	S041223	0.973	(0.083)	0.192	(0.072)	0.317	(0.028)				
S09_03	S041026	0.506	(0.051)	0.360	(0.117)	0.137	(0.036)				
S09_04	S041177	0.382	(0.020)	1.231	(0.060)			0.387	(0.061)	−0.387	(0.085)
S09_05	S041183	0.565	(0.018)	0.128	(0.030)			1.255	(0.047)	−1.255	(0.048)
S09_06	S041008	0.996	(0.088)	0.602	(0.055)	0.239	(0.023)				
S09_08	S041195	0.632	(0.037)	1.239	(0.063)						
S09_09A	S041134A	0.779	(0.036)	0.619	(0.034)						
S09_09B	S041134B	0.693	(0.032)	−0.062	(0.033)						
S09_09C	S041134C	0.726	(0.063)	0.365	(0.078)	0.178	(0.029)				
S09_10	S041191	0.732	(0.091)	0.888	(0.085)	0.269	(0.029)				
S09_11	S041107	0.363	(0.012)	−1.053	(0.051)			−1.248	(0.098)	1.248	(0.082)
S09_12	S041113	0.797	(0.036)	0.262	(0.029)						
S11_01	S041027	0.676	(0.035)	−2.284	(0.100)						
S11_02	S041043	0.533	(0.028)	−0.683	(0.053)						
S11_03	S041050	0.423	(0.060)	0.673	(0.180)	0.194	(0.047)				
S11_04	S041070	0.754	(0.060)	0.158	(0.079)	0.176	(0.030)				
S11_05	S041006	0.399	(0.019)	0.522	(0.038)			0.297	(0.061)	−0.297	(0.068)
S11_06	S041052	0.918	(0.075)	−0.302	(0.097)	0.346	(0.037)				
S11_07	S041301	0.590	(0.032)	0.773	(0.047)						
S11_09	S041033	0.786	(0.039)	0.924	(0.041)						
S11_11	S041077	0.764	(0.034)	0.233	(0.030)						
S11_12	S041209	0.601	(0.068)	0.720	(0.099)	0.183	(0.033)				
S11_13	S041081	0.482	(0.017)	0.378	(0.028)			−0.400	(0.056)	0.400	(0.060)
S11_14	S041102	0.782	(0.062)	−0.277	(0.102)	0.240	(0.038)				
S13_01	S041010	0.941	(0.059)	−1.048	(0.092)	0.208	(0.040)				
S13_02	S041034	0.494	(0.051)	−0.602	(0.218)	0.250	(0.058)				
S13_03	S041017	0.778	(0.093)	0.943	(0.078)	0.258	(0.027)				
S13_04	S041124	0.868	(0.090)	0.824	(0.065)	0.236	(0.024)				
S13_05	S041186	0.622	(0.034)	0.958	(0.051)						
S13_06	S041037	0.521	(0.019)	−0.081	(0.027)			−0.172	(0.054)	0.172	(0.050)
S13_07	S041119	0.845	(0.083)	−0.068	(0.115)	0.413	(0.037)				
S13_08	S041105	0.853	(0.054)	−0.354	(0.072)	0.148	(0.031)				

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
S13_09	S041193	0.377	(0.035)	−1.074	(0.225)	0.131	(0.051)				
S13_10Z	S041149Z	0.523	(0.016)	0.797	(0.029)			−1.124	(0.063)	1.124	(0.069)
S13_11	S041032	0.645	(0.035)	−2.140	(0.102)						
S13_12	S041068	0.649	(0.032)	0.207	(0.034)						
S13_13	S041303	0.503	(0.067)	0.657	(0.149)	0.214	(0.044)				
Items Introduced in 2011:											
S02_01	S051057	0.656	(0.044)	−0.278	(0.052)						
S02_02	S051032	0.965	(0.110)	0.311	(0.090)	0.223	(0.040)				
S02_03Z	S051049Z	0.349	(0.037)	0.516	(0.093)						
S02_04	S051033	0.711	(0.135)	0.846	(0.141)	0.293	(0.048)				
S02_05	S051173	0.899	(0.062)	1.129	(0.061)						
S02_06	S051086	0.687	(0.074)	−1.017	(0.217)	0.160	(0.085)				
S02_07	S051179	0.796	(0.074)	−1.099	(0.165)	0.125	(0.072)				
S02_08	S051074	0.483	(0.044)	1.092	(0.099)						
S02_09	S051119	0.526	(0.045)	1.075	(0.091)						
S02_10	S051071	0.747	(0.102)	0.497	(0.117)	0.182	(0.046)				
S02_11	S051100	1.125	(0.150)	1.076	(0.064)	0.161	(0.023)				
S02_12	S051156	1.251	(0.195)	1.269	(0.071)	0.198	(0.021)				
S04_01	S051041	1.043	(0.159)	0.657	(0.095)	0.370	(0.035)				
S04_02	S051037	0.686	(0.045)	−0.069	(0.047)						
S04_03	S051008	0.809	(0.058)	1.102	(0.065)						
S04_04	S051004	1.171	(0.101)	−0.295	(0.080)	0.188	(0.042)				
S04_05Z	S051026Z	0.481	(0.042)	0.808	(0.082)						
S04_06	S051130	0.490	(0.046)	1.378	(0.121)						
S04_07	S051114	1.135	(0.147)	0.671	(0.073)	0.276	(0.031)				
S04_08Z	S051121Z	0.350	(0.036)	0.086	(0.085)						
S04_09	S051147	0.771	(0.053)	0.869	(0.056)						
S04_10	S051105	0.942	(0.106)	−0.182	(0.127)	0.290	(0.053)				
S04_11	S051110	0.856	(0.096)	−0.056	(0.123)	0.221	(0.052)				
S04_12	S051111	1.007	(0.137)	0.255	(0.115)	0.375	(0.044)				
S08_01	S051044	0.536	(0.041)	0.142	(0.057)						
S08_03	S051003	0.603	(0.058)	−0.519	(0.140)	0.019	(0.050)				
S08_04	S051168	0.635	(0.043)	−0.316	(0.054)						
S08_05	S051010	0.745	(0.047)	−0.080	(0.044)						
S08_06	S051035	1.306	(0.247)	1.356	(0.086)	0.266	(0.021)				
S08_07	S051059	0.474	(0.039)	−0.003	(0.064)						
S08_08	S051142	0.856	(0.092)	0.335	(0.084)	0.128	(0.037)				
S08_09A	S051131A	0.990	(0.106)	−0.158	(0.110)	0.268	(0.048)				
S08_09B	S051131B	0.879	(0.109)	0.454	(0.093)	0.199	(0.039)				
S08_10	S051151	0.905	(0.057)	−1.251	(0.071)						
S08_11	S051157	0.635	(0.111)	0.804	(0.138)	0.191	(0.050)				

TIMSS 2011 Item Parameters from Concurrent Calibration of Fourth Grade Science (Continued)

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
S10_01	S051185	1.035	(0.101)	0.054	(0.080)	0.186	(0.038)				
S10_02	S051048	0.642	(0.033)	0.026	(0.032)			0.152	(0.060)	−0.152	(0.057)
S10_03	S051164	0.820	(0.071)	1.650	(0.109)						
S10_04	S051186	0.753	(0.047)	−0.767	(0.059)						
S10_05	S051137	0.611	(0.068)	−1.252	(0.256)	0.112	(0.093)				
S10_06	S051007	0.768	(0.047)	−0.431	(0.049)						
S10_07	S051087	0.847	(0.079)	−0.918	(0.147)	0.170	(0.064)				
S10_08Z	S051188Z	0.536	(0.041)	0.056	(0.057)						
S10_10	S051201	0.587	(0.044)	0.393	(0.056)						
S10_11	S051102	0.752	(0.089)	−0.156	(0.147)	0.205	(0.057)				
S10_12	S051095	0.478	(0.038)	−0.599	(0.079)						
S12_01	S051161	0.590	(0.104)	0.447	(0.198)	0.226	(0.064)				
S12_02	S051051	1.586	(0.287)	1.399	(0.073)	0.249	(0.017)				
S12_03Z	S051138Z	0.650	(0.045)	0.296	(0.049)						
S12_04	S051194	0.930	(0.061)	0.949	(0.050)						
S12_05	S051029	0.606	(0.152)	1.363	(0.164)	0.253	(0.049)				
S12_06	S051077	0.733	(0.046)	−0.480	(0.053)						
S12_07	S051200	0.606	(0.051)	1.286	(0.095)						
S12_08	S051075	0.611	(0.043)	−0.823	(0.075)						
S12_09	S051065	0.965	(0.108)	−0.308	(0.134)	0.310	(0.056)				
S12_10	S051191	1.161	(0.111)	0.266	(0.064)	0.168	(0.033)				
S12_11	S051099	0.866	(0.097)	0.062	(0.113)	0.198	(0.048)				
S12_12	S051175	0.798	(0.056)	0.929	(0.057)						
S14_01	S051054	0.860	(0.076)	−0.774	(0.128)	0.127	(0.058)				
S14_02	S051024	0.613	(0.045)	0.508	(0.054)						
S14_03A	S051132A	0.818	(0.061)	1.247	(0.072)						
S14_03B	S051132B	0.823	(0.059)	1.136	(0.065)						
S14_04	S051040	0.419	(0.039)	0.501	(0.078)						
S14_05	S051193	0.986	(0.109)	−0.151	(0.119)	0.300	(0.051)				
S14_06	S051063	1.132	(0.149)	0.857	(0.066)	0.226	(0.028)				
S14_07	S051012	1.189	(0.137)	0.276	(0.083)	0.324	(0.037)				
S14_08	S051115	1.079	(0.059)	0.061	(0.032)						
S14_09	S051180	0.755	(0.114)	−0.041	(0.197)	0.374	(0.063)				
S14_10	S051106	1.108	(0.140)	0.771	(0.067)	0.216	(0.029)				
S14_11	S051148	1.067	(0.126)	0.281	(0.092)	0.289	(0.040)				

TIMSS 2011 Item Parameters for Concurrent Calibration of Eighth Grade Mathematics

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
Items Released in 2007:											
M01_01	M022043	0.670	(0.057)	−0.559	(0.136)	0.139	(0.051)				
M01_02	M022046	0.857	(0.043)	−0.535	(0.040)						
M01_03	M022049	0.726	(0.094)	0.316	(0.145)	0.318	(0.045)				
M01_04	M022050	1.049	(0.107)	1.022	(0.058)	0.148	(0.019)				
M01_05	M022055	1.283	(0.060)	0.561	(0.029)						
M01_06	M022057	0.470	(0.064)	−0.175	(0.282)	0.226	(0.075)				
M01_07	M022257	1.717	(0.154)	0.535	(0.042)	0.263	(0.019)				
M01_08	M022062	1.066	(0.092)	0.678	(0.053)	0.128	(0.020)				
M01_09	M022066	1.560	(0.107)	0.227	(0.036)	0.116	(0.018)				
M01_10	M022232	0.587	(0.024)	1.591	(0.053)			−2.181	(0.143)	2.181	(0.157)
M01_11A	M022234A	0.828	(0.029)	0.771	(0.028)			−0.552	(0.056)	0.552	(0.063)
M01_11B	M022234B	0.934	(0.036)	1.128	(0.030)			−1.462	(0.104)	1.462	(0.110)
M01_12	M022243	1.169	(0.057)	0.443	(0.031)						
M02_01	M042003	0.724	(0.064)	−0.329	(0.123)	0.162	(0.047)				
M02_02	M042079	1.125	(0.110)	−0.230	(0.098)	0.363	(0.040)				
M02_03	M042018	1.015	(0.048)	0.378	(0.033)						
M02_04	M042055	1.435	(0.156)	0.834	(0.056)	0.317	(0.019)				
M02_05	M042039	0.699	(0.055)	0.303	(0.075)	0.076	(0.026)				
M02_06	M042199	1.342	(0.107)	−0.074	(0.059)	0.232	(0.029)				
M02_07A	M042301A	0.506	(0.032)	−0.142	(0.056)						
M02_07B	M042301B	0.957	(0.047)	0.621	(0.037)						
M02_07C	M042301C	1.701	(0.085)	0.965	(0.029)						
M02_08	M042263	1.374	(0.068)	0.930	(0.033)						
M02_09	M042265	0.917	(0.082)	0.380	(0.073)	0.163	(0.029)				
M02_10	M042137	1.229	(0.115)	0.634	(0.056)	0.227	(0.022)				
M02_11	M042148	0.883	(0.087)	−0.243	(0.122)	0.284	(0.047)				
M02_12	M042254	0.708	(0.058)	−1.282	(0.161)	0.174	(0.064)				
M02_13	M042250	1.140	(0.056)	−0.749	(0.036)						
M02_14	M042220	0.728	(0.023)	0.396	(0.026)			−1.440	(0.084)	1.440	(0.087)
M03_01	M022097	1.237	(0.085)	−0.132	(0.051)	0.120	(0.025)				
M03_02	M022101	0.895	(0.071)	−0.379	(0.092)	0.155	(0.041)				
M03_03	M022104	1.070	(0.076)	−0.229	(0.063)	0.122	(0.030)				
M03_04	M022105	0.640	(0.072)	0.670	(0.105)	0.129	(0.036)				
M03_05	M022106	1.052	(0.051)	0.662	(0.036)						
M03_06	M022108	1.059	(0.105)	0.298	(0.078)	0.280	(0.031)				
M03_07	M022110	0.586	(0.035)	−0.731	(0.060)						
M03_08	M022181	1.206	(0.098)	−0.706	(0.088)	0.244	(0.046)				
M03_09	M032307	1.573	(0.078)	0.884	(0.030)						
M03_10	M032523	2.144	(0.212)	1.029	(0.036)	0.174	(0.012)				
M03_11	M032701	1.293	(0.106)	−1.035	(0.094)	0.247	(0.053)				
M03_12	M032704	1.326	(0.107)	−0.180	(0.062)	0.237	(0.032)				
M03_13	M032525	1.093	(0.093)	0.126	(0.067)	0.201	(0.030)				

TIMSS 2011 Item Parameters for Concurrent Calibration of Eighth Grade Mathematics (Continued)

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
M03_14	M032579	1.329	(0.113)	−0.071	(0.063)	0.265	(0.031)				
M03_15	M032691	0.781	(0.041)	0.258	(0.039)						
M04_01	M042001	0.794	(0.068)	−0.530	(0.119)	0.175	(0.049)				
M04_02	M042022	0.995	(0.118)	0.761	(0.077)	0.276	(0.026)				
M04_03	M042082	1.521	(0.139)	0.768	(0.043)	0.185	(0.016)				
M04_04	M042088	1.261	(0.107)	0.250	(0.054)	0.209	(0.025)				
M04_05A	M042304A	1.416	(0.064)	−0.503	(0.027)						
M04_05B	M042304B	0.955	(0.041)	0.611	(0.026)			0.416	(0.035)	−0.416	(0.046)
M04_05C	M042304C	1.418	(0.068)	0.703	(0.030)						
M04_05D	M042304D	0.572	(0.019)	0.107	(0.030)			−1.286	(0.082)	1.286	(0.083)
M04_06	M042267	1.406	(0.112)	0.627	(0.040)	0.121	(0.016)				
M04_07	M042239	1.482	(0.129)	0.931	(0.041)	0.112	(0.013)				
M04_08	M042238	1.317	(0.146)	1.101	(0.055)	0.192	(0.016)				
M04_09	M042279	1.079	(0.078)	−0.086	(0.058)	0.116	(0.027)				
M04_10	M042036	1.588	(0.131)	0.684	(0.038)	0.140	(0.015)				
M04_11	M042130	0.477	(0.033)	−0.263	(0.060)						
M04_12A	M042303A	1.166	(0.054)	0.176	(0.029)						
M04_12B	M042303B	0.359	(0.021)	0.753	(0.061)			−0.059	(0.089)	0.059	(0.106)
M04_13	M042222	1.015	(0.084)	0.334	(0.058)	0.124	(0.025)				
M05_01	M032142	1.956	(0.269)	1.005	(0.053)	0.418	(0.016)				
M05_02	M032198	0.819	(0.085)	0.389	(0.090)	0.184	(0.034)				
M05_03	M032640	0.628	(0.025)	1.287	(0.048)			−0.833	(0.075)	0.833	(0.094)
M05_04	M032344	1.277	(0.060)	0.451	(0.029)						
M05_05	M032754	0.850	(0.043)	−0.514	(0.040)						
M05_06	M032755	1.084	(0.045)	1.143	(0.031)			−0.175	(0.044)	0.175	(0.058)
M05_07A	M032753A	1.093	(0.040)	0.716	(0.024)			−0.222	(0.040)	0.222	(0.048)
M05_07B	M032753B	1.224	(0.049)	0.863	(0.024)			−0.011	(0.035)	0.011	(0.045)
M05_07C	M032753C	0.974	(0.049)	0.433	(0.035)						
M05_08	M032756	0.654	(0.038)	0.341	(0.048)						
M05_09	M032205	0.609	(0.084)	0.230	(0.182)	0.254	(0.056)				
M05_10	M032163	1.619	(0.156)	0.634	(0.045)	0.245	(0.019)				
M07_01	M032381	1.114	(0.052)	0.255	(0.030)						
M07_02	M032416	1.513	(0.118)	0.757	(0.037)	0.110	(0.014)				
M07_03	M032160	2.051	(0.202)	1.171	(0.036)	0.133	(0.011)				
M07_04	M032273	1.088	(0.097)	−0.167	(0.086)	0.270	(0.038)				
M07_05	M032540	1.188	(0.122)	0.340	(0.073)	0.340	(0.029)				
M07_06	M032698	1.092	(0.093)	0.509	(0.055)	0.143	(0.023)				
M07_07	M032097	1.401	(0.163)	1.270	(0.054)	0.197	(0.015)				
M07_08	M032575	2.254	(0.194)	0.544	(0.032)	0.229	(0.016)				
M07_09	M032414	1.117	(0.054)	0.582	(0.033)						
M07_10	M032294	0.934	(0.089)	−0.022	(0.097)	0.245	(0.039)				
M07_11	M032688	0.802	(0.043)	0.671	(0.044)						
M07_12	M032529	1.630	(0.145)	0.899	(0.039)	0.156	(0.014)				

TIMSS 2011 Item Parameters for Concurrent Calibration of Eighth Grade Mathematics (Continued)

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
M07_13A	M032637A	0.835	(0.043)	−0.456	(0.041)						
M07_13B	M032637B	1.197	(0.059)	−0.419	(0.033)						
M07_13C	M032637C	1.123	(0.055)	0.194	(0.031)						
Items Common in 2007 and 2011:											
M01_01	M032166	1.067	(0.063)	0.020	(0.051)	0.188	(0.023)				
M01_02	M032721	0.912	(0.093)	1.272	(0.061)	0.263	(0.017)				
M01_03	M032757	0.520	(0.012)	−0.326	(0.023)			−1.997	(0.079)	1.997	(0.076)
M01_04A	M032760A	0.999	(0.023)	0.590	(0.015)			−1.122	(0.050)	1.122	(0.052)
M01_04B	M032760B	1.681	(0.059)	0.916	(0.020)						
M01_04C	M032760C	1.904	(0.073)	1.150	(0.021)						
M01_05	M032761	1.320	(0.038)	1.119	(0.018)			−0.112	(0.026)	0.112	(0.034)
M01_06	M032692	0.635	(0.015)	0.952	(0.024)			−1.400	(0.062)	1.400	(0.068)
M01_07	M032626	0.837	(0.055)	0.268	(0.062)	0.154	(0.025)				
M01_08	M032595	1.494	(0.076)	0.231	(0.029)	0.132	(0.015)				
M01_09	M032673	1.554	(0.091)	0.405	(0.031)	0.216	(0.015)				
M03_01	M042032	0.858	(0.057)	−0.513	(0.097)	0.241	(0.041)				
M03_02	M042031	1.621	(0.100)	0.520	(0.031)	0.240	(0.014)				
M03_03	M042186	1.098	(0.036)	0.290	(0.021)						
M03_04	M042059	0.887	(0.022)	0.065	(0.016)			−0.165	(0.032)	0.165	(0.032)
M03_05	M042236	1.470	(0.088)	0.243	(0.036)	0.250	(0.017)				
M03_06	M042226	1.296	(0.041)	0.182	(0.019)						
M03_07	M042103	0.901	(0.038)	1.434	(0.044)						
M03_08	M042086	1.230	(0.041)	0.586	(0.021)						
M03_09	M042228	0.816	(0.030)	0.620	(0.030)						
M03_10	M042245	1.736	(0.113)	1.116	(0.027)	0.130	(0.008)				
M03_11	M042270	0.902	(0.031)	−0.091	(0.025)						
M03_12	M042201	1.368	(0.043)	0.106	(0.018)						
M03_13	M042152	0.741	(0.063)	0.717	(0.073)	0.198	(0.025)				
M03_14	M042269	0.808	(0.066)	0.232	(0.088)	0.286	(0.031)				
M03_15	M042179	0.895	(0.057)	0.202	(0.059)	0.165	(0.025)				
M03_16	M042177	1.153	(0.070)	0.163	(0.047)	0.214	(0.021)				
M03_17	M042207	0.436	(0.010)	−0.106	(0.026)			−2.926	(0.107)	2.926	(0.106)
M05_01	M032094	1.333	(0.082)	0.055	(0.045)	0.288	(0.021)				
M05_02	M032662	1.975	(0.145)	1.299	(0.027)	0.138	(0.008)				
M05_03	M032064	1.398	(0.046)	0.711	(0.020)						
M05_04	M032419	1.480	(0.100)	0.770	(0.034)	0.250	(0.013)				
M05_05	M032477	1.832	(0.112)	0.591	(0.027)	0.236	(0.012)				
M05_06	M032538	1.320	(0.042)	0.216	(0.019)						
M05_07	M032324	1.185	(0.074)	0.732	(0.036)	0.163	(0.014)				
M05_08	M032116	1.233	(0.089)	0.781	(0.041)	0.257	(0.015)				
M05_09	M032100	1.039	(0.058)	0.322	(0.042)	0.127	(0.018)				
M05_10	M032402	0.892	(0.082)	0.828	(0.066)	0.313	(0.021)				
M05_11	M032734	0.774	(0.028)	−0.385	(0.030)						

TIMSS 2011 Item Parameters for Concurrent Calibration of Eighth Grade Mathematics (Continued)

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
M05_12	M032397	1.195	(0.082)	0.711	(0.041)	0.228	(0.016)				
M05_13	M032695	0.571	(0.013)	−0.156	(0.022)			−0.992	(0.055)	0.992	(0.053)
M05_14	M032132	0.664	(0.046)	0.293	(0.077)	0.111	(0.028)				
M06_01	M042041	1.401	(0.087)	−0.222	(0.049)	0.325	(0.024)				
M06_02	M042024	1.722	(0.088)	0.094	(0.027)	0.171	(0.015)				
M06_03	M042016	0.887	(0.066)	0.523	(0.060)	0.220	(0.022)				
M06_04	M042002	0.710	(0.029)	0.920	(0.038)						
M06_05A	M042198A	1.179	(0.040)	−0.752	(0.025)						
M06_05B	M042198B	1.065	(0.035)	0.307	(0.022)						
M06_05C	M042198C	1.730	(0.063)	1.038	(0.021)						
M06_06	M042077	1.535	(0.096)	0.448	(0.034)	0.263	(0.015)				
M06_07	M042235	1.579	(0.075)	0.181	(0.026)	0.113	(0.013)				
M06_08	M042067	2.093	(0.174)	1.103	(0.030)	0.296	(0.010)				
M06_09	M042150	0.877	(0.070)	0.886	(0.054)	0.189	(0.019)				
M06_10Z	M042300Z	0.771	(0.019)	0.267	(0.018)			−0.426	(0.037)	0.426	(0.039)
M06_11	M042260	1.034	(0.071)	0.035	(0.064)	0.295	(0.026)				
M06_12A	M042169A	1.121	(0.037)	0.192	(0.021)						
M06_12B	M042169B	0.403	(0.025)	1.693	(0.100)						
M06_12C	M042169C	0.767	(0.039)	1.811	(0.067)						
M07_01	M032352	1.508	(0.110)	0.404	(0.042)	0.393	(0.017)				
M07_02	M032725	1.325	(0.046)	0.789	(0.022)						
M07_03	M032683	0.584	(0.014)	0.706	(0.024)			−1.321	(0.059)	1.321	(0.064)
M07_04	M032738	1.361	(0.077)	−0.188	(0.043)	0.238	(0.022)				
M07_05	M032295	1.366	(0.079)	−0.497	(0.051)	0.263	(0.027)				
M07_06	M032331	2.112	(0.159)	1.180	(0.027)	0.191	(0.009)				
M07_07	M032623	1.847	(0.098)	0.599	(0.022)	0.126	(0.010)				
M07_08	M032679	1.222	(0.075)	0.291	(0.042)	0.227	(0.018)				
M07_09	M032047	2.006	(0.201)	1.095	(0.038)	0.445	(0.011)				
M07_10	M032398	1.569	(0.115)	0.805	(0.035)	0.297	(0.013)				
M07_11	M032507	1.771	(0.122)	1.048	(0.028)	0.185	(0.010)				
M07_12	M032424	1.178	(0.066)	0.339	(0.037)	0.152	(0.017)				
M07_13A	M032681A	0.581	(0.024)	−0.639	(0.041)						
M07_13B	M032681B	0.601	(0.027)	0.885	(0.044)						
M07_13C	M032681C	1.138	(0.039)	0.460	(0.022)						
M09_01	M042183	0.662	(0.042)	−0.261	(0.092)	0.117	(0.035)				
M09_02	M042060	1.381	(0.074)	0.168	(0.034)	0.172	(0.016)				
M09_03	M042019	0.795	(0.029)	0.534	(0.029)						
M09_04	M042023	1.247	(0.041)	0.460	(0.020)						
M09_05	M042197	1.175	(0.041)	0.850	(0.025)						
M09_06	M042234	1.529	(0.082)	0.316	(0.029)	0.171	(0.014)				
M09_07	M042066	0.728	(0.027)	0.344	(0.030)						

TIMSS 2011 Item Parameters for Concurrent Calibration of Eighth Grade Mathematics (Continued)

Item		Slope (a$_j$)		Location (b$_j$)		Guessing (c$_j$)		Step 1 (d$_{j1}$)		Step 2 (d$_{j2}$)	
M09_08	M042243	1.933	(0.091)	0.367	(0.020)	0.094	(0.009)				
M09_09	M042248	1.465	(0.049)	0.678	(0.020)						
M09_10Z	M042229Z	1.089	(0.027)	0.836	(0.017)			−0.500	(0.034)	0.500	(0.039)
M09_11A	M042080A	0.857	(0.031)	0.501	(0.027)						
M09_11B	M042080B	1.343	(0.053)	1.268	(0.029)						
M09_12	M042120	1.068	(0.073)	−0.017	(0.064)	0.305	(0.026)				
M09_13	M042203	1.518	(0.078)	0.104	(0.030)	0.160	(0.016)				
M09_14	M042264	0.764	(0.032)	1.271	(0.046)						
M09_15	M042255	0.672	(0.045)	−0.310	(0.101)	0.139	(0.038)				
M09_16	M042224	0.959	(0.032)	−0.059	(0.024)						
M11_01	M042015	0.972	(0.058)	−0.399	(0.071)	0.201	(0.032)				
M11_02	M042196	1.112	(0.055)	0.070	(0.037)	0.093	(0.017)				
M11_03	M042194	1.134	(0.037)	−0.455	(0.023)						
M11_04A	M042114A	1.443	(0.045)	−0.130	(0.018)						
M11_04B	M042114B	1.454	(0.046)	0.147	(0.017)						
M11_05	M042112	0.652	(0.082)	1.027	(0.105)	0.325	(0.029)				
M11_06	M042109	1.580	(0.119)	1.044	(0.034)	0.240	(0.011)				
M11_07	M042050	1.143	(0.039)	0.662	(0.023)						
M11_08A	M042074A	1.160	(0.039)	0.588	(0.022)						
M11_08B	M042074B	1.087	(0.038)	0.746	(0.025)						
M11_08C	M042074C	1.830	(0.067)	1.000	(0.020)						
M11_09	M042151	0.955	(0.032)	−0.075	(0.023)						
M11_10	M042132	1.622	(0.123)	1.159	(0.033)	0.202	(0.010)				
M11_11	M042257	0.693	(0.057)	0.786	(0.068)	0.135	(0.024)				
M11_12	M042158	0.835	(0.073)	0.364	(0.085)	0.330	(0.028)				
M11_13	M042252	1.178	(0.076)	0.761	(0.037)	0.162	(0.014)				
M11_14	M042261	0.694	(0.052)	−0.004	(0.099)	0.173	(0.036)				
M13_01	M042182	1.565	(0.107)	0.232	(0.040)	0.371	(0.017)				
M13_02	M042081	1.057	(0.037)	0.689	(0.025)						
M13_03	M042049	1.133	(0.077)	0.051	(0.057)	0.318	(0.024)				
M13_04	M042052	1.700	(0.083)	−0.043	(0.027)	0.150	(0.015)				
M13_05	M042076	1.246	(0.079)	0.502	(0.038)	0.215	(0.016)				
M13_06A	M042302A	0.888	(0.022)	0.352	(0.016)			−0.237	(0.032)	0.237	(0.034)
M13_06B	M042302B	0.886	(0.020)	0.457	(0.016)			−0.665	(0.038)	0.665	(0.040)
M13_06C	M042302C	0.551	(0.016)	1.423	(0.038)			−1.150	(0.063)	1.150	(0.077)
M13_07	M042100	1.403	(0.087)	0.220	(0.039)	0.277	(0.018)				
M13_08	M042202	1.652	(0.107)	0.497	(0.031)	0.276	(0.014)				

Item		Slope (a$_j$)		Location (b$_j$)		Guessing (c$_j$)		Step 1 (d$_{j1}$)		Step 2 (d$_{j2}$)	
M13_09	M042240	1.338	(0.069)	0.145	(0.033)	0.141	(0.016)				
M13_10	M042093	1.802	(0.069)	1.095	(0.022)						
M13_11	M042271	1.148	(0.063)	0.275	(0.037)	0.127	(0.016)				
M13_12	M042268	1.460	(0.097)	1.017	(0.031)	0.147	(0.010)				
M13_13	M042159	0.542	(0.024)	−0.830	(0.048)						
M13_14	M042164	1.343	(0.045)	0.548	(0.020)						
M13_15	M042167	1.258	(0.045)	0.748	(0.023)						
Items Introduced in 2011:											
M02_01	M052216	1.350	(0.105)	−0.335	(0.065)	0.214	(0.035)				
M02_02	M052231	0.743	(0.041)	−1.029	(0.058)						
M02_03	M052061	0.964	(0.045)	0.260	(0.033)						
M02_04	M052228	1.393	(0.100)	0.572	(0.038)	0.094	(0.016)				
M02_05	M052214	1.101	(0.127)	1.057	(0.067)	0.253	(0.021)				
M02_06	M052173	2.512	(0.244)	1.371	(0.031)	0.073	(0.008)				
M02_07	M052302	0.967	(0.074)	−0.703	(0.102)	0.095	(0.053)				
M02_08	M052002	1.002	(0.038)	1.280	(0.031)			−0.582	(0.058)	0.582	(0.069)
M02_09	M052362	1.022	(0.047)	0.222	(0.032)						
M02_10	M052408	0.903	(0.045)	0.624	(0.038)						
M02_11	M052084	1.462	(0.105)	0.269	(0.041)	0.131	(0.020)				
M02_12	M052206	1.035	(0.052)	0.906	(0.039)						
M02_13	M052429	0.879	(0.084)	0.504	(0.078)	0.152	(0.031)				
M02_14A	M052503A	0.560	(0.038)	1.526	(0.094)						
M02_14B	M052503B	0.457	(0.039)	1.971	(0.148)						
M04_01	M052209	1.404	(0.095)	−0.067	(0.045)	0.113	(0.024)				
M04_02	M052142	1.070	(0.098)	0.860	(0.055)	0.134	(0.020)				
M04_03	M052006	1.602	(0.186)	1.061	(0.052)	0.317	(0.017)				
M04_04	M052035	1.410	(0.063)	0.326	(0.025)						
M04_05	M052016	1.409	(0.063)	0.366	(0.026)						
M04_06	M052064	1.724	(0.155)	0.661	(0.042)	0.248	(0.018)				
M04_07	M052126	1.689	(0.088)	1.147	(0.031)						
M04_08	M052103	1.099	(0.089)	0.286	(0.060)	0.147	(0.027)				
M04_09	M052066	1.380	(0.119)	0.437	(0.051)	0.232	(0.023)				
M04_10	M052041	1.199	(0.065)	1.304	(0.044)						
M04_11	M052057	0.674	(0.076)	0.152	(0.148)	0.159	(0.054)				
M04_12	M052417	0.950	(0.045)	0.305	(0.034)						
M04_13	M052501	0.832	(0.046)	1.077	(0.051)						
M04_14	M052410	0.761	(0.100)	0.585	(0.127)	0.291	(0.041)				
M04_15	M052170	1.222	(0.163)	1.327	(0.068)	0.278	(0.018)				
M08_01	M052413	1.232	(0.104)	0.046	(0.065)	0.237	(0.030)				
M08_02	M052134	1.227	(0.094)	−0.084	(0.060)	0.172	(0.030)				
M08_03	M052078	1.118	(0.116)	0.952	(0.058)	0.190	(0.020)				
M08_04	M052034	1.548	(0.156)	0.651	(0.051)	0.318	(0.020)				

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
M08_05A	M052174A	1.098	(0.051)	0.316	(0.030)						
M08_05B	M052174B	1.120	(0.059)	1.095	(0.042)						
M08_06	M052130	1.247	(0.113)	0.890	(0.048)	0.143	(0.017)				
M08_07	M052073	1.612	(0.122)	0.500	(0.037)	0.143	(0.017)				
M08_08	M052110	1.567	(0.073)	0.662	(0.026)						
M08_09	M052105	1.158	(0.069)	1.520	(0.056)						
M08_10	M052407	1.294	(0.137)	0.328	(0.073)	0.391	(0.027)				
M08_11	M052036	0.693	(0.037)	0.347	(0.044)						
M08_12	M052502	1.114	(0.051)	−0.278	(0.031)						
M08_13	M052117	0.627	(0.049)	2.137	(0.135)						
M08_14	M052426	0.717	(0.062)	−1.210	(0.191)	0.000	(0.095)				
M10_01	M052017	1.214	(0.099)	0.103	(0.059)	0.186	(0.028)				
M10_02	M052217	1.298	(0.063)	0.801	(0.032)						
M10_03	M052021	0.978	(0.034)	0.616	(0.023)			−0.375	(0.046)	0.375	(0.051)
M10_04	M052095	1.533	(0.069)	0.394	(0.025)						
M10_05	M052094	1.129	(0.059)	1.115	(0.043)						
M10_06	M052131	1.304	(0.134)	0.816	(0.056)	0.259	(0.020)				
M10_07	M052090	1.265	(0.131)	0.911	(0.055)	0.231	(0.019)				
M10_08A	M052121A	1.019	(0.079)	0.206	(0.060)	0.099	(0.027)				
M10_08B	M052121B	1.818	(0.115)	1.491	(0.039)						
M10_09	M052042	0.879	(0.044)	0.466	(0.038)						
M10_10	M052047	1.086	(0.051)	0.316	(0.031)						
M10_11	M052044	1.464	(0.208)	1.174	(0.066)	0.389	(0.018)				
M10_12A	M052422A	0.885	(0.104)	0.221	(0.118)	0.335	(0.041)				
M10_12B	M052422B	0.682	(0.075)	0.225	(0.129)	0.125	(0.048)				
M10_13	M052505	1.092	(0.095)	−0.887	(0.119)	0.216	(0.062)				
M12_01	M052079	1.106	(0.122)	0.570	(0.075)	0.326	(0.027)				
M12_02	M052204	0.816	(0.094)	0.595	(0.094)	0.217	(0.034)				
M12_03	M052364	1.162	(0.053)	0.060	(0.029)						
M12_04	M052215	0.867	(0.042)	−0.131	(0.036)						
M12_05	M052147	1.573	(0.156)	0.823	(0.047)	0.258	(0.017)				
M12_06	M052067	1.143	(0.114)	0.218	(0.077)	0.322	(0.031)				
M12_07	M052068	1.398	(0.133)	1.194	(0.046)	0.110	(0.013)				
M12_08	M052087	1.532	(0.081)	1.131	(0.035)						
M12_09	M052048	1.035	(0.056)	1.166	(0.047)						
M12_10	M052039	1.185	(0.054)	0.308	(0.029)						
M12_11	M052208	2.208	(0.186)	1.112	(0.030)	0.074	(0.008)				
M12_12A	M052419A	0.883	(0.066)	−0.240	(0.079)	0.048	(0.036)				
M12_12B	M052419B	1.458	(0.103)	−0.525	(0.056)	0.140	(0.032)				
M12_13	M052115	1.793	(0.122)	0.426	(0.030)	0.087	(0.014)				
M12_14	M052421	0.809	(0.043)	0.679	(0.044)						
M14_01	M052024	1.422	(0.124)	0.569	(0.047)	0.217	(0.020)				
M14_02A	M052058A	1.197	(0.054)	−0.318	(0.030)						

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})	Step 2 (d_{j2})
M14_02B	M052058B	1.430	(0.073)	1.064	(0.034)				
M14_03	M052125	1.354	(0.103)	0.679	(0.039)	0.098	(0.016)		
M14_04	M052229	0.941	(0.045)	0.034	(0.033)				
M14_05	M052063	1.309	(0.117)	0.679	(0.050)	0.199	(0.020)		
M14_06	M052072	1.025	(0.084)	0.031	(0.073)	0.156	(0.033)		
M14_07A	M052146A	0.846	(0.042)	0.360	(0.038)				
M14_07B	M052146B	1.738	(0.099)	1.318	(0.035)				
M14_08	M052092	1.161	(0.139)	1.536	(0.066)	0.129	(0.014)		
M14_09	M052046	1.155	(0.153)	1.571	(0.072)	0.173	(0.015)		
M14_10	M052083	1.535	(0.142)	0.926	(0.043)	0.186	(0.016)		
M14_11	M052082	1.175	(0.095)	0.216	(0.058)	0.164	(0.026)		
M14_12	M052161	1.071	(0.091)	−0.096	(0.079)	0.199	(0.036)		
M14_13A	M052418A	1.835	(0.154)	0.767	(0.035)	0.164	(0.015)		
M14_13B	M052418B	1.725	(0.159)	0.652	(0.042)	0.251	(0.018)		

TIMSS 2011 Item Parameters for Concurrent Calibration of Eighth Grade Science

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
Items Released in 2007:											
S01_01	S032115	1.017	(0.094)	0.575	(0.057)	0.144	(0.024)				
S01_02	S032565	0.780	(0.047)	0.868	(0.050)						
S01_03	S032403	1.232	(0.154)	0.939	(0.059)	0.269	(0.022)				
S01_04	S032273	0.704	(0.172)	1.702	(0.165)	0.271	(0.031)				
S01_05A	S032019A	1.149	(0.066)	1.113	(0.044)						
S01_05B	S032019B	1.155	(0.081)	1.589	(0.069)						
S01_06	S032516	0.761	(0.042)	−0.515	(0.046)						
S01_07	S032620	0.709	(0.151)	1.685	(0.148)	0.203	(0.029)				
S01_08A	S032693A	1.015	(0.050)	0.105	(0.030)						
S01_08B	S032693B	1.051	(0.051)	−0.220	(0.032)						
S01_09	S032695	0.645	(0.028)	0.587	(0.032)			−0.153	(0.054)	0.153	(0.062)
S01_10Z	S032697Z	0.746	(0.032)	0.465	(0.027)			−0.023	(0.048)	0.023	(0.053)
S02_01	S042009	0.939	(0.129)	0.641	(0.095)	0.359	(0.032)				
S02_02	S042313	0.644	(0.038)	−0.875	(0.063)						
S02_03	S042059	0.843	(0.110)	0.763	(0.088)	0.248	(0.032)				
S02_04	S042011	0.811	(0.052)	1.257	(0.066)						
S02_05	S042028	0.807	(0.121)	1.218	(0.088)	0.188	(0.027)				
S02_06	S042001	0.935	(0.133)	1.303	(0.079)	0.163	(0.021)				
S02_07	S042276	1.229	(0.223)	1.212	(0.082)	0.415	(0.021)				
S02_08	S042279	0.362	(0.072)	0.487	(0.347)	0.242	(0.074)				
S02_09	S042083	0.717	(0.031)	0.983	(0.037)			−0.193	(0.051)	0.193	(0.066)
S02_10	S042106	1.048	(0.056)	0.816	(0.038)						
S02_11	S042071	1.080	(0.152)	1.120	(0.069)	0.250	(0.022)				
S02_12	S042101	0.824	(0.050)	1.002	(0.053)						
S02_13	S042307	0.605	(0.038)	0.408	(0.050)						
S02_14	S042405	0.931	(0.120)	0.646	(0.087)	0.300	(0.032)				
S02_15A	S042244A	1.108	(0.061)	0.961	(0.040)						
S02_15B	S042244B	1.059	(0.069)	1.365	(0.059)						
S02_16	S042153	0.868	(0.048)	0.414	(0.037)						
S03_01	S022183	1.419	(0.166)	0.955	(0.050)	0.258	(0.019)				
S03_02	S022276	0.775	(0.090)	0.345	(0.111)	0.246	(0.040)				
S03_03	S022115	0.963	(0.085)	0.010	(0.082)	0.210	(0.036)				
S03_04	S022022	0.729	(0.041)	0.121	(0.040)						
S03_05	S022019	0.996	(0.093)	−0.178	(0.098)	0.291	(0.041)				
S03_06	S022002	1.116	(0.107)	0.481	(0.061)	0.212	(0.027)				
S03_07	S022294	0.913	(0.102)	0.140	(0.109)	0.332	(0.040)				
S03_09	S022244	1.152	(0.062)	0.904	(0.037)						
S03_10	S022150	0.881	(0.092)	0.507	(0.078)	0.190	(0.031)				
S03_11	S022042	1.257	(0.117)	0.543	(0.052)	0.210	(0.023)				
S03_12	S022289	0.809	(0.036)	0.873	(0.032)			0.796	(0.038)	−0.796	(0.058)
S03_13	S022069	0.988	(0.052)	0.566	(0.034)						
S03_14	S022268	0.601	(0.041)	0.690	(0.057)						

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
S04_01	S042013	1.013	(0.095)	−0.700	(0.126)	0.363	(0.050)				
S04_02	S042006	0.682	(0.089)	0.230	(0.150)	0.293	(0.048)				
S04_03	S042310	0.490	(0.021)	−0.034	(0.035)			−0.331	(0.073)	0.331	(0.071)
S04_04	S042052	0.563	(0.029)	0.115	(0.035)			0.367	(0.062)	−0.367	(0.061)
S04_05	S042054	0.215	(0.043)	−0.832	(0.722)	0.241	(0.092)				
S04_06	S042043	0.353	(0.034)	1.218	(0.125)						
S04_07	S042196	0.778	(0.051)	1.271	(0.067)						
S04_08	S042061	0.612	(0.110)	1.396	(0.125)	0.178	(0.034)				
S04_09	S042292	0.432	(0.018)	0.675	(0.043)			−1.079	(0.090)	1.079	(0.099)
S04_10	S042109	1.442	(0.128)	0.128	(0.059)	0.313	(0.028)				
S04_11A	S042232A	0.775	(0.043)	0.368	(0.039)						
S04_11B	S042232B	1.156	(0.090)	1.794	(0.085)						
S04_11C	S042232C	2.053	(0.457)	1.627	(0.078)	0.342	(0.014)				
S04_12	S042294	1.553	(0.169)	0.895	(0.045)	0.248	(0.018)				
S04_13	S042149	0.518	(0.035)	0.177	(0.054)						
S04_14	S042155	0.853	(0.047)	0.577	(0.039)						
S04_15	S042150	0.820	(0.103)	0.561	(0.100)	0.266	(0.036)				
S05_01	S022290	1.213	(0.121)	0.422	(0.063)	0.281	(0.028)				
S05_02	S022292	0.620	(0.039)	0.497	(0.049)						
S05_03	S022054	1.164	(0.124)	0.555	(0.064)	0.277	(0.027)				
S05_04	S022181	1.033	(0.119)	0.742	(0.067)	0.235	(0.027)				
S05_05	S022208	1.122	(0.146)	0.980	(0.064)	0.258	(0.023)				
S05_06	S022078	1.076	(0.052)	0.101	(0.029)						
S05_07	S022126	0.571	(0.078)	0.348	(0.164)	0.218	(0.051)				
S05_08	S022281	0.593	(0.043)	1.199	(0.080)						
S05_09	S032385	0.903	(0.091)	0.011	(0.103)	0.274	(0.041)				
S05_10	S032035	1.127	(0.098)	0.320	(0.059)	0.186	(0.027)				
S05_11	S032519	0.688	(0.041)	0.480	(0.045)						
S05_12	S032683	1.039	(0.110)	0.741	(0.060)	0.185	(0.025)				
S05_13	S032258	0.940	(0.088)	−0.082	(0.096)	0.251	(0.040)				
S05_14A	S032120A	0.766	(0.053)	1.380	(0.076)						
S05_14B	S032120B	0.871	(0.055)	0.922	(0.048)						
S07_01	S032606	0.964	(0.095)	−0.560	(0.132)	0.371	(0.051)				
S07_02	S032015	0.842	(0.045)	0.472	(0.038)						
S07_03Z	S032310Z	0.615	(0.026)	−0.186	(0.031)			−0.100	(0.061)	0.100	(0.055)
S07_04	S032680	0.706	(0.030)	−0.415	(0.031)			0.067	(0.057)	−0.067	(0.048)
S07_05	S032672	0.354	(0.068)	0.013	(0.442)	0.286	(0.086)				
S07_06	S032392	0.393	(0.048)	−1.820	(0.400)	0.240	(0.088)				
S07_07	S032425	0.926	(0.119)	0.743	(0.084)	0.278	(0.031)				
S07_08	S032257	1.348	(0.172)	1.024	(0.056)	0.261	(0.021)				
S07_09	S032663	0.415	(0.096)	1.527	(0.216)	0.193	(0.053)				
S07_10	S032660	0.835	(0.140)	1.361	(0.096)	0.217	(0.026)				
S07_11	S032555	1.247	(0.061)	0.612	(0.029)						

TIMSS 2011 Item Parameters for Concurrent Calibration of Eighth Grade Science (Continued)

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
S07_12	S032122	0.622	(0.043)	0.951	(0.065)						
Items Common in 2007 and 2011:											
S01_01	S032611	0.890	(0.096)	1.291	(0.060)	0.211	(0.018)				
S01_02	S032614	0.778	(0.029)	−0.113	(0.028)						
S01_03	S032451	0.580	(0.014)	−0.030	(0.021)			−1.277	(0.058)	1.277	(0.057)
S01_04	S032156	1.173	(0.090)	0.742	(0.042)	0.244	(0.017)				
S01_05	S032056	0.843	(0.032)	0.491	(0.027)						
S01_06	S032087	0.838	(0.087)	0.985	(0.064)	0.254	(0.022)				
S01_07	S032279	0.789	(0.094)	1.419	(0.071)	0.196	(0.019)				
S01_08	S032238	1.112	(0.076)	0.606	(0.041)	0.190	(0.018)				
S01_09	S032369	0.586	(0.018)	0.644	(0.024)			−0.241	(0.042)	0.241	(0.048)
S01_10	S032160	0.883	(0.082)	0.439	(0.080)	0.362	(0.027)				
S01_11	S032654	0.878	(0.068)	0.586	(0.057)	0.198	(0.023)				
S01_12	S032126	0.701	(0.029)	0.148	(0.030)						
S01_13	S032510	0.799	(0.064)	−0.238	(0.109)	0.346	(0.037)				
S01_14	S032158	0.972	(0.079)	0.426	(0.064)	0.311	(0.024)				
S03_01	S042304	0.712	(0.046)	−0.077	(0.077)	0.141	(0.029)				
S03_02	S042038	0.854	(0.059)	0.386	(0.056)	0.159	(0.023)				
S03_03	S042298	0.989	(0.036)	0.600	(0.024)						
S03_04	S042261	0.834	(0.035)	0.957	(0.035)						
S03_05A	S042051A	0.768	(0.029)	−0.025	(0.027)						
S03_05B	S042051B	1.199	(0.043)	0.721	(0.022)						
S03_06	S042076	0.960	(0.036)	0.625	(0.025)						
S03_07	S042404	0.865	(0.030)	1.253	(0.028)			0.049	(0.031)	−0.049	(0.046)
S03_08	S042306	1.180	(0.108)	1.029	(0.044)	0.256	(0.015)				
S03_09	S042403	0.884	(0.035)	0.776	(0.030)						
S03_10	S042272	0.862	(0.068)	0.347	(0.069)	0.254	(0.026)				
S03_11	S042100	0.445	(0.017)	0.536	(0.030)			−0.043	(0.052)	0.043	(0.058)
S03_12A	S042238A	0.672	(0.061)	0.796	(0.071)	0.154	(0.025)				
S03_12B	S042238B	0.727	(0.034)	1.228	(0.049)						
S03_12C	S042238C	0.885	(0.046)	−0.530	(0.042)						
S03_13	S042141	0.726	(0.050)	−0.328	(0.096)	0.204	(0.036)				
S03_14	S042215	0.571	(0.095)	1.690	(0.121)	0.220	(0.028)				
S05_01	S032542	1.213	(0.091)	0.615	(0.043)	0.272	(0.018)				
S05_02	S032645	0.967	(0.091)	0.825	(0.057)	0.292	(0.021)				
S05_03Z	S032530Z	0.531	(0.018)	0.357	(0.027)			0.919	(0.042)	−0.919	(0.047)
S05_04	S032007	0.804	(0.031)	0.379	(0.027)						
S05_05	S032502	1.038	(0.071)	0.599	(0.042)	0.166	(0.018)				
S05_06	S032679	0.838	(0.039)	1.427	(0.051)						
S05_07	S032184	0.396	(0.062)	1.199	(0.168)	0.175	(0.044)				
S05_08	S032394	0.928	(0.080)	0.619	(0.061)	0.280	(0.023)				
S05_09	S032151	1.135	(0.078)	0.676	(0.039)	0.181	(0.017)				
S05_10A	S032651A	1.130	(0.038)	0.329	(0.020)						

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
S05_10B	S032651B	0.967	(0.040)	1.115	(0.035)						
S05_11A	S032665A	0.921	(0.035)	0.586	(0.026)						
S05_11B	S032665B	1.016	(0.042)	1.093	(0.033)						
S05_11C	S032665C	0.913	(0.040)	1.011	(0.035)						
S06_01	S042073	0.738	(0.079)	−0.492	(0.186)	0.575	(0.041)				
S06_02	S042017	0.930	(0.101)	1.265	(0.059)	0.230	(0.017)				
S06_03	S042007	1.110	(0.084)	0.704	(0.043)	0.223	(0.018)				
S06_04	S042024	1.214	(0.139)	1.380	(0.054)	0.277	(0.013)				
S06_05	S042095	1.066	(0.061)	−0.299	(0.058)	0.215	(0.027)				
S06_06	S042022	0.832	(0.032)	0.504	(0.027)						
S06_07	S042063	0.870	(0.068)	−1.326	(0.152)	0.439	(0.051)				
S06_08	S042197	1.035	(0.085)	0.804	(0.047)	0.229	(0.018)				
S06_09	S042297	0.545	(0.017)	1.289	(0.037)			−0.844	(0.055)	0.844	(0.068)
S06_10	S042305	0.530	(0.022)	1.274	(0.042)			0.346	(0.042)	−0.346	(0.063)
S06_11	S042112	0.414	(0.046)	0.067	(0.207)	0.185	(0.052)				
S06_12Z	S042173Z	0.427	(0.014)	−0.635	(0.036)			1.446	(0.066)	−1.446	(0.049)
S06_13	S042407	0.451	(0.024)	0.648	(0.051)						
S06_14	S042278	0.787	(0.032)	0.769	(0.033)						
S06_15	S042274	1.379	(0.140)	1.346	(0.045)	0.233	(0.012)				
S06_17	S042317	0.574	(0.016)	−0.112	(0.023)			−0.454	(0.049)	0.454	(0.046)
S07_01	S032465	0.778	(0.063)	0.077	(0.093)	0.295	(0.032)				
S07_02	S032315	0.756	(0.064)	0.574	(0.070)	0.199	(0.026)				
S07_03	S032306	0.483	(0.012)	0.441	(0.025)			−1.311	(0.062)	1.311	(0.065)
S07_04	S032640	0.568	(0.025)	−0.158	(0.036)						
S07_05	S032579	1.128	(0.142)	1.401	(0.062)	0.314	(0.015)				
S07_06	S032570	0.937	(0.034)	0.542	(0.025)						
S07_07	S032024	0.968	(0.115)	1.385	(0.064)	0.241	(0.016)				
S07_08	S032272	1.021	(0.046)	1.412	(0.044)						
S07_09	S032141	1.711	(0.127)	1.016	(0.028)	0.184	(0.010)				
S07_10	S032060	1.134	(0.039)	−0.459	(0.024)						
S07_11	S032463	1.313	(0.078)	0.227	(0.039)	0.218	(0.019)				
S07_12Z	S032650Z	0.705	(0.022)	0.087	(0.019)			0.160	(0.035)	−0.160	(0.035)
S07_13	S032514	0.629	(0.079)	0.953	(0.101)	0.277	(0.031)				
S09_01	S042053	1.143	(0.071)	−0.133	(0.057)	0.286	(0.026)				
S09_02	S042408	0.703	(0.029)	0.535	(0.032)						
S09_03	S042015	1.045	(0.098)	0.874	(0.051)	0.292	(0.018)				
S09_04	S042309	0.266	(0.046)	1.163	(0.307)	0.157	(0.058)				
S09_05A	S042049A	1.004	(0.035)	−0.535	(0.026)						

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})		Step 2 (d_{j2})	
S09_05B	S042049B	1.137	(0.038)	0.236	(0.020)						
S09_06	S042182	0.641	(0.051)	−0.315	(0.123)	0.235	(0.041)				
S09_07	S042402	0.830	(0.037)	1.215	(0.044)						
S09_08A	S042228A	1.325	(0.051)	1.028	(0.026)						
S09_08B	S042228B	1.260	(0.041)	0.006	(0.019)						
S09_08C	S042228C	1.494	(0.049)	0.529	(0.018)						
S09_09	S042126	0.799	(0.087)	0.364	(0.109)	0.422	(0.032)				
S09_10	S042210	0.859	(0.121)	1.457	(0.080)	0.288	(0.019)				
S09_11	S042176	0.935	(0.035)	0.600	(0.026)						
S09_12	S042211	0.850	(0.031)	0.126	(0.025)						
S09_13	S042135	0.751	(0.029)	−0.172	(0.029)						
S09_14	S042257	0.858	(0.111)	1.177	(0.073)	0.337	(0.021)				
S11_01	S042042	0.712	(0.063)	−0.275	(0.136)	0.378	(0.041)				
S11_02	S042030	0.843	(0.038)	1.249	(0.044)						
S11_03	S042003	0.544	(0.072)	0.882	(0.126)	0.267	(0.037)				
S11_04	S042110	0.574	(0.044)	−0.786	(0.156)	0.205	(0.049)				
S11_05A	S042222A	0.984	(0.042)	1.252	(0.039)						
S11_05B	S042222B	0.981	(0.038)	0.921	(0.030)						
S11_05C	S042222C	0.818	(0.064)	0.147	(0.081)	0.271	(0.030)				
S11_06	S042065	0.729	(0.063)	−0.598	(0.152)	0.420	(0.045)				
S11_07	S042280	1.277	(0.072)	0.254	(0.036)	0.171	(0.018)				
S11_08	S042088	0.680	(0.027)	−0.064	(0.030)						
S11_09	S042218	1.463	(0.097)	0.590	(0.033)	0.236	(0.015)				
S11_10	S042104	0.829	(0.035)	1.044	(0.038)						
S11_11	S042064	0.823	(0.033)	0.822	(0.033)						
S11_12	S042273	1.082	(0.037)	0.183	(0.021)						
S11_13	S042301	0.818	(0.030)	−0.044	(0.026)						
S11_14	S042312	0.417	(0.048)	−0.335	(0.267)	0.248	(0.062)				
S11_15	S042217	1.514	(0.107)	0.645	(0.033)	0.268	(0.015)				
S11_16	S042406	1.054	(0.038)	0.606	(0.024)						
S13_01	S042258	0.838	(0.080)	1.027	(0.057)	0.198	(0.020)				
S13_02	S042005	0.311	(0.008)	0.237	(0.034)			−2.608	(0.103)	2.608	(0.105)
S13_03	S042016	0.911	(0.110)	1.717	(0.082)	0.135	(0.013)				
S13_04A	S042300A	1.261	(0.042)	0.038	(0.019)						
S13_04B	S042300B	0.617	(0.033)	1.529	(0.070)						
S13_04C	S042300C	1.039	(0.036)	0.207	(0.021)						
S13_05	S042319	1.130	(0.042)	0.875	(0.026)						
S13_06	S042068	1.210	(0.101)	1.015	(0.039)	0.212	(0.014)				
S13_07	S042216	1.084	(0.092)	0.509	(0.058)	0.345	(0.022)				
S13_08	S042249	1.073	(0.083)	0.667	(0.046)	0.239	(0.019)				
S13_09	S042094	0.802	(0.032)	0.603	(0.029)						

TIMSS 2011 Item Parameters for Concurrent Calibration of Eighth Grade Science (Continued)

Item		Slope (a_j)	Location (b_j)	Guessing (c_j)	Step 1 (d_{j1})	Step 2 (d_{j2})
S13_10A	S042293A	0.841 (0.031)	−0.463 (0.030)			
S13_10B	S042293B	0.829 (0.047)	1.903 (0.078)			
S13_11	S042195	0.651 (0.035)	1.572 (0.069)			
S13_12	S042400	0.998 (0.041)	1.084 (0.033)			
S13_14	S042164	1.047 (0.070)	0.596 (0.041)	0.158 (0.018)		
Items Introduced in 2011:						
S02_01	S052093	0.589 (0.080)	−1.276 (0.372)	0.378 (0.101)		
S02_02	S052088	0.895 (0.080)	−0.205 (0.103)	0.223 (0.043)		
S02_03	S052030	0.732 (0.123)	1.038 (0.112)	0.282 (0.036)		
S02_04	S052080	0.511 (0.076)	−0.022 (0.254)	0.226 (0.072)		
S02_05	S052091	0.695 (0.039)	0.115 (0.042)			
S02_06	S052152	1.381 (0.130)	0.827 (0.043)	0.159 (0.018)		
S02_07	S052136	0.796 (0.042)	0.213 (0.037)			
S02_08	S052046	1.445 (0.118)	−0.620 (0.076)	0.316 (0.041)		
S02_09	S052254	0.777 (0.103)	0.949 (0.086)	0.179 (0.031)		
S02_10	S052207	0.962 (0.050)	0.643 (0.036)			
S02_11A	S052165A	0.918 (0.061)	1.457 (0.068)			
S02_11B	S052165B	0.758 (0.048)	1.185 (0.063)			
S02_11C	S052165C	0.808 (0.047)	0.866 (0.048)			
S02_12	S052297	0.802 (0.095)	0.259 (0.120)	0.289 (0.042)		
S02_13	S052032	1.049 (0.061)	1.154 (0.047)			
S02_14	S052106	0.659 (0.044)	0.937 (0.060)			
S04_01	S052261	0.960 (0.112)	0.744 (0.073)	0.232 (0.028)		
S04_02Z	S052092Z	0.251 (0.016)	0.380 (0.075)		1.377 (0.123)	−1.377 (0.133)
S04_03A	S052263A	1.310 (0.081)	1.374 (0.049)			
S04_03B	S052263B	1.376 (0.075)	1.072 (0.036)			
S04_04	S052265	0.766 (0.047)	1.030 (0.056)			
S04_05	S052280	0.920 (0.096)	0.411 (0.082)	0.221 (0.033)		
S04_06	S052256	1.165 (0.127)	0.834 (0.056)	0.213 (0.022)		
S04_07Z	S052043Z	0.462 (0.038)	1.312 (0.105)			
S04_08	S052194	1.065 (0.116)	0.773 (0.061)	0.203 (0.025)		
S04_09	S052179	0.877 (0.123)	1.041 (0.081)	0.227 (0.028)		
S04_10	S052233	0.662 (0.049)	1.577 (0.096)			
S04_11	S052159	0.645 (0.144)	0.696 (0.223)	0.516 (0.048)		
S04_12A	S052289A	0.834 (0.090)	−0.807 (0.181)	0.387 (0.062)		
S04_12B	S052289B	0.504 (0.076)	0.810 (0.150)	0.108 (0.049)		
S04_12C	S052289C	0.816 (0.047)	0.783 (0.045)			
S08_01	S052076	0.646 (0.099)	0.626 (0.145)	0.278 (0.045)		
S08_02	S052272	1.028 (0.049)	−0.133 (0.032)			
S08_03A	S052085A	0.860 (0.056)	1.375 (0.068)			
S08_03B	S052085B	0.981 (0.048)	0.034 (0.032)			
S08_04	S052094	0.598 (0.041)	1.069 (0.072)			

Item		Slope (a$_j$)		Location (b$_j$)		Guessing (c$_j$)		Step 1 (d$_{j1}$)		Step 2 (d$_{j2}$)	
S08_05	S052248	0.827	(0.168)	1.370	(0.116)	0.339	(0.029)				
S08_06	S052146	0.964	(0.049)	0.396	(0.033)						
S08_07	S052282	0.797	(0.091)	0.707	(0.081)	0.158	(0.031)				
S08_08	S052299	1.029	(0.105)	0.228	(0.083)	0.285	(0.034)				
S08_09	S052144	1.306	(0.143)	0.815	(0.053)	0.246	(0.021)				
S08_10	S052214	0.913	(0.046)	0.271	(0.034)						
S08_12	S052101	0.574	(0.038)	0.682	(0.059)						
S08_13	S052113	1.812	(0.166)	0.476	(0.041)	0.285	(0.020)				
S08_14	S052107	0.955	(0.133)	1.242	(0.075)	0.180	(0.022)				
S10_01	S052003	1.098	(0.135)	0.124	(0.108)	0.479	(0.035)				
S10_02	S052071	1.294	(0.118)	0.513	(0.051)	0.208	(0.023)				
S10_03	S052246	0.864	(0.116)	0.894	(0.084)	0.242	(0.030)				
S10_04	S052276	0.703	(0.089)	0.251	(0.141)	0.278	(0.046)				
S10_05A	S052303A	0.560	(0.076)	−0.109	(0.221)	0.246	(0.065)				
S10_05B	S052303B	0.690	(0.040)	0.422	(0.044)						
S10_06	S052125	0.855	(0.199)	1.288	(0.131)	0.476	(0.029)				
S10_07	S052145	1.166	(0.056)	0.392	(0.029)						
S10_08	S052049	0.590	(0.030)	0.763	(0.040)			0.533	(0.052)	−0.533	(0.068)
S10_09	S052063	0.593	(0.088)	0.700	(0.142)	0.200	(0.046)				
S10_10	S052192	1.287	(0.086)	0.208	(0.041)	0.077	(0.019)				
S10_11	S052232	0.409	(0.105)	1.413	(0.234)	0.186	(0.065)				
S10_12	S052141	1.149	(0.060)	0.825	(0.035)						
S10_13	S052096	0.896	(0.095)	0.140	(0.103)	0.284	(0.039)				
S10_14	S052116	0.798	(0.032)	0.182	(0.025)			0.039	(0.046)	−0.039	(0.046)
S10_15	S052110	0.812	(0.050)	1.099	(0.057)						
S12_01A	S052090A	0.434	(0.118)	0.128	(0.566)	0.506	(0.092)				
S12_01B	S052090B	0.549	(0.049)	2.072	(0.156)						
S12_02	S052262	0.748	(0.098)	0.667	(0.107)	0.227	(0.038)				
S12_03	S052267	0.946	(0.115)	0.823	(0.074)	0.229	(0.028)				
S12_04	S052273	0.467	(0.026)	0.852	(0.050)			0.180	(0.067)	−0.180	(0.084)
S12_05Z	S052015Z	0.836	(0.043)	−0.087	(0.037)						
S12_06	S052051	0.973	(0.050)	0.652	(0.036)						
S12_07	S052026	0.610	(0.117)	0.671	(0.201)	0.387	(0.052)				
S12_08	S052130	0.822	(0.118)	1.172	(0.084)	0.175	(0.028)				
S12_09	S052028	0.871	(0.110)	0.555	(0.100)	0.295	(0.036)				
S12_10	S052189	1.046	(0.051)	0.372	(0.031)						
S12_11	S052217	0.679	(0.116)	1.027	(0.123)	0.265	(0.039)				
S12_12	S052038	0.972	(0.147)	1.192	(0.079)	0.259	(0.025)				
S12_13	S052099	0.825	(0.046)	0.773	(0.044)						
S12_14	S052118	0.783	(0.052)	1.366	(0.071)						
S14_01	S052006	0.625	(0.029)	−0.086	(0.032)			0.568	(0.056)	−0.568	(0.052)
S14_02	S052069	1.010	(0.125)	0.860	(0.071)	0.251	(0.026)				
S14_03	S052012	0.908	(0.090)	0.426	(0.078)	0.186	(0.032)				

Item		Slope (a_j)		Location (b_j)		Guessing (c_j)		Step 1 (d_{j1})	Step 2 (d_{j2})
S14_04	S052021	0.763	(0.043)	0.606	(0.043)				
S14_05Z	S052095Z	0.518	(0.034)	−0.278	(0.057)				
S14_06	S052134	1.658	(0.290)	1.503	(0.069)	0.285	(0.015)		
S14_07	S052054	0.713	(0.040)	−0.579	(0.050)				
S14_08	S052150	0.957	(0.138)	1.257	(0.077)	0.205	(0.023)		
S14_09A	S052243A	0.527	(0.035)	0.387	(0.055)				
S14_09B	S052243B	0.758	(0.042)	0.444	(0.041)				
S14_09C	S052243C	0.588	(0.103)	1.118	(0.131)	0.186	(0.042)		
S14_10	S052206	1.001	(0.095)	0.431	(0.068)	0.183	(0.029)		
S14_11A	S052112A	0.789	(0.097)	0.341	(0.120)	0.289	(0.042)		
S14_11B	S052112B	1.004	(0.054)	0.827	(0.039)				
S14_12	S052294	1.053	(0.090)	−0.029	(0.078)	0.215	(0.036)		