

4. THE 2011 MSA-MATH STATISTICAL SUMMARY

This chapter summarizes statistical results of the 2011 MSA-Math. It includes descriptive statistics of the 2011 math test based on raw scores and scale scores, accuracy and consistency of the 2011 math test, rater agreement rates, correlation coefficients among reporting standards, and total and substrand RS/SS conversion tables.

Table 4.1. The 2011 MSA-Math Classical Descriptive Statistics: Grades 3 through 8

Grade	Form	Total No. of Items	Total Score Point	N	Mean	SD	Reliability	SEM
3	A	65	72	31,082	53.57	11.55	0.93	3.05
	F	65	72	30,211	53.98	11.16	0.93	3.00
4	A	64	71	30,037	49.48	12.63	0.94	3.22
	F	64	71	29,027	50.94	12.28	0.93	3.17
5	A	65	74	30,354	48.33	13.90	0.93	3.55
	F	65	74	29,293	50.10	13.23	0.93	3.57
6	A	62	70	29,778	44.00	14.42	0.94	3.51
	F	62	70	28,531	45.21	14.35	0.94	3.53
7	A	62	72	30,180	38.50	15.50	0.95	3.43
	F	62	72	29,100	39.55	15.44	0.95	3.50
8	A	62	73	30,089	36.85	16.87	0.96	3.58
	F	62	73	29,114	37.52	16.44	0.95	3.72

Note. Analysis was conducted with a statewide population.

Table 4.2. The 2011 MSA-Math Scale Score Descriptive Statistics: Grades 3 through 8

Grade	Form	N	M	SD	P10	Q1	Mdn	Q3	P90	IQR	SE at cut-points	
											Prof.	Adv.
3	A	31,082	423.7	42.0	370	395	424	450	476	55	9	12
	F	30,211	427.2	43.1	372	399	426	459	481	60	9	12
	Overall	61,293	425.4	42.6	372	396	426	453	476	57	N/A	N/A
4	A	30,037	430.1	42.3	375	402	431	462	485	60	9	10
	F	29,027	434.1	42.0	380	405	436	464	489	59	9	10
	Overall	59,064	432.1	42.2	378	405	433	462	485	57	N/A	N/A
5	A	30,354	425.7	37.1	380	399	425	452	476	53	8	10
	F	29,293	426.5	35.9	383	402	426	451	471	49	8	10
	Overall	59,647	426.1	36.5	381	401	425	451	476	50	N/A	N/A
6	A	29,778	429.7	38.5	383	402	427	455	482	53	8	9
	F	28,531	432.0	39.2	385	404	428	455	485	51	8	9
	Overall	58,309	430.8	38.9	383	402	428	455	482	53	N/A	N/A
7	A	30,180	422.5	39.5	372	394	421	451	475	57	8	9
	F	29,100	425.3	38.0	376	397	424	454	475	57	8	8
	Overall	59,280	423.9	38.8	375	396	422	451	475	55	N/A	N/A
8	A	30,089	426.8	40.8	377	397	424	455	482	58	8	8
	F	29,114	429.6	38.6	382	401	425	455	481	54	8	7
	Overall	59,203	428.2	39.8	380	399	424	455	482	56	N/A	N/A

Note. Analysis was conducted with a statewide population.

Table 4.3. The 2011 MSA-Math Strand (Cluster) Correlations: Grade 3

Form	N	Mean	SD	1	2	3	4	5
Form A								
1. Algebra	31,082	20.12	5.28	1.00				
2. Geometry and Measurement	31,082	24.33	4.88	0.67	1.00			
3. Statistics and Probability	31,082	21.38	5.30	0.74	0.67	1.00		
4. Numbers and Computation	31,082	24.95	6.35	0.76	0.70	0.76	1.00	
5. Process	31,082	16.36	4.86	0.62	0.62	0.63	0.66	1.00
Form F								
1. Algebra	30,211	20.87	4.93	1.00				
2. Geometry and Measurement	30,211	24.44	4.74	0.67	1.00			
3. Statistics and Probability	30,211	22.11	5.08	0.74	0.67	1.00		
4. Numbers and Computation	30,211	25.61	5.97	0.75	0.69	0.76	1.00	
5. Process	30,211	14.94	5.03	0.63	0.63	0.65	0.67	1.00

Note. Analysis was conducted with a statewide population.

Table 4.4. The 2011 MSA-Math Strand (Cluster) Correlations: Grade 4

Form	N	Mean	SD	1	2	3	4	5
Form A								
1. Algebra	30,037	21.74	5.27	1.00				
2. Geometry and Measurement	30,037	18.02	5.95	0.69	1.00			
3. Statistics and Probability	30,037	23.31	6.18	0.72	0.68	1.00		
4. Numbers and Computation	30,037	21.20	5.75	0.74	0.70	0.72	1.00	
5. Process	30,037	14.68	5.75	0.70	0.69	0.73	0.68	1.00
Form F								
1. Algebra	29,027	21.88	4.94	1.00				
2. Geometry and Measurement	29,027	18.06	6.26	0.66	1.00			
3. Statistics and Probability	29,027	23.39	6.25	0.71	0.69	1.00		
4. Numbers and Computation	29,027	22.14	5.46	0.71	0.69	0.73	1.00	
5. Process	29,027	16.41	5.35	0.67	0.67	0.72	0.68	1.00

Note. Analysis was conducted with a statewide population.

Table 4.5. The 2011 MSA-Math Strand (Cluster) Correlations: Grade 5

Form	N	Mean	SD	1	2	3	4	5
Form A								
1. Algebra	30,354	22.59	6.15	1.00				
2. Geometry and Measurement	30,354	19.06	5.81	0.71	1.00			
3. Statistics and Probability	30,354	20.02	4.87	0.70	0.67	1.00		
4. Numbers and Computation	30,354	19.23	7.07	0.73	0.72	0.68	1.00	
5. Process	30,354	15.75	7.60	0.74	0.73	0.69	0.79	1.00
Form F								
1. Algebra	29,293	22.22	5.94	1.00				
2. Geometry and Measurement	29,293	19.51	5.25	0.68	1.00			
3. Statistics and Probability	29,293	20.48	4.78	0.67	0.66	1.00		
4. Numbers and Computation	29,293	19.60	6.47	0.70	0.69	0.66	1.00	
5. Process	29,293	18.39	7.87	0.75	0.71	0.67	0.74	1.00

Note. Analysis was conducted with a statewide population.

Table 4.6. The 2011 MSA-Math Strand (Cluster) Correlations: Grade 6

Form	N	Mean	SD	1	2	3	4	5
Form A								
1. Algebra	29,778	18.92	6.48	1.00				
2. Geometry and Measurement	29,778	16.92	6.73	0.75	1.00			
3. Statistics and Probability	29,778	17.92	5.40	0.74	0.71	1.00		
4. Numbers and Computation	29,778	17.00	6.45	0.75	0.72	0.72	1.00	
5. Process	29,778	17.24	7.24	0.78	0.77	0.75	0.75	1.00
Form F								
1. Algebra	28,531	19.85	6.37	1.00				
2. Geometry and Measurement	28,531	18.67	6.69	0.75	1.00			
3. Statistics and Probability	28,531	18.44	5.48	0.74	0.71	1.00		
4. Numbers and Computation	28,531	17.67	6.33	0.72	0.70	0.70	1.00	
5. Process	28,531	15.78	7.42	0.77	0.77	0.73	0.75	1.00

Note. Analysis was conducted with a statewide population.

Table 4.7. The 2011 MSA-Math Strand (Cluster) Correlations: Grade 7

Form	N	Mean	SD	1	2	3	4	5
Form A								
1. Algebra	30,180	17.17	7.02	1.00				
2. Geometry and Measurement	30,180	15.03	6.98	0.76	1.00			
3. Statistics and Probability	30,180	16.04	7.25	0.79	0.78	1.00		
4. Numbers and Computation	30,180	15.82	6.85	0.77	0.74	0.74	1.00	
5. Process	30,180	12.95	6.30	0.77	0.79	0.79	0.70	1.00
Form F								
1. Algebra	29,100	16.65	6.67	1.00				
2. Geometry and Measurement	29,100	14.86	6.61	0.74	1.00			
3. Statistics and Probability	29,100	16.92	7.21	0.78	0.75	1.00		
4. Numbers and Computation	29,100	15.48	7.00	0.77	0.74	0.76	1.00	
5. Process	29,100	15.19	6.83	0.76	0.79	0.79	0.73	1.00

Note. Analysis was conducted with a statewide population.

Table 4.8. The 2011 MSA-Math Strand (Cluster) Correlations: Grade 8

Form	N	Mean	SD	1	2	3	4	5
Form A								
1. Algebra	30,089	15.13	7.73	1.00				
2. Geometry and Measurement	30,089	13.02	7.29	0.78	1.00			
3. Statistics and Probability	30,089	15.07	6.95	0.78	0.78	1.00		
4. Numbers and Computation	30,089	14.71	5.94	0.77	0.75	0.76	1.00	
5. Process	30,089	15.77	8.98	0.84	0.83	0.84	0.77	1.00
Form F								
1. Algebra	29,114	16.41	7.86	1.00				
2. Geometry and Measurement	29,114	14.07	6.94	0.76	1.00			
3. Statistics and Probability	29,114	15.69	6.12	0.74	0.73	1.00		
4. Numbers and Computation	29,114	13.57	5.81	0.76	0.73	0.72	1.00	
5. Process	29,114	15.31	9.58	0.83	0.83	0.79	0.76	1.00

Note. Analysis was conducted with a statewide population.

Table 4.9. The 2011 MSA-m 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
A	BP : A	0.92	0.04	0.04	0.89
F	B : PA	0.95	0.02	0.03	0.93
F	BP : A	0.92	0.04	0.04	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 2011 MSA-m Decision Accuracy and Consistency Indices: Grade 4

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	B : PA	0.97	0.01	0.02	0.95
A	BP : A	0.92	0.04	0.04	0.89
F	B : PA	0.97	0.01	0.02	0.96
F	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 2011 MSA-m 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
A	BP : A	0.94	0.04	0.03	0.91
F	B : PA	0.94	0.03	0.03	0.92
F	BP : A	0.94	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 2011 MSA-m Decision Accuracy and Consistency Indices: Grade 6

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	B : PA	0.93	0.03	0.04	0.91
A	BP : A	0.94	0.03	0.03	0.91
F	B : PA	0.92	0.04	0.04	0.89
F	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 4.13. The 2011 MSA-m 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	0.92
A	BP : A	0.95	0.03	0.02	0.93
F	B : PA	0.94	0.03	0.03	0.92
F	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 4.14. The 2011 MSA-m Decision Accuracy and Consistency Indices: Grade 8

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	B : PA	0.93	0.03	0.03	0.91
A	BP : A	0.94	0.03	0.03	0.92
F	B : PA	0.93	0.03	0.03	0.90
F	BP : A	0.94	0.03	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 4.15. The 2011 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	30,547	98.90	339	1.10			30,886	100.00
	0-2	3595529	27,456	89.10	3,344	10.85	14	0.05	30,814	100.00
	0-1	3509941	31,082	100.00					31,082	100.00
	0-2	3595501	31,082	100.00					31,082	100.00
	0-1	3509957	30,519	99.13	269	0.87			30,788	100.00
	0-2	3564081	26,172	85.40	4,427	14.45	47	0.15	30,646	100.00
	0-1	3510067	30,548	99.39	187	0.61			30,735	100.00
	0-2	3564083	27,160	88.52	3,515	11.46	9	0.03	30,684	100.00
	0-1	3509940	30,805	99.62	118	0.38			30,923	100.00
	0-2	584928	26,859	86.99	3,891	12.60	125	0.40	30,875	100.00
	0-1	3509978	29,710	99.65	104	0.35			29,814	100.00
	0-2	3985610	29,128	95.07	1,512	4.93			30,640	100.00
	0-1	3547998	30,056	97.30	834	2.70			30,890	100.00
	0-2	3564094	25,682	83.37	5,104	16.57	20	0.06	30,806	100.00
F	0-1	100000011186	29,782	99.09	275	0.91			30,057	100.00
	0-2	3595529	26,616	88.76	3,358	11.20	12	0.04	29,986	100.00
	0-1	3509918	30,211	100.00					30,211	100.00
	0-2	3564076	30,211	100.00					30,211	100.00
	0-1	3509922	29,663	99.24	228	0.76			29,891	100.00
	0-2	3564085	27,193	91.49	2,500	8.41	30	0.10	29,723	100.00
	0-1	3510073	29,254	98.98	300	1.02			29,554	100.00
	0-2	3595503	26,844	90.34	2,864	9.64	5	0.02	29,713	100.00
	0-1	3488087	29,987	99.74	78	0.26			30,065	100.00
	0-2	3564099	27,787	92.62	2,196	7.32	17	0.06	30,000	100.00
	0-1	3509949	29,615	99.58	125	0.42			29,740	100.00
	0-2	3985609	26,822	90.96	2,662	9.03	3	0.01	29,487	100.00
	0-1	3547998	28,954	97.06	877	2.94			29,831	100.00
	0-2	3564094	25,929	86.38	3,996	13.31	94	0.31	30,019	100.00

Note. Analysis was conducted with a statewide population.

Table 4.16. The 2011 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	29,284	97.95	612	2.05			29,896	100.00
	0-2	3564186	26,230	87.79	3,635	12.17	14	0.05	29,879	100.00
	0-1	3515451	30,037	100.00					30,037	100.00
	0-2	3564161	30,037	100.00					30,037	100.00
	0-1	3515807	29,405	98.81	355	1.19			29,760	100.00
	0-2	3564165	24,408	82.03	5,202	17.48	145	0.49	29,755	100.00
	0-1	3515862	28,200	99.72	78	0.28			28,278	100.00
	0-2	3564170	22,828	77.26	6,564	22.22	154	0.52	29,546	100.00
	0-1	3515642	29,485	99.15	252	0.85			29,737	100.00
	0-2	3985619	25,255	85.10	4,390	14.79	32	0.11	29,677	100.00
	0-1	3488145	29,441	99.20	238	0.80			29,679	100.00
	0-2	3564189	24,426	82.71	5,004	16.94	101	0.34	29,531	100.00
	0-1	3515638	29,465	98.83	348	1.17			29,813	100.00
	0-2	3564169	25,787	86.93	3,861	13.02	17	0.06	29,665	100.00
F	0-1	100000069368	28,010	96.94	885	3.06			28,895	100.00
	0-2	3985632	27,176	94.02	1,715	5.93	14	0.05	28,905	100.00
	0-1	100000044142	29,027	100.00					29,027	100.00
	0-2	3595499	29,027	100.00					29,027	100.00
	0-1	3515648	28,434	98.87	324	1.13			28,758	100.00
	0-2	3564163	25,085	87.30	3,579	12.46	69	0.24	28,733	100.00
	0-1	3515646	28,482	99.03	280	0.97			28,762	100.00
	0-2	3595537	23,453	81.79	5,072	17.69	151	0.53	28,676	100.00
	0-1	100000025172	28,620	99.34	191	0.66			28,811	100.00
	0-2	3985613	25,499	88.52	3,273	11.36	33	0.11	28,805	100.00
	0-1	3488145	28,774	99.57	125	0.43			28,899	100.00
	0-2	3564189	24,044	83.22	4,826	16.70	22	0.08	28,892	100.00
	0-1	100000007087	28,549	98.93	309	1.07			28,858	100.00
	0-2	3595563	24,878	86.65	3,819	13.30	13	0.05	28,710	100.00

Note. Analysis was conducted with a statewide population.

Table 4.17. The 2011 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	100000065205	29,748	98.44	472	1.56			30,220	100.00	
	0-2	3985586	27,738	91.79	2,472	8.18	9	0.03	30,219	100.00	
	0-1	100000028212	30,354	100.00					30,354	100.00	
	0-2	3595468	30,354	100.00					30,354	100.00	
	0-1	100000009927	29,918	99.35	195	0.65			30,113	100.00	
	0-2	3985561	27,095	90.16	2,956	9.84	1	0.00	30,052	100.00	
	0-1	100000028202	30,354	100.00					30,354	100.00	
	0-3	3985560	30,354	100.00					30,354	100.00	
	0-1	3488347	27,960	94.14	1,741	5.86			29,701	100.00	
	0-2	3564046	27,227	91.83	2,348	7.92	73	0.25	29,648	100.00	
	0-1	3548459	29,800	98.94	319	1.06			30,119	100.00	
	0-2	3564051	24,861	82.69	5,082	16.90	122	0.41	30,065	100.00	
	0-1	100000160221	29,269	98.14	554	1.86			29,823	100.00	
	0-2	3985559	27,314	92.11	2,179	7.35	161	0.54	29,654	100.00	
	0-1	3488530	29,536	99.48	154	0.52			29,690	100.00	
	0-2	3564054	27,777	93.70	1,839	6.20	30	0.10	29,646	100.00	
	F	0-1	100000065205	28,704	98.38	472	1.62			29,176	100.00
		0-2	3985586	26,750	91.69	2,416	8.28	9	0.03	29,175	100.00
0-1		3511336	29,293	100.00					29,293	100.00	
0-2		3563987	29,293	100.00					29,293	100.00	
0-1		3512615	27,588	97.42	731	2.58			28,319	100.00	
0-2		3595439	25,482	90.47	2,667	9.47	17	0.06	28,166	100.00	
0-1		100000028200	29,293	100.00					29,293	100.00	
0-3		3595464	29,293	100.00					29,293	100.00	
0-1		100000022530	28,406	98.99	290	1.01			28,696	100.00	
0-2		3985592	22,653	78.95	6,027	21.01	13	0.05	28,693	100.00	
0-1		100000028238	27,913	97.22	797	2.78			28,710	100.00	
0-2		3985553	24,671	86.34	3,649	12.77	254	0.89	28,574	100.00	
0-1		100000022532	26,928	94.06	1,701	5.94			28,629	100.00	
0-2		3595471	26,104	91.02	2,514	8.77	60	0.21	28,678	100.00	
0-1		3488530	27,379	96.21	1,079	3.79			28,458	100.00	
0-2		3564054	26,108	91.77	2,288	8.04	53	0.19	28,449	100.00	

Note. Analysis was conducted with a statewide population.

Note. Bold-faced item indicates an ECR item.

Table 4.18. The 2011 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	3517004	29,402	99.44	166	0.56			29,568	100.00
	0-3	3564010	22,416	76.31	6,622	22.54	336	1.14	29,374	100.00
	0-1	100000094477	29,778	100.00					29,778	100.00
	0-2	3985566	29,778	100.00					29,778	100.00
	0-1	100000028367	27,482	98.51	416	1.49			27,898	100.00
	0-2	3595489	24,251	89.77	2,704	10.01	59	0.22	27,014	100.00
	0-1	3516333	29,207	99.55	133	0.45			29,340	100.00
	0-2	3564008	26,937	91.95	2,322	7.93	36	0.12	29,295	100.00
	0-1	100000022501	29,778	100.00					29,778	100.00
	0-2	3595485	29,778	100.00					29,778	100.00
	0-1	100000064587	28,617	97.92	607	2.08			29,224	100.00
	0-2	3985580	26,188	90.21	2,799	9.64	42	0.14	29,029	100.00
	0-1	3488404	28,961	99.05	278	0.95			29,239	100.00
	0-2	3985578	26,230	89.51	3,030	10.34	44	0.15	29,304	100.00
	F	0-1	3517004	28,202	99.43	162	0.57			28,364
0-3		3564010	21,542	76.47	6,304	22.38	325	1.15	28,171	100.00
0-1		100000094481	28,531	100.00					28,531	100.00
0-2		3985581	28,531	100.00					28,531	100.00
0-1		100000028363	27,601	99.68	89	0.32			27,690	100.00
0-2		3595491	24,007	87.65	3,342	12.20	42	0.15	27,391	100.00
0-1		100000022498	27,902	99.39	172	0.61			28,074	100.00
0-2		3595494	24,908	88.93	3,044	10.87	55	0.20	28,007	100.00
0-1		100000022504	28,531	100.00					28,531	100.00
0-2		3595488	28,531	100.00					28,531	100.00
0-1		100000064587	26,939	97.20	777	2.80			27,716	100.00
0-2		3985580	23,039	83.60	4,483	16.27	37	0.13	27,559	100.00
0-1		100000065098	26,675	99.27	197	0.73			26,872	100.00
0-2		3985582	24,475	90.57	2,273	8.41	275	1.02	27,023	100.00

Note. Analysis was conducted with a statewide population.

Note. Bold-faced item indicates an ECR item.

Table 4.19. The 2011 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	100000064017	29,272	99.68	94	0.32			29,366	100.00
	0-2	3985664	24,802	85.10	4,308	14.78	33	0.11	29,143	100.00
	0-1	3491692	30,180	100.00					30,180	100.00
	0-3	3564159	30,180	100.00					30,180	100.00
	0-1	3517818	28,769	99.50	145	0.50			28,914	100.00
	0-2	3564023	24,347	86.73	3,667	13.06	58	0.21	28,072	100.00
	0-1	3517706	26,730	99.76	65	0.24			26,795	100.00
	0-2	3564025	22,339	85.66	3,737	14.33	2	0.01	26,078	100.00
	0-1	100000043347	30,180	100.00					30,180	100.00
	0-3	3595366	30,180	100.00					30,180	100.00
	0-1	100000064068	28,257	97.92	601	2.08			28,858	100.00
	0-3	3985667	24,086	84.70	4,314	15.17	38	0.13	28,438	100.00
	0-1	100000063909	29,325	99.52	140	0.48			29,465	100.00
	0-2	3985662	27,322	93.92	1,755	6.03	14	0.05	29,091	100.00
F	0-1	100000064058	28,459	99.62	109	0.38			28,568	100.00
	0-2	3985652	26,765	94.22	1,639	5.77	2	0.01	28,406	100.00
	0-1	100000026808	29,100	100.00					29,100	100.00
	0-3	3595374	29,100	100.00					29,100	100.00
	0-1	3517818	27,869	99.49	144	0.51			28,013	100.00
	0-2	3564023	24,038	86.75	3,423	12.35	248	0.90	27,709	100.00
	0-1	3517706	26,243	99.73	72	0.27			26,315	100.00
	0-2	3564025	21,930	85.08	3,843	14.91	2	0.01	25,775	100.00
	0-1	100000064101	29,100	100.00					29,100	100.00
	0-3	3985665	29,100	100.00					29,100	100.00
	0-1	3517648	27,328	97.91	582	2.09			27,910	100.00
	0-3	3564027	23,006	83.36	4,556	16.51	35	0.13	27,597	100.00
	0-1	100000012815	27,838	96.95	876	3.05			28,714	100.00
	0-2	3595391	24,539	85.53	3,914	13.64	239	0.83	28,692	100.00

Note. Analysis was conducted with a statewide population.

Note. Bold-faced item indicates an ECR item.

Table 4.20. The 2011 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	3514013	29,188	99.35	191	0.65			29,379	100.00	
	0-2	3564107	25,550	87.50	3,585	12.28	64	0.22	29,199	100.00	
	0-1	100000064847	30,089	100.00					30,089	100.00	
	0-3	3985701	30,089	100.00					30,089	100.00	
	0-1	100000064945	27,747	99.03	272	0.97			28,019	100.00	
	0-2	3985679	23,833	85.28	3,745	13.40	369	1.32	27,947	100.00	
	0-1	3487636	28,312	98.32	483	1.68			28,795	100.00	
	0-2	3595428	24,744	86.73	3,773	13.23	12	0.04	28,529	100.00	
	0-1	100000064837	30,089	100.00					30,089	100.00	
	0-3	3985702	30,089	100.00					30,089	100.00	
	0-1	3487759	28,955	99.22	227	0.78			29,182	100.00	
	0-2	3564128	27,236	94.33	1,529	5.30	107	0.37	28,872	100.00	
	0-1	3514078	28,464	98.51	431	1.49			28,895	100.00	
	0-3	3564109	24,646	85.31	4,175	14.45	69	0.24	28,890	100.00	
	F	0-1	100000012739	28,275	99.45	157	0.55			28,432	100.00
		0-2	3985697	26,084	92.64	2,067	7.34	5	0.02	28,156	100.00
0-1		100000043324	27,605	99.40	168	0.60			27,773	100.00	
0-2		3595434	26,418	96.25	973	3.55	55	0.20	27,446	100.00	
0-1		3487937	29,114	100.00					29,114	100.00	
0-3		3564125	29,114	100.00					29,114	100.00	
0-1		100000064945	27,192	99.36	174	0.64			27,366	100.00	
0-2		3985679	22,816	83.38	4,290	15.68	258	0.94	27,364	100.00	
0-1		3487636	27,759	98.74	355	1.26			28,114	100.00	
0-2		3595428	24,886	89.07	3,047	10.91	8	0.03	27,941	100.00	
0-1		100000026770	29,114	100.00					29,114	100.00	
0-3		3595425	29,114	100.00					29,114	100.00	
0-1		100000064972	28,142	99.18	232	0.82			28,374	100.00	
0-2		3985691	26,504	94.32	1,497	5.33	100	0.36	28,101	100.00	
0-1		3487639	27,753	99.72	79	0.28			27,832	100.00	
0-3		3985692	23,533	84.70	4,131	14.87	119	0.43	27,783	100.00	
0-1	100000012739	25,950	99.54	119	0.46			26,069	100.00		
0-2	3985697	22,501	88.34	2,959	11.62	11	0.04	25,471	100.00		

Note. Analysis was conducted with a statewide population.

Note. Bold-faced item indicates an ECR item.

Table 4.21. The 2011 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	34
2	240 ^a	24
3	243	20
4	254	18
5	263	16
6	270	15
7	276	14
8	282	13
9	287	13
10	292	12
11	296	12
12	300	11
13	304	11
14	308	11
15	311	10
16	315	10
17	318	10
18	321	10
19	324	10
20	327	10
21	329	10
22	332	9
23	335	9
24	337	9
25	340	9
26	343	9
27	345	9
28	348	9
29	350	9
30	353	9
31	355	9
32	357	9
33	360	9
34	362	9
35	365	9
36	367	9
37	370	9
38	372	9
39	375	9
40	377	9

Table 4.21 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
41	380	9
42	382	9
43	385	9
44	387	9
45	390	9
46	393	9
47	395	10
48	398	10
49	401	10
50	404	10
51	407	10
52	410	10
53	413	10
54	417	11
55	420	11
56	424	11
57	428	11
58	432	12
59	436	12
60	440	12
61	445	13
62	450	13
63	456	14
64	462	14
65	469	15
66	476	16
67	484	17
68	494	19
69	506	21
70	522	25
71	548	34
72	650 ^b	47

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.22. The 2011 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	33
2	240 ^a	24
3	245	20
4	255	17
5	264	16
6	271	15
7	277	14
8	282	13
9	287	12
10	292	12
11	296	12
12	300	11
13	304	11
14	307	11
15	311	10
16	314	10
17	317	10
18	320	10
19	323	10
20	326	10
21	329	10
22	331	9
23	334	9
24	337	9
25	339	9
26	342	9
27	345	9
28	347	9
29	350	9
30	352	9
31	355	9
32	357	9
33	360	9
34	362	9
35	365	9
36	367	9
37	370	9
38	372	9
39	375	9
40	377	9

Table 4.22 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
41	380	9
42	382	9
43	385	9
44	388	9
45	390	9
46	393	10
47	396	10
48	399	10
49	402	10
50	405	10
51	408	10
52	411	10
53	415	11
54	418	11
55	422	11
56	426	11
57	429	11
58	434	12
59	438	12
60	443	13
61	448	13
62	453	14
63	459	14
64	465	15
65	472	16
66	481	17
67	490	18
68	501	20
69	514	22
70	532	26
71	559	35
72	650 ^b	48

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.23. The 2011 MSA-Math Total 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	276	35
AL	2	303	26
AL	3	320	23
AL	4	335	21
AL	5	347	20
AL	6	359	20
AL	7	371	20
AL	8	383	20
AL	9	396	21
AL	10	411	23
AL	11	430	27
AL	12	458	35
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	327	20
GM	6	339	19
GM	7	350	19
GM	8	361	19
GM	9	372	19
GM	10	383	20
GM	11	396	21
GM	12	411	23
GM	13	429	26
GM	14	457	35
GM	15	650 ^b	48
SP	0	240 ^a	50
SP	1	245	38
SP	2	279	30
SP	3	302	26
SP	4	320	24
SP	5	336	22
SP	6	351	21
SP	7	364	21
SP	8	377	21
SP	9	391	21
SP	10	405	22

Table 4.23 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	11	421	24
SP	12	440	27
SP	13	469	35
SP	14	650 ^b	48
NC	0	240 ^a	47
NC	1	265	34
NC	2	291	26
NC	3	309	22
NC	4	322	20
NC	5	334	19
NC	6	344	18
NC	7	355	18
NC	8	365	18
NC	9	375	18
NC	10	385	19
NC	11	396	19
NC	12	409	21
NC	13	423	23
NC	14	441	26
NC	15	468	35
NC	16	650 ^b	48
PR	0	240 ^a	49
PR	1	279	36
PR	2	309	28
PR	3	329	25
PR	4	347	23
PR	5	363	23
PR	6	380	24
PR	7	398	25
PR	8	418	26
PR	9	439	26
PR	10	459	26
PR	11	480	26
PR	12	502	28
PR	13	532	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 2011 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 3 Form F

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	48
AL	1	260	36
AL	2	289	27
AL	3	308	24
AL	4	324	22
AL	5	338	21
AL	6	351	21
AL	7	364	21
AL	8	377	21
AL	9	391	22
AL	10	407	24
AL	11	426	27
AL	12	455	35
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	327	20
GM	6	339	19
GM	7	351	19
GM	8	362	19
GM	9	374	20
GM	10	386	20
GM	11	399	21
GM	12	413	23
GM	13	432	26
GM	14	459	35
GM	15	650 ^b	48
SP	0	240 ^a	48
SP	1	256	35
SP	2	284	26
SP	3	302	23
SP	4	317	22
SP	5	331	21
SP	6	344	21
SP	7	357	21
SP	8	370	21
SP	9	384	22
SP	10	399	23

Table 4.24 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	11	416	24
SP	12	436	28
SP	13	465	36
SP	14	650 ^b	49
NC	0	240 ^a	47
NC	1	266	34
NC	2	292	25
NC	3	309	22
NC	4	322	20
NC	5	333	19
NC	6	344	18
NC	7	353	18
NC	8	363	18
NC	9	373	18
NC	10	383	18
NC	11	393	19
NC	12	405	20
NC	13	419	22
NC	14	437	26
NC	15	464	35
NC	16	650 ^b	48
PR	0	240 ^a	49
PR	1	294	36
PR	2	325	28
PR	3	346	25
PR	4	365	24
PR	5	383	24
PR	6	400	24
PR	7	418	24
PR	8	436	25
PR	9	455	25
PR	10	473	25
PR	11	493	26
PR	12	516	29
PR	13	548	37
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 2011 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	246	24
3	261	20
4	272	18
5	281	16
6	288	15
7	295	14
8	301	13
9	306	13
10	311	12
11	315	12
12	319	12
13	323	11
14	327	11
15	331	11
16	334	10
17	337	10
18	340	10
19	343	10
20	346	10
21	349	10
22	352	10
23	355	9
24	357	9
25	360	9
26	363	9
27	365	9
28	368	9
29	370	9
30	373	9
31	375	9
32	378	9
33	380	9
34	383	9
35	385	9
36	387	9
37	390	9
38	392	9
39	395	9
40	397	9

Table 4.25 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
41	400	9
42	402	9
43	405	9
44	408	9
45	410	9
46	413	9
47	416	10
48	419	10
49	422	10
50	425	10
51	428	10
52	431	10
53	434	10
54	437	11
55	441	11
56	445	11
57	449	11
58	453	12
59	457	12
60	462	13
61	467	13
62	472	14
63	478	14
64	485	15
65	492	16
66	501	17
67	511	19
68	524	22
69	541	26
70	567	35
71	650 ^b	48

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.26. The 2011 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	301	13
9	306	13
10	311	12
11	315	12
12	319	12
13	323	11
14	327	11
15	331	11
16	334	10
17	337	10
18	340	10
19	343	10
20	346	10
21	349	10
22	352	10
23	355	9
24	357	9
25	360	9
26	363	9
27	365	9
28	368	9
29	370	9
30	373	9
31	375	9
32	378	9
33	380	9
34	383	9
35	385	9
36	387	9
37	390	9
38	392	9
39	395	9
40	397	9

Table 4.26 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
41	400	9
42	402	9
43	405	9
44	407	9
45	410	9
46	413	9
47	415	9
48	418	10
49	421	10
50	424	10
51	427	10
52	430	10
53	433	10
54	436	10
55	439	11
56	443	11
57	447	11
58	451	12
59	455	12
60	460	12
61	464	13
62	470	13
63	476	14
64	482	15
65	489	16
66	498	17
67	508	19
68	520	22
69	537	26
70	564	35
71	650 ^b	48

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.27. The 2011 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 4 Form A

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	48
AL	1	274	35
AL	2	301	26
AL	3	319	23
AL	4	334	21
AL	5	347	20
AL	6	359	20
AL	7	370	19
AL	8	382	20
AL	9	394	20
AL	10	407	21
AL	11	422	23
AL	12	441	27
AL	13	470	36
AL	14	650 ^b	49
GM	0	240 ^a	51
GM	1	280	39
GM	2	316	31
GM	3	340	26
GM	4	359	24
GM	5	375	22
GM	6	389	21
GM	7	402	20
GM	8	415	20
GM	9	427	21
GM	10	441	21
GM	11	456	23
GM	12	474	27
GM	13	502	35
GM	14	650 ^b	48
SP	0	240 ^a	48
SP	1	274	35
SP	2	302	26
SP	3	320	23
SP	4	334	21
SP	5	347	20
SP	6	358	19
SP	7	368	19
SP	8	379	19
SP	9	389	19
SP	10	401	20

Table 4.27 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	11	413	21
SP	12	427	23
SP	13	445	26
SP	14	472	35
SP	15	650 ^b	48
NC	0	240 ^a	49
NC	1	273	36
NC	2	302	27
NC	3	322	24
NC	4	337	21
NC	5	350	20
NC	6	362	20
NC	7	374	19
NC	8	385	19
NC	9	397	20
NC	10	410	21
NC	11	424	23
NC	12	443	26
NC	13	470	35
NC	14	650 ^b	48
PR	0	240 ^a	48
PR	1	317	35
PR	2	345	27
PR	3	363	23
PR	4	379	22
PR	5	393	21
PR	6	407	21
PR	7	421	22
PR	8	437	23
PR	9	454	24
PR	10	472	25
PR	11	493	27
PR	12	517	30
PR	13	550	37
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 2011 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 4 Form F

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	48
AL	1	274	35
AL	2	301	26
AL	3	320	23
AL	4	335	21
AL	5	348	20
AL	6	360	20
AL	7	371	20
AL	8	383	20
AL	9	395	20
AL	10	408	21
AL	11	423	23
AL	12	443	27
AL	13	471	36
AL	14	650 ^b	49
GM	0	240 ^a	53
GM	1	288	41
GM	2	326	31
GM	3	350	26
GM	4	368	23
GM	5	382	21
GM	6	395	20
GM	7	407	20
GM	8	418	19
GM	9	430	20
GM	10	443	21
GM	11	457	22
GM	12	474	26
GM	13	501	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	338	21
SP	5	350	20
SP	6	362	19
SP	7	372	19
SP	8	383	19
SP	9	394	19
SP	10	405	19

Table 4.28 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	11	417	21
SP	12	431	22
SP	13	448	26
SP	14	475	35
SP	15	650 ^b	48
NC	0	240 ^a	49
NC	1	273	36
NC	2	302	27
NC	3	321	23
NC	4	336	21
NC	5	349	20
NC	6	360	19
NC	7	372	19
NC	8	383	19
NC	9	394	20
NC	10	407	21
NC	11	421	23
NC	12	439	26
NC	13	466	35
NC	14	650 ^b	48
PR	0	240 ^a	49
PR	1	301	36
PR	2	330	28
PR	3	351	24
PR	4	367	23
PR	5	382	22
PR	6	396	22
PR	7	410	22
PR	8	426	23
PR	9	443	25
PR	10	463	26
PR	11	485	28
PR	12	511	30
PR	13	545	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 4.29. The 2011 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	244	32
2	267	23
3	281	19
4	291	17
5	300	15
6	306	14
7	312	13
8	318	12
9	322	12
10	327	11
11	331	11
12	334	11
13	338	10
14	341	10
15	344	10
16	347	10
17	350	9
18	353	9
19	356	9
20	358	9
21	361	9
22	363	9
23	366	9
24	368	9
25	371	8
26	373	8
27	375	8
28	377	8
29	380	8
30	382	8
31	384	8
32	386	8
33	388	8
34	390	8
35	392	8
36	395	8
37	397	8
38	399	8
39	401	8

Table 4.29 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
40	403	8
41	405	8
42	407	8
43	409	8
44	412	8
45	414	8
46	416	8
47	418	8
48	420	8
49	423	8
50	425	8
51	427	9
52	430	9
53	432	9
54	435	9
55	437	9
56	440	9
57	443	9
58	446	10
59	449	10
60	452	10
61	455	10
62	459	11
63	462	11
64	467	11
65	471	12
66	476	13
67	482	13
68	488	14
69	495	16
70	504	17
71	515	20
72	530	23
73	554	32
74	650 ^b	44

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.30. The 2011 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	245	31
2	268	22
3	281	19
4	291	16
5	299	15
6	305	14
7	311	13
8	316	12
9	321	12
10	325	11
11	329	11
12	332	10
13	336	10
14	339	10
15	342	10
16	345	9
17	348	9
18	351	9
19	353	9
20	356	9
21	359	9
22	361	9
23	363	9
24	366	8
25	368	8
26	370	8
27	373	8
28	375	8
29	377	8
30	379	8
31	381	8
32	383	8
33	385	8
34	388	8
35	390	8
36	392	8
37	394	8
38	396	8
39	398	8

Table 4.30 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
40	400	8
41	402	8
42	404	8
43	406	8
44	408	8
45	410	8
46	413	8
47	415	8
48	417	8
49	419	8
50	421	8
51	424	8
52	426	9
53	428	9
54	431	9
55	433	9
56	436	9
57	439	9
58	442	9
59	445	10
60	448	10
61	451	10
62	454	10
63	458	11
64	462	11
65	466	12
66	471	12
67	476	13
68	482	14
69	489	15
70	497	17
71	507	19
72	521	23
73	544	32
74	650 ^b	44

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.31. The 2011 MSA-Math Total 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	290	32
AL	2	314	24
AL	3	330	21
AL	4	343	19
AL	5	354	18
AL	6	363	17
AL	7	373	17
AL	8	382	17
AL	9	391	17
AL	10	401	18
AL	11	412	19
AL	12	425	21
AL	13	441	24
AL	14	466	33
AL	15	650 ^b	45
GM	0	240 ^a	45
GM	1	301	33
GM	2	327	25
GM	3	344	22
GM	4	358	20
GM	5	370	19
GM	6	381	18
GM	7	392	18
GM	8	403	18
GM	9	414	19
GM	10	426	20
GM	11	440	22
GM	12	457	25
GM	13	483	33
GM	14	650 ^b	45
SP	0	240 ^a	47
SP	1	283	35
SP	2	312	26
SP	3	332	22
SP	4	346	20
SP	5	359	19
SP	6	370	19
SP	7	381	18
SP	8	392	19
SP	9	404	19

Table 4.31 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	10	418	21
SP	11	434	24
SP	12	459	33
SP	13	650 ^b	45
NC	0	240 ^a	44
NC	1	316	32
NC	2	340	24
NC	3	356	20
NC	4	368	19
NC	5	379	18
NC	6	389	17
NC	7	398	17
NC	8	407	17
NC	9	416	17
NC	10	425	17
NC	11	436	19
NC	12	448	20
NC	13	464	24
NC	14	488	32
NC	15	650 ^b	44
PR	0	240 ^a	47
PR	1	320	35
PR	2	351	27
PR	3	371	23
PR	4	387	21
PR	5	400	19
PR	6	410	17
PR	7	420	16
PR	8	428	16
PR	9	436	16
PR	10	445	16
PR	11	454	17
PR	12	464	18
PR	13	476	20
PR	14	491	22
PR	15	510	26
PR	16	537	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 2011 MSA-Math Total 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	290	32
AL	2	315	24
AL	3	331	21
AL	4	344	19
AL	5	355	18
AL	6	366	18
AL	7	375	17
AL	8	385	17
AL	9	395	18
AL	10	406	18
AL	11	417	19
AL	12	430	21
AL	13	447	25
AL	14	473	33
AL	15	650 ^b	45
GM	0	240 ^a	45
GM	1	291	33
GM	2	318	25
GM	3	336	22
GM	4	350	20
GM	5	363	20
GM	6	375	19
GM	7	387	19
GM	8	399	19
GM	9	411	20
GM	10	425	21
GM	11	439	22
GM	12	457	25
GM	13	484	33
GM	14	650 ^b	45
SP	0	240 ^a	45
SP	1	289	33
SP	2	316	25
SP	3	333	21
SP	4	346	20
SP	5	358	19
SP	6	369	18
SP	7	380	18
SP	8	391	18
SP	9	402	19

Table 4.32 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	10	416	21
SP	11	432	24
SP	12	457	33
SP	13	650 ^b	45
NC	0	240 ^a	44
NC	1	315	32
NC	2	339	24
NC	3	355	20
NC	4	367	19
NC	5	378	18
NC	6	387	17
NC	7	397	17
NC	8	406	17
NC	9	415	17
NC	10	425	18
NC	11	436	19
NC	12	448	21
NC	13	464	24
NC	14	489	32
NC	15	650 ^b	45
PR	0	240 ^a	46
PR	1	317	34
PR	2	345	26
PR	3	363	22
PR	4	376	19
PR	5	388	18
PR	6	397	17
PR	7	406	16
PR	8	414	16
PR	9	423	16
PR	10	431	16
PR	11	440	17
PR	12	449	18
PR	13	460	19
PR	14	473	21
PR	15	491	25
PR	16	518	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 4.33. The 2011 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	268	30
2	289	22
3	302	18
4	312	16
5	319	14
6	326	13
7	331	12
8	336	12
9	340	11
10	344	11
11	348	10
12	352	10
13	355	10
14	358	9
15	361	9
16	364	9
17	366	9
18	369	9
19	372	9
20	374	8
21	376	8
22	379	8
23	381	8
24	383	8
25	386	8
26	388	8
27	390	8
28	392	8
29	394	8
30	396	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
40	416	8

Table 4.33 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
41	418	8
42	420	8
43	423	8
44	425	8
45	427	8
46	429	8
47	431	8
48	434	8
49	436	8
50	438	8
51	441	9
52	443	9
53	446	9
54	449	9
55	452	9
56	455	10
57	458	10
58	461	10
59	465	10
60	468	11
61	472	11
62	477	12
63	482	12
64	487	13
65	494	14
66	501	16
67	511	18
68	524	22
69	546	30
70	650 ^b	42

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.34. The 2011 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	268	30
2	290	22
3	303	18
4	312	16
5	320	14
6	326	13
7	331	12
8	336	12
9	341	11
10	345	11
11	348	10
12	352	10
13	355	10
14	358	9
15	361	9
16	364	9
17	367	9
18	369	9
19	372	9
20	374	8
21	377	8
22	379	8
23	381	8
24	383	8
25	385	8
26	388	8
27	390	8
28	392	8
29	394	8
30	396	8
31	398	8
32	400	8
33	402	8
34	404	8
35	406	8
36	408	8
37	410	8
38	411	8
39	413	8
40	415	8

Table 4.34 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
41	417	8
42	419	8
43	421	8
44	423	8
45	426	8
46	428	8
47	430	8
48	432	8
49	434	8
50	437	8
51	439	8
52	441	9
53	444	9
54	447	9
55	449	9
56	452	9
57	455	10
58	458	10
59	462	10
60	466	11
61	470	11
62	474	12
63	479	12
64	485	13
65	491	15
66	499	16
67	509	18
68	523	22
69	545	31
70	650 ^b	43

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.35. The 2011 MSA-Math Total Raw Score to Scale Score Conversion Table: Grade 6 Form A

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
AL	0	240 ^a	44
AL	1	311	32
AL	2	336	24
AL	3	353	21
AL	4	366	19
AL	5	377	18
AL	6	388	17
AL	7	398	17
AL	8	408	17
AL	9	418	18
AL	10	429	19
AL	11	442	20
AL	12	458	24
AL	13	483	32
AL	14	650 ^b	43
GM	0	240 ^a	43
GM	1	332	31
GM	2	356	23
GM	3	371	20
GM	4	383	18
GM	5	394	17
GM	6	404	17
GM	7	413	17
GM	8	422	17
GM	9	432	17
GM	10	443	18
GM	11	455	20
GM	12	471	23
GM	13	494	31
GM	14	650 ^b	43
SP	0	240 ^a	43
SP	1	308	32
SP	2	333	24
SP	3	350	21
SP	4	363	20
SP	5	376	19
SP	6	388	19
SP	7	400	19
SP	8	412	19
SP	9	425	20
SP	10	441	22

Table 4.35 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	11	459	25
SP	12	487	33
SP	13	650 ^b	45
NC	0	240 ^a	43
NC	1	327	32
NC	2	351	24
NC	3	367	20
NC	4	380	18
NC	5	391	17
NC	6	400	17
NC	7	410	17
NC	8	419	17
NC	9	428	17
NC	10	439	18
NC	11	451	20
NC	12	466	23
NC	13	490	31
NC	14	650 ^b	43
PR	0	240 ^a	43
PR	1	324	32
PR	2	349	24
PR	3	365	20
PR	4	378	19
PR	5	389	18
PR	6	399	17
PR	7	409	17
PR	8	419	17
PR	9	429	18
PR	10	440	18
PR	11	452	20
PR	12	466	21
PR	13	484	25
PR	14	510	32
PR	15	650 ^b	44

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 2011 MSA-Math Total 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	309	32
AL	2	334	24
AL	3	350	20
AL	4	363	19
AL	5	374	18
AL	6	384	17
AL	7	393	17
AL	8	403	17
AL	9	413	18
AL	10	424	19
AL	11	437	20
AL	12	453	24
AL	13	478	32
AL	14	650 ^b	43
GM	0	240 ^a	43
GM	1	325	31
GM	2	349	23
GM	3	364	20
GM	4	376	18
GM	5	386	17
GM	6	396	17
GM	7	405	16
GM	8	414	17
GM	9	423	17
GM	10	434	18
GM	11	446	20
GM	12	461	23
GM	13	485	31
GM	14	650 ^b	43
SP	0	240 ^a	43
SP	1	309	32
SP	2	334	24
SP	3	351	21
SP	4	365	20
SP	5	378	19
SP	6	390	18
SP	7	401	18
SP	8	413	19
SP	9	425	19
SP	10	438	21

Table 4.36 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	11	455	24
SP	12	479	31
SP	13	650 ^b	43
NC	0	240 ^a	43
NC	1	325	32
NC	2	349	23
NC	3	365	20
NC	4	377	18
NC	5	388	17
NC	6	397	17
NC	7	407	16
NC	8	416	16
NC	9	425	17
NC	10	435	18
NC	11	447	20
NC	12	462	23
NC	13	485	31
NC	14	650 ^b	43
PR	0	240 ^a	44
PR	1	337	32
PR	2	362	24
PR	3	379	20
PR	4	391	18
PR	5	402	17
PR	6	412	17
PR	7	421	16
PR	8	430	16
PR	9	439	17
PR	10	449	18
PR	11	460	19
PR	12	474	21
PR	13	492	25
PR	14	519	33
PR	15	650 ^b	45

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 2011 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	276	29
2	297	21
3	309	17
4	318	15
5	326	14
6	332	13
7	337	12
8	342	11
9	346	11
10	350	10
11	354	10
12	358	10
13	361	9
14	364	9
15	367	9
16	370	9
17	372	9
18	375	9
19	378	8
20	380	8
21	382	8
22	385	8
23	387	8
24	389	8
25	392	8
26	394	8
27	396	8
28	398	8
29	400	8
30	402	8
31	404	8
32	406	8
33	408	8
34	410	8
35	413	8
36	415	8
37	417	8
38	419	8
39	421	8
40	423	8

Table 4.37 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
41	425	8
42	427	8
43	429	8
44	432	8
45	434	8
46	436	8
47	439	8
48	441	8
49	443	8
50	446	9
51	449	9
52	451	9
53	454	9
54	457	9
55	460	9
56	464	10
57	467	10
58	471	10
59	475	11
60	479	11
61	484	12
62	489	12
63	494	13
64	501	14
65	509	15
66	518	17
67	529	19
68	544	22
69	564	26
70	592	31
71	634	39
72	650 ^b	47

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.38. The 2011 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	276	29
2	296	21
3	309	17
4	318	15
5	326	14
6	332	13
7	338	12
8	342	11
9	347	11
10	351	10
11	355	10
12	358	10
13	361	10
14	364	9
15	367	9
16	370	9
17	373	9
18	376	9
19	378	8
20	381	8
21	383	8
22	386	8
23	388	8
24	390	8
25	393	8
26	395	8
27	397	8
28	399	8
29	401	8
30	403	8
31	406	8
32	408	8
33	410	8
34	412	8
35	414	8
36	416	8
37	418	8
38	420	8
39	422	8
40	424	8

Table 4.38 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
41	426	8
42	428	8
43	431	8
44	433	8
45	435	8
46	437	8
47	439	8
48	442	8
49	444	8
50	446	8
51	449	8
52	451	9
53	454	9
54	457	9
55	459	9
56	462	9
57	465	9
58	469	10
59	472	10
60	475	10
61	479	10
62	483	11
63	487	11
64	492	12
65	497	12
66	503	13
67	509	14
68	517	15
69	526	17
70	539	21
71	560	29
72	650 ^b	40

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.39. The 2011 MSA-Math Total 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	325	30
AL	2	348	22
AL	3	363	19
AL	4	374	17
AL	5	384	17
AL	6	394	16
AL	7	403	16
AL	8	412	16
AL	9	422	17
AL	10	432	18
AL	11	445	19
AL	12	460	22
AL	13	483	30
AL	14	650 ^b	41
GM	0	240 ^a	42
GM	1	326	31
GM	2	350	23
GM	3	367	20
GM	4	380	19
GM	5	392	18
GM	6	403	18
GM	7	414	18
GM	8	425	18
GM	9	437	19
GM	10	450	20
GM	11	466	23
GM	12	490	30
GM	13	650 ^b	41
SP	0	240 ^a	41
SP	1	325	30
SP	2	349	23
SP	3	365	20
SP	4	377	18
SP	5	388	17
SP	6	399	17
SP	7	408	17
SP	8	418	17
SP	9	428	17
SP	10	439	18
SP	11	452	20

Table 4.39 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	12	468	23
SP	13	493	31
SP	14	650 ^b	42
NC	0	240 ^a	43
NC	1	326	32
NC	2	353	24
NC	3	370	20
NC	4	383	18
NC	5	394	17
NC	6	404	16
NC	7	413	16
NC	8	423	16
NC	9	433	17
NC	10	443	18
NC	11	456	20
NC	12	471	23
NC	13	495	30
NC	14	650 ^b	42
PR	0	240 ^a	42
PR	1	328	31
PR	2	354	24
PR	3	372	22
PR	4	388	20
PR	5	402	20
PR	6	415	19
PR	7	428	19
PR	8	441	19
PR	9	454	20
PR	10	469	21
PR	11	485	22
PR	12	503	24
PR	13	525	26
PR	14	553	29
PR	15	587	33
PR	16	632	39
PR	17	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 4.40. The 2011 MSA-Math Total 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	328	30
AL	2	351	22
AL	3	366	19
AL	4	378	18
AL	5	389	17
AL	6	399	16
AL	7	408	16
AL	8	418	16
AL	9	428	17
AL	10	438	18
AL	11	450	19
AL	12	466	22
AL	13	489	30
AL	14	650 ^b	41
GM	0	240 ^a	42
GM	1	328	31
GM	2	353	24
GM	3	370	21
GM	4	384	19
GM	5	396	18
GM	6	408	18
GM	7	419	18
GM	8	431	18
GM	9	443	19
GM	10	456	20
GM	11	472	23
GM	12	495	30
GM	13	650 ^b	41
SP	0	240 ^a	41
SP	1	323	30
SP	2	347	23
SP	3	363	20
SP	4	376	18
SP	5	387	17
SP	6	397	17
SP	7	407	17
SP	8	417	17
SP	9	427	17
SP	10	438	18
SP	11	451	20

Table 4.40 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	12	466	23
SP	13	490	30
SP	14	650 ^b	41
NC	0	240 ^a	44
NC	1	328	33
NC	2	356	24
NC	3	373	21
NC	4	387	18
NC	5	398	17
NC	6	408	16
NC	7	417	16
NC	8	427	16
NC	9	436	17
NC	10	446	18
NC	11	458	19
NC	12	473	22
NC	13	496	30
NC	14	650 ^b	41
PR	0	240 ^a	42
PR	1	323	31
PR	2	349	24
PR	3	366	21
PR	4	380	20
PR	5	394	19
PR	6	407	19
PR	7	419	18
PR	8	431	18
PR	9	442	18
PR	10	454	18
PR	11	466	18
PR	12	479	18
PR	13	491	19
PR	14	504	20
PR	15	520	23
PR	16	543	30
PR	17	650 ^b	41

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 2011 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	286	29
2	307	21
3	320	17
4	329	15
5	336	14
6	342	13
7	348	12
8	352	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	8
33	418	8
34	420	7
35	422	7
36	424	7
37	426	7
38	428	7
39	430	7
40	432	8

Table 4.41 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
41	434	8
42	436	8
43	438	8
44	440	8
45	442	8
46	444	8
47	446	8
48	448	8
49	450	8
50	453	8
51	455	8
52	457	8
53	460	8
54	462	8
55	464	8
56	467	9
57	470	9
58	473	9
59	475	9
60	479	9
61	482	10
62	485	10
63	489	11
64	493	11
65	498	12
66	503	12
67	508	13
68	515	14
69	523	16
70	533	18
71	547	22
72	570	30
73	650 ^b	41

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.42. The 2011 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	41
1	289	29
2	309	21
3	322	17
4	331	15
5	338	14
6	345	13
7	350	12
8	355	11
9	359	11
10	363	10
11	367	10
12	370	10
13	373	9
14	376	9
15	379	9
16	382	9
17	385	9
18	387	8
19	390	8
20	392	8
21	395	8
22	397	8
23	399	8
24	401	8
25	404	8
26	406	8
27	408	8
28	410	8
29	412	8
30	414	7
31	416	7
32	418	7
33	420	7
34	422	7
35	423	7
36	425	7
37	427	7
38	429	7
39	431	7
40	433	7

Table 4.42 (continued)

Raw Score	Scale Score (SS)	Standard Error (SE)
41	435	7
42	437	7
43	439	7
44	440	7
45	442	7
46	444	7
47	446	8
48	448	8
49	450	8
50	453	8
51	455	8
52	457	8
53	459	8
54	462	8
55	464	8
56	466	9
57	469	9
58	472	9
59	475	9
60	478	10
61	481	10
62	485	10
63	489	11
64	493	11
65	497	12
66	502	12
67	508	13
68	515	14
69	523	16
70	533	18
71	546	21
72	568	29
73	650 ^b	41

Note. ^aLOSS was set to 240.

Note. ^bHOSS was set to 650.

Table 4.43. The 2011 MSA-Math Total 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	339	30
AL	2	363	23
AL	3	378	20
AL	4	391	18
AL	5	401	17
AL	6	411	16
AL	7	420	16
AL	8	429	16
AL	9	438	16
AL	10	448	17
AL	11	458	18
AL	12	470	19
AL	13	485	23
AL	14	509	30
AL	15	650 ^b	41
GM	0	240 ^a	41
GM	1	350	30
GM	2	373	23
GM	3	389	19
GM	4	401	18
GM	5	412	17
GM	6	422	17
GM	7	431	17
GM	8	441	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	42
SP	1	330	31
SP	2	355	24
SP	3	372	21
SP	4	386	19
SP	5	398	18
SP	6	409	18
SP	7	420	17
SP	8	431	18
SP	9	442	18
SP	10	454	19

Table 4.43 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	11	467	20
SP	12	484	23
SP	13	509	31
SP	14	650 ^b	42
NC	0	240 ^a	41
NC	1	337	30
NC	2	360	22
NC	3	375	19
NC	4	387	18
NC	5	398	17
NC	6	408	17
NC	7	418	17
NC	8	429	18
NC	9	441	19
NC	10	456	22
NC	11	479	30
NC	12	650 ^b	41
PR	0	240 ^a	42
PR	1	328	31
PR	2	354	24
PR	3	372	21
PR	4	386	19
PR	5	399	18
PR	6	410	17
PR	7	420	17
PR	8	430	16
PR	9	439	16
PR	10	447	15
PR	11	455	15
PR	12	464	15
PR	13	472	16
PR	14	482	17
PR	15	492	18
PR	16	505	21
PR	17	523	25
PR	18	551	32
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 2011 MSA-Math Total 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	337	30
AL	2	360	22
AL	3	375	19
AL	4	387	18
AL	5	398	17
AL	6	407	16
AL	7	416	16
AL	8	424	16
AL	9	433	16
AL	10	442	17
AL	11	453	17
AL	12	464	19
AL	13	479	22
AL	14	502	30
AL	15	650 ^b	41
GM	0	240 ^a	41
GM	1	343	30
GM	2	367	23
GM	3	383	20
GM	4	395	18
GM	5	407	18
GM	6	417	17
GM	7	428	17
GM	8	438	18
GM	9	449	18
GM	10	462	20
GM	11	478	23
GM	12	502	30
GM	13	650 ^b	41
SP	0	240 ^a	42
SP	1	329	31
SP	2	354	23
SP	3	370	21
SP	4	384	19
SP	5	396	18
SP	6	407	18
SP	7	418	18
SP	8	429	18
SP	9	441	18
SP	10	453	19

Table 4.44 (continued)

Strand	Raw Score	Scale Score (SS)	Standard Error (SE)
SP	11	467	21
SP	12	484	24
SP	13	509	31
SP	14	650 ^b	42
NC	0	240 ^a	41
NC	1	344	30
NC	2	367	22
NC	3	382	20
NC	4	395	18
NC	5	406	18
NC	6	417	17
NC	7	428	18
NC	8	440	19
NC	9	453	21
NC	10	471	24
NC	11	498	32
NC	12	650 ^b	43
PR	0	240 ^a	43
PR	1	341	33
PR	2	370	25
PR	3	388	21
PR	4	401	18
PR	5	412	16
PR	6	420	15
PR	7	428	14
PR	8	434	14
PR	9	441	13
PR	10	447	13
PR	11	454	14
PR	12	460	14
PR	13	468	15
PR	14	477	17
PR	15	488	19
PR	16	502	21
PR	17	520	25
PR	18	547	32
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