

4. THE 2010 MSA-MATH STATISTICAL SUMMARY

This chapter summarizes statistical results of the 2010 MSA-Math. It includes descriptive statistics of the 2010 math test based on raw scores and scale scores, accuracy and consistency of the 2010 math test, rater agreement rates, correlation coefficients among reporting standards, and total and substrand RS/SS conversion tables.

Table 4.1 The 2010 MSA-Math Classical Descriptive Statistics: Grade 3 through 8

Grade	Form	Total No. of Items	Total Score Point	N	Mean	SD	Reliability	SEM
3	A	65	72	29,508	53.33	11.89	0.93	3.16
	F	65	72	29,279	53.33	11.51	0.93	3.12
4	A	64	71	29,778	49.92	12.09	0.93	3.09
	F	64	71	29,797	49.47	11.90	0.93	3.12
5	A	65	74	29,532	48.18	13.19	0.93	3.48
	F	65	74	28,934	48.11	13.04	0.93	3.49
6	A	62	70	29,928	43.77	14.16	0.94	3.52
	F	62	70	29,384	46.09	13.59	0.93	3.54
7	A	62	72	30,039	37.45	15.53	0.95	3.53
	F	62	72	29,140	37.98	15.93	0.95	3.56
8	A	62	73	30,331	36.19	16.43	0.95	3.73
	F	62	73	29,748	36.91	16.33	0.95	3.72

Note. Analysis was conducted with a statewide population.

Table 4.2 The 2010 MSA-Math Scale Score Descriptive Statistics: Grade 3 through 8

Grade	Form	N	M	SD	P10	Q1	Mdn	Q3	P90	IQR	SE at Cut-Points	
											Prof.	Adv.
3	A	29,508	422.1	41.1	369	397	423	447	470	50	9	12
	F	29,279	423.9	41.3	372	397	425	450	475	53	9	12
	Overall	58,787	423.0	41.2	370	397	423	450	475	53	N/A	N/A
4	A	29,778	429.8	43.7	374	399	428	457	482	58	9	11
	F	29,797	430.1	41.5	377	402	430	459	484	57	9	10
	Overall	59,575	430.0	42.6	376	401	430	459	484	58	N/A	N/A
5	A	29,532	428.2	37.2	382	402	426	454	478	52	8	10
	F	28,934	429.6	36.6	384	404	427	455	475	51	8	10
	Overall	58,466	428.9	36.9	382	402	427	454	478	52	N/A	N/A
6	A	29,928	428.2	36.7	383	402	426	454	476	52	8	9
	F	29,384	429.4	35.2	386	404	429	455	475	51	8	9
	Overall	59,312	428.8	36.0	384	402	426	454	476	52	N/A	N/A
7	A	30,039	421.6	37.7	375	394	419	447	473	53	8	8
	F	29,140	422.4	37.9	373	394	421	449	474	55	8	8
	Overall	59,179	422.0	37.8	375	394	419	449	473	55	N/A	N/A
8	A	30,331	424.6	37.1	379	399	422	449	475	50	8	7
	F	29,748	425.9	37.5	380	399	422	451	476	52	8	7
	Overall	60,079	425.2	37.3	379	399	422	451	476	52	N/A	N/A

Note. Analysis was conducted with a statewide population.

Table 4.3 The 2010 MSA-Math Strand (Cluster) Correlations: Grade 3

Form	N	Mean	SD	1	2	3	4	5
Form A								
1. Algebra	29,508	9.75	2.55	1.00				
2. Geometry and Measurement	29,508	11.65	2.59	0.67	1.00			
3. Statistics and Probability	29,508	11.01	2.71	0.73	0.68	1.00		
4. Numbers and Computation	29,508	12.68	3.03	0.74	0.70	0.76	1.00	
5. Process	29,508	8.24	2.81	0.64	0.65	0.66	0.68	1.00
Form F								
1. Algebra	29,279	10.61	2.22	1.00				
2. Geometry and Measurement	29,279	11.60	2.58	0.65	1.00			
3. Statistics and Probability	29,279	10.72	2.73	0.72	0.68	1.00		
4. Numbers and Computation	29,279	12.69	3.02	0.72	0.70	0.76	1.00	
5. Process	29,279	7.70	2.72	0.62	0.66	0.67	0.69	1.00

Note. Analysis was conducted with a statewide population.

Table 4.4 The 2010 MSA-Math Strand (Cluster) Correlations: Grade 4

Form	N	Mean	SD	1	2	3	4	5
Form A								
1. Algebra	29,778	11.35	2.51	1.00				
2. Geometry and Measurement	29,778	9.55	2.81	0.66	1.00			
3. Statistics and Probability	29,778	11.29	3.18	0.74	0.70	1.00		
4. Numbers and Computation	29,778	11.03	2.76	0.73	0.66	0.73	1.00	
5. Process	29,778	6.70	2.58	0.69	0.69	0.72	0.68	1.00
Form F								
1. Algebra	29,797	10.87	2.64	1.00				
2. Geometry and Measurement	29,797	9.12	2.92	0.66	1.00			
3. Statistics and Probability	29,797	11.68	3.10	0.71	0.68	1.00		
4. Numbers and Computation	29,797	10.89	2.75	0.72	0.68	0.73	1.00	
5. Process	29,797	6.91	2.36	0.64	0.65	0.68	0.65	1.00

Note. Analysis was conducted with a statewide population.

Table 4.5 The 2010 MSA-Math Strand (Cluster) Correlations: Grade 5

Form	N	Mean	SD	1	2	3	4	5
Form A								
1. Algebra	29,532	11.71	2.71	1.00				
2. Geometry and Measurement	29,532	9.56	2.79	0.68	1.00			
3. Statistics and Probability	29,532	9.55	2.47	0.70	0.68	1.00		
4. Numbers and Computation	29,532	9.95	3.22	0.72	0.71	0.70	1.00	
5. Process	29,532	7.41	3.85	0.72	0.69	0.70	0.77	1.00
Form F								
1. Algebra	28,934	11.70	2.70	1.00				
2. Geometry and Measurement	28,934	9.11	2.75	0.67	1.00			
3. Statistics and Probability	28,934	9.69	2.41	0.70	0.66	1.00		
4. Numbers and Computation	28,934	9.72	3.37	0.70	0.70	0.69	1.00	
5. Process	28,934	7.88	3.66	0.72	0.71	0.71	0.76	1.00

Note. Analysis was conducted with a statewide population.

Table 4.6 The 2010 MSA-Math Strand (Cluster) Correlations: Grade 6

Form	N	Mean	SD	1	2	3	4	5
Form A								
1. Algebra	29,928	9.81	3.12	1.00				
2. Geometry and Measurement	29,928	8.62	3.25	0.72	1.00			
3. Statistics and Probability	29,928	8.82	2.92	0.74	0.72	1.00		
4. Numbers and Computation	29,928	8.49	3.16	0.74	0.71	0.73	1.00	
5. Process	29,928	8.03	3.47	0.77	0.77	0.75	0.74	1.00
Form F								
1. Algebra	29,384	10.26	3.00	1.00				
2. Geometry and Measurement	29,384	8.97	3.25	0.72	1.00			
3. Statistics and Probability	29,384	8.88	2.82	0.72	0.70	1.00		
4. Numbers and Computation	29,384	9.41	2.97	0.72	0.70	0.71	1.00	
5. Process	29,384	8.57	3.40	0.75	0.73	0.70	0.71	1.00

Note. Analysis was conducted with a statewide population.

Table 4.7 The 2010 MSA-Math Strand (Cluster) Correlations: Grade 7

Form	N	Mean	SD	1	2	3	4	5
Form A								
1. Algebra	30,039	8.05	3.29	1.00				
2. Geometry and Measurement	30,039	6.30	3.56	0.75	1.00			
3. Statistics and Probability	30,039	9.02	3.40	0.77	0.72	1.00		
4. Numbers and Computation	30,039	7.67	3.43	0.79	0.75	0.74	1.00	
5. Process	30,039	6.40	3.61	0.76	0.79	0.77	0.73	1.00
Form F								
1. Algebra	29,140	7.76	3.33	1.00				
2. Geometry and Measurement	29,140	6.89	3.68	0.77	1.00			
3. Statistics and Probability	29,140	8.84	3.43	0.75	0.75	1.00		
4. Numbers and Computation	29,140	7.50	3.35	0.78	0.75	0.72	1.00	
5. Process	29,140	6.99	3.90	0.77	0.80	0.80	0.73	1.00

Note. Analysis was conducted with a statewide population.

Table 4.8 The 2010 MSA-Math Strand (Cluster) Correlations: Grade 8

Form	N	Mean	SD	1	2	3	4	5
Form A								
1. Algebra	30,331	7.47	3.79	1.00				
2. Geometry and Measurement	30,331	6.31	3.21	0.75	1.00			
3. Statistics and Probability	30,331	7.08	3.12	0.76	0.75	1.00		
4. Numbers and Computation	30,331	7.18	2.94	0.75	0.73	0.75	1.00	
5. Process	30,331	8.14	5.08	0.82	0.80	0.80	0.76	1.00
Form F								
1. Algebra	29,748	7.80	3.72	1.00				
2. Geometry and Measurement	29,748	6.17	3.28	0.74	1.00			
3. Statistics and Probability	29,748	8.81	3.25	0.74	0.72	1.00		
4. Numbers and Computation	29,748	6.80	2.94	0.75	0.73	0.75	1.00	
5. Process	29,748	7.33	4.87	0.82	0.81	0.80	0.75	1.00

Note. Analysis was conducted with a statewide population.

Table 4.9 The 2010 MSA-Math Decision Accuracy and Consistency Indices: Grade 3

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	B : PA	0.95	0.02	0.03	0.93
	BP : A	0.92	0.04	0.03	0.89
F	B : PA	0.95	0.02	0.03	0.93
	BP : A	0.92	0.04	0.03	0.89

Note. B: PA denotes the cut between Basic and Proficient, while BP:A denotes the cut between Proficient and Advanced.

Table 4.10 The 2010 MSA-Math Decision Accuracy and Consistency Indices: Grade 4

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	B : PA	0.96	0.01	0.02	0.95
	BP : A	0.92	0.04	0.04	0.89
F	B : PA	0.97	0.01	0.02	0.95
	BP : A	0.92	0.04	0.04	0.88

Note. B: PA denotes the cut between Basic and Proficient, while BP:A denotes the cut between Proficient and Advanced.

Table 4.11 The 2010 MSA-Math Decision Accuracy and Consistency Indices: Grade 5

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	B : PA	0.94	0.02	0.03	0.92
	BP : A	0.94	0.03	0.03	0.91
F	B : PA	0.94	0.02	0.03	0.92
	BP : A	0.93	0.04	0.03	0.91

Note. B: PA denotes the cut between Basic and Proficient, while BP:A denotes the cut between Proficient and Advanced.

Table 4.12 The 2010 MSA-Math Decision Accuracy and Consistency Indices: Grade 6

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	B : PA	0.94	0.03	0.04	0.91
	BP : A	0.94	0.03	0.03	0.91
F	B : PA	0.94	0.03	0.04	0.91
	BP : A	0.93	0.04	0.03	0.90

Note. B: PA denotes the cut between Basic and Proficient, while BP:A denotes the cut between Proficient and Advanced.

Table 4.13 The 2010 MSA-Math Decision Accuracy and Consistency Indices: Grade 7

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	B : PA	0.94	0.03	0.03	0.91
	BP : A	0.95	0.03	0.02	0.93
F	B : PA	0.94	0.03	0.03	0.92
	BP : A	0.95	0.03	0.02	0.93

Note. B: PA denotes the cut between Basic and Proficient, while BP:A denotes the cut between Proficient and Advanced.

Table 4.14 The 2010 MSA-Math Decision Accuracy and Consistency Indices: Grade 8

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	B : PA	0.93	0.03	0.04	0.90
	BP : A	0.94	0.03	0.03	0.92
F	B : PA	0.93	0.03	0.04	0.90
	BP : A	0.94	0.03	0.03	0.92

Note. B: PA denotes the cut between Basic and Proficient, while BP:A denotes the cut between Proficient and Advanced.

Table 4.15 The 2010 MSA-Math Score Difference between Rater 1 and Rater 2: Grade 3

Form	Score Range	Item CID	Perfect		Adjacent		Discrepancy		Total	
			N	%	N	%	N	%	N	%
A	0-1	100000011186	29,042	98.89	326	1.11			29,368	100.00
	0-2	3595529	26,406	90.34	2,804	9.59	20	0.07	29,230	100.00
	0-1	3509941	29,508	100.00					29,508	100.00
	0-2	3595501	29,508	100.00					29,508	100.00
	0-1	100000025196	28,828	98.51	435	1.49			29,263	100.00
	0-2	3595519	25,120	86.29	3,943	13.54	48	0.16	29,111	100.00
	0-1	3488139	29,201	99.76	71	0.24			29,272	100.00
	0-2	3564095	23,229	79.84	5,827	20.03	37	0.13	29,093	100.00
	0-1	3510072	29,189	99.60	116	0.40			29,305	100.00
	0-2	3564080	25,602	87.92	3,490	11.99	27	0.09	29,119	100.00
	0-1	100000011176	29,125	99.37	186	0.63			29,311	100.00
	0-2	3595524	23,619	81.07	5,261	18.06	255	0.88	29,135	100.00
	0-1	100000004277	27,791	96.28	1,075	3.72			28,866	100.00
	0-2	3595518	26,289	90.04	2,883	9.87	24	0.08	29,196	100.00
F	0-1	100000011186	28,856	98.90	320	1.10			29,176	100.00
	0-2	3595529	26,189	90.08	2,867	9.86	16	0.06	29,072	100.00
	0-1	3509941	29,279	100.00					29,279	100.00
	0-2	3595501	29,279	100.00					29,279	100.00
	0-1	100000025196	28,600	98.40	466	1.60			29,066	100.00
	0-2	3595519	24,894	86.08	3,990	13.80	37	0.13	28,921	100.00
	0-1	3488139	29,026	99.78	65	0.22			29,091	100.00
	0-2	3564095	23,071	79.72	5,812	20.08	56	0.19	28,939	100.00
	0-1	3488087	28,923	99.52	139	0.48			29,062	100.00
	0-2	3564099	25,350	87.76	3,501	12.12	36	0.12	28,887	100.00
	0-1	3509949	28,588	98.94	307	1.06			28,895	100.00
	0-2	3985609	22,908	79.99	5,709	19.94	21	0.07	28,638	100.00
	0-1	3509932	27,604	95.64	1,257	4.36			28,861	100.00
	0-2	3564086	25,373	87.41	3,568	12.29	88	0.30	29,029	100.00

Note. Analysis was conducted with a statewide population.

Table 4.16 The 2010 MSA-Math Score Difference between Rater 1 and Rater 2: Grade 4

Form	Score Range	Item CID	Perfect		Adjacent		Discrepancy		Total	
			N	%	N	%	N	%	N	%
A	0-1	3487819	28,879	97.62	704	2.38			29,583	100.00
	0-2	3564186	24,596	83.43	4,874	16.53	12	0.04	29,482	100.00
	0-1	100000044142	29,778	100.00					29,778	100.00
	0-2	3595499	29,778	100.00					29,778	100.00
	0-1	100000025175	29,251	99.12	261	0.88			29,512	100.00
	0-2	3595574	26,380	89.62	3,028	10.29	28	0.10	29,436	100.00
	0-1	3515823	29,422	99.72	82	0.28			29,504	100.00
	0-2	3595532	26,145	89.01	3,227	10.99	2	0.01	29,374	100.00
	0-1	3488150	29,173	98.82	348	1.18			29,521	100.00
	0-2	3564176	24,789	84.43	4,556	15.52	15	0.05	29,360	100.00
	0-1	3488145	29,403	99.52	141	0.48			29,544	100.00
	0-2	3564189	25,404	86.28	4,027	13.68	11	0.04	29,442	100.00
	0-1	3515783	29,189	98.68	390	1.32			29,579	100.00
	0-2	3595560	24,780	84.33	4,600	15.65	5	0.02	29,385	100.00
	F	0-1	3487819	28,948	97.77	659	2.23			29,607
0-2		3564186	24,625	83.38	4,897	16.58	12	0.04	29,534	100.00
0-1		100000044142	29,797	100.00					29,797	100.00
0-2		3595499	29,797	100.00					29,797	100.00
0-1		3548776	29,232	99.03	287	0.97			29,519	100.00
0-2		3595562	26,375	89.70	3,000	10.20	29	0.10	29,404	100.00
0-1		100000201938	29,242	99.03	287	0.97			29,529	100.00
0-2		3985620	24,467	83.18	4,907	16.68	39	0.13	29,413	100.00
0-1		3488076	29,392	99.24	225	0.76			29,617	100.00
0-2		3595578	26,449	89.52	3,087	10.45	9	0.03	29,545	100.00
0-1		3488145	29,022	98.45	457	1.55			29,479	100.00
0-2		3564189	26,142	89.29	3,133	10.70	1	0.00	29,276	100.00
0-1		100000007087	29,227	98.73	376	1.27			29,603	100.00
0-2		3595563	24,718	84.02	4,697	15.97	4	0.01	29,419	100.00

Note. Analysis was conducted with a statewide population.

Table 4.17 The 2010 MSA-Math Score Difference between Rater 1 and Rater 2: Grade 5

Form	Score Range	Item CID	Perfect		Adjacent		Discrepancy		Total	
			N	%	N	%	N	%	N	%
A	0-1	3488471	28,760	99.36	186	0.64			28,946	100.00
	0-2	3564052	23,601	81.93	5,153	17.89	52	0.18	28,806	100.00
	0-1	100000028212	29,532	100.00					29,532	100.00
	0-2	3595468	29,532	100.00					29,532	100.00
	0-1	3511483	29,080	99.29	208	0.71			29,288	100.00
	0-2	3563992	26,240	89.85	2,958	10.13	7	0.02	29,205	100.00
	0-1	3488402	29,532	100.00					29,532	100.00
	0-3	3564000	29,532	100.00					29,532	100.00
	0-1	100000022528	28,925	99.51	143	0.49			29,068	100.00
	0-2	3595465	23,490	81.30	5,398	18.68	4	0.01	28,892	100.00
	0-1	3512644	28,888	99.43	165	0.57			29,053	100.00
	0-2	3595445	24,591	85.39	4,084	14.18	124	0.43	28,799	100.00
	0-1	3488530	28,378	99.15	243	0.85			28,621	100.00
	0-2	3564054	26,765	93.65	1,803	6.31	12	0.04	28,580	100.00
	0-1	100000022532	27,291	95.55	1,270	4.45			28,561	100.00
	0-2	3595471	23,922	83.90	4,495	15.76	97	0.34	28,514	100.00
F	0-1	3488471	28,238	99.26	210	0.74			28,448	100.00
	0-2	3564052	23,133	81.74	5,124	18.10	45	0.16	28,302	100.00
	0-1	3488459	28,934	100.00					28,934	100.00
	0-2	3595470	28,934	100.00					28,934	100.00
	0-1	3511483	28,263	99.33	191	0.67			28,454	100.00
	0-2	3563992	26,079	91.78	2,328	8.19	8	0.03	28,415	100.00
	0-1	100000028203	28,934	100.00					28,934	100.00
	0-3	3595467	28,934	100.00					28,934	100.00
	0-1	3556476	28,198	99.34	187	0.66			28,385	100.00
	0-2	3563990	22,641	80.20	5,578	19.76	10	0.04	28,229	100.00
	0-1	3511455	26,244	93.28	1,890	6.72			28,134	100.00
	0-2	3563993	20,806	73.55	7,137	25.23	345	1.22	28,288	100.00
	0-1	3512564	28,241	99.21	226	0.79			28,467	100.00
	0-2	3595444	24,828	87.51	3,459	12.19	83	0.29	28,370	100.00
	0-1	3488346	27,823	97.71	652	2.29			28,475	100.00
	0-2	3595473	25,599	90.07	2,664	9.37	158	0.56	28,421	100.00

Note. Analysis was conducted with a statewide population.

Note. Bold-faced item indicates an ECR item.

Table 4.18 The 2010 MSA-Math Score Difference between Rater 1 and Rater 2: Grade 6

Form	Score Range	Item CID	Perfect		Adjacent		Discrepancy		Total	
			N	%	N	%	N	%	N	%
A	0-1	100000028374	28,450	96.04	1,172	3.96			29,622	100.00
	0-3	3595487	22,898	77.52	6,283	21.27	356	1.21	29,537	100.00
	0-1	3548404	29,928	100.00					29,928	100.00
	0-2	3564013	29,928	100.00					29,928	100.00
	0-1	100000028367	28,857	99.08	269	0.92			29,126	100.00
	0-2	3595489	26,304	90.99	2,597	8.98	9	0.03	28,910	100.00
	0-1	100000022498	29,269	99.60	118	0.40			29,387	100.00
	0-2	3595494	27,513	93.97	1,750	5.98	14	0.05	29,277	100.00
	0-1	100000022501	29,928	100.00					29,928	100.00
	0-2	3595485	29,928	100.00					29,928	100.00
	0-1	3488399	28,738	98.29	501	1.71			29,239	100.00
	0-2	3595482	24,968	86.30	3,935	13.60	30	0.10	28,933	100.00
	0-1	3516327	28,923	98.38	475	1.62			29,398	100.00
	0-2	3564005	24,569	83.65	4,718	16.06	85	0.29	29,372	100.00
	F	0-1	100000028374	27,975	96.14	1,124	3.86			29,099
0-3		3595487	22,577	77.77	6,126	21.10	327	1.13	29,030	100.00
0-1		3516627	29,384	100.00					29,384	100.00
0-2		3564006	29,384	100.00					29,384	100.00
0-1		100000028363	27,641	98.49	424	1.51			28,065	100.00
0-2		3595491	24,930	89.91	2,781	10.03	18	0.06	27,729	100.00
0-1		100000022498	28,613	99.07	269	0.93			28,882	100.00
0-2		3595494	25,717	89.21	3,068	10.64	43	0.15	28,828	100.00
0-1		100000022492	29,384	100.00					29,384	100.00
0-2		3595479	29,384	100.00					29,384	100.00
0-1		3488281	28,008	98.09	544	1.91			28,552	100.00
0-2		3564063	24,201	85.59	4,049	14.32	25	0.09	28,275	100.00
0-1		3516327	27,720	97.09	830	2.91			28,550	100.00
0-2		3564005	21,808	77.31	5,956	21.11	445	1.58	28,209	100.00

Note. Analysis was conducted with a statewide population.

Note. Bold-faced item indicates an ECR item.

Table 4.19 The 2010 MSA-Math Score Difference between Rater 1 and Rater 2: Grade 7

Form	Score Range	Item CID	Perfect		Adjacent		Discrepancy		Total	
			N	%	N	%	N	%	N	%
A	0-1	100000026806	28,010	97.13	829	2.87			28,839	100.00
	0-2	3595381	23,342	79.70	5,883	20.09	64	0.22	29,289	100.00
	0-1	100000026808	30,039	100.00					30,039	100.00
	0-3	3595374	30,039	100.00					30,039	100.00
	0-1	3517818	28,658	99.45	159	0.55			28,817	100.00
	0-2	3564023	23,521	82.80	4,562	16.06	323	1.14	28,406	100.00
	0-1	3517706	26,506	99.43	151	0.57			26,657	100.00
	0-2	3564025	22,300	85.25	3,858	14.75			26,158	100.00
	0-1	100000012779	30,039	100.00					30,039	100.00
	0-3	3595378	30,039	100.00					30,039	100.00
	0-1	100000004147	27,382	95.81	1,197	4.19			28,579	100.00
	0-3	3595388	23,521	83.37	4,517	16.01	175	0.62	28,213	100.00
	0-1	3517693	27,193	93.52	1,883	6.48			29,076	100.00
	0-2	3564028	24,899	85.48	4,118	14.14	111	0.38	29,128	100.00
	F	0-1	100000026820	28,325	99.00	286	1.00			28,611
0-2		3595398	21,780	76.82	6,531	23.04	41	0.14	28,352	100.00
0-1		3491692	29,140	100.00					29,140	100.00
0-3		3564159	29,140	100.00					29,140	100.00
0-1		100000004178	27,634	99.36	177	0.64			27,811	100.00
0-2		3595400	22,628	83.15	4,503	16.55	84	0.31	27,215	100.00
0-1		3517706	26,448	99.61	103	0.39			26,551	100.00
0-2		3564025	23,883	90.89	2,345	8.92	48	0.18	26,276	100.00
0-1		100000012779	29,140	100.00					29,140	100.00
0-3		3595378	29,140	100.00					29,140	100.00
0-1		100000027967	26,659	95.67	1,206	4.33			27,865	100.00
0-3		3595392	22,866	83.02	4,479	16.26	198	0.72	27,543	100.00
0-1		3517693	26,371	92.94	2,004	7.06			28,375	100.00
0-2		3564028	24,011	84.52	4,269	15.03	127	0.45	28,407	100.00

Note. Analysis was conducted with a statewide population.

Note. Bold-faced item indicates an ECR item.

Table 4.20 The 2010 MSA-Math Score Difference between Rater 1 and Rater 2: Grade 8

Form	Score Range	Item CID	Perfect		Adjacent		Discrepancy		Total	
			N	%	N	%	N	%	N	%
A	0-1	100000043324	28,686	98.71	376	1.29			29,062	100.00
	0-2	3595434	27,005	94.21	1,569	5.47	90	0.31	28,664	100.00
	0-1	100000012774	30,331	100.00					30,331	100.00
	0-3	3595421	30,331	100.00					30,331	100.00
	0-1	3487637	28,241	98.07	556	1.93			28,797	100.00
	0-2	3595418	20,758	73.26	7,383	26.06	192	0.68	28,333	100.00
	0-1	3487636	28,715	97.22	820	2.78			29,535	100.00
	0-2	3595428	23,428	79.97	5,751	19.63	116	0.40	29,295	100.00
	0-1	3487626	30,331	100.00					30,331	100.00
	0-3	3595433	30,331	100.00					30,331	100.00
	0-1	3514117	29,316	99.31	205	0.69			29,521	100.00
	0-2	3564111	27,833	95.22	1,339	4.58	58	0.20	29,230	100.00
	0-1	3487933	29,233	99.61	114	0.39			29,347	100.00
	0-3	3595416	24,301	84.12	4,377	15.15	211	0.73	28,889	100.00
	F	0-1	100000012745	27,943	98.90	311	1.10			28,254
0-2		3595427	23,689	86.20	3,773	13.73	21	0.08	27,483	100.00
0-1		3487624	27,669	98.50	422	1.50			28,091	100.00
0-2		3595415	23,385	86.26	3,606	13.30	119	0.44	27,110	100.00
0-1		3487680	29,748	100.00					29,748	100.00
0-3		3564133	29,748	100.00					29,748	100.00
0-1		3514147	27,781	99.41	164	0.59			27,945	100.00
0-2		3564115	24,894	91.44	2,265	8.32	64	0.24	27,223	100.00
0-1		3514266	28,199	99.15	241	0.85			28,440	100.00
0-2		3564120	23,154	83.93	4,281	15.52	152	0.55	27,587	100.00
0-1		3514607	29,748	100.00					29,748	100.00
0-3		3564112	29,748	100.00					29,748	100.00
0-1		3514117	28,447	99.33	193	0.67			28,640	100.00
0-2		3564111	23,958	85.24	4,069	14.48	79	0.28	28,106	100.00
0-1		100000016550	26,980	99.22	211	0.78			27,191	100.00
0-3	3595411	22,491	84.03	3,995	14.93	281	1.05	26,767	100.00	
0-1	100000012744	27,580	98.85	322	1.15			27,902	100.00	
0-2	3595424	23,225	85.51	3,911	14.40	25	0.09	27,161	100.00	

Note. Analysis was conducted with a statewide population.

Note. Bold-faced item indicates an ECR item.

Table 4.21 The 2010 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 3 Form A

Raw Score	Scale Score (SS)	Standard Error (SE)
0	240 ^a	47
1	240 ^a	33
2	240 ^a	24
3	247	20
4	258	17
5	266	16
6	273	15
7	280	14
8	285	13
9	290	12
10	295	12
11	299	12
12	303	11
13	307	11
14	310	11
15	314	10
16	317	10
17	320	10
18	323	10
19	326	10
20	329	10
21	332	9
22	334	9
23	337	9
24	340	9
25	342	9
26	345	9
27	347	9
28	350	9
29	352	9
30	355	9
31	357	9
32	359	9
33	362	9
34	364	9
35	367	9
36	369	9
37	371	9
38	374	9
39	376	9
40	379	9

Table 4.21 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
41	381	9
42	384	9
43	386	9
44	389	9
45	391	9
46	394	9
47	397	9
48	399	9
49	402	10
50	405	10
51	408	10
52	411	10
53	414	10
54	417	10
55	420	10
56	423	11
57	427	11
58	430	11
59	434	11
60	438	12
61	443	12
62	447	12
63	452	13
64	457	14
65	463	14
66	470	15
67	478	16
68	486	18
69	498	20
70	513	24
71	537	34
72	650 ^b	47

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.22 The 2010 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 3 Form F

Raw Score	Scale Score (SS)	Standard Error (SE)
0	240 ^a	47
1	240 ^a	34
2	240 ^a	24
3	244	20
4	255	18
5	264	16
6	271	15
7	278	14
8	284	13
9	289	13
10	294	12
11	298	12
12	302	11
13	306	11
14	310	11
15	313	11
16	317	10
17	320	10
18	323	10
19	326	10
20	329	10
21	332	10
22	335	9
23	337	9
24	340	9
25	343	9
26	345	9
27	348	9
28	350	9
29	353	9
30	355	9
31	358	9
32	360	9
33	363	9
34	365	9
35	367	9
36	370	9
37	372	9
38	375	9
39	377	9
40	380	9

Table 4.22 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
41	382	9
42	385	9
43	387	9
44	390	9
45	392	9
46	395	9
47	397	9
48	400	9
49	403	10
50	406	10
51	409	10
52	412	10
53	415	10
54	418	10
55	421	11
56	425	11
57	428	11
58	432	11
59	436	12
60	441	12
61	445	12
62	450	13
63	455	13
64	461	14
65	467	15
66	475	16
67	483	17
68	493	19
69	504	21
70	520	25
71	546	34
72	650 ^b	47

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.23 The 2010 MSA-Math Subtotal Raw Score to Scale Score Conversion Table: Grade 3 Form A

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	48
AL	1	278	35
AL	2	306	27
AL	3	324	23
AL	4	339	21
AL	5	353	20
AL	6	365	20
AL	7	377	20
AL	8	390	21
AL	9	404	22
AL	10	420	24
AL	11	439	27
AL	12	468	36
AL	13	650 ^b	48
GM	0	240 ^a	48
GM	1	253	35
GM	2	281	27
GM	3	300	23
GM	4	315	21
GM	5	329	20
GM	6	341	20
GM	7	353	20
GM	8	365	20
GM	9	377	20
GM	10	390	21
GM	11	403	22
GM	12	419	23
GM	13	438	27
GM	14	466	35
GM	15	650 ^b	48
SP	0	240 ^a	48
SP	1	270	35
SP	2	297	26
SP	3	314	22
SP	4	328	20
SP	5	340	19
SP	6	351	19
SP	7	362	19
SP	8	373	19
SP	9	384	20
SP	10	396	21
SP	11	410	22
SP	12	428	26
SP	13	455	35
SP	14	650 ^b	48

Table 4.23 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
NC	0	240 ^a	47
NC	1	260	34
NC	2	286	26
NC	3	303	22
NC	4	317	20
NC	5	329	19
NC	6	339	18
NC	7	350	18
NC	8	360	18
NC	9	370	18
NC	10	380	19
NC	11	391	20
NC	12	404	21
NC	13	418	23
NC	14	436	26
NC	15	464	35
NC	16	650 ^b	48
PR	0	240 ^a	50
PR	1	279	38
PR	2	312	30
PR	3	337	27
PR	4	356	24
PR	5	373	23
PR	6	389	22
PR	7	403	22
PR	8	417	22
PR	9	432	22
PR	10	447	23
PR	11	464	24
PR	12	484	27
PR	13	513	36
PR	14	650 ^b	48

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Note. AL=Algebra; GM=Geometry and Measurement; SP=Statistics and Probability; NC=Numbers and Computation; PR=Process

Table 4.24 The 2010 MSA-Math Subtotal Raw Score to Scale Score Conversion Table: Grade 3 Form F

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	51
AL	1	251	38
AL	2	284	29
AL	3	306	25
AL	4	323	22
AL	5	337	21
AL	6	350	20
AL	7	363	20
AL	8	375	20
AL	9	388	21
AL	10	403	23
AL	11	422	27
AL	12	450	35
AL	13	650 ^b	48
GM	0	240 ^a	48
GM	1	256	36
GM	2	285	27
GM	3	304	23
GM	4	319	21
GM	5	332	20
GM	6	344	20
GM	7	356	19
GM	8	368	19
GM	9	379	20
GM	10	391	20
GM	11	405	21
GM	12	420	23
GM	13	438	27
GM	14	466	35
GM	15	650 ^b	48
SP	0	240 ^a	48
SP	1	265	35
SP	2	294	27
SP	3	313	24
SP	4	329	22
SP	5	342	21
SP	6	355	20
SP	7	367	20
SP	8	379	20
SP	9	391	20
SP	10	404	21
SP	11	419	23
SP	12	438	27
SP	13	466	35
SP	14	650 ^b	48

Table 4.24 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
NC	0	240 ^a	47
NC	1	263	34
NC	2	289	26
NC	3	307	22
NC	4	320	20
NC	5	332	19
NC	6	343	18
NC	7	353	18
NC	8	363	18
NC	9	373	18
NC	10	383	19
NC	11	394	19
NC	12	406	21
NC	13	420	23
NC	14	438	26
NC	15	466	35
NC	16	650 ^b	48
PR	0	240 ^a	50
PR	1	295	37
PR	2	327	29
PR	3	349	25
PR	4	366	23
PR	5	382	22
PR	6	396	22
PR	7	411	22
PR	8	426	22
PR	9	442	23
PR	10	458	24
PR	11	477	25
PR	12	499	28
PR	13	529	36
PR	14	650 ^b	49

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Note. AL=Algebra; GM=Geometry and Measurement; SP=Statistics and Probability; NC=Numbers and Computation; PR=Process

Table 4.25 The 2010 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 4 Form A

Raw Score	Scale Score (SS)	Standard Error (SE)
0	240 ^a	47
1	240 ^a	34
2	240 ^a	25
3	256	21
4	267	18
5	276	17
6	284	15
7	290	14
8	296	14
9	302	13
10	307	12
11	311	12
12	315	12
13	319	11
14	323	11
15	327	11
16	330	10
17	333	10
18	337	10
19	340	10
20	343	10
21	345	10
22	348	10
23	351	9
24	354	9
25	356	9
26	359	9
27	361	9
28	364	9
29	366	9
30	369	9
31	371	9
32	374	9
33	376	9
34	379	9
35	381	9
36	383	9
37	386	9
38	388	9
39	391	9

Table 4.25 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
40	393	9
41	396	9
42	399	9
43	401	9
44	404	9
45	407	9
46	409	10
47	412	10
48	415	10
49	418	10
50	421	10
51	424	10
52	428	11
53	431	11
54	435	11
55	439	11
56	443	12
57	447	12
58	452	13
59	457	13
60	462	14
61	468	14
62	475	15
63	482	16
64	490	17
65	500	18
66	511	20
67	524	22
68	540	24
69	561	28
70	592	37
71	650 ^b	49

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.26 The 2010 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 4 Form F

Raw Score	Scale Score (SS)	Standard Error (SE)
0	240 ^a	47
1	240 ^a	34
2	246	24
3	261	20
4	272	18
5	281	16
6	288	15
7	295	14
8	300	13
9	306	13
10	310	12
11	315	12
12	319	11
13	323	11
14	327	11
15	330	11
16	333	10
17	337	10
18	340	10
19	343	10
20	346	10
21	349	10
22	351	9
23	354	9
24	357	9
25	359	9
26	362	9
27	364	9
28	367	9
29	369	9
30	372	9
31	374	9
32	377	9
33	379	9
34	382	9
35	384	9
36	387	9
37	389	9
38	391	9
39	394	9

Table 4.26 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
40	396	9
41	399	9
42	402	9
43	404	9
44	407	9
45	409	9
46	412	10
47	415	10
48	418	10
49	421	10
50	424	10
51	427	10
52	430	10
53	434	11
54	437	11
55	441	11
56	445	12
57	449	12
58	454	12
59	459	13
60	464	13
61	470	14
62	476	15
63	484	16
64	492	17
65	502	19
66	514	21
67	529	23
68	547	26
69	571	30
70	606	38
71	650 ^b	50

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.27 The 2010 MSA-Math Subtotal Raw Score to Scale Score Conversion Table: Grade 4 Form A

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	49
AL	1	265	36
AL	2	293	27
AL	3	313	23
AL	4	328	21
AL	5	341	20
AL	6	353	19
AL	7	364	19
AL	8	375	19
AL	9	386	20
AL	10	399	21
AL	11	413	22
AL	12	430	26
AL	13	457	35
AL	14	650 ^b	48
GM	0	240 ^a	52
GM	1	268	39
GM	2	303	30
GM	3	327	26
GM	4	345	23
GM	5	361	22
GM	6	375	21
GM	7	389	21
GM	8	402	21
GM	9	416	21
GM	10	430	22
GM	11	445	24
GM	12	464	27
GM	13	492	35
GM	14	650 ^b	48
SP	0	240 ^a	48
SP	1	277	35
SP	2	305	27
SP	3	323	23
SP	4	337	21
SP	5	350	20
SP	6	361	19
SP	7	372	19
SP	8	382	19
SP	9	393	19
SP	10	405	20
SP	11	417	21
SP	12	432	23
SP	13	450	26

Table 4.27 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	14	478	35
SP	15	650 ^b	48
NC	0	240 ^a	49
NC	1	270	36
NC	2	299	27
NC	3	318	23
NC	4	333	21
NC	5	346	20
NC	6	358	19
NC	7	369	19
NC	8	380	19
NC	9	391	20
NC	10	404	21
NC	11	418	23
NC	12	436	26
NC	13	463	35
NC	14	650 ^b	48
PR	0	240 ^a	48
PR	1	317	35
PR	2	345	27
PR	3	364	24
PR	4	380	22
PR	5	395	22
PR	6	411	23
PR	7	429	25
PR	8	451	28
PR	9	475	28
PR	10	499	28
PR	11	523	29
PR	12	550	31
PR	13	585	38
PR	14	650 ^b	50

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Note. AL=Algebra; GM=Geometry and Measurement; SP=Statistics and Probability; NC=Numbers and Computation; PR=Process

Table 4.28 The 2010 MSA-Math Subtotal Raw Score to Scale Score Conversion Table: Grade 4 Form F

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	49
AL	1	276	37
AL	2	306	28
AL	3	325	23
AL	4	340	21
AL	5	353	20
AL	6	365	19
AL	7	375	19
AL	8	386	19
AL	9	397	19
AL	10	409	20
AL	11	423	22
AL	12	440	26
AL	13	466	35
AL	14	650 ^b	48
GM	0	240 ^a	49
GM	1	286	37
GM	2	317	29
GM	3	339	25
GM	4	357	23
GM	5	372	22
GM	6	386	21
GM	7	398	20
GM	8	411	20
GM	9	423	20
GM	10	436	21
GM	11	451	23
GM	12	469	26
GM	13	496	35
GM	14	650 ^b	48
SP	0	240 ^a	48
SP	1	273	35
SP	2	301	26
SP	3	319	23
SP	4	333	21
SP	5	346	20
SP	6	357	19
SP	7	368	19
SP	8	378	19
SP	9	389	19
SP	10	400	19
SP	11	412	21
SP	12	426	23
SP	13	444	26

Table 4.28 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	14	471	35
SP	15	650 ^b	48
NC	0	240 ^a	49
NC	1	272	36
NC	2	302	27
NC	3	321	23
NC	4	337	21
NC	5	349	20
NC	6	361	19
NC	7	372	19
NC	8	383	19
NC	9	395	20
NC	10	407	21
NC	11	422	23
NC	12	440	26
NC	13	467	35
NC	14	650 ^b	48
PR	0	240 ^a	49
PR	1	304	36
PR	2	334	28
PR	3	355	25
PR	4	373	24
PR	5	390	24
PR	6	408	25
PR	7	427	26
PR	8	449	28
PR	9	474	30
PR	10	502	31
PR	11	531	31
PR	12	563	33
PR	13	602	40
PR	14	650 ^b	51

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Note. AL=Algebra; GM=Geometry and Measurement; SP=Statistics and Probability; NC=Numbers and Computation; PR=Process

Table 4.29 The 2010 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 5 Form A

Raw Score	Scale Score (SS)	Standard Error (SE)
0	240 ^a	44
1	245	31
2	268	22
3	281	19
4	291	16
5	299	15
6	306	14
7	312	13
8	317	12
9	321	12
10	326	11
11	330	11
12	333	11
13	337	10
14	340	10
15	344	10
16	347	10
17	350	9
18	352	9
19	355	9
20	358	9
21	360	9
22	363	9
23	366	9
24	368	9
25	370	9
26	373	9
27	375	8
28	378	8
29	380	8
30	382	8
31	384	8
32	387	8
33	389	8
34	391	8
35	393	8
36	396	8
37	398	8
38	400	8
39	402	8
40	405	8
41	407	8
42	409	8
43	412	8

Table 4.29 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
44	414	8
45	416	9
46	419	9
47	421	9
48	423	9
49	426	9
50	428	9
51	431	9
52	434	9
53	436	9
54	439	9
55	442	9
56	445	9
57	448	10
58	451	10
59	454	10
60	457	10
61	461	11
62	465	11
63	469	11
64	473	12
65	478	12
66	483	13
67	489	14
68	495	14
69	502	16
70	511	17
71	522	20
72	537	23
73	561	32
74	650 ^b	44

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.30 The 2010 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 5 Form F

Raw Score	Scale Score (SS)	Standard Error (SE)
0	240 ^a	44
1	248	31
2	270	22
3	284	19
4	294	16
5	302	15
6	309	14
7	314	13
8	320	12
9	324	12
10	328	11
11	332	11
12	336	11
13	340	10
14	343	10
15	346	10
16	349	10
17	352	9
18	355	9
19	358	9
20	360	9
21	363	9
22	366	9
23	368	9
24	371	9
25	373	9
26	375	8
27	378	8
28	380	8
29	382	8
30	384	8
31	387	8
32	389	8
33	391	8
34	393	8
35	395	8
36	398	8
37	400	8
38	402	8
39	404	8
40	406	8
41	409	8
42	411	8
43	413	8

Table 4.30 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
44	415	8
45	418	8
46	420	8
47	422	9
48	425	9
49	427	9
50	430	9
51	432	9
52	435	9
53	437	9
54	440	9
55	443	9
56	446	10
57	449	10
58	452	10
59	455	10
60	459	11
61	462	11
62	466	11
63	471	12
64	475	12
65	480	13
66	486	13
67	492	14
68	499	15
69	507	16
70	516	18
71	528	20
72	544	24
73	569	33
74	650 ^b	45

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.31 The 2010 MSA-Math Subtotal Raw Score to Scale Score Conversion Table: Grade 5 Form A

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	45
AL	1	278	33
AL	2	303	25
AL	3	320	21
AL	4	334	20
AL	5	346	18
AL	6	356	18
AL	7	367	18
AL	8	377	18
AL	9	387	18
AL	10	398	19
AL	11	410	20
AL	12	423	22
AL	13	441	25
AL	14	467	33
AL	15	650 ^b	45
GM	0	240 ^a	45
GM	1	304	33
GM	2	329	25
GM	3	346	21
GM	4	360	20
GM	5	372	19
GM	6	383	18
GM	7	394	18
GM	8	405	18
GM	9	416	19
GM	10	428	20
GM	11	442	22
GM	12	460	25
GM	13	486	33
GM	14	650 ^b	45
SP	0	240 ^a	45
SP	1	296	33
SP	2	322	25
SP	3	338	21
SP	4	352	20
SP	5	364	19
SP	6	376	19
SP	7	387	19
SP	8	399	20
SP	9	413	21
SP	10	429	23
SP	11	449	27
SP	12	478	35

Table 4.31 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	13	650 ^b	46
NC	0	240 ^a	45
NC	1	301	33
NC	2	327	25
NC	3	345	22
NC	4	359	20
NC	5	371	19
NC	6	383	18
NC	7	393	18
NC	8	403	18
NC	9	414	18
NC	10	424	18
NC	11	436	19
NC	12	449	21
NC	13	466	24
NC	14	491	32
NC	15	650 ^b	45
PR	0	240 ^a	45
PR	1	340	33
PR	2	365	24
PR	3	382	21
PR	4	395	19
PR	5	406	18
PR	6	416	17
PR	7	426	17
PR	8	434	16
PR	9	443	17
PR	10	452	17
PR	11	462	18
PR	12	473	19
PR	13	485	20
PR	14	499	22
PR	15	518	26
PR	16	545	34
PR	17	650 ^b	46

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Note. AL=Algebra; GM=Geometry and Measurement; SP=Statistics and Probability; NC=Numbers and Computation; PR=Process

Table 4.32 The 2010 MSA-Math Subtotal Raw Score to Scale Score Conversion Table: Grade 5 Form F

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	45
AL	1	280	33
AL	2	306	25
AL	3	323	22
AL	4	337	20
AL	5	349	19
AL	6	359	18
AL	7	370	18
AL	8	380	17
AL	9	390	18
AL	10	400	18
AL	11	411	19
AL	12	424	21
AL	13	440	24
AL	14	465	32
AL	15	650 ^b	45
GM	0	240 ^a	45
GM	1	304	33
GM	2	330	25
GM	3	348	22
GM	4	363	20
GM	5	376	20
GM	6	388	19
GM	7	400	19
GM	8	412	19
GM	9	425	20
GM	10	438	21
GM	11	453	22
GM	12	472	26
GM	13	499	33
GM	14	650 ^b	45
SP	0	240 ^a	45
SP	1	296	33
SP	2	321	24
SP	3	338	21
SP	4	351	20
SP	5	364	19
SP	6	375	19
SP	7	387	19
SP	8	399	20
SP	9	412	21
SP	10	428	23
SP	11	448	27
SP	12	478	35

Table 4.32 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	13	650 ^b	46
NC	0	240 ^a	45
NC	1	315	32
NC	2	340	24
NC	3	356	21
NC	4	369	19
NC	5	380	18
NC	6	389	17
NC	7	399	17
NC	8	408	17
NC	9	417	17
NC	10	427	18
NC	11	438	19
NC	12	450	20
NC	13	466	24
NC	14	490	32
NC	15	650 ^b	44
PR	0	240 ^a	45
PR	1	334	33
PR	2	360	25
PR	3	377	21
PR	4	390	19
PR	5	402	18
PR	6	412	17
PR	7	421	17
PR	8	430	17
PR	9	439	17
PR	10	449	18
PR	11	460	19
PR	12	472	20
PR	13	487	22
PR	14	504	24
PR	15	525	27
PR	16	555	35
PR	17	650 ^b	47

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Note. AL=Algebra; GM=Geometry and Measurement; SP=Statistics and Probability; NC=Numbers and Computation; PR=Process

Table 4.33 The 2010 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 6 Form A

Raw Score	Scale Score (SS)	Standard Error (SE)
0	240 ^a	42
1	267	30
2	288	22
3	301	18
4	311	16
5	318	14
6	325	13
7	330	12
8	335	12
9	339	11
10	343	11
11	347	10
12	351	10
13	354	10
14	357	10
15	360	9
16	363	9
17	366	9
18	368	9
19	371	9
20	373	9
21	376	8
22	378	8
23	380	8
24	383	8
25	385	8
26	387	8
27	389	8
28	391	8
29	393	8
30	395	8
31	398	8
32	400	8
33	402	8
34	404	8
35	406	8
36	408	8
37	410	8
38	412	8
39	414	8

Table 4.33 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
40	416	8
41	418	8
42	420	8
43	422	8
44	424	8
45	426	8
46	429	8
47	431	8
48	433	8
49	436	8
50	438	8
51	440	9
52	443	9
53	446	9
54	448	9
55	451	9
56	454	9
57	457	10
58	461	10
59	464	10
60	468	11
61	472	11
62	476	12
63	481	12
64	487	13
65	493	15
66	501	16
67	512	19
68	526	23
69	549	32
70	650 ^b	44

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.34 The 2010 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 6 Form F

Raw Score	Scale Score (SS)	Standard Error (SE)
0	240 ^a	42
1	265	30
2	287	22
3	300	18
4	309	16
5	317	14
6	323	13
7	328	12
8	333	12
9	337	11
10	341	11
11	345	10
12	349	10
13	352	10
14	355	9
15	358	9
16	361	9
17	363	9
18	366	9
19	368	9
20	371	8
21	373	8
22	375	8
23	378	8
24	380	8
25	382	8
26	384	8
27	386	8
28	388	8
29	390	8
30	392	8
31	394	8
32	396	8
33	398	8
34	400	8
35	402	8
36	404	8
37	406	8
38	408	8
39	410	8

Table 4.34 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
40	412	8
41	414	8
42	416	8
43	418	8
44	420	8
45	422	8
46	424	8
47	426	8
48	429	8
49	431	8
50	433	8
51	435	8
52	438	9
53	440	9
54	443	9
55	446	9
56	449	9
57	452	10
58	455	10
59	458	10
60	462	11
61	466	11
62	470	12
63	475	12
64	481	13
65	487	14
66	495	16
67	505	18
68	518	22
69	541	31
70	650 ^b	43

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.35 The 2010 MSA-Math Subtotal Raw Score to Scale Score Conversion Table: Grade 6 Form A

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	43
AL	1	309	31
AL	2	333	23
AL	3	349	20
AL	4	361	18
AL	5	372	18
AL	6	382	17
AL	7	392	17
AL	8	401	17
AL	9	411	17
AL	10	422	18
AL	11	435	20
AL	12	450	23
AL	13	474	31
AL	14	650 ^b	43
GM	0	240 ^a	43
GM	1	326	31
GM	2	350	23
GM	3	365	20
GM	4	378	18
GM	5	389	18
GM	6	399	17
GM	7	408	17
GM	8	418	17
GM	9	428	18
GM	10	439	19
GM	11	452	20
GM	12	468	24
GM	13	492	31
GM	14	650 ^b	43
SP	0	240 ^a	43
SP	1	311	32
SP	2	336	24
SP	3	353	21
SP	4	367	20
SP	5	379	19
SP	6	391	19
SP	7	403	19
SP	8	414	19
SP	9	427	20
SP	10	440	21
SP	11	457	24
SP	12	482	32
SP	13	650 ^b	43

Table 4.35 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
NC	0	240 ^a	43
NC	1	327	32
NC	2	352	24
NC	3	368	20
NC	4	380	18
NC	5	391	17
NC	6	401	17
NC	7	410	16
NC	8	419	17
NC	9	429	17
NC	10	439	18
NC	11	451	20
NC	12	466	23
NC	13	489	31
NC	14	650 ^b	43
PR	0	240 ^a	44
PR	1	322	33
PR	2	349	25
PR	3	367	22
PR	4	381	20
PR	5	394	19
PR	6	405	18
PR	7	416	18
PR	8	426	17
PR	9	436	18
PR	10	447	18
PR	11	459	19
PR	12	473	21
PR	13	491	25
PR	14	521	36
PR	15	650 ^b	48

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Note. AL=Algebra; GM=Geometry and Measurement; SP=Statistics and Probability; NC=Numbers and Computation; PR=Process

Table 4.36 The 2010 MSA-Math Subtotal Raw Score to Scale Score Conversion Table: Grade 6 Form F

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	43
AL	1	306	31
AL	2	330	23
AL	3	345	20
AL	4	358	18
AL	5	368	17
AL	6	378	17
AL	7	388	17
AL	8	398	17
AL	9	408	17
AL	10	418	18
AL	11	431	20
AL	12	446	23
AL	13	470	31
AL	14	650 ^b	43
GM	0	240 ^a	43
GM	1	327	31
GM	2	351	23
GM	3	366	20
GM	4	378	18
GM	5	389	17
GM	6	398	17
GM	7	407	16
GM	8	416	17
GM	9	426	17
GM	10	436	18
GM	11	448	20
GM	12	464	23
GM	13	487	31
GM	14	650 ^b	43
SP	0	240 ^a	43
SP	1	312	32
SP	2	338	24
SP	3	355	21
SP	4	369	20
SP	5	381	19
SP	6	393	18
SP	7	404	18
SP	8	415	18
SP	9	427	19
SP	10	440	21
SP	11	457	24
SP	12	482	32
SP	13	650 ^b	43

Table 4.36 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
NC	0	240 ^a	44
NC	1	313	32
NC	2	338	24
NC	3	355	21
NC	4	368	19
NC	5	380	18
NC	6	390	17
NC	7	400	17
NC	8	409	17
NC	9	419	17
NC	10	430	18
NC	11	442	20
NC	12	457	23
NC	13	481	31
NC	14	650 ^b	43
PR	0	240 ^a	43
PR	1	330	31
PR	2	355	23
PR	3	371	20
PR	4	383	18
PR	5	393	17
PR	6	403	16
PR	7	412	16
PR	8	421	16
PR	9	430	17
PR	10	439	17
PR	11	450	19
PR	12	463	21
PR	13	481	25
PR	14	510	34
PR	15	650 ^b	46

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Note. AL=Algebra; GM=Geometry and Measurement; SP=Statistics and Probability; NC=Numbers and Computation; PR=Process

Table 4.37 The 2010 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 7 Form A

Raw Score	Scale Score (SS)	Standard Error (SE)
0	240 ^a	40
1	278	29
2	299	21
3	311	17
4	321	15
5	328	14
6	334	13
7	340	12
8	345	11
9	349	11
10	353	10
11	357	10
12	360	10
13	363	10
14	367	9
15	370	9
16	372	9
17	375	9
18	378	9
19	380	8
20	383	8
21	385	8
22	388	8
23	390	8
24	392	8
25	394	8
26	397	8
27	399	8
28	401	8
29	403	8
30	405	8
31	407	8
32	409	8
33	411	8
34	413	8
35	415	8
36	417	8
37	419	8
38	421	8
39	423	8

Table 4.37 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
40	426	8
41	428	8
42	430	8
43	432	8
44	434	8
45	436	8
46	438	8
47	440	8
48	443	8
49	445	8
50	447	8
51	450	8
52	452	8
53	455	9
54	458	9
55	460	9
56	463	9
57	466	9
58	470	10
59	473	10
60	477	10
61	480	11
62	484	11
63	489	11
64	494	12
65	499	13
66	505	14
67	513	15
68	521	16
69	531	18
70	545	22
71	568	30
72	650 ^b	41

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.38 The 2010 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 7 Form F

Raw Score	Scale Score (SS)	Standard Error (SE)
0	240 ^a	40
1	279	29
2	299	21
3	312	17
4	321	15
5	329	14
6	335	13
7	340	12
8	345	11
9	349	11
10	353	10
11	357	10
12	361	10
13	364	9
14	367	9
15	370	9
16	373	9
17	375	9
18	378	9
19	381	8
20	383	8
21	385	8
22	388	8
23	390	8
24	392	8
25	394	8
26	397	8
27	399	8
28	401	8
29	403	8
30	405	8
31	407	8
32	409	8
33	411	8
34	413	8
35	415	8
36	417	8
37	419	8
38	421	8
39	423	8

Table 4.38 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
40	425	8
41	427	8
42	429	8
43	431	8
44	433	8
45	435	8
46	438	8
47	440	8
48	442	8
49	444	8
50	446	8
51	449	8
52	451	8
53	454	8
54	456	9
55	459	9
56	462	9
57	465	9
58	468	9
59	471	10
60	474	10
61	478	10
62	482	11
63	486	11
64	490	12
65	495	12
66	501	13
67	508	14
68	516	16
69	525	18
70	538	21
71	560	29
72	650 ^b	41

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.39 The 2010 MSA-Math Subtotal Raw Score to Scale Score Conversion Table: Grade 7 Form A

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	41
AL	1	322	30
AL	2	346	23
AL	3	362	20
AL	4	375	18
AL	5	386	17
AL	6	396	17
AL	7	407	17
AL	8	417	17
AL	9	428	18
AL	10	441	19
AL	11	455	21
AL	12	474	25
AL	13	501	32
AL	14	650 ^b	43
GM	0	240 ^a	42
GM	1	344	31
GM	2	368	23
GM	3	385	20
GM	4	398	18
GM	5	409	17
GM	6	420	17
GM	7	430	17
GM	8	440	17
GM	9	451	18
GM	10	463	19
GM	11	478	22
GM	12	501	30
GM	13	650 ^b	41
SP	0	240 ^a	41
SP	1	315	30
SP	2	338	22
SP	3	353	19
SP	4	365	18
SP	5	376	17
SP	6	385	16
SP	7	395	16
SP	8	404	16
SP	9	414	17
SP	10	425	18
SP	11	437	20
SP	12	452	23
SP	13	476	30
SP	14	650 ^b	41

Table 4.39 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
NC	0	240 ^a	43
NC	1	327	33
NC	2	355	24
NC	3	372	21
NC	4	386	18
NC	5	397	17
NC	6	407	17
NC	7	417	16
NC	8	426	16
NC	9	436	17
NC	10	447	18
NC	11	459	19
NC	12	474	22
NC	13	497	30
NC	14	650 ^b	41
PR	0	240 ^a	42
PR	1	342	31
PR	2	367	24
PR	3	384	20
PR	4	398	19
PR	5	409	17
PR	6	419	16
PR	7	428	16
PR	8	438	16
PR	9	447	16
PR	10	457	17
PR	11	467	18
PR	12	479	19
PR	13	492	20
PR	14	507	22
PR	15	526	25
PR	16	553	32
PR	17	650 ^b	42

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Note. AL=Algebra; GM=Geometry and Measurement; SP=Statistics and Probability; NC=Numbers and Computation; PR=Process

Table 4.40 The 2010 MSA-Math Subtotal Raw Score to Scale Score Conversion Table: Grade 7 Form F

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	41
AL	1	329	30
AL	2	352	22
AL	3	368	20
AL	4	380	18
AL	5	391	17
AL	6	401	17
AL	7	411	17
AL	8	422	17
AL	9	432	18
AL	10	444	19
AL	11	458	21
AL	12	475	24
AL	13	501	32
AL	14	650 ^b	42
GM	0	240 ^a	41
GM	1	339	30
GM	2	363	23
GM	3	379	20
GM	4	391	18
GM	5	402	17
GM	6	413	17
GM	7	423	17
GM	8	433	17
GM	9	443	18
GM	10	455	19
GM	11	470	22
GM	12	493	30
GM	13	650 ^b	41
SP	0	240 ^a	41
SP	1	314	30
SP	2	337	23
SP	3	353	20
SP	4	365	18
SP	5	376	17
SP	6	387	17
SP	7	397	17
SP	8	407	17
SP	9	417	18
SP	10	429	18
SP	11	442	20
SP	12	458	23
SP	13	482	30
SP	14	650 ^b	41

Table 4.40 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
NC	0	240 ^a	44
NC	1	328	33
NC	2	356	24
NC	3	374	21
NC	4	387	19
NC	5	398	17
NC	6	409	17
NC	7	419	17
NC	8	428	17
NC	9	439	17
NC	10	450	18
NC	11	463	20
NC	12	479	23
NC	13	503	30
NC	14	650 ^b	41
PR	0	240 ^a	41
PR	1	341	30
PR	2	365	23
PR	3	381	20
PR	4	394	18
PR	5	405	17
PR	6	415	16
PR	7	425	16
PR	8	433	16
PR	9	442	16
PR	10	451	16
PR	11	460	16
PR	12	470	17
PR	13	482	19
PR	14	495	21
PR	15	512	24
PR	16	538	31
PR	17	650 ^b	42

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Note. AL=Algebra; GM=Geometry and Measurement; SP=Statistics and Probability; NC=Numbers and Computation; PR=Process

Table 4.41 The 2010 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 8 Form A

Raw Score	Scale Score (SS)	Standard Error (SE)
0	240 ^a	40
1	289	29
2	309	21
3	322	17
4	331	15
5	338	14
6	344	13
7	350	12
8	354	11
9	359	11
10	363	10
11	366	10
12	370	10
13	373	9
14	376	9
15	379	9
16	382	9
17	384	9
18	387	8
19	389	8
20	392	8
21	394	8
22	396	8
23	399	8
24	401	8
25	403	8
26	405	8
27	407	8
28	409	8
29	411	7
30	413	7
31	415	7
32	417	7
33	419	7
34	421	7
35	422	7
36	424	7
37	426	7
38	428	7
39	430	7

Table 4.41 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
40	432	7
41	433	7
42	435	7
43	437	7
44	439	7
45	441	7
46	443	7
47	445	7
48	447	8
49	449	8
50	451	8
51	453	8
52	455	8
53	457	8
54	459	8
55	462	8
56	464	8
57	467	9
58	469	9
59	472	9
60	475	9
61	478	9
62	481	10
63	485	10
64	489	11
65	493	11
66	498	12
67	503	13
68	509	14
69	516	15
70	525	17
71	538	21
72	559	29
73	650 ^b	41

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.42 The 2010 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 8 Form F

Raw Score	Scale Score (SS)	Standard Error (SE)
0	240 ^a	40
1	287	29
2	308	21
3	320	17
4	329	15
5	336	14
6	343	13
7	348	12
8	353	11
9	357	11
10	361	10
11	364	10
12	368	10
13	371	9
14	374	9
15	377	9
16	380	9
17	383	9
18	385	9
19	388	8
20	390	8
21	393	8
22	395	8
23	397	8
24	399	8
25	402	8
26	404	8
27	406	8
28	408	8
29	410	8
30	412	8
31	414	8
32	416	7
33	418	7
34	420	7
35	422	7
36	424	7
37	426	7
38	428	7
39	430	7

Table 4.42 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
40	431	7
41	433	7
42	435	7
43	437	7
44	439	7
45	441	7
46	443	7
47	445	7
48	447	8
49	449	8
50	451	8
51	453	8
52	455	8
53	457	8
54	459	8
55	462	8
56	464	8
57	467	9
58	470	9
59	473	9
60	476	9
61	479	10
62	482	10
63	486	11
64	490	11
65	495	12
66	500	12
67	506	13
68	512	15
69	521	16
70	532	19
71	547	23
72	572	32
73	650 ^b	43

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.43 The 2010 MSA-Math Subtotal Raw Score to Scale Score Conversion Table: Grade 8 Form A

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	42
AL	1	337	30
AL	2	361	23
AL	3	377	20
AL	4	390	18
AL	5	401	17
AL	6	411	17
AL	7	421	16
AL	8	430	16
AL	9	439	16
AL	10	449	17
AL	11	459	18
AL	12	471	19
AL	13	486	22
AL	14	509	30
AL	15	650 ^b	41
GM	0	240 ^a	42
GM	1	344	31
GM	2	368	23
GM	3	385	20
GM	4	398	19
GM	5	410	18
GM	6	421	18
GM	7	432	18
GM	8	443	18
GM	9	455	19
GM	10	468	20
GM	11	484	23
GM	12	508	30
GM	13	650 ^b	42
SP	0	240 ^a	42
SP	1	327	31
SP	2	352	24
SP	3	371	22
SP	4	386	20
SP	5	400	19
SP	6	412	19
SP	7	424	18
SP	8	436	18
SP	9	448	18
SP	10	460	19
SP	11	473	20
SP	12	490	23
SP	13	514	30
SP	14	650 ^b	41

Table 4.43 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
NC	0	240 ^a	41
NC	1	336	30
NC	2	360	23
NC	3	375	20
NC	4	388	18
NC	5	399	18
NC	6	410	17
NC	7	421	18
NC	8	432	18
NC	9	445	20
NC	10	461	23
NC	11	484	30
NC	12	650 ^b	41
PR	0	240 ^a	41
PR	1	350	30
PR	2	372	22
PR	3	386	18
PR	4	396	16
PR	5	404	15
PR	6	412	14
PR	7	418	13
PR	8	424	13
PR	9	430	13
PR	10	436	13
PR	11	442	13
PR	12	448	13
PR	13	454	14
PR	14	462	15
PR	15	470	17
PR	16	481	19
PR	17	496	23
PR	18	521	31
PR	19	650 ^b	43

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Note. AL=Algebra; GM=Geometry and Measurement; SP=Statistics and Probability; NC=Numbers and Computation; PR=Process

Table 4.44 The 2010 MSA-Math Subtotal Raw Score to Scale Score Conversion Table: Grade 8 Form F

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	41
AL	1	335	30
AL	2	359	23
AL	3	374	20
AL	4	387	18
AL	5	398	17
AL	6	408	17
AL	7	418	16
AL	8	427	16
AL	9	437	17
AL	10	447	17
AL	11	458	18
AL	12	470	20
AL	13	486	23
AL	14	509	30
AL	15	650 ^b	41
GM	0	240 ^a	42
GM	1	348	30
GM	2	372	23
GM	3	388	20
GM	4	401	19
GM	5	413	18
GM	6	424	18
GM	7	435	18
GM	8	446	18
GM	9	458	19
GM	10	471	20
GM	11	487	23
GM	12	511	30
GM	13	650 ^b	42
SP	0	240 ^a	41
SP	1	317	30
SP	2	341	23
SP	3	356	20
SP	4	369	18
SP	5	381	18
SP	6	392	17
SP	7	402	17
SP	8	413	18
SP	9	424	18
SP	10	436	19
SP	11	450	21
SP	12	467	23
SP	13	492	31
SP	14	650 ^b	42

Table 4.44 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
NC	0	240 ^a	42
NC	1	340	30
NC	2	364	23
NC	3	379	20
NC	4	392	19
NC	5	404	18
NC	6	415	18
NC	7	426	18
NC	8	438	19
NC	9	451	20
NC	10	468	23
NC	11	493	31
NC	12	650 ^b	42
PR	0	240 ^a	41
PR	1	354	30
PR	2	377	22
PR	3	392	19
PR	4	403	17
PR	5	412	15
PR	6	420	14
PR	7	426	13
PR	8	432	13
PR	9	438	13
PR	10	444	13
PR	11	449	13
PR	12	456	14
PR	13	463	15
PR	14	471	16
PR	15	481	18
PR	16	495	21
PR	17	515	27
PR	18	549	37
PR	19	650 ^b	47

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Note. AL=Algebra; GM=Geometry and Measurement; SP=Statistics and Probability; NC=Numbers and Computation; PR=Process