Appendix 12E: M... ...eters from the TIMSS 2019 Grade 4 Le...

Item		RMSD		Slope (a_i)	Location (b_i)	Guessing (c_i)	Step 1 (d_{i1})	Step 2 (d_{i2})
		2015	2019					
Items Released in 2015:								
N1_01	M011135	0.026			...24)	0.211 (0.051)		
N1_02	M011114	0.014			...034)			
N1_03	M011216	0.030			...029)			
N1_04	M011255	0.018			...079)	0.191 (0.035)		
N1_05	M011027	0.022			...(0.035)			
N1_06	M011259	0.020			...(0.043)	0.173 (0.020)		
N1_07	M011031	0.026			...4 (0.103)	0.144 (0.044)		
N1_08	M011227	0.026			...46 (0.098)			
N1_09	M011267	0.042			...72 (0.094)			
N1_10	M011042	0.022			...114 (0.051)			
N1_11	M011184	0.014			...311 (0.044)			
N1_12	M011190	0.021			0.717 (0.039)			
N1_13	M011193	0.019			1.068 (0.057)	0.280 (0.019)		
N4_01	M061272	0.018	ò	1.024 (0.076)	1.283 (0.068)			
N4_02	M061243	0.019	ò	0.663 (0.030)	0.739 (0.039)		-0.566 (0.073)	0.566 (0.084)
N4_03	M061029	0.025	ò	1.430 (0.157)	0.665 (0.051)	0.183 (0.022)		
N4_04	M061031	0.017	ò	1.411 (0.177)	1.361 (0.065)	0.070 (0.012)		
N4_05	M061050	0.019	ò	1.442 (0.244)	1.448 (0.081)	0.186 (0.017)		
N4_06	M061167	0.027	ò	0.975 (0.057)	-0.030 (0.039)			
N4_07	M061206	0.018	ò	1.327 (0.247)	1.625 (0.103)	0.164 (0.016)		
N4_08A	M061265A	0.034	ò	0.869 (0.090)	2.083 (0.155)			
N4_08B	M061265B	0.022	ò	1.255 (0.324)	2.019 (0.185)	0.175 (0.015)		
N4_09	M061185	0.030	ò	1.392 (0.146)	0.552 (0.053)	0.175 (0.023)		
N4_10	M061239	0.017	ò	1.422 (0.083)	0.558 (0.032)			
Items Common in 2015 and 2...								
MN01_01	MN11128	0.032		...8 (0.047)	0....			
MN01_02	MN11022	0.027		...8 (0.056)				
MN01_03	MN11010	0.027		...39 (0.056)				
MN01_04A	MN11278A	0.039		...161 (0.077)		...(0.034)		
MN01_04B	MN11278B	0.034		...576 (0.1...)		...46 (0.014)		
MN01_05	MN11136	0.029		0.951 (0...				
MN01_06	MN11261	0.014		1.099...				
MN01_07	MN11033	0.042		0.4...	...63)			
MN01_08	MN11039	0.040		0...	...(0.132)	0.151 (0.053)		

TIMSS & PIRLS

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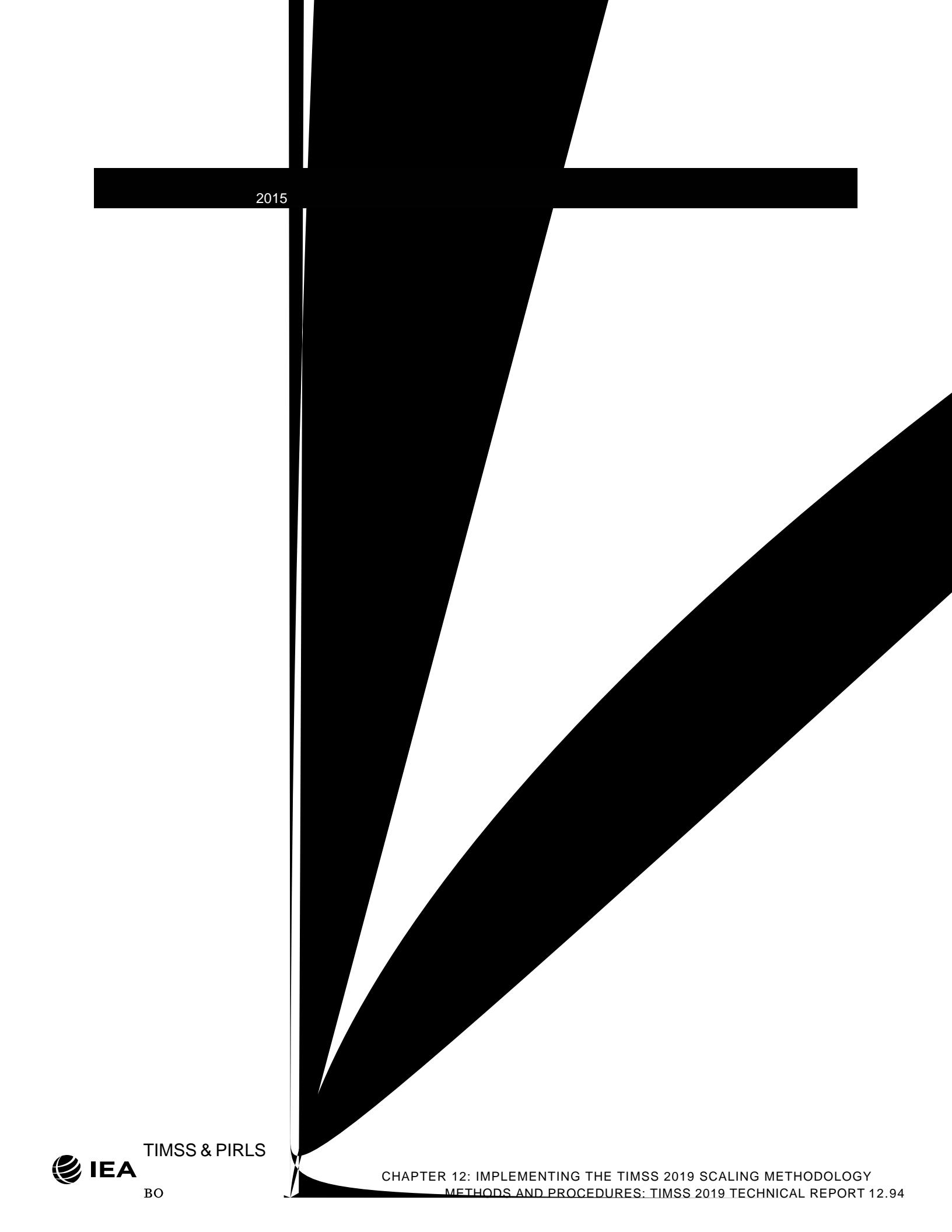
2015

Item		RMSD		Slope (a_i)	Location (b_i)	Guessing (c_i)	Step 1 (d_{i1})	Step 2 (d_{i2})
		2015	2019					
MP03_03	MP61034	0.016	0.040	1.221 (0.077)	1.498 (0.056)			
MP03_04	MP61040	0.029	0.037	1.722 (0.226)	1.443 (0.054)	0.180 (0.012)		
MP03_05	MP61228	0.026	0.032	0.808 (0.046)	1.885 (0.072)		-0.178 (0.059)	0.178 (0.105)
MP03_06	MP61166	0.021	0.030	1.194 (0.058)	0.709 (0.031)			
MP03_07	MP61171	0.020	0.041	1.404 (0.129)	0.605 (0.047)	0.236 (0.020)		
MP03_08	MP61080	0.021	0.030	0.677 (0.048)	1.668 (0.097)			
MP03_09	MP61222	0.026	0.038	0.880 (0.115)	0.952 (0.081)	0.253 (0.027)		
MP03_10	MP61076	0.035	0.030	0.522 (0.035)	0.790 (0.066)			
MP03_11	MP61084	0.035	0.027	0.961 (0.068)	1.725 (0.083)			

Items Introduced in 2019:

Item		RMSD		Slope (a_i)	Location (b_i)	Guessing (c_i)	Step 1 (d_{i1})	Step 2 (d_{i2})
MN04_01	MN21061	ò			(0.061)	0.142 (0.034)		
MN04_02	MN21067	ò			(0.099)	0.254 (0.043)		
MN04_03	MN21046	ò			5 (0.054)			
MN04_04	MN21023	ò			450 (0.053)			
MN04_05	MN21018	ò			.935 (0.071)			
MN04_06	MN21020	ò			0.384 (0.065)	0.096 (0.030)		
MN04_07	MN21069	ò			0.065 (0.076)	0.214 (0.041)		
MN04_08	MN21040	ò			0.399 (0.054)	0.193 (0.029)		
MN04_09	MN21070	ò			1.135 (0.091)	0.179 (0.030)		
MN04_10	MN21037	ò			0.389 (0.057)	0.137 (0.028)		
MN04_11	MN21033	ò			1.183 (0.102)			
MN04_12	MN21001	ò			0.809 (0.101)	0.210 (0.039)		
MN04_13	MN21060	ò			-0.219 (0.059)			
MN04_14	MN21003	ò			-0.174 (0.063)			4)
MN12_01	MN21066	ò	0.037	1.003 (0.128)	-0.385 (0.143)	0.157 (0.067)		
MN12_02	MN21045	ò	0.036	0.606 (0.132)	0.530 (0.231)	0.151 (0.080)		
MN12_03	MN21064	ò	0.024	1.686 (0.207)	0.663 (0.052)	0.114 (0.023)		
MN12_04	MN21051	ò	0.026	MN21070 ò				

Item		RMSD		Slope (a_i)	Location (b_i)	Guessing (c_i)	Step 1 (d_{i1})	Step 2 (d_{i2})
		2015	2019					
MN14_04	MN21014	ò						
MN14_05	MN21019	ò				0.266 (0.053)		
MN14_06	MN21024	ò				0.121 (0.023)		
MN14_07	MN21035	ò			)	0.270 (0.043)		
MN14_08	MN21039	ò			0)	0.231 (0.050)		
MN14_09	MN21062	ò			91)			
MN14_10	MN21057	ò			088)			
MN14_11	MN21063	ò			103)	0.193 (0.049)		
MN14_12	MN21005	ò			.058)			
MN14_13A	MN21012A	ò			0.071)			
MN14_13B	MN21012B	ò			(0.066)	0.213 (0.028)		
MP02_01	MP71219	ò	0.035	0.995 (0.140)	0.107 (0.122)	0.174 (0.053)		
MP02_02	MP71021	ò	0.033	1.692 (0.240)	0.892 (0.057)	0.140 (0.023)		
MP02_03	MP71167	ò	0.042	1.084 (0.119)	1.638 (0.111)			
MP02_04	MP71041	ò	0.033	0.973 (0.157)	0.810 (0.095)	0.129 (0.037)		
MP02_05	MP71162	ò	0.024	0.540 (0.045)	1.972 (0.140)		-0.968 (0.153)	0.968 (0.215)
MP02_06	MP71078	ò	0.027	0.788 (0.070)	0.573 (0.068)			
MP02_07	MP71090	ò	0.029	0.788 (0.182)	1.355 (0.140)	0.139 (0.040)		
MP02_08	MP71151	ò	0.027	0.590 (0.044)	1.819 (0.107)		-1.918 (0.219)	1.918 (0.253)
MP02_09	MP71119	ò	0.041	0.649 (0.059)	-0.203 (0.077)			
MP02_10A	MP71217A	ò	0.030	0.711 (0.065)	0.411 (0.071)			
MP02_11	MP71142	ò	0.031	1.207 (0.094)	0.440 (0.047)			
MP02_12	MP71204	ò	0.027	1.112 (0.115)	1.418 (0.091)			
MP08_01	MP71018	ò		)	1.140 (0.078)	0.175 (0		
MP08_02	MP71009	ò		6)	1.019 (0.053)			
MP08_03	MP71037	ò		71)	0.961 (0.082)			
MP08_04	MP71051	ò		32)	1.973 (0.150)			
MP08_05	MP71064	ò		257)	1.590 (0.142)			
MP08_06	MP71169	ò		0.135)	1.391 (0.0			
MP08_07	MP71083	ò		0.432)	1.590 (			
MP08_09	MP71184	ò		(0.847)	1.88			
MP08_10	MP71141	ò		5 (0.089)	2			
MP08_11	MP71194	ò		50 (0.064)				
MP08_12	MP71193	ò		96 (0.043)			-0.565 (0.114)	0.565 (0.143)
MP08_13	MP71192	ò		498 (0.03			-2.221 (0.247)	2.221 (0.283)
MP13_01	MP61240	ò	0.045	0.572 (0.081)	2.083 (0.241)			
MP13_02	MP61254	ò	0.062	0.678 (0.069)	1.111 (0.102)			
MP13_03	MP61244	ò	0.025	1.382 (0.236)	0.802 (0.083)	0.257 (0.033)		
MP13_04	MP61041	ò	0.029	0.729 (0.267)	1.997 (0.286)	0.195 (0.040)		
MP13_05	MP61173	ò	0.038	0.774 (0.067)	0.458 (0.066)			
MP13_06	MP61252	ò	0.027	1.748 (0.395)	1.650 (0.097)	0.127 (0.017)		

Item		RMSD 2015	RMSD 2019	Slope (a_i)	Location (b_i)	Guessing (c_i)	Step 1 (d_{i1})	Step 2 (d_{i2})
MP13_07	MP61261	ò	0.032	1.562 (0.137)	1.084 (0.051)			
MP13_08	MP61224	ò	0.023	0.821 (0.083)	1.321 (0.101)			
MP13_09	MP61077	ò	0.027	1.151 (0.232)	1.438 (0.105)	0.126 (0.025)		
MP13_10A	MP61069A	ò	0.035	0.716 (0.063)	0.290 (0.069)			
MP13_10B	MP61069B	ò	0.033	0.726 (0.070)	0.874 (0.084)			

Appendix 12F: S... ...s from the TIMSS 2019
Grade 4 Less Dif...

Item		RMSD	Slope (a_i)	Location (b_i)	Guessing (c_i)	Step 1 (d_{i1})	Step 2 (d_{i2})
Trend Items*:							
SP06_01	SP61071	0.124	0.335	-1.372	0.197		
SP06_02	SP61138	0.119	0.616	0.002			
SP06_03A	SP61016A	0.049	0.926	0.365	0.216		
SP06_03B	SP61016B	0.026	0.990	0.509			
SP06_04	SP61011	0.103	0.733	-0.536			
SP06_06	SP61083	0.100	0.726	-1.025			
SP06_07	SP61034	0.038	0.788	1.088			
SP06_08	SP61044	0.052	0.740	0.551			
SP06_09A	SP61142A	0.056	0.623	0.351			
SP06_09B	SP61142B	0.052	0.788	1.034			
SP06_10A	SP61115A	0.062	1.468	0.346	0.264		
SP06_10B	SP61115B	0.072	1.345	0.662	0.328		
SP07_01	SP51161	0.10			0.217		
SP07_02	SP51051	0.12			0.281		
SP07_03Z	SP51138Z	0.05					
SP07_04	SP51194	0.01					
SP07_05	SP51029	0.04			0.202		
SP07_06	SP51077	0.07					
SP07_07	SP51200	0.12					
SP07_08	SP51075	0.13					
SP07_09	SP51065	0.08		0.215	0.333		
SP07_10	SP51191	0.05		0.578	0.205		
SP07_11	SP51099	0.04		0.332	0.216		
SP07_12	SP51175	0.02		0.968			
SP09_01	SP61135	0.102	0.758	-0.598	0.268		
SP09_02	SP61069	0.120	0.400	-0.481			
SP09_03	SP61134	0.086	0.651	0.181	0.126		
SP09_04	SP61140	0.040	1.039	0.601	0.296		
SP09_05	SP61019	0.031	0.887	0.943			
SP09_06	SP61022	0.085	0.656	0.183	0.241		
SP09_07	SP61036	0.095	0.951	0.903			
SP09_08	SP61160	0.108	0.761	-0.954			
SP09_09	SP61159	0.114	0.826	-0.788			
SP09_10	SP61091	0.036	0.452	1.170		-0.176	0.176
SP09_11	SP61118	0.034	1.001	0.542	0.217		
SP09_12	SP61097	0.036	0.798	0.517	0.275		
SP11_01	SP61132	0.090			0.213		
SP11_02	SP61120	0.048			0.197		
SP11_03	SP61025	0.079					

* Item parameters for trend items w... xe... MSS fourth grade science concurrent calibration.

Item		RMSD	Slope (a_i)	Location (b_i)	Guessing (c_i)	Step 1 (d_{i1})	Step 2 (d_{i2})
Trend Items*:							
SP11_04A	SP61133A	0.06			0.326		
SP11_04B	SP61133B	0.04			0.114		
SP11_05	SP61074	0.07					
SP11_06	SP61093	0.14				0.937	-0.937
SP11_07	SP61161	0.08					
SP11_08A	SP61042A	0.03			0.239		
SP11_08B	SP61042B	0.04			0.150		
SP11_09A	SP61041A	0.05					
SP11_09B	SP61041B	0.06					
SP11_10	SP61155	0.09			0.286		
SP13_02	SP61014	0.085	0.495	0.425			
SP13_03	SP61056	0.104	0.853	-0.738			
SP13_04	SP61015	0.110	0.692	-0.395			
SP13_05	SP61113	0.101	0.760	0.954			
SP13_06	SP61107	0.075	1.001	0.641	0.180		
SP13_07	SP61046	0.029	1.164	0.804	0.227		
SP13_08	SP61047	0.095	0.751	-0.518	0.313		
SP13_09	SP61048	0.045	1.300	0.509	0.221		
SP13_10	SP61096	0.054	1.100	0.730	0.257		
SP13_11	SP61124	0.031	0.590	1.242			
SP13_12	SP61116	0.092	0.681	0.159			

New Items: SP61116

Item		RMSD	Slope (a_i)	Location (b_i)	Guessing (c_i)	Step 1 (d_{i1})	Step 2 (d_{i2})
New Items:							
SP12_07	SP71138	0.113					
SP12_08	SP71127	0.068			0.285 (0.039)		
SP12_10	SP71500	0.049			0.170 (0.028)		
SP12_11	SP71257	0.034			0.429 (0.022)		
SP12_12	SP71222	0.044					
SP12_13	SP71252	0.043			0.266 (0.030)		
SP14_01	SP71063	0.075					
SP14_02	SP71900	0.043	0.965 (0.206)	0.083 (0.127)	0.351 (0.032)		
SP14_04	SP71043	0.026	0.742 (0.096)	1.179 (0.193)			
SP14_05	SP71005	0.101	0.845 (0.065)	-0.691 (0.063)			
SP14_06	SP71118	0.033	1.178 (0.233)	0.473 (0.101)	0.185 (0.023)		
SP14_07	SP71139	0.106	0.538 (0.106)	-0.701 (0.243)	0.236 (0.059)		
SP14_08	SP71114	0.086	0.713 (0.059)	-0.481 (0.074)			
SP14_09	SP71131	0.077	0.566 (0.053)	-0.097 (0.102)			
SP14_10	SP71152	0.040	0.862 (0.19				