

APPENDIX A: THE 2009 MSA-MATH STRATIFIED RANDOM SAMPLING

Since the deadline for the students' score reports made it difficult for Pearson to use almost 100% of the 2009 population as the calibration and equating data set, MSDE and NPC recommended that Pearson use equating samples instead of the 2009 population. Pearson chose Local Education Agency (LEA) as one of the most important variables for random stratification. It should be noted that this method has been applied since the 2006 assessment.

Based on each LEA percentage of the 2009 population, Pearson randomly selected nearly 3,000 students from the first-wave documents (i.e., 30% of the statewide population) within each grade, and the item responses of these selected students were used for the 2009 calibration and equating. It should be acknowledged that each student's answer document from the first-wave were randomly distributed and completely scored in the Pearson performance scoring system (i.e., E-Pen scoring system). Please refer to section 1.7 for detailed information about performance scoring procedures.

To verify that the equating sample was representative of the statewide examinee population in terms of LEA, gender, and ethnicity, the distributions of LEA, gender, and ethnicity of the 2009 samples were compared with those of the 2009 population. The results are shown in this appendix. The percentages of students from the LEAs were all within 2.8 percentage points of the target values across all grades. The percentages of students from the five major ethnic groups were all within 3.5 percentage points of the target values across all grades. The percentages of male and female students were within 1.5 percentage points of the target values across all grades. Consequently, we concluded that the 2009 equating samples were representative of the 2009 statewide examinee population in terms of LEA, gender, and ethnicity.

Table A.1 2009 MSA-Math Population and Stratified Random Sampling (S.R.S.): Grade 3 LEA

LEA	Operational Form A				Operational Form F			
	2009 Pop.	2009	% of 2009	% of	2009 Pop.	2009	% of 2009	% of
	%	S. R. S.	S. R. S.	Differ.	%	S. R. S.	S. R. S.	Differ.
1	1.08	32	1.08	0.00	1.08	32	1.07	0.01
2	8.73	262	8.86	-0.13	8.73	262	8.76	-0.03
3	12.39	372	12.58	-0.19	12.39	372	12.43	-0.04
4	1.93	58	1.96	-0.03	1.93	58	1.94	-0.01
5	0.68	20	0.68	0.00	0.68	20	0.67	0.01
6	3.28	98	3.32	-0.04	3.28	98	3.28	0.00
7	1.89	57	1.93	-0.04	1.89	57	1.91	-0.02
8	2.98	89	3.01	-0.03	2.98	89	2.97	0.01
9	0.55	16	0.54	0.01	0.55	16	0.53	0.02
10	4.77	143	4.84	-0.07	4.77	143	4.78	-0.01
11	0.53	16	0.54	-0.01	0.53	16	0.53	0.00
12	4.76	143	4.84	-0.08	4.76	143	4.78	-0.02
13	5.81	174	5.89	-0.08	5.81	174	5.82	-0.01
14	0.27	8	0.27	0.00	0.27	8	0.27	0.00
15	16.75	502	16.98	-0.23	16.75	502	16.78	-0.03
16	14.52	436	14.75	-0.23	14.52	436	14.57	-0.05
17	0.91	27	0.91	0.00	0.91	27	0.90	0.01
18	1.92	57	1.93	-0.01	1.92	57	1.91	0.01
19	0.35	11	0.37	-0.02	0.35	11	0.37	-0.02
20	0.49	15	0.51	-0.02	0.49	15	0.50	-0.01
21	2.76	40	1.35	1.41	2.76	78	2.61	0.15
22	1.96	59	2.00	-0.04	1.96	59	1.97	-0.01
23	0.72	22	0.74	-0.02	0.72	22	0.74	-0.02
24	0.06	2	0.07	-0.01	0.06	0	0.00	0.06
30	9.91	297	10.05	-0.14	9.91	297	9.93	-0.02
Total	100.00	2,956	100.00	0.00	100.00	2,992	100.00	0.00

Note. 1. Allegany; 2. Anne Arundel; 3. Baltimore; 4. Calvert; 5. Caroline; 6. Carroll; 7. Cecil; 8. Charles; 9. Dorchester; 10. Frederick; 11. Garrett; 12. Harford; 13. Howard; 14. Kent; 15. Montgomery; 16. Prince George's; 17. Queen Anne's; 18. St. Mary's; 19. Somerset; 20. Talbot; 21. Washington; 22. Wicomico; 23. Worcester; 24. LEA 24; 30. Baltimore City

Table A.2 2009 MSA-Math Population and Stratified Random Sampling (S.R.S.): Grade 3 Ethnicity

Race	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
1	0.42	13	0.44	-0.02	0.42	7	0.23	0.18
2	6.44	166	5.62	0.82	6.44	185	6.18	0.25
3	37.56	1,072	36.27	1.30	37.56	1,165	38.94	-1.38
4	45.46	1,431	48.41	-2.95	45.46	1,355	45.29	0.17
5	10.02	270	9.13	0.89	10.02	279	9.32	0.69
Miss	0.10	4	0.14	-0.03	0.10	1	0.03	0.07
Total	100.00	2,956	100.00	0.00	100.00	2,992	100.00	0.00

Note. 1. American Indian; 2. Asian American; 3. African American; 4. White; 5. Hispanic; Miss: Missing

Table A.3 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 3 Gender

Gender	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
F	51.21	1,526	51.62	-0.42	51.21	1,561	52.17	-0.96
M	48.72	1,430	48.38	0.35	48.72	1,430	47.79	0.93
Miss	0.07	0	0.00	0.07	0.07	1	0.03	0.03
Total	100.00	2,956	100.00	0.00	100.00	2,992	100.00	0.00

Note. F. Female; M. Male; Miss: Missing

Table A.4 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 4 LEA

LEA	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
1	1.07	32	1.07	0.00	1.07	32	1.07	0.00
2	8.74	262	8.73	0.01	8.74	262	8.73	0.01
3	12.69	381	12.70	-0.01	12.69	381	12.70	-0.01
4	2.04	61	2.03	0.01	2.04	61	2.03	0.01
5	0.59	18	0.60	-0.01	0.59	18	0.60	-0.01
6	3.19	96	3.20	-0.01	3.19	96	3.20	-0.01
7	1.96	59	1.97	-0.01	1.96	59	1.97	-0.01
8	2.89	87	2.90	-0.01	2.89	87	2.90	-0.01
9	0.50	15	0.50	0.00	0.50	15	0.50	0.00
10	4.74	142	4.73	0.01	4.74	142	4.73	0.01
11	0.53	16	0.53	0.00	0.53	16	0.53	0.00
12	4.67	140	4.67	0.00	4.67	140	4.67	0.00
13	5.83	175	5.83	0.00	5.83	175	5.83	0.00
14	0.25	7	0.23	0.02	0.25	7	0.23	0.02
15	16.58	497	16.57	0.01	16.58	497	16.57	0.01
16	14.51	435	14.50	0.01	14.51	435	14.50	0.01
17	0.92	28	0.93	-0.01	0.92	28	0.93	-0.01
18	1.99	60	2.00	-0.01	1.99	60	2.00	-0.01
19	0.33	10	0.33	0.00	0.33	10	0.33	0.00
20	0.47	14	0.47	0.00	0.47	14	0.47	0.00
21	2.69	81	2.70	-0.01	2.69	81	2.70	-0.01
22	1.94	58	1.93	0.01	1.94	58	1.93	0.01
23	0.78	23	0.77	0.01	0.78	23	0.77	0.01
24	0.12	4	0.13	-0.01	0.12	4	0.13	-0.01
30	9.97	299	9.97	0.00	9.97	299	9.97	0.00
Total	100.00	3,000	100.00	0.00	100.00	3,000	100.00	0.00

Note. 1. Allegany; 2. Anne Arundel; 3. Baltimore; 4. Calvert; 5. Caroline; 6. Carroll; 7. Cecil; 8. Charles; 9. Dorchester; 10. Frederick; 11. Garrett; 12. Harford; 13. Howard; 14. Kent; 15. Montgomery; 16. Prince George's; 17. Queen Anne's; 18. St. Mary's; 19. Somerset; 20. Talbot; 21. Washington; 22. Wicomico; 23. Worcester; 24. LEA 24; 30. Baltimore City

Table A.5 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 4 Ethnicity

Race	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
1	0.39	10	0.33	0.06	0.39	9	0.30	0.09
2	6.07	160	5.33	0.74	6.07	182	6.07	0.00
3	38.20	1,151	38.37	-0.16	38.20	1,178	39.27	-1.06
4	45.65	1,384	46.13	-0.48	45.65	1,349	44.97	0.69
5	9.55	290	9.67	-0.12	9.55	278	9.27	0.28
Miss	0.14	5	0.17	-0.03	0.14	4	0.13	0.00
Total	100.00	3,000	100.00	0.00	100.00	3,000	100.00	0.00

Note. 1. American Indian; 2. Asian American; 3. African American; 4. White; 5. Hispanic; Miss: Missing

Table A.6 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 4 Gender

Gender	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
F	51.26	1,516	50.53	0.73	51.26	1,515	50.50	0.76
M	48.63	1,478	49.27	-0.64	48.63	1,482	49.40	-0.77
Miss	0.11	6	0.20	-0.09	0.11	3	0.10	0.01
Total	100.00	3,000	100.00	0.00	100.00	3,000	100.00	0.00

Note. F. Female; M. Male; Miss: Missing

Table A.7 2009 MSA-Math Population and Stratified Random Sampling (S.R.S.): Grade 5 LEA

LEA	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
1	1.12	33	1.15	-0.03	1.12	33	1.14	-0.02
2	8.72	262	9.12	-0.40	8.72	262	9.01	-0.29
3	12.31	369	12.84	-0.53	12.31	369	12.69	-0.38
4	2.06	62	2.16	-0.10	2.06	62	2.13	-0.07
5	0.59	18	0.63	-0.04	0.59	18	0.62	-0.03
6	3.37	101	3.51	-0.14	3.37	101	3.47	-0.10
7	2.01	60	2.09	-0.08	2.01	60	2.06	-0.05
8	3.14	94	3.27	-0.13	3.14	94	3.23	-0.09
9	0.46	14	0.49	-0.03	0.46	14	0.48	-0.02
10	4.82	145	5.05	-0.23	4.82	145	4.99	-0.17
11	0.51	10	0.35	0.16	0.51	15	0.52	-0.01
12	4.80	144	5.01	-0.21	4.80	144	4.95	-0.15
13	6.21	186	6.47	-0.26	6.21	186	6.40	-0.19
14	0.24	7	0.24	0.00	0.24	7	0.24	0.00
15	16.49	495	17.22	-0.73	16.49	495	17.03	-0.54
16	14.59	438	15.24	-0.65	14.59	438	15.07	-0.48
17	0.88	27	0.94	-0.06	0.88	27	0.93	-0.05
18	1.93	58	2.02	-0.09	1.93	58	2.00	-0.07
19	0.27	8	0.28	-0.01	0.27	8	0.28	-0.01
20	0.48	14	0.49	-0.01	0.48	14	0.48	0.00
21	2.67	0	0.00	2.67	2.67	11	0.38	2.29
22	1.88	56	1.95	-0.07	1.88	56	1.93	-0.05
23	0.76	23	0.80	-0.04	0.76	23	0.79	-0.03
24	0.14	4	0.14	0.00	0.14	0	0.00	0.14
30	9.54	246	8.56	0.98	9.54	267	9.18	0.36
Total	100.00	2,874	100.00	0.00	100.00	2,907	100.00	0.00

Note. 1. Allegany; 2. Anne Arundel; 3. Baltimore; 4. Calvert; 5. Caroline; 6. Carroll; 7. Cecil; 8. Charles; 9. Dorchester; 10. Frederick; 11. Garrett; 12. Harford; 13. Howard; 14. Kent; 15. Montgomery; 16. Prince George's; 17. Queen Anne's; 18. St. Mary's; 19. Somerset; 20. Talbot; 21. Washington; 22. Wicomico; 23. Worcester; 24. LEA 24; 30. Baltimore City

Table A.8 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 5 Ethnicity

Race	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
1	0.36	8	0.28	0.08	0.36	6	0.21	0.15
2	6.15	183	6.37	-0.21	6.15	183	6.30	-0.14
3	38.18	1,090	37.93	0.25	38.18	1,121	38.56	-0.38
4	46.00	1,344	46.76	-0.76	46.00	1,339	46.06	-0.06
5	9.21	245	8.52	0.69	9.21	255	8.77	0.44
Miss	0.09	4	0.14	-0.05	0.09	3	0.10	-0.02
Total	100.00	2,874	100.00	0.00	100.00	2,907	100.00	0.00

Note. 1. American Indian; 2. Asian American; 3. African American; 4. White; 5. Hispanic; Miss: Missing

Table A.9 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 5 Gender

Gender	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
F	50.95	1,502	52.26	-1.32	50.95	1,455	50.05	0.89
M	48.97	1,366	47.53	1.44	48.97	1,448	49.81	-0.84
Miss	0.08	6	0.21	-0.13	0.08	4	0.14	-0.06
Total	100.00	2,874	100.00	0.00	100.00	2,907	100.00	0.00

Note. F. Female; M. Male; Miss: Missing

Table A.10 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 6 LEA

LEA	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
1	0.83	25	0.83	0.00	0.83	25	0.83	0.00
2	8.89	267	8.91	-0.02	8.89	267	8.91	-0.02
3	12.03	361	12.05	-0.02	12.03	361	12.05	-0.02
4	2.17	65	2.17	0.00	2.17	65	2.17	0.00
5	0.70	21	0.70	0.00	0.70	21	0.70	0.00
6	3.36	101	3.37	-0.01	3.36	101	3.37	-0.01
7	1.98	59	1.97	0.01	1.98	59	1.97	0.01
8	3.37	101	3.37	0.00	3.37	101	3.37	0.00
9	0.61	18	0.60	0.01	0.61	18	0.60	0.01
10	4.93	148	4.94	-0.01	4.93	148	4.94	-0.01
11	0.50	15	0.50	0.00	0.50	15	0.50	0.00
12	4.83	145	4.84	-0.01	4.83	145	4.84	-0.01
13	6.23	187	6.24	-0.01	6.23	187	6.24	-0.01
14	0.28	8	0.27	0.01	0.28	8	0.27	0.01
15	16.59	498	16.62	-0.03	16.59	498	16.62	-0.03
16	14.67	440	14.69	-0.02	14.67	440	14.69	-0.02
17	0.96	29	0.97	-0.01	0.96	29	0.97	-0.01
18	2.04	61	2.04	0.00	2.04	61	2.04	0.00
19	0.32	9	0.30	0.02	0.32	9	0.30	0.02
20	0.51	15	0.50	0.01	0.51	15	0.50	0.01
21	2.79	84	2.80	-0.01	2.79	84	2.80	-0.01
22	1.69	51	1.70	-0.01	1.69	51	1.70	-0.01
23	0.78	23	0.77	0.01	0.78	23	0.77	0.01
24	0.13	4	0.13	0.00	0.13	4	0.13	0.00
30	8.70	261	8.71	-0.01	8.70	261	8.71	-0.01
32	0.13	0	0.00	0.13	0.13	0	0.00	0.13
Total	100.00	2,996	100.00	0.00	100.00	2,996	100.00	0.00

Note. 1. Allegany; 2. Anne Arundel; 3. Baltimore; 4. Calvert; 5. Caroline; 6. Carroll; 7. Cecil; 8. Charles; 9. Dorchester; 10. Frederick; 11. Garrett; 12. Harford; 13. Howard; 14. Kent; 15. Montgomery; 16. Prince George's; 17. Queen Anne's; 18. St. Mary's; 19. Somerset; 20. Talbot; 21. Washington; 22. Wicomico; 23. Worcester; 24. LEA 24; 30. Baltimore City; 32. The Seed school

Table A.11 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 6 Ethnicity

Race	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
1	0.38	16	0.53	-0.15	0.38	12	0.40	-0.02
2	6.27	196	6.54	-0.28	6.27	181	6.04	0.23
3	37.74	1,058	35.31	2.43	37.74	1,071	35.75	2.00
4	45.98	1,435	47.90	-1.91	45.98	1,476	49.27	-3.28
5	9.44	286	9.55	-0.11	9.44	250	8.34	1.09
Miss	0.18	5	0.17	0.02	0.18	6	0.20	-0.02
Total	100.00	2,996	100.00	0.00	100.00	2,996	100.00	0.00

Note. 1. American Indian; 2. Asian American; 3. African American; 4. White; 5. Hispanic; Miss: Missing

Table A.12 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 6 Gender

Gender	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
F	50.98	1,534	51.20	-0.22	50.98	1,485	49.57	1.41
M	48.90	1,458	48.66	0.23	48.90	1,507	50.30	-1.40
Miss	0.12	4	0.13	-0.01	0.12	4	0.13	-0.01
Total	100.00	2,996	100.00	0.00	100.00	2,996	100.00	0.00

Note. F. Female; M. Male; Miss: Missing

Table A.13 2009 MSA-Math Population and Stratified Random Sampling (S.R.S.): Grade 7 LEA

LEA	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
1	0.69	21	0.74	-0.05	0.69	21	0.74	-0.05
2	8.86	266	9.38	-0.52	8.86	266	9.38	-0.52
3	12.15	365	12.87	-0.72	12.15	365	12.87	-0.72
4	2.15	65	2.29	-0.14	2.15	65	2.29	-0.14
5	0.58	17	0.60	-0.02	0.58	17	0.60	-0.02
6	3.52	106	3.74	-0.22	3.52	106	3.74	-0.22
7	1.95	59	2.08	-0.13	1.95	59	2.08	-0.13
8	3.32	100	3.53	-0.21	3.32	100	3.52	-0.20
9	0.53	16	0.56	-0.03	0.53	16	0.56	-0.03
10	4.94	148	5.22	-0.28	4.94	148	5.22	-0.28
11	0.54	16	0.56	-0.02	0.54	16	0.56	-0.02
12	4.88	146	5.15	-0.27	4.88	146	5.15	-0.27
13	6.36	191	6.74	-0.38	6.36	191	6.73	-0.37
14	0.22	7	0.25	-0.03	0.22	7	0.25	-0.03
15	16.89	507	17.88	-0.99	16.89	507	17.87	-0.98
16	14.68	440	15.52	-0.84	14.68	440	15.51	-0.83
17	1.03	31	1.09	-0.06	1.03	31	1.09	-0.06
18	2.02	60	2.12	-0.10	2.02	60	2.11	-0.09
19	0.34	0	0.00	0.34	0.34	1	0.04	0.30
20	0.53	16	0.56	-0.03	0.53	16	0.56	-0.03
21	2.71	0	0.00	2.71	2.71	0	0.00	2.71
22	1.55	46	1.62	-0.07	1.55	46	1.62	-0.07
23	0.77	23	0.81	-0.04	0.77	23	0.81	-0.04
24	0.18	5	0.18	0.00	0.18	5	0.18	0.00
30	8.61	184	6.49	2.12	8.61	185	6.52	2.09
Total	100.00	2,835	100.00	0.00	100.00	2,837	100.00	0.00

Note. 1. Allegany; 2. Anne Arundel; 3. Baltimore; 4. Calvert; 5. Caroline; 6. Carroll; 7. Cecil; 8. Charles; 9. Dorchester; 10. Frederick; 11. Garrett; 12. Harford; 13. Howard; 14. Kent; 15. Montgomery; 16. Prince George's; 17. Queen Anne's; 18. St. Mary's; 19. Somerset; 20. Talbot; 21. Washington; 22. Wicomico; 23. Worcester; 24. LEA 24; 30. Baltimore City

Table A.14 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 7 Ethnicity

Race	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
1	0.33	12	0.42	-0.09	0.33	9	0.32	0.01
2	6.11	139	4.90	1.21	6.11	152	5.36	0.75
3	37.27	1,054	37.18	0.09	37.27	1,056	37.22	0.05
4	46.84	1,336	47.13	-0.29	46.84	1,323	46.63	0.20
5	9.24	293	10.34	-1.09	9.24	294	10.36	-1.12
Miss	0.21	1	0.04	0.18	0.21	3	0.11	0.10
Total	100.00	2,835	100.00	0.00	100.00	2,837	100.00	0.00

Note. 1. American Indian; 2. Asian American; 3. African American; 4. White; 5. Hispanic; Miss: Missing

Table A.15 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 7 Gender

Gender	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
F	50.38	1,399	49.35	1.04	50.38	1,457	51.36	-0.97
M	49.47	1,435	50.62	-1.15	49.47	1,377	48.54	0.93
Miss	0.15	1	0.04	0.12	0.15	3	0.11	0.04
Total	100.00	2,835	100.00	0.00	100.00	2,837	100.00	0.00

Note. F. Female; M. Male; Miss: Missing

Table A.16 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 8 LEA

LEA	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
1	0.72	21	0.72	0.00	0.72	21	0.72	0.00
2	9.05	271	9.27	-0.22	9.05	271	9.27	-0.22
3	12.32	369	12.62	-0.30	12.32	369	12.62	-0.30
4	2.27	68	2.33	-0.06	2.27	68	2.33	-0.06
5	0.63	19	0.65	-0.02	0.63	19	0.65	-0.02
6	3.49	105	3.59	-0.10	3.49	105	3.59	-0.10
7	1.98	59	2.02	-0.04	1.98	59	2.02	-0.04
8	3.43	103	3.52	-0.09	3.43	103	3.52	-0.09
9	0.51	15	0.51	0.00	0.51	15	0.51	0.00
10	5.07	152	5.20	-0.13	5.07	152	5.20	-0.13
11	0.57	17	0.58	-0.01	0.57	17	0.58	-0.01
12	4.93	148	5.06	-0.13	4.93	148	5.06	-0.13
13	6.63	199	6.81	-0.18	6.63	199	6.81	-0.18
14	0.25	8	0.27	-0.02	0.25	8	0.27	-0.02
15	16.57	497	17.00	-0.43	16.57	497	17.00	-0.43
16	14.48	434	14.85	-0.37	14.48	434	14.85	-0.37
17	0.93	28	0.96	-0.03	0.93	28	0.96	-0.03
18	1.91	57	1.95	-0.04	1.91	57	1.95	-0.04
19	0.36	11	0.38	-0.02	0.36	11	0.38	-0.02
20	0.52	15	0.51	0.01	0.52	15	0.51	0.01
21	2.54	0	0.00	2.54	2.54	0	0.00	2.54
22	1.49	45	1.54	-0.05	1.49	45	1.54	-0.05
23	0.76	23	0.79	-0.03	0.76	23	0.79	-0.03
24	0.26	8	0.27	-0.01	0.26	8	0.27	-0.01
30	8.35	251	8.59	-0.24	8.35	251	8.59	-0.24
Total	100.00	2,923	100.00	0.00	100.00	2,923	100.00	0.00

Note. 1. Allegany; 2. Anne Arundel; 3. Baltimore; 4. Calvert; 5. Caroline; 6. Carroll; 7. Cecil; 8. Charles; 9. Dorchester; 10. Frederick; 11. Garrett; 12. Harford; 13. Howard; 14. Kent; 15. Montgomery; 16. Prince George's; 17. Queen Anne's; 18. St. Mary's; 19. Somerset; 20. Talbot; 21. Washington; 22. Wicomico; 23. Worcester; 24. LEA 24; 30. Baltimore City

Table A.17 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 8 Ethnicity

Race	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
1	0.39	16	0.55	-0.16	0.39	17	0.58	-0.19
2	5.92	148	5.06	0.85	5.92	169	5.78	0.13
3	37.50	1,088	37.22	0.28	37.50	1,103	37.74	-0.24
4	47.34	1,351	46.22	1.12	47.34	1,344	45.98	1.36
5	8.70	315	10.78	-2.07	8.70	287	9.82	-1.12
Miss	0.15	5	0.17	-0.02	0.15	3	0.10	0.05
Total	100.00	2,923	100.00	0.00	100.00	2,923	100.00	0.00

Note. 1. American Indian; 2. Asian American; 3. African American; 4. White; 5. Hispanic; Miss: Missing

Table A.18 2009 MSA- Mathematics Population and Stratified Random Sampling (S.R.S.): Grade 8 Gender

Gender	Operational Form A				Operational Form F			
	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.	2009 Pop. %	2009 S. R. S.	% of 2009 S. R. S.	% of Differ.
F	50.78	1,463	50.05	0.73	50.78	1,464	50.09	0.70
M	49.12	1,456	49.81	-0.70	49.12	1,458	49.88	-0.76
Miss	0.10	4	0.14	-0.04	0.10	1	0.03	0.07
Total	100.00	2,923	100.00	0.00	100.00	2,923	100.00	0.00

Note. F. Female; M. Male; Miss: Missing