

APPENDIX B: ITEM DISTRACTOR ANALYSES

Table B.1. The 2010 Mod-MSA: Mathematics Grade 3, Distractor Distribution and Distractor-to- Total Correlation Analysis

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000197601	1	MC	669	0.77	0.42	12.26	10.16	77.28	0.30	-0.16	-0.24	
100000197604	2	MC	669	0.50	0.50	37.97	11.66	49.93	0.45	-0.37	0.02	
100000098438	3	MC	669	0.44	0.50	35.58	20.03	44.10	0.30	-0.03	-0.20	
100000098445	4	MC	669	0.59	0.49	16.44	58.59	24.96		-0.18		-0.26
100000098439	5	MC	669	0.55	0.50	21.52	55.01	23.47		-0.24		-0.19
100000098516	6	MC	669	0.58	0.49	57.55	17.04	25.41			-0.24	-0.27
100000185401	7	MC	669	0.35	0.48	13.45	35.43	50.82	0.30	-0.14		-0.13
100000185403	8	MC	669	0.38	0.49	20.93	37.97	40.96	0.15	-0.18		-0.01
100000197723	9	MC	669	0.54	0.50	11.06	53.96	34.83	0.15	-0.23		-0.10
100000197745	10	MC	669	0.57	0.50	29.30	13.60	56.80	0.30	-0.23	-0.25	
100000197780	11	MC	669	0.46	0.50	29.60	24.07	46.04	0.30	-0.02	-0.17	
100000197781	12	MC	669	0.53	0.50	23.32	52.62	23.77	0.30	-0.16		-0.21
100000098529	13	MC	669	0.38	0.49	34.53	38.12	26.61	0.75	-0.02		-0.12
100000197752	14	MC	669	0.41	0.49	44.99	13.15	41.41	0.45	-0.16	-0.20	
100000197753	15	MC	669	0.31	0.46	54.26	14.05	31.24	0.45	-0.14	-0.16	
100000197754	16	MC	669	0.27	0.45	27.20	30.34	41.85	0.60		-0.06	-0.02
100000197620	17	MC	669	0.70	0.46	17.49	11.96	70.25	0.30	-0.22	-0.05	
100000197647	18	MC	669	0.55	0.50	21.08	24.07	54.56	0.30	-0.15	-0.19	
100000098440	19	MC	669	0.68	0.47	17.34	14.65	67.71	0.30	-0.17	-0.15	
100000098448	20	MC	669	0.63	0.48	21.08	62.78	15.55	0.60	-0.23		-0.23
100000185375	21	MC	669	0.61	0.49	19.13	19.88	60.54	0.45	-0.25	-0.16	
100000185389	22	MC	669	0.45	0.50	23.17	31.09	45.44	0.30	-0.10	-0.09	
100000185391	23	MC	669	0.42	0.49	32.14	42.00	25.71	0.15	-0.14		-0.24
100000197617	24	MC	669	0.36	0.48	18.98	44.69	36.02	0.30	-0.16	0.01	
100000197603	25	MC	669	0.66	0.47	8.82	24.51	66.37	0.30	-0.23	-0.06	
100000197677	26	MC	669	0.41	0.49	36.62	21.97	41.26	0.15	0.02	-0.17	
100000197751	27	MC	669	0.26	0.44	26.46	40.81	32.44	0.30		-0.04	-0.15
100000197722	28	MC	669	0.42	0.49	34.53	22.72	42.45	0.30	-0.05	-0.18	
100000350878	29	MC	669	0.56	0.50	17.64	26.16	55.90	0.30	-0.21	-0.12	
100000098450	30	MC	669	0.57	0.50	57.25	16.59	26.01	0.15		-0.19	-0.20
100000197651	31	MC	669	0.74	0.44	17.04	8.67	73.99	0.30	-0.04	-0.13	
100000197655	32	MC	669	0.22	0.41	31.69	21.97	46.19	0.15	-0.13		0.04
100000197656	33	MC	669	0.71	0.45	13.30	15.70	70.85	0.15	-0.21	-0.19	
100000197741	34	MC	669	0.48	0.50	19.13	48.13	32.59	0.15	-0.24		-0.22
100000197755	35	MC	669	0.52	0.50	15.25	32.14	52.32	0.30	-0.05	-0.25	

Table B.1. The 2010 Mod-MSA: Mathematics Grade 3, Distractor Distribution and Distractor-to-Total Correlation Analysis (Continued)

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000197779	36	MC	669	0.62	0.49	20.93	61.73	17.19	0.15	-0.34		-0.16
100000197670	37	MC	669	0.54	0.50	53.81	19.73	26.31	0.15		-0.12	-0.23
100000197674	38	MC	669	0.52	0.50	52.32	22.72	24.66	0.30		-0.17	-0.22
100000197675	39	MC	669	0.46	0.50	24.07	45.59	30.19	0.15	-0.16		-0.18
100000098452	40	MC	669	0.70	0.46	13.15	70.25	16.44	0.15	-0.24		-0.28
100000098444	41	MC	669	0.36	0.48	35.72	39.16	24.81	0.30		-0.11	-0.10
100000197667	42	MC	669	0.37	0.48	37.22	23.47	39.16	0.15		-0.17	-0.09
100000197668	43	MC	669	0.46	0.50	29.15	45.89	24.81	0.15	-0.08		-0.23
100000197669	44	MC	669	0.33	0.47	33.48	27.50	38.71	0.30		-0.07	-0.16
100000098451	45	MC	669	0.62	0.48	62.48	12.26	24.96	0.30		-0.28	-0.27
100000098454	46	MC	669	0.69	0.46	17.64	68.61	13.45	0.30	-0.15		-0.26
100000098447	47	MC	669	0.29	0.45	46.19	29.00	24.36	0.45	0.03		-0.15
100000185378	48	MC	669	0.69	0.46	68.91	21.52	9.27	0.30		-0.23	-0.25
100000197757	49	MC	669	0.57	0.50	57.25	16.44	26.01	0.30		-0.20	-0.34
100000197761	50	MC	669	0.59	0.49	15.55	59.04	25.11	0.30	-0.19		-0.20
100000197765	51	MC	669	0.52	0.50	27.06	20.78	51.72	0.45	-0.05	-0.10	
100000098449	52	MC	669	0.63	0.48	62.78	9.42	27.35	0.45		-0.21	-0.30
100000098453	53	MC	669	0.39	0.49	25.56	38.71	35.28	0.45	-0.02		-0.14
100000197602	54	MC	669	0.52	0.50	51.72	20.33	27.35	0.60		0.01	-0.16
100000197621	55	MC	669	0.61	0.49	16.89	61.14	21.38	0.60	-0.12		-0.24
100000197660	56	MC	669	0.71	0.45	70.85	11.06	17.64	0.45		-0.23	-0.22
100000197756	57	MC	669	0.64	0.48	16.59	64.28	18.68	0.45	-0.20		-0.17
100000098446	58	MC	669	0.33	0.47	47.09	33.48	18.98	0.45	-0.04		-0.20
100000098455	59	MC	669	0.36	0.48	35.28	35.87	28.40	0.45	0.01		-0.09
100000197648	60	MC	669	0.28	0.45	23.32	47.98	28.25	0.45	-0.17	0.08	
100000197649	61	MC	669	0.66	0.47	66.22	18.68	14.65	0.45		-0.22	-0.19
100000197650	62	MC	669	0.39	0.49	44.39	39.31	15.70	0.60	0.05		-0.19
100000185382	63	MC	669	0.42	0.49	28.70	29.00	42.00	0.30	-0.09	-0.14	
100000185313	64	MC	669	0.75	0.43	12.86	11.81	75.04	0.30	-0.28	-0.19	
100000197662	65	MC	669	0.49	0.50	30.34	48.88	20.48	0.30	-0.28		-0.20
100000197665	66	MC	669	0.60	0.49	23.32	60.24	16.14	0.30	-0.23		-0.17
100000098522	67	MC	669	0.70	0.46	13.00	17.04	69.66	0.30	-0.30	-0.22	
100000185484	68	MC	669	0.40	0.49	39.91	31.99	27.80	0.30		-0.10	-0.13
100000185404	69	MC	669	0.43	0.50	30.49	42.90	26.31	0.30	-0.03		-0.28
100000197746	70	MC	669	0.31	0.46	36.32	30.94	32.44	0.30	0.07		-0.11

Table B.1. The 2010 Mod-MSA: Mathematics Grade 3, Distractor Distribution and Distractor-to-Total Correlation Analysis (Continued)

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000197724	71	MC	669	0.50	0.50	49.78	19.13	30.64	0.45		-0.21	-0.24
100000197750	72	MC	669	0.38	0.49	49.93	37.97	11.66	0.45	-0.17		0.03
100000098527	73	MC	669	0.31	0.46	48.43	20.33	30.79	0.45	-0.07	-0.11	
100000185381	74	MC	669	0.62	0.49	61.73	20.18	17.49	0.60		-0.20	-0.25
100000098435	75	MC	669	0.52	0.50	17.79	29.30	52.47	0.45	-0.28	-0.12	
100000185485	76	MC	669	0.49	0.50	48.58	28.40	22.57	0.45		-0.13	-0.32
100000185486	77	MC	669	0.63	0.48	25.11	62.78	11.66	0.45	-0.31		-0.18
100000185380	78	MC	669	0.48	0.50	17.34	47.98	34.23	0.45	-0.16		-0.15
100000185384	79	MC	669	0.63	0.48	24.22	62.93	12.41	0.45	-0.24		-0.22
100000185377	80	MC	669	0.53	0.50	53.06	23.47	22.87	0.60		-0.11	-0.29
100000197720	81	MC	669	0.44	0.50	39.01	43.95	16.44	0.60	-0.23		-0.09
100000185386	82	MC	669	0.39	0.49	47.38	39.16	13.00	0.45	-0.09		-0.20
100000185477	83	MC	669	0.67	0.47	18.83	13.45	67.26	0.45	-0.18	-0.21	
100000185473	84	MC	669	0.33	0.47	24.66	33.03	41.70	0.60	-0.06		-0.25
100000197676	85	MC	669	0.36	0.48	36.47	35.28	27.65	0.60		-0.03	-0.09
100000197664	86	MC	669	0.39	0.49	13.45	38.71	47.23	0.60	-0.17		-0.15
100000098532	87	MC	669	0.30	0.46	30.34	17.94	51.27	0.45		0.02	-0.10
100000185387	88	MC	669	0.42	0.49	42.45	16.89	40.21	0.45		-0.17	-0.25
100000185376	89	MC	669	0.46	0.50	46.19	32.88	20.48	0.45		0.01	-0.27
100000197740	90	MC	669	0.62	0.49	11.66	25.86	61.88	0.60	-0.24	-0.24	
100000197661	91	MC	669	0.57	0.50	57.10	31.69	10.76	0.45		-0.17	-0.18
100000098515	92	MC	669	0.53	0.50	16.89	53.06	29.60	0.45	-0.33		-0.24
100000185385	93	MC	669	0.26	0.44	44.99	26.31	28.25	0.45	-0.03		-0.09
100000197663	94	MC	669	0.43	0.49	42.60	24.96	31.99	0.45		-0.12	-0.11
100000197666	95	MC	669	0.56	0.50	24.51	55.61	19.28	0.60	-0.09		-0.28
100000098441	96	MC	669	0.52	0.50	15.99	31.54	52.02	0.45	-0.11	0.06	
100000185388	97	MC	669	0.57	0.50	18.83	57.10	23.47	0.60	-0.16		-0.19
100000185390	98	MC	669	0.61	0.49	60.84	16.44	22.27	0.45		-0.18	-0.31
100000185379	99	MC	669	0.61	0.49	60.84	26.16	12.41	0.60		-0.23	-0.10
100000185383	100	MC	669	0.68	0.47	19.28	68.01	12.26	0.45	-0.32		-0.29

Note: 1. Empty cell indicates the correct answer for the particular item. Point biserial (Item-to-Total Correlation) for the correct answer will be the same as the one shown for item analysis in Section 3.2.

2. Percent distribution by distractors may not add to 100 because of rounding

3. These analyses are based on the equating sample used with the exclusion criteria.

Table B.2. The 2010 Mod-MSA: Mathematics Grade 4, Distractor Distribution and Distractor-to- Total Correlation Analysis

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000198111	1	MC	872	0.52	0.50	31.65	51.95	16.06	0.34	-0.29		-0.12
100000198113	2	MC	872	0.57	0.50	56.65	16.17	27.06	0.11		-0.18	-0.19
100000198114	3	MC	872	0.56	0.50	34.98	56.19	8.72	0.11	-0.02		-0.26
100000198138	4	MC	872	0.34	0.47	13.99	33.94	51.72	0.34	-0.09		-0.21
100000198123	5	MC	872	0.57	0.50	33.94	8.83	57.00	0.23	-0.25	-0.08	
100000098578	6	MC	872	0.42	0.49	17.20	41.97	40.71	0.11	-0.19		-0.23
100000186564	7	MC	872	0.42	0.49	41.74	24.54	33.37	0.34		-0.13	-0.06
100000186565	8	MC	872	0.32	0.47	32.00	35.21	32.34	0.46		-0.10	-0.06
100000186566	9	MC	872	0.33	0.47	40.60	26.15	33.03	0.23	0.06	-0.07	
100000098583	10	MC	872	0.37	0.48	30.50	32.34	36.70	0.46	-0.09	-0.09	
100000098584	11	MC	872	0.78	0.42	6.77	77.52	15.14	0.57	-0.20		-0.29
100000198124	12	MC	872	0.57	0.50	57.22	23.39	18.81	0.57		-0.18	-0.15
100000198153	13	MC	872	0.39	0.49	43.35	39.11	17.09	0.46	0.03		-0.18
100000198098	14	MC	872	0.76	0.43	9.98	13.99	75.69	0.34	-0.23	-0.16	
100000198100	15	MC	872	0.49	0.50	48.51	25.57	25.57	0.34		-0.12	-0.08
100000198133	16	MC	872	0.39	0.49	12.96	39.11	47.59	0.34	-0.10		-0.16
100000198134	17	MC	872	0.49	0.50	32.57	48.62	18.58	0.23	-0.19		-0.13
100000198135	18	MC	872	0.36	0.48	35.09	28.56	36.01	0.34	0.11	-0.01	
100000198110	19	MC	872	0.76	0.43	10.89	13.30	75.57	0.23	-0.20	-0.20	
100000098579	20	MC	872	0.71	0.46	18.69	70.53	10.44	0.34	-0.18		-0.19
100000098581	21	MC	872	0.43	0.50	40.71	16.17	42.78	0.34	-0.21	-0.14	
100000198140	22	MC	872	0.64	0.48	19.15	16.51	64.11	0.23	-0.27	-0.14	
100000198142	23	MC	872	0.53	0.50	15.25	31.31	53.10	0.34	-0.13	-0.10	
100000198143	24	MC	872	0.51	0.50	22.82	51.38	25.57	0.23	-0.17		-0.09
100000198126	25	MC	872	0.31	0.46	38.99	30.05	30.62	0.34	0.07	-0.09	
100000198128	26	MC	872	0.46	0.50	21.56	32.34	45.87	0.23	-0.13	-0.06	
100000198092	27	MC	872	0.48	0.50	47.94	30.05	21.79	0.23		-0.13	0.00
100000198099	28	MC	872	0.58	0.49	19.61	22.36	57.68	0.34	-0.12	-0.03	
100000198117	29	MC	872	0.46	0.50	45.64	20.53	33.49	0.34		-0.21	-0.21
100000198118	30	MC	872	0.53	0.50	52.87	23.51	23.39	0.23		-0.20	-0.12
100000198119	31	MC	872	0.34	0.48	45.18	34.40	20.07	0.34	0.07		-0.21
100000098577	32	MC	872	0.61	0.49	61.47	19.95	18.35	0.23		-0.15	-0.23
100000098576	33	MC	872	0.36	0.48	41.51	36.01	22.13	0.34	0.08		-0.13
100000098587	34	MC	872	0.42	0.49	23.39	33.94	42.43	0.23	-0.09	-0.10	
100000198116	35	MC	872	0.20	0.40	14.68	64.68	20.41	0.23	-0.22	0.19	
100000198107	36	MC	872	0.53	0.50	34.40	53.44	11.93	0.23	-0.22		-0.15

Table B.2. The 2010 Mod-MSA: Mathematics Grade 4, Distractor Distribution and Distractor-to-Total Correlation Analysis (Continued)

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000198101	37	MC	872	0.39	0.49	38.65	19.61	41.51	0.23		-0.20	0.00
100000198102	38	MC	872	0.48	0.50	22.13	48.05	29.47	0.34	-0.10		-0.20
100000198103	39	MC	872	0.51	0.50	50.80	22.82	26.03	0.34		-0.17	-0.17
100000198148	40	MC	872	0.47	0.50	37.50	47.25	14.79	0.46	-0.13		-0.18
100000198158	41	MC	872	0.49	0.50	49.08	28.78	21.90	0.23		-0.15	-0.27
100000098646	42	MC	872	0.78	0.41	14.91	78.21	6.31	0.57	-0.27		-0.27
100000186562	43	MC	872	0.67	0.47	6.65	67.09	25.92	0.34	-0.21		-0.25
100000186563	44	MC	872	0.44	0.50	29.59	25.46	44.38	0.57	-0.08	-0.10	
100000198094	45	MC	872	0.78	0.41	7.22	78.21	13.99	0.57	-0.16		-0.27
100000198096	46	MC	872	0.58	0.49	30.85	57.91	10.78	0.46	-0.19		-0.20
100000198129	47	MC	872	0.53	0.50	52.87	31.19	15.48	0.46		-0.27	-0.16
100000198131	48	MC	872	0.34	0.48	34.40	37.96	27.18	0.46		-0.03	-0.16
100000198132	49	MC	872	0.40	0.49	23.97	39.79	35.78	0.46	-0.01		-0.19
100000198093	50	MC	872	0.90	0.30	3.67	90.25	5.73	0.34	-0.22		-0.27
100000098572	51	MC	872	0.40	0.49	39.91	17.32	42.43	0.34		-0.18	-0.22
100000098586	52	MC	872	0.48	0.50	24.31	48.39	26.95	0.34	-0.05		-0.29
100000198104	53	MC	872	0.55	0.50	15.71	54.93	29.01	0.34	-0.13		-0.01
100000198105	54	MC	872	0.54	0.50	23.62	22.25	53.78	0.34	-0.16	-0.13	
100000198106	55	MC	872	0.43	0.50	28.44	43.46	27.75	0.34	-0.12		-0.11
100000198139	56	MC	872	0.42	0.49	16.97	40.94	41.63	0.46	-0.19	-0.05	
100000098585	57	MC	872	0.79	0.41	78.90	11.58	8.94	0.57		-0.18	-0.25
100000098582	58	MC	872	0.52	0.50	52.18	22.94	24.43	0.46		-0.26	-0.17
100000207144	59	MC	872	0.41	0.49	31.77	27.18	40.60	0.46	-0.02	-0.15	
100000198144	60	MC	872	0.69	0.46	13.65	68.69	17.32	0.34	-0.29		-0.29
100000198145	61	MC	872	0.39	0.49	39.11	36.70	23.85	0.34		-0.10	-0.21
100000198147	62	MC	872	0.49	0.50	48.74	19.50	31.31	0.46		-0.10	-0.15
100000186576	63	MC	872	0.72	0.45	10.55	16.74	72.36	0.34	-0.26	-0.21	
100000098666	64	MC	872	0.53	0.50	52.75	18.12	28.78	0.34		-0.16	-0.12
100000198150	65	MC	872	0.70	0.46	70.30	17.32	12.04	0.34		-0.31	-0.25
100000198149	66	MC	872	0.56	0.50	55.85	20.76	22.82	0.57		-0.22	-0.17
100000186573	67	MC	872	0.36	0.48	31.65	32.11	35.89	0.34	-0.19	-0.10	
100000186574	68	MC	872	0.49	0.50	26.26	49.08	24.31	0.34	-0.13		-0.15
100000186575	69	MC	872	0.49	0.50	32.91	49.08	17.55	0.46	-0.12		-0.23
100000186583	70	MC	872	0.50	0.50	18.12	31.31	49.89	0.69	0.05	0.05	
100000198108	71	MC	872	0.44	0.50	14.91	43.92	40.83	0.34	-0.09		-0.29

Table B.2. The 2010 Mod-MSA: Mathematics Grade 4, Distractor Distribution and Distractor-to-Total Correlation Analysis (Continued)

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000198122	72	MC	872	0.37	0.48	37.04	48.85	13.76	0.34		-0.17	-0.01
100000098645	73	MC	872	0.44	0.50	37.84	17.43	43.92	0.80	-0.15	-0.14	
100000186578	74	MC	872	0.73	0.44	73.28	10.78	15.25	0.69		-0.23	-0.29
100000186580	75	MC	872	0.63	0.48	16.86	20.18	62.61	0.34	-0.28	-0.23	
100000198157	76	MC	872	0.32	0.47	15.48	52.18	31.88	0.46	-0.04	-0.17	
100000098573	77	MC	872	0.42	0.49	30.05	42.43	27.06	0.46	-0.22		-0.08
100000186560	78	MC	872	0.53	0.50	33.03	52.87	13.65	0.46	-0.05		-0.22
100000186561	79	MC	872	0.35	0.48	33.60	34.98	30.96	0.46	-0.12		-0.06
100000198137	80	MC	872	0.44	0.50	44.38	27.64	27.41	0.57		-0.07	-0.30
100000098571	81	MC	872	0.60	0.49	23.05	60.09	16.40	0.46	-0.31		-0.16
100000186581	82	MC	872	0.61	0.49	17.32	20.87	61.47	0.34	-0.19	-0.16	
100000207143	83	MC	872	0.60	0.49	20.07	19.15	60.32	0.46	-0.17	-0.26	
100000198121	84	MC	872	0.41	0.49	40.25	40.71	18.35	0.69	-0.08		-0.17
100000098588	85	MC	872	0.55	0.50	28.21	16.06	55.28	0.46	-0.09	-0.27	
100000098657	86	MC	872	0.35	0.48	35.09	43.46	20.99	0.46		-0.11	-0.15
100000186571	87	MC	872	0.47	0.50	40.14	12.96	46.56	0.34	-0.01	-0.15	
100000186572	88	MC	872	0.47	0.50	46.90	19.84	32.91	0.34		-0.13	-0.16
100000198125	89	MC	872	0.55	0.50	55.16	21.67	22.59	0.57		-0.19	-0.24
100000198151	90	MC	872	0.71	0.45	71.22	16.74	11.58	0.46		-0.25	-0.25
100000098653	91	MC	872	0.33	0.47	46.90	33.03	19.50	0.57	-0.10		-0.10
100000186577	92	MC	872	0.72	0.45	72.13	13.65	13.65	0.57		-0.20	-0.28
100000098568	93	MC	872	0.64	0.48	17.78	17.20	64.45	0.57	-0.32	-0.17	
100000186558	94	MC	872	0.57	0.50	19.95	57.22	22.36	0.46	-0.17		-0.27
100000186559	95	MC	872	0.49	0.50	24.66	48.74	26.15	0.46	-0.14		-0.09
100000186567	96	MC	872	0.54	0.50	54.47	26.49	18.58	0.46		-0.20	-0.16
100000186582	97	MC	872	0.38	0.49	17.20	38.42	44.04	0.34	-0.07		-0.13
100000198127	98	MC	872	0.55	0.50	12.39	55.16	32.00	0.46	-0.20		-0.25
100000098664	99	MC	872	0.52	0.50	32.34	51.61	15.48	0.57	-0.20		-0.17
100000098580	100	MC	872	0.32	0.47	31.31	35.89	32.22	0.57	-0.12	-0.01	
100000186579	101	MC	872	0.50	0.50	49.89	26.72	17.66	5.73		-0.08	-0.17
100000198109	102	MC	872	0.40	0.49	37.39	40.14	16.86	5.62	-0.13		-0.06

Note: 1. Empty cell indicates the correct answer for the particular item. Point biserial (Item-to-Total Correlation) for the correct answer will be the same as the one shown for item analysis in Section 3.2.

2. Percent distribution by distractors may not add to 100 because of rounding

3. These analyses are based on the equating sample used with the exclusion criteria.

Table B.3. The 2010 Mod-MSA: Mathematics Grade 5, Distractor Distribution and Distractor-to- Total Correlation Analysis

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000187371	1	MC	926	0.83	0.38	82.61	10.26	7.02	0.11		-0.26	-0.22
100000187367	2	MC	926	0.47	0.50	24.84	28.29	46.76	0.11	-0.14	-0.10	
100000187378	3	MC	926	0.68	0.47	12.85	18.68	68.25	0.22	-0.18	-0.21	
100000099084	4	MC	926	0.67	0.47	20.09	13.28	66.52	0.11	-0.24	-0.24	
100000099080	5	MC	926	0.64	0.48	64.47	19.55	15.87	0.11		-0.18	-0.29
100000099090	6	MC	926	0.40	0.49	50.97	9.29	39.63	0.11	0.00	-0.25	
100000099087	7	MC	926	0.26	0.44	42.44	31.21	26.24	0.11	0.13	-0.19	
100000196233	8	MC	926	0.65	0.48	21.27	65.33	13.28	0.11	-0.28		-0.19
100000196246	9	MC	926	0.12	0.33	12.10	61.34	26.46	0.11		0.21	-0.20
100000196229	10	MC	926	0.46	0.50	43.41	45.68	10.80	0.11	-0.14		-0.17
100000196273	11	MC	926	0.31	0.46	30.99	13.71	55.08	0.22		-0.22	-0.16
100000196043	12	MC	926	0.43	0.50	43.09	42.98	13.50	0.43	-0.12		-0.26
100000196045	13	MC	926	0.52	0.50	27.32	52.38	19.87	0.43	-0.03		-0.21
100000196253	14	MC	926	0.64	0.48	19.55	64.04	16.09	0.32	-0.28		-0.21
100000196278	15	MC	926	0.29	0.45	29.05	19.65	51.08	0.22		-0.27	-0.07
100000196088	16	MC	926	0.33	0.47	33.37	33.48	32.72	0.43		-0.05	-0.09
100000187430	17	MC	926	0.55	0.50	25.81	54.97	18.47	0.76	-0.16		-0.20
100000187390	18	MC	926	0.73	0.44	12.20	13.50	73.43	0.86	-0.20	-0.13	
100000196090	19	MC	926	0.29	0.46	8.64	29.27	61.45	0.65	-0.14		-0.06
100000196081	20	MC	926	0.35	0.48	45.36	34.56	19.98	0.11	-0.08		-0.05
100000187376	21	MC	926	0.55	0.50	26.57	18.57	54.75	0.11	-0.05	-0.14	
100000187386	22	MC	926	0.70	0.46	70.09	15.33	14.47	0.11		-0.10	-0.07
100000187383	23	MC	926	0.41	0.49	32.40	26.89	40.60	0.11	-0.11	-0.08	
100000196231	24	MC	926	0.40	0.49	48.27	39.52	11.99	0.22	-0.04		-0.18
100000196036	25	MC	926	0.68	0.47	14.90	68.36	16.41	0.32	-0.11		-0.21
100000196029	26	MC	926	0.54	0.50	54.43	24.41	20.84	0.32		-0.19	-0.15
100000196242	27	MC	926	0.60	0.49	27.32	60.15	12.42	0.11	-0.20		-0.22
100000099083	28	MC	926	0.53	0.50	16.41	30.78	52.59	0.22	-0.14	-0.08	
100000099075	29	MC	926	0.53	0.50	19.87	53.24	26.67	0.22	-0.14		-0.25
100000099086	30	MC	926	0.62	0.49	61.99	23.54	14.04	0.43		-0.25	-0.17
100000196200	31	MC	926	0.63	0.48	62.74	21.49	15.44	0.32		-0.23	-0.13
100000196277	32	MC	926	0.50	0.50	18.47	31.32	49.89	0.32	-0.12	-0.16	
100000196284	33	MC	926	0.63	0.48	28.19	62.74	8.96	0.11	-0.21		-0.28
100000196057	34	MC	926	0.48	0.50	20.63	31.21	47.95	0.22	-0.20	-0.11	
100000196054	35	MC	926	0.47	0.50	28.62	46.98	24.08	0.32	-0.08		-0.20

Table B.3. The 2010 Mod-MSA: Mathematics Grade 5, Distractor Distribution and Distractor-to-Total Correlation Analysis (Continued)

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000196279	36	MC	926	0.28	0.45	26.78	44.82	28.29	0.11	-0.06	-0.11	
100000099081	37	MC	926	0.39	0.49	22.03	38.88	38.98	0.11	-0.12		-0.02
100000099079	38	MC	926	0.63	0.48	14.79	22.46	62.63	0.11	-0.15	-0.16	
100000099088	39	MC	926	0.54	0.50	20.84	53.78	25.16	0.22	-0.07		-0.06
100000099085	40	MC	926	0.69	0.46	69.33	20.19	10.15	0.32		-0.25	-0.18
100000196237	41	MC	926	0.39	0.49	39.09	24.73	35.96	0.22		-0.03	-0.04
100000196234	42	MC	926	0.75	0.43	11.12	74.84	13.93	0.11	-0.20		-0.15
100000196053	43	MC	926	0.64	0.48	13.82	21.81	64.15	0.22	-0.24	-0.19	
100000196244	44	MC	926	0.20	0.40	51.08	20.09	28.62	0.22	0.02		-0.10
100000099089	45	MC	926	0.72	0.45	8.64	72.46	18.79	0.11	-0.19		-0.30
100000099091	46	MC	926	0.54	0.50	21.60	24.62	53.67	0.11	-0.13	-0.21	
100000099092	47	MC	926	0.54	0.50	54.43	32.40	13.07	0.11		-0.10	-0.19
100000187365	48	MC	926	0.40	0.49	28.40	39.74	31.75	0.11	-0.15		-0.09
100000187364	49	MC	926	0.46	0.50	45.68	29.16	24.95	0.22		-0.06	-0.21
100000196381	50	MC	926	0.76	0.43	12.10	11.77	75.92	0.22	-0.30	-0.19	
100000196281	51	MC	926	0.41	0.49	37.47	41.14	21.27	0.11	-0.07		-0.10
100000187387	52	MC	926	0.22	0.41	22.03	47.73	30.13	0.11		-0.07	-0.05
100000187388	53	MC	926	0.40	0.49	39.85	21.92	38.01	0.22		-0.14	0.04
100000187389	54	MC	926	0.35	0.48	23.33	35.10	41.25	0.32	-0.10		0.08
100000196270	55	MC	926	0.35	0.48	33.15	34.67	32.07	0.11	-0.17		-0.14
100000196256	56	MC	926	0.53	0.50	22.25	24.84	52.59	0.32	-0.17	-0.18	
100000196267	57	MC	926	0.85	0.36	85.10	9.61	5.18	0.11		-0.21	-0.22
100000099178	58	MC	926	0.53	0.50	25.49	52.81	21.60	0.11	-0.08		-0.22
100000187369	59	MC	926	0.40	0.49	34.99	40.06	24.84	0.11	-0.02		-0.15
100000187380	60	MC	926	0.39	0.49	39.20	33.48	27.00	0.32		-0.05	-0.09
100000187429	61	MC	926	0.56	0.50	23.65	20.63	55.51	0.22	-0.16	-0.23	
100000187428	62	MC	926	0.59	0.49	58.64	19.98	20.95	0.43		-0.20	-0.20
100000187372	63	MC	926	0.24	0.43	38.55	37.37	23.87	0.22	-0.05	0.02	
100000099180	64	MC	926	0.45	0.50	25.27	29.59	44.71	0.43	-0.17	-0.15	
100000099072	65	MC	926	0.56	0.50	23.43	55.72	20.63	0.22	-0.23		-0.21
100000187360	66	MC	926	0.38	0.49	38.12	37.80	23.76	0.32		-0.05	-0.09
100000187361	67	MC	926	0.51	0.50	24.95	51.08	23.65	0.32	-0.22		-0.17
100000196260	68	MC	926	0.41	0.49	45.25	13.39	41.04	0.32	0.04	-0.12	
100000196258	69	MC	926	0.32	0.47	22.68	45.03	31.97	0.32	-0.12	0.04	

Table B.3. The 2010 Mod-MSA: Mathematics Grade 5, Distractor Distribution and Distractor-to-Total Correlation Analysis (Continued)

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000196269	70	MC	926	0.22	0.42	22.35	38.98	38.23	0.43		-0.05	-0.14
100000196223	71	MC	926	0.52	0.50	30.67	16.74	52.16	0.43	-0.09	-0.14	
100000196100	72	MC	926	0.80	0.40	11.56	80.02	7.99	0.43	-0.31		-0.15
100000196094	73	MC	926	0.47	0.50	40.28	46.76	12.53	0.43	-0.08		-0.24
100000187373	74	MC	926	0.35	0.48	35.85	34.99	28.51	0.65	-0.02		-0.20
100000187363	75	MC	926	0.36	0.48	36.39	35.64	27.32	0.65		-0.04	-0.04
100000196037	76	MC	926	0.47	0.50	21.81	46.54	31.10	0.54	-0.12		-0.05
100000187370	77	MC	926	0.46	0.50	38.12	46.33	15.12	0.43	-0.16		-0.16
100000187391	78	MC	926	0.38	0.49	9.50	51.94	38.01	0.54	-0.21	-0.15	
100000187392	79	MC	926	0.40	0.49	39.85	41.90	17.71	0.54		-0.07	-0.04
100000187382	80	MC	926	0.41	0.49	24.51	34.56	40.71	0.22	-0.07	-0.08	
100000196263	81	MC	926	0.67	0.47	19.33	66.74	13.82	0.11	-0.21		-0.14
100000196247	82	MC	926	0.41	0.49	20.63	38.12	41.04	0.22	-0.15	-0.15	
100000196238	83	MC	926	0.38	0.49	38.23	31.53	29.81	0.43		-0.04	-0.04
100000196079	84	MC	926	0.40	0.49	39.96	33.26	26.67	0.11		0.05	-0.30
100000196025	85	MC	926	0.60	0.49	25.81	13.93	60.04	0.22	-0.07	-0.21	
100000187393	86	MC	926	0.28	0.45	20.19	28.19	51.51	0.11	-0.16		0.15
100000196225	87	MC	926	0.31	0.46	38.66	31.10	30.13	0.11	-0.03		-0.03
100000099177	88	MC	926	0.48	0.50	34.02	18.03	47.84	0.11	-0.16	-0.22	
100000187366	89	MC	926	0.45	0.50	44.92	36.50	18.47	0.11		-0.07	-0.21
100000196049	90	MC	926	0.58	0.49	23.22	57.67	18.90	0.22	-0.16		-0.10
100000196235	91	MC	926	0.28	0.45	22.14	27.86	49.89	0.11	-0.09		0.03
100000099082	92	MC	926	0.44	0.50	24.19	44.06	31.64	0.11	0.04		-0.09
100000196042	93	MC	926	0.40	0.49	39.52	15.33	45.03	0.11		-0.26	-0.03
100000187385	94	MC	926	0.49	0.50	27.54	22.79	49.46	0.22	-0.04	-0.19	
100000187374	95	MC	926	0.45	0.50	38.66	45.14	15.87	0.32	0.07		-0.14
100000187424	96	MC	926	0.40	0.49	15.33	43.74	40.50	0.43	-0.12	-0.06	
100000187379	97	MC	926	0.55	0.50	54.54	22.79	17.49	5.18		-0.14	-0.15
100000187377	98	MC	926	0.24	0.42	23.54	12.63	58.64	5.18		0.00	0.11
100000187381	99	MC	926	0.26	0.44	25.81	52.16	16.74	5.29		0.05	-0.10
100000187375	100	MC	926	0.38	0.48	30.78	26.46	37.58	5.18	0.05	-0.03	

Note: 1. Empty cell indicates the correct answer for the particular item. Point biserial (Item-to-Total Correlation) for the correct answer will be the same as the one shown for item analysis in Section 3.2.

2. Percent distribution by distractors may not add to 100 because of rounding

3. These analyses are based on the equating sample used with the exclusion criteria.

Table B.4. The 2010 Mod-MSA: Mathematics Grade 6, Distractor Distribution and Distractor-to- Total Correlation Analysis

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000272103	1	MC	852	0.72	0.45	13.62	72.30	13.97	0.12	-0.15		-0.05
100000272105	2	MC	852	0.62	0.49	61.97	21.01	16.90	0.12		-0.13	-0.08
100000272100	3	MC	852	0.30	0.46	16.08	29.69	53.87	0.35	-0.06		-0.09
100000272095	4	MC	852	0.21	0.41	64.67	20.77	14.20	0.35	-0.05		-0.11
100000272117	5	MC	852	0.41	0.49	21.01	41.08	37.79	0.12	-0.16		-0.16
100000198185	6	MC	852	0.41	0.49	44.13	14.67	40.73	0.47	-0.22	-0.20	
100000272111	7	MC	852	0.35	0.48	35.09	38.15	26.53	0.23		-0.11	0.01
100000272115	8	MC	852	0.37	0.48	43.43	37.21	19.01	0.35	-0.07		-0.01
100000272113	9	MC	852	0.41	0.49	46.71	11.97	41.20	0.12	-0.25	-0.15	
100000272076	10	MC	852	0.58	0.49	21.60	58.45	19.84	0.12	-0.16		-0.21
100000272073	11	MC	852	0.53	0.50	27.70	53.17	18.90	0.23	-0.02		-0.17
100000099232	12	MC	852	0.60	0.49	16.31	23.12	60.33	0.23	-0.27	-0.26	
100000272096	13	MC	852	0.55	0.50	55.05	28.76	15.73	0.47		-0.21	-0.23
100000272145	14	MC	852	0.47	0.50	27.23	25.70	46.60	0.47	-0.12	-0.15	
100000272146	15	MC	852	0.49	0.50	23.71	48.59	27.58	0.12	-0.10		-0.09
100000198162	16	MC	852	0.43	0.50	42.84	17.84	39.20	0.12		-0.11	-0.09
100000272101	17	MC	852	0.46	0.50	34.04	19.95	45.77	0.23	-0.12	-0.14	
100000198232	18	MC	852	0.33	0.47	32.51	19.25	48.12	0.12		-0.14	-0.08
100000272084	19	MC	852	0.34	0.47	38.03	27.70	34.04	0.23	0.09	-0.07	
100000198210	20	MC	852	0.35	0.48	40.96	24.06	34.74	0.23	-0.15	-0.19	
100000198211	21	MC	852	0.51	0.50	51.41	31.57	16.43	0.59		-0.11	-0.23
100000198212	22	MC	852	0.63	0.48	20.89	15.85	62.79	0.47	-0.27	-0.23	
100000272129	23	MC	852	0.52	0.50	26.88	20.66	52.23	0.23	-0.15	-0.22	
100000187836	24	MC	852	0.61	0.49	61.15	19.01	19.72	0.12		-0.17	-0.22
100000272156	25	MC	852	0.60	0.49	18.43	21.60	59.74	0.23	-0.14	-0.20	
100000272158	26	MC	852	0.41	0.49	41.31	37.56	20.66	0.47		0.02	-0.17
100000272159	27	MC	852	0.39	0.49	28.40	32.63	38.73	0.23	-0.09	-0.12	
100000272066	28	MC	852	0.73	0.44	12.09	73.24	14.44	0.23	-0.27		-0.21
100000272077	29	MC	852	0.31	0.46	29.69	38.62	31.22	0.47	-0.03	-0.12	
100000272068	30	MC	852	0.36	0.48	36.03	36.03	27.58	0.35		-0.10	-0.08
100000272075	31	MC	852	0.70	0.46	19.37	69.95	10.56	0.12	-0.19		-0.19
100000272072	32	MC	852	0.61	0.49	18.54	61.03	20.07	0.35	-0.18		-0.09
100000272067	33	MC	852	0.66	0.47	15.26	18.43	65.73	0.59	-0.26	-0.27	
100000272131	34	MC	852	0.44	0.50	21.60	34.51	43.66	0.23	-0.14	-0.16	
100000272127	35	MC	852	0.62	0.48	62.32	18.43	18.90	0.35		-0.22	-0.26

Table B.4. The 2010 Mod-MSA: Mathematics Grade 6, Distractor Distribution and Distractor-to-Total Correlation Analysis (Continued)

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000272134	36	MC	852	0.65	0.48	13.38	21.36	64.91	0.35	-0.17	-0.22	
100000273844	37	MC	852	0.50	0.50	49.65	32.98	17.02	0.35		-0.05	-0.16
100000273626	38	MC	852	0.31	0.46	24.30	44.37	31.10	0.23	-0.12	-0.05	
100000272143	39	MC	852	0.54	0.50	25.94	54.34	19.13	0.59	-0.17		-0.26
100000272144	40	MC	852	0.45	0.50	45.07	29.81	24.77	0.35		-0.07	-0.22
100000198178	41	MC	852	0.47	0.50	26.53	47.18	25.82	0.47	-0.15		-0.13
100000272099	42	MC	852	0.28	0.45	42.49	27.93	29.34	0.23	-0.03		-0.04
100000272148	43	MC	852	0.42	0.49	21.95	35.33	42.25	0.47	-0.17	0.01	
100000272149	44	MC	852	0.49	0.50	48.71	16.90	34.15	0.23		-0.14	-0.04
100000198235	45	MC	852	0.48	0.50	32.28	47.77	19.60	0.35	-0.05		-0.17
100000272080	46	MC	852	0.69	0.46	15.61	69.13	15.02	0.23	-0.19		-0.20
100000272082	47	MC	852	0.66	0.47	65.73	19.48	14.44	0.35		-0.25	-0.14
100000272114	48	MC	852	0.26	0.44	57.16	15.85	26.29	0.70	-0.09	-0.11	
100000272116	49	MC	852	0.40	0.49	40.14	13.97	45.54	0.35		-0.13	-0.22
100000198186	50	MC	852	0.35	0.48	56.81	8.10	34.62	0.47	-0.19	-0.14	
100000272112	51	MC	852	0.34	0.47	29.81	34.04	35.68	0.47	0.02		-0.09
100000099325	52	MC	852	0.65	0.48	22.30	65.38	12.09	0.23	-0.26		-0.28
100000272128	53	MC	852	0.56	0.50	55.52	27.46	16.55	0.47		-0.12	-0.23
100000272125	54	MC	852	0.45	0.50	21.36	33.22	44.72	0.70	-0.10	-0.14	
100000272069	55	MC	852	0.58	0.49	58.33	20.31	21.01	0.35		-0.23	-0.18
100000272155	56	MC	852	0.23	0.42	23.36	56.81	19.37	0.47		0.17	-0.18
100000272166	57	MC	852	0.39	0.49	31.81	28.40	38.97	0.82	-0.16	-0.10	
100000272167	58	MC	852	0.25	0.43	24.88	32.63	42.14	0.35		-0.21	-0.04
100000187852	59	MC	852	0.60	0.49	12.56	27.46	59.62	0.35	-0.22	-0.24	
100000272065	60	MC	852	0.43	0.50	16.20	40.38	43.31	0.12	-0.17	-0.26	
100000198218	61	MC	852	0.52	0.50	29.69	51.64	18.66		-0.11		-0.25
100000198220	62	MC	852	0.53	0.50	20.89	20.89	52.70	5.52	-0.19	-0.16	
100000198219	63	MC	852	0.50	0.50	50.47	21.60	27.82	0.12		-0.14	-0.26
100000187841	64	MC	852	0.60	0.49	27.70	12.21	59.98	0.12	-0.24	-0.14	
100000272161	65	MC	852	0.27	0.44	26.53	38.73	34.62	0.12		-0.13	-0.03
100000272163	66	MC	852	0.45	0.50	11.03	44.84	44.01	0.12	-0.18		-0.23
100000198170	67	MC	852	0.23	0.42	69.48	22.77	7.63	0.12	-0.15		-0.11
100000272104	68	MC	852	0.45	0.50	15.96	44.60	39.32	0.12	-0.13		-0.07
100000272150	69	MC	852	0.44	0.50	43.78	37.32	18.66	0.23		-0.04	-0.17

Table B.4. The 2010 Mod-MSA: Mathematics Grade 6, Distractor Distribution and Distractor-to-Total Correlation Analysis (Continued)

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000272151	70	MC	852	0.28	0.45	27.82	37.09	34.74	0.35		-0.04	0.00
100000272098	71	MC	852	0.60	0.49	21.36	18.54	59.98	0.12	-0.20	-0.13	
100000272071	72	MC	852	0.74	0.44	74.30	13.62	11.85	0.23		-0.17	-0.15
100000099236	73	MC	852	0.62	0.48	10.09	27.23	62.44	0.23	-0.16	-0.25	
100000273837	74	MC	852	0.65	0.48	25.12	9.51	65.26	0.12	-0.29	-0.11	
100000273598	75	MC	852	0.51	0.50	51.17	42.02	6.69	0.12		-0.11	-0.18
100000272141	76	MC	852	0.63	0.48	25.35	62.56	11.85	0.23	-0.18		-0.15
100000198202	77	MC	852	0.62	0.49	61.97	14.79	23.00	0.23		-0.24	-0.23
100000272126	78	MC	852	0.54	0.50	54.23	29.34	16.20	0.23		-0.17	-0.16
100000272133	79	MC	852	0.38	0.49	38.26	18.90	42.49	0.35		-0.25	-0.13
100000272132	80	MC	852	0.63	0.48	16.43	20.07	63.26	0.23	-0.19	-0.21	
100000272165	81	MC	852	0.53	0.50	30.63	53.05	15.96	0.35	-0.10		0.00
100000272152	82	MC	852	0.38	0.49	38.38	38.50	23.12			-0.16	-0.07
100000273858	83	MC	852	0.40	0.49	31.92	40.49	27.35	0.23	-0.01		-0.14
100000272160	84	MC	852	0.69	0.46	19.48	11.74	68.66	0.12	-0.24	-0.18	
100000187850	85	MC	852	0.66	0.47	14.55	19.01	66.31	0.12	-0.16	-0.24	
100000272157	86	MC	852	0.18	0.38	52.70	29.23	17.84	0.23	0.01	-0.19	
100000272154	87	MC	852	0.46	0.50	23.83	45.77	29.81	0.59	-0.02		-0.10
100000272153	88	MC	852	0.57	0.49	19.95	22.54	57.39	0.12	-0.16	-0.14	
100000272162	89	MC	852	0.55	0.50	54.69	23.00	22.18	0.12		-0.28	-0.08
100000099252	90	MC	852	0.35	0.48	34.74	24.06	41.08	0.12		-0.22	0.09
100000198165	91	MC	852	0.44	0.50	29.11	26.88	43.78	0.23	-0.16	-0.16	
100000272097	92	MC	852	0.52	0.50	20.89	51.53	27.46	0.12	-0.23		-0.07
100000187833	93	MC	852	0.35	0.48	34.51	35.33	29.81	0.35		-0.12	-0.09
100000272102	94	MC	852	0.47	0.50	46.95	31.10	21.83	0.12		0.11	-0.12
100000198174	95	MC	852	0.40	0.49	40.02	40.02	19.72	0.23	-0.07		-0.15
100000272164	96	MC	852	0.34	0.47	34.27	25.12	40.49	0.12		-0.01	-0.17

Note: 1. Empty cell indicates the correct answer for the particular item. Point biserial (Item-to-Total Correlation) for the correct answer will be the same as the one shown for item analysis in Section 3.2.

2. Percent distribution by distractors may not add to 100 because of rounding

3. These analyses are based on the equating sample used with the exclusion criteria.

Table B.5. The 2010 Mod-MSA: Mathematics Grade 7, Distractor Distribution and Distractor-to- Total Correlation Analysis

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000322134	1	MC	1000	0.63	0.48	63.00	24.60	12.30	0.10		-0.20	-0.20
100000273428	2	MC	1000	0.29	0.45	45.00	25.90	28.90	0.20	-0.05	-0.08	
100000273431	3	MC	1000	0.27	0.44	26.90	13.40	59.60	0.10		-0.17	0.09
100000272267	4	MC	1000	0.80	0.40	79.50	16.90	3.50	0.10		-0.06	-0.13
100000197499	5	MC	1000	0.59	0.49	16.10	24.50	59.20	0.20	-0.21	-0.20	
100000272217	6	MC	1000	0.60	0.49	19.40	21.00	59.50	0.10	-0.14	-0.08	
100000322127	7	MC	1000	0.20	0.40	19.90	16.70	63.00	0.40		-0.15	-0.08
100000322131	8	MC	1000	0.15	0.36	63.60	21.30	15.00	0.10	0.08	-0.09	
100000197494	9	MC	1000	0.35	0.48	34.70	29.80	35.20	0.30	-0.11	-0.11	
100000322136	10	MC	1000	0.27	0.44	52.00	26.50	21.10	0.40	0.01		0.06
100000322138	11	MC	1000	0.26	0.44	38.40	34.70	26.40	0.50	-0.06	-0.13	
100000197496	12	MC	1000	0.21	0.40	39.60	39.70	20.60	0.10	-0.17	-0.01	
100000322166	13	MC	1000	0.63	0.48	62.60	23.50	13.80	0.10		-0.16	-0.20
100000322165	14	MC	1000	0.43	0.50	29.10	27.90	42.90	0.10	-0.03	-0.15	
100000322169	15	MC	1000	0.33	0.47	15.20	51.50	32.80	0.50	-0.02	-0.06	
100000099488	16	MC	1000	0.83	0.37	83.10	10.10	6.40	0.40		-0.26	-0.19
100000322151	17	MC	1000	0.34	0.47	47.70	18.40	33.60	0.30	-0.01	-0.21	
100000322141	18	MC	1000	0.54	0.50	21.90	23.80	53.90	0.40	-0.16	-0.14	
100000322152	19	MC	1000	0.52	0.50	37.00	52.10	10.50	0.40	-0.19		-0.07
100000322140	20	MC	1000	0.58	0.49	19.50	57.60	22.60	0.30	-0.05		-0.17
100000287243	21	MC	1000	0.76	0.43	10.60	13.40	75.80	0.20	-0.16	-0.18	
100000272268	22	MC	1000	0.63	0.48	62.50	19.90	17.40	0.20		-0.21	-0.01
100000287244	23	MC	1000	0.16	0.37	25.80	57.60	16.20	0.40	-0.17	0.03	
100000272270	24	MC	1000	0.32	0.47	39.20	32.20	28.20	0.40	0.04		-0.15
100000322137	25	MC	1000	0.31	0.46	31.80	36.90	30.90	0.40	-0.09	-0.02	
100000322139	26	MC	1000	0.26	0.44	26.30	42.10	31.20	0.40		-0.07	-0.12
100000272201	27	MC	1000	0.38	0.49	23.80	37.90	38.00	0.30	-0.17		0.17
100000322164	28	MC	1000	0.55	0.50	54.50	35.10	10.10	0.30		-0.13	-0.20
100000272171	29	MC	1000	0.60	0.49	15.60	60.40	23.60	0.40	-0.06		-0.11
100000099420	30	MC	1000	0.63	0.48	63.10	25.30	11.30	0.30		0.00	-0.18
100000099421	31	MC	1000	0.72	0.45	14.10	71.50	13.90	0.50	-0.16		-0.22
100000272271	32	MC	1000	0.37	0.48	26.90	35.30	37.40	0.40	-0.06	-0.13	
100000272216	33	MC	1000	0.43	0.49	42.70	31.40	25.20	0.70		-0.06	-0.05
100000272272	34	MC	1000	0.47	0.50	47.10	27.00	25.40	0.50		-0.10	-0.12
100000322175	35	MC	1000	0.57	0.49	18.40	24.10	57.30	0.20	-0.04	-0.26	

Table B.5. The 2010 Mod-MSA: Mathematics Grade 7, Distractor Distribution and Distractor-to-Total Correlation Analysis (Continued)

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000322172	36	MC	1000	0.31	0.46	28.10	40.30	31.20	0.40	-0.03	-0.16	
100000197528	37	MC	1000	0.34	0.47	36.90	29.10	33.50	0.50	0.07	-0.27	
100000374151	38	MC	1000	0.37	0.48	36.60	34.50	28.20	0.70		-0.08	0.07
100000374152	39	MC	1000	0.41	0.49	28.30	29.90	41.00	0.80	-0.04	0.03	
100000196052	40	MC	1000	0.42	0.49	25.80	41.80	31.90	0.50	-0.07		0.07
100000196055	41	MC	1000	0.33	0.47	32.40	33.90	33.30	0.40	-0.05	-0.09	
100000322129	42	MC	1000	0.62	0.49	16.20	62.00	21.40	0.40	-0.19		-0.12
100000197481	43	MC	1000	0.59	0.49	58.90	19.40	21.50	0.20		-0.17	-0.24
100000273423	44	MC	1000	0.47	0.50	46.70	28.70	24.10	0.50		-0.10	-0.11
100000273427	46	MC	1000	0.37	0.48	37.30	41.20	21.00	0.50		0.07	-0.09
100000272203	48	MC	1000	0.52	0.50	22.50	25.60	51.70	0.20	-0.17	-0.25	
100000322153	49	MC	1000	0.58	0.49	28.70	13.40	57.60	0.30	-0.28	-0.19	
100000272246	50	MC	1000	0.29	0.45	27.40	29.20	43.20	0.20	0.11		-0.15
100000322154	51	MC	1000	0.62	0.49	10.20	61.50	28.00	0.30	-0.11		-0.16
100000322128	52	MC	1000	0.29	0.45	22.60	28.80	47.30	1.30	-0.07		-0.06
100000322173	53	MC	1000	0.34	0.47	32.80	32.40	34.30	0.50	0.03	-0.06	
100000322174	54	MC	1000	0.28	0.45	19.90	28.30	51.20	0.60	-0.06		0.02
100000273415	55	MC	1000	0.29	0.45	28.80	37.80	32.70	0.70		-0.02	0.01
100000273416	56	MC	1000	0.17	0.38	57.50	25.20	17.00	0.30	-0.06	-0.02	
100000272274	57	MC	1000	0.41	0.49	41.40	25.10	33.30	0.20		-0.11	-0.06
100000272186	58	MC	1000	0.65	0.48	19.30	65.10	15.10	0.50	-0.15		-0.12
100000322135	59	MC	1000	0.65	0.48	65.30	18.90	15.20	0.60		-0.23	-0.20
100000322132	60	MC	1000	0.48	0.50	47.90	35.10	16.50	0.50		-0.09	-0.05
100000272187	61	MC	1000	0.46	0.50	10.90	42.10	46.40	0.60	-0.11	-0.17	
100000374196	63	MC	1000	0.34	0.47	33.70	23.50	42.40	0.40		-0.07	-0.19
100000272248	64	MC	1000	0.58	0.49	57.80	25.60	16.60			-0.11	-0.15
100000322146	65	MC	1000	0.33	0.47	29.40	38.10	32.50		-0.07	-0.06	
100000197501	66	MC	1000	0.46	0.50	46.20	27.70	26.10			-0.05	-0.22
100000322158	67	MC	1000	0.44	0.50	24.00	31.70	44.10	0.20	-0.27	-0.32	
100000322160	68	MC	1000	0.48	0.50	47.90	31.70	20.20	0.20		-0.25	-0.19
100000322163	69	MC	1000	0.46	0.50	29.60	24.10	45.90	0.40	-0.16	-0.16	
100000272174	70	MC	1000	0.41	0.49	41.40	38.30	20.30			-0.21	-0.22
100000099504	71	MC	1000	0.32	0.47	26.90	32.10	41.00		-0.27		0.03
100000322142	72	MC	1000	0.80	0.40	5.00	15.40	79.50	0.10	-0.14	-0.21	

Table B.5. The 2010 Mod-MSA: Mathematics Grade 7, Distractor Distribution and Distractor-to-Total Correlation Analysis (Continued)

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000167818	73	MC	1000	0.63	0.48	23.20	13.90	62.80	0.10	-0.22	-0.37	
100000322143	74	MC	1000	0.80	0.40	80.10	5.30	14.50	0.10		-0.19	-0.23
100000322147	75	MC	1000	0.49	0.50	49.40	20.80	29.70	0.10		-0.11	-0.22
100000099493	76	MC	1000	0.69	0.46	69.10	22.00	8.60	0.30		-0.18	-0.18
100000273417	77	MC	1000	0.47	0.50	15.90	47.00	36.70	0.40	-0.10		-0.05
100000273444	78	MC	1000	0.47	0.50	47.10	32.30	20.60			-0.26	-0.21
100000273445	79	MC	1000	0.33	0.47	33.40	37.50	29.10			-0.07	-0.08
100000197524	80	MC	1000	0.19	0.39	31.80	49.00	19.20		-0.04	-0.14	
100000272247	81	MC	1000	0.68	0.47	24.70	68.40	6.70	0.20	-0.19		-0.16
100000322149	82	MC	1000	0.68	0.47	20.80	68.00	11.00	0.20	-0.31		-0.20
100000322150	83	MC	1000	0.50	0.50	9.50	50.30	39.60	0.60	0.03		-0.18
100000322144	84	MC	1000	0.74	0.44	73.80	20.00	5.80	0.40		-0.22	-0.09
100000322148	85	MC	1000	0.61	0.49	11.20	27.40	61.20	0.20	-0.16	-0.37	
100000099410	86	MC	1000	0.43	0.50	11.20	43.20	45.40	0.20	-0.11		-0.29
100000322161	87	MC	1000	0.42	0.49	41.90	32.80	25.00	0.30		-0.23	-0.05
100000099413	88	MC	1000	0.25	0.43	24.70	47.00	27.80	0.50		-0.23	0.06
100000322157	89	MC	1000	0.75	0.44	11.70	74.50	13.80		-0.16		-0.14
100000099404	90	MC	1000	0.49	0.50	48.70	37.10	14.20			-0.35	-0.15
100000196255	91	MC	1000	0.55	0.50	25.10	55.40	18.90	0.60	-0.13		-0.13
100000197522	92	MC	1000	0.59	0.49	30.20	10.50	59.00	0.30	-0.10	-0.22	
100000196257	93	MC	1000	0.37	0.48	37.30	26.90	35.50	0.30		-0.24	0.05
100000196261	94	MC	1000	0.47	0.50	23.80	47.20	28.70	0.30	-0.01		-0.07
100000322171	95	MC	1000	0.48	0.50	27.10	48.10	24.50	0.30	-0.20		-0.29
100000322162	96	MC	1000	0.47	0.50	29.30	23.90	46.60	0.20	-0.09	-0.25	
100000322159	97	MC	1000	0.42	0.49	42.10	22.90	35.00			-0.16	-0.23
100000099490	98	MC	1000	0.46	0.50	46.10	26.90	27.00			-0.19	-0.14

Note: 1. Empty cell indicates the correct answer for the particular item. Point biserial (Item-to-Total Correlation) for the correct answer will be the same as the one shown for item analysis in Section 3.2.

2. Percent distribution by distractors may not add to 100 because of rounding

3. These analyses are based on the equating sample used with the exclusion criteria.

Table B.6. The 2010 Mod-MSA: Mathematics Grade 8, Distractor Distribution and Distractor-to- Total Correlation Analysis

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000322198	1	MC	1017	0.49	0.50	41.59	48.87	9.14	0.39	0.06		-0.03
100000322187	2	MC	1017	0.41	0.49	42.97	40.81	16.03	0.20	-0.02		-0.12
100000197359	3	MC	1017	0.60	0.49	25.17	60.37	14.06	0.39	-0.14		-0.16
100000272279	4	MC	1017	0.15	0.35	61.06	24.19	14.55	0.20	-0.12	0.01	
100000272278	5	MC	1017	0.37	0.48	37.27	27.83	34.91			-0.03	-0.05
100000272340	6	MC	1017	0.47	0.50	19.57	33.33	47.10		-0.17	-0.11	
100000099548	7	MC	1017	0.74	0.44	10.91	73.94	15.04	0.10	-0.24		-0.14
100000322121	8	MC	1017	0.54	0.50	21.53	24.78	53.69		-0.05	-0.25	
100000322186	9	MC	1017	0.73	0.44	73.25	14.65	12.00	0.10		-0.07	-0.15
100000322122	10	MC	1017	0.59	0.49	58.80	28.61	12.59			0.02	-0.05
100000322120	11	MC	1017	0.55	0.50	10.32	54.77	34.81	0.10	-0.14		-0.24
100000099550	12	MC	1017	0.43	0.50	28.52	28.42	43.07		-0.22	-0.15	
100000272296	13	MC	1017	0.26	0.44	50.74	22.91	26.35		-0.01	-0.04	
100000272337	14	MC	1017	0.28	0.45	24.88	47.39	27.53	0.20	-0.14	-0.07	
100000272295	15	MC	1017	0.29	0.45	28.61	41.10	30.29			-0.10	-0.03
100000272297	16	MC	1017	0.51	0.50	31.27	51.23	17.31	0.20	-0.07		-0.04
100000272323	17	MC	1017	0.45	0.50	13.37	44.84	41.40	0.39	-0.04		-0.05
100000322119	18	MC	1017	0.58	0.49	57.62	29.40	12.78	0.20		-0.14	-0.14
100000322118	19	MC	1017	0.47	0.50	47.10	21.44	30.97	0.49		-0.21	-0.16
100000322084	20	MC	1017	0.32	0.47	20.75	47.30	31.66	0.29	0.01	-0.10	
100000197347	21	MC	1017	0.38	0.49	42.97	38.45	18.49	0.10	-0.12		-0.11
100000322081	22	MC	1017	0.54	0.50	21.63	54.38	23.70	0.29	-0.15		-0.12
100000272309	23	MC	1017	0.33	0.47	23.40	43.66	32.65	0.29	-0.05	0.01	
100000322209	24	MC	1017	0.53	0.50	21.24	53.39	25.37		-0.11		-0.14
100000322208	25	MC	1017	0.65	0.48	64.80	23.30	11.70	0.20		-0.20	-0.17
100000322205	26	MC	1017	0.42	0.49	34.22	42.38	22.62	0.79	-0.06		-0.04
100000322207	27	MC	1017	0.77	0.42	77.48	15.34	6.59	0.59		-0.22	-0.14
100000197387	28	MC	1017	0.42	0.49	41.69	27.83	29.99	0.49		-0.15	-0.28
100000286862	29	MC	1017	0.39	0.49	20.26	40.81	38.54	0.39	-0.03	0.02	
100000272790	30	MC	1017	0.58	0.49	12.19	29.11	58.21	0.49	-0.22	-0.19	
100000286872	31	MC	1017	0.40	0.49	39.92	20.75	38.94	0.39		-0.16	0.06
100000373799	32	MC	1017	0.37	0.48	37.36	57.82	4.62	0.20		-0.15	-0.12
100000272368	33	MC	1017	0.34	0.47	44.44	21.53	33.63	0.39	0.04	-0.01	
100000322200	34	MC	1017	0.34	0.47	23.89	41.89	34.02	0.20	-0.19	-0.14	
100000099626	35	MC	1017	0.72	0.45	11.41	16.42	72.07	0.10	-0.17	-0.13	

Table B.6. The 2010 Mod-MSA: Mathematics Grade 8, Distractor Distribution and Distractor-to-Total Correlation Analysis (Continued)

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000286792	36	MC	1017	0.45	0.50	44.74	32.06	23.21			-0.13	-0.07
100000272298	37	MC	1017	0.27	0.44	26.65	54.67	18.58	0.10		-0.07	-0.04
100000286786	38	MC	1017	0.76	0.43	14.26	75.81	9.54	0.39	-0.14		-0.02
100000272300	39	MC	1017	0.15	0.36	60.28	24.58	14.85	0.29	0.02	-0.11	
100000322079	40	MC	1017	0.44	0.50	32.15	43.95	23.50	0.39	-0.02		-0.08
100000322078	41	MC	1017	0.59	0.49	34.41	58.70	6.59	0.29	-0.20		-0.08
100000197367	42	MC	1017	0.36	0.48	37.27	26.65	35.99	0.10	-0.12	-0.16	
100000286859	43	MC	1017	0.33	0.47	33.53	33.43	32.94	0.10	-0.20	-0.11	
100000272305	44	MC	1017	0.30	0.46	29.60	39.92	30.29	0.20	-0.13	-0.15	
100000286860	45	MC	1017	0.27	0.44	26.84	40.31	32.65	0.20		-0.08	-0.13
100000322116	46	MC	1017	0.49	0.50	29.99	49.16	20.75	0.10	0.10		-0.19
100000322117	47	MC	1017	0.83	0.38	5.41	82.89	11.31	0.39	-0.16		-0.24
100000286845	48	MC	1017	0.42	0.49	21.44	36.18	41.99	0.39	-0.11	-0.14	
100000272301	49	MC	1017	0.15	0.36	53.10	31.07	15.44	0.39	-0.02	-0.10	
100000286846	50	MC	1017	0.30	0.46	10.23	29.79	59.98		-0.13		-0.06
100000322080	51	MC	1017	0.46	0.50	30.88	22.81	46.12	0.20	-0.07	-0.19	
100000272353	52	MC	1017	0.48	0.50	29.30	47.98	22.71		-0.21		-0.02
100000167565	53	MC	1017	0.48	0.50	27.53	23.89	48.18	0.39	-0.07	-0.14	
100000167566	54	MC	1017	0.30	0.46	31.37	38.15	30.38	0.10	-0.10	-0.06	
100000174558	55	MC	1017	0.26	0.44	26.16	30.48	43.17	0.20		-0.05	-0.13
100000322204	56	MC	1017	0.34	0.47	33.43	34.12	32.25	0.20	-0.05		-0.14
100000322206	57	MC	1017	0.81	0.39	81.12	11.21	7.67			-0.17	-0.18
100000322199	58	MC	1017	0.41	0.49	24.09	40.71	35.00	0.20	-0.09		-0.02
100000099639	59	MC	1017	0.40	0.49	27.04	32.84	39.82	0.29	-0.15	-0.15	
100000272308	60	MC	1017	0.43	0.50	14.45	42.48	42.97	0.10	-0.17	-0.10	
100000197322	61	MC	1017	0.45	0.50	45.13	39.43	15.44			-0.15	-0.07
100000322082	62	MC	1017	0.42	0.49	30.97	27.14	41.79	0.10	-0.06	-0.21	
100000322115	63	MC	1017	0.74	0.44	74.34	14.65	11.01			-0.22	-0.13
100000197365	64	MC	1017	0.38	0.49	38.25	26.75	34.91	0.10		-0.13	-0.13
100000272339	65	MC	1017	0.56	0.50	30.58	55.75	13.47	0.20	-0.25		-0.17
100000197377	66	MC	1017	0.61	0.49	8.95	29.50	61.36	0.20	0.01	-0.21	
100000197373	67	MC	1017	0.44	0.50	43.76	31.17	24.78	0.29		-0.02	-0.21
100000197375	68	MC	1017	0.18	0.39	46.90	34.61	18.19	0.29	-0.17	-0.02	
100000197376	69	MC	1017	0.64	0.48	63.91	20.55	15.44	0.10		-0.16	-0.13

Table B.6 The 2010 Mod-MSA: Mathematics Grade 8, Distractor Distribution and Distractor-to-Total Correlation Analysis (Continued)

Item CID	Item Seq. No. ¹	Item Type	n-Count	Mean	SD	Distractor Distribution				Distractor/Total Correlations ¹		
						1	2	3	Omit	1	2	3
100000322201	70	MC	1017	0.89	0.31	89.18	2.95	7.87			-0.11	-0.15
100000322203	71	MC	1017	0.28	0.45	25.27	46.61	28.02	0.10	-0.11	-0.10	
100000322193	72	MC	1017	0.48	0.50	16.81	48.18	34.91	0.10	0.06		-0.20
100000099553	73	MC	1017	0.68	0.47	22.81	67.55	9.34	0.29	-0.28		-0.19
100000322185	74	MC	1017	0.53	0.50	13.18	52.70	33.82	0.29	-0.14		-0.25
100000322195	75	MC	1017	0.44	0.50	43.56	34.02	22.12	0.29		-0.16	-0.16
100000373853	76	MC	1017	0.48	0.50	17.40	34.12	48.28	0.20	-0.09	-0.30	
100000167561	77	MC	1017	0.58	0.49	30.29	57.72	11.90	0.10	-0.23		-0.19
100000373854	78	MC	1017	0.52	0.50	15.54	32.06	52.21	0.20	-0.25	-0.25	
100000322188	79	MC	1017	0.58	0.49	23.21	18.58	57.82	0.39	-0.30	-0.21	
100000197319	80	MC	1017	0.36	0.48	31.07	32.45	35.99	0.49	-0.04	-0.19	
100000322196	81	MC	1017	0.65	0.48	21.34	65.09	13.57		-0.14		-0.11
100000322191	82	MC	1017	0.52	0.50	19.67	51.62	28.42	0.29	-0.18		-0.10
100000322189	83	MC	1017	0.76	0.42	8.46	76.50	14.95	0.10	-0.20		-0.29
100000099647	84	MC	1017	0.52	0.50	52.41	23.60	23.89	0.10		-0.22	-0.11
100000286880	85	MC	1017	0.37	0.48	37.46	23.70	38.84			-0.13	-0.06
100000272303	86	MC	1017	0.57	0.50	28.81	56.54	14.65		-0.09		-0.13
100000286879	87	MC	1017	0.41	0.49	40.61	30.09	29.11	0.20		-0.08	-0.10
100000286793	88	MC	1017	0.40	0.49	29.11	30.38	40.31	0.20	-0.03	-0.14	
100000286797	89	MC	1017	0.39	0.49	39.33	43.66	16.72	0.29		-0.17	-0.15
100000272293	90	MC	1017	0.74	0.44	12.68	74.24	12.88	0.20	-0.10		-0.21
100000272294	91	MC	1017	0.64	0.48	17.70	64.01	17.99	0.29	-0.19		-0.13
100000322192	92	MC	1017	0.56	0.50	29.01	56.44	14.45	0.10	-0.29		-0.10
100000322190	93	MC	1017	0.29	0.45	21.44	49.36	28.91	0.29	-0.16	-0.06	
100000322202	94	MC	1017	0.77	0.42	5.60	77.48	16.81	0.10	-0.10		-0.24
100000272367	95	MC	1017	0.80	0.40	5.51	80.43	14.06		-0.15		-0.17
100000099631	96	MC	1017	0.35	0.48	17.31	34.51	48.18		-0.08		-0.11
100000322197	97	MC	1017	0.41	0.49	41.49	47.89	10.52	0.10		-0.24	-0.18
100000322194	98	MC	1017	0.64	0.48	17.80	63.62	18.49	0.10	-0.08		-0.18

Note: 1. Empty cell indicates the correct answer for the particular item. Point biserial (Item-to-Total Correlation) for the correct answer will be the same as the one shown for item analysis in Section 3.2.

2. Percent distribution by distractors may not add to 100 because of rounding

3. These analyses are based on the equating sample used with the exclusion criteria.