

## **APPENDIX B: SCALE SCORE HISTOGRAMS AND TUKEY CHARTS**

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**Year 2003 Grade=3 (Base Year)**

Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240 ,*	175	175	0.27	0.27
250 ,	3	178	0.00	0.28
260 ,	3	181	0.00	0.28
270 ,	15	196	0.02	0.30
280 ,	21	217	0.03	0.34
290 ,	31	248	0.05	0.38
300 ,*	102	350	0.16	0.54
310 ,*	227	577	0.35	0.89
320 ,**	519	1096	0.81	1.70
330 ,****	1075	2171	1.67	3.37
340 ,*****	2017	4188	3.13	6.50
350 ,*****	3126	7314	4.85	11.34
360 ,*****	4782	12096	7.42	18.76
370 ,*****	5482	17578	8.50	27.26
380 ,*****	6300	23878	9.77	37.04
390 ,*****	6025	29903	9.35	46.38
400 ,*****	6565	36468	10.18	56.56
410 ,*****	5755	42223	8.93	65.49
420 ,*****	5027	47250	7.80	73.29
430 ,*****	4773	52023	7.40	80.69
440 ,*****	3782	55805	5.87	86.56
450 ,*****	3057	58862	4.74	91.30
460 ,*****	1896	60758	2.94	94.24
470 ,*****	1395	62153	2.16	96.40
480 ,****	892	63045	1.38	97.79
490 ,****	737	63782	1.14	98.93
500 ,*	281	64063	0.44	99.37
510 ,*	201	64264	0.31	99.68
520 ,	67	64331	0.10	99.78
530 ,	56	64387	0.09	99.87
540 ,	28	64415	0.04	99.91
550 ,	20	64435	0.03	99.94
560 ,	22	64457	0.03	99.98
570 ,	0	64457	0.00	99.98
580 ,	10	64467	0.02	99.99
590 ,	2	64469	0.00	100.00
600 ,	2	64471	0.00	100.00
610 ,	0	64471	0.00	100.00
620 ,	0	64471	0.00	100.00
630 ,	0	64471	0.00	100.00
640 ,	0	64471	0.00	100.00
650 ,	0	64471	0.00	100.00

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 1000 2000 3000 4000 5000 6000

Frequency

**Figure B.1 Year 2003 Scale Score Distribution: Grade3**

Year 2010 Grade=3 Form A

Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	2	2	0.01	0.01
250	0	2	0.00	0.01
260	0	2	0.00	0.01
270	0	2	0.00	0.01
280	1	3	0.00	0.01
290	2	5	0.01	0.02
300	2	7	0.01	0.02
310	12	19	0.04	0.06
320	29	48	0.10	0.16
330	97	145	0.33	0.50
340	81	226	0.28	0.77
350	436	662	1.49	2.26
360	669	1331	2.28	4.54
370	867	2198	2.96	7.50
380	1926	4124	6.58	14.08
390	2036	6160	6.95	21.03
400	3515	9675	12.00	33.03
410	2669	12344	9.11	42.15
420	2986	15330	10.19	52.34
430	3492	18822	11.92	64.26
440	3332	22154	11.38	75.64
450	1649	23803	5.63	81.27
460	1529	25332	5.22	86.49
470	1351	26683	4.61	91.10
480	1065	27748	3.64	94.74
490	803	28551	2.74	97.48
500	436	28987	1.49	98.97
510	0	28987	0.00	98.97
520	232	29219	0.79	99.76
530	0	29219	0.00	99.76
540	0	29219	0.00	99.76
550	53	29272	0.18	99.94
560	0	29272	0.00	99.94
570	11	29283	0.04	99.98
580	0	29283	0.00	99.98
590	0	29283	0.00	99.98
600	0	29283	0.00	99.98
610	5	29288	0.02	100.00
620	0	29288	0.00	100.00
630	0	29288	0.00	100.00
640	0	29288	0.00	100.00
650	1	29289	0.00	100.00

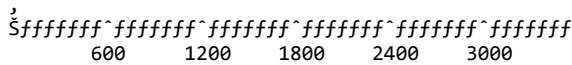
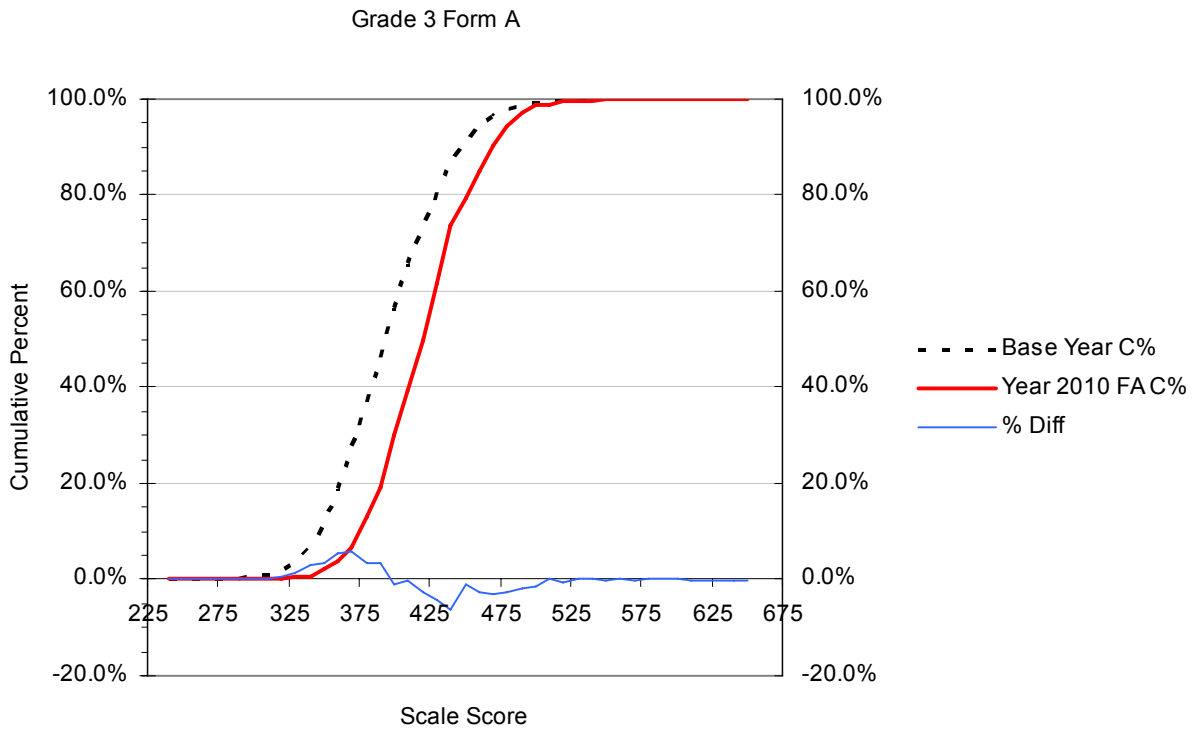
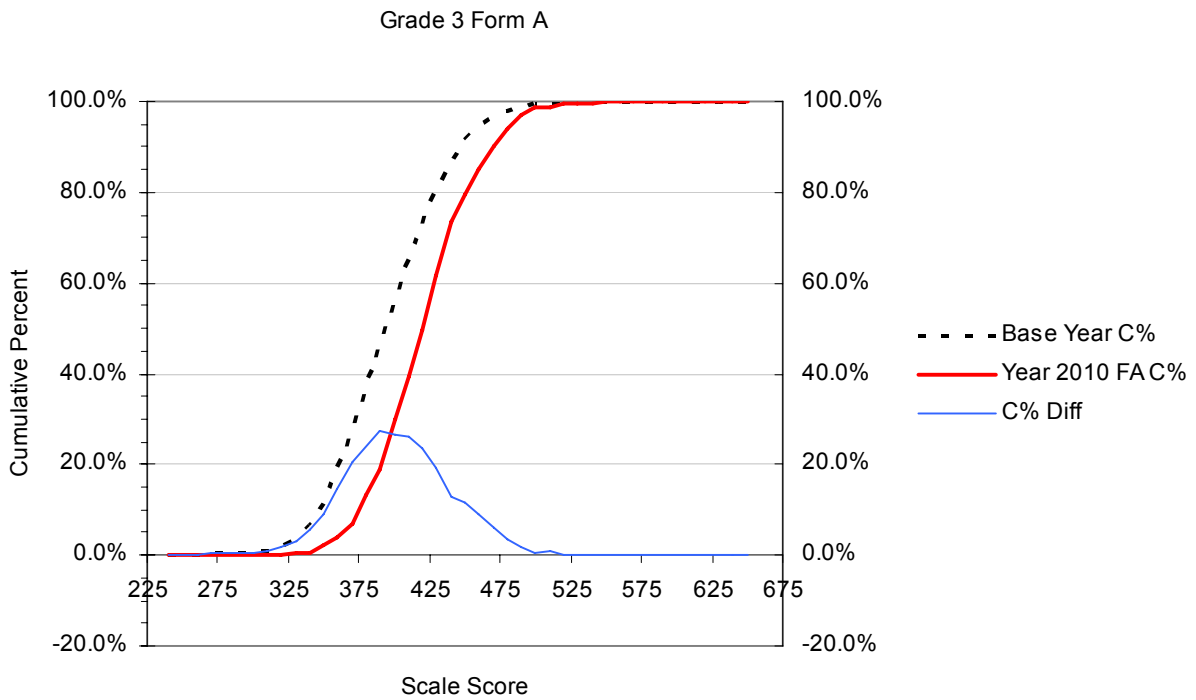


Figure B.2 Year 2010 Scale Score Distribution: Grade 3 Form A



**Figure B.3 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2010 Scale Scores with the Percent Differences between CDFs: Grade 3 Form A**



**Figure B.4 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2010 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 3 Form A**

Year 2010 Grade=3 Form B

Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	1	1	0.00	0.00
250	0	1	0.00	0.00
260	0	1	0.00	0.00
270	1	2	0.00	0.01
280	2	4	0.01	0.01
290	0	4	0.00	0.01
300	5	9	0.02	0.03
310	13	22	0.04	0.08
320	61	83	0.21	0.29
330	63	146	0.22	0.50
340	223	369	0.77	1.27
350	369	738	1.27	2.54
360	867	1605	2.98	5.52
370	1012	2617	3.48	8.99
380	1168	3785	4.01	13.01
390	2292	6077	7.88	20.89
400	1725	7802	5.93	26.81
410	3227	11029	11.09	37.90
420	2540	13569	8.73	46.63
430	3194	16763	10.98	57.61
440	3516	20279	12.08	69.69
450	1848	22127	6.35	76.05
460	1812	23939	6.23	82.27
470	2963	26902	10.18	92.46
480	48	26950	0.16	92.62
490	1057	28007	3.63	96.25
500	665	28672	2.29	98.54
510	0	28672	0.00	98.54
520	301	28973	1.03	99.57
530	0	28973	0.00	99.57
540	1	28974	0.00	99.58
550	96	29070	0.33	99.91
560	0	29070	0.00	99.91
570	22	29092	0.08	99.98
580	0	29092	0.00	99.98
590	0	29092	0.00	99.98
600	0	29092	0.00	99.98
610	5	29097	0.02	100.00
620	0	29097	0.00	100.00
630	0	29097	0.00	100.00
640	0	29097	0.00	100.00
650	0	29097	0.00	100.00

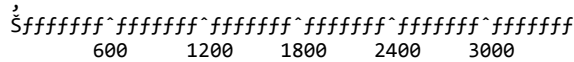
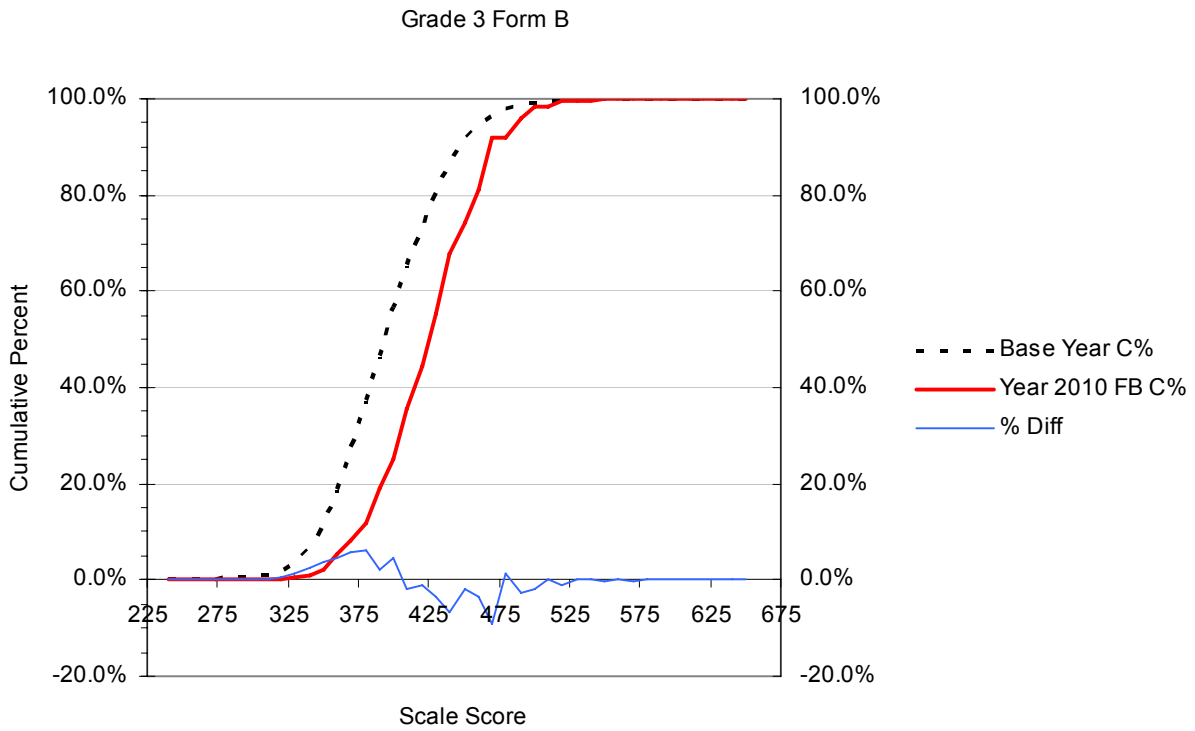
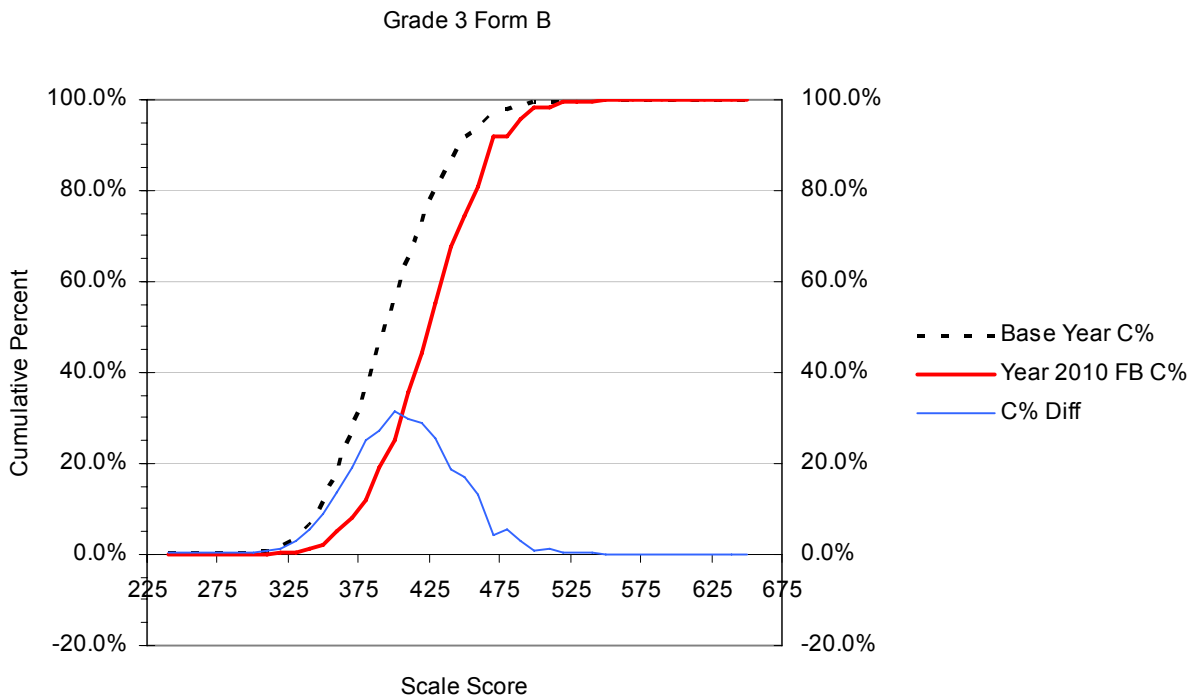


Figure B.5 Year 2010 Scale Score Distribution: Grade 3 Form B



**Figure B.6 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2010 Scale Scores with the Percent Differences between CDFs: Grade 3 Form B**



**Figure B.7 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2010 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 3 Form B**

Year

Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	72	72	0.12	0.12
250	3	75	0.00	0.12
260	1	76	0.00	0.12
270	11	87	0.02	0.14
280	75	162	0.12	0.26
290	75	237	0.12	0.38
300	273	510	0.44	0.83
310	347	857	0.56	1.39
320	896	1753	1.45	2.84
330	1516	3269	2.46	5.30
340	2255	5524	3.65	8.95
350	2552	8076	4.13	13.08
360	3552	11628	5.75	18.84
370	4251	15879	6.89	25.72
380	4738	20617	7.68	33.40
390	5806	26423	9.41	42.80
400	6760	33183	10.95	53.76
410	4626	37809	7.49	61.25
420	7417	45226	12.02	73.26
430	4696	49922	7.61	80.87
440	4619	54541	7.48	88.35
450	2514	57055	4.07	92.43
460	1852	58907	3.00	95.43
470	1352	60259	2.19	97.62
480	659	60918	1.07	98.68
490	239	61157	0.39	99.07
500	297	61454	0.48	99.55
510	110	61564	0.18	99.73
520	77	61641	0.12	99.86
530	31	61672	0.05	99.91
540	26	61698	0.04	99.95
550	9	61707	0.01	99.96
560	4	61711	0.01	99.97
570	8	61719	0.01	99.98
580	4	61723	0.01	99.99
590	7	61730	0.01	100.00
600	0	61730	0.00	100.00
610	0	61730	0.00	100.00
620	0	61730	0.00	100.00
630	0	61730	0.00	100.00
640	0	61730	0.00	100.00
650	0	61730	0.00	100.00

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Frequency

Figure B.8 Year 2004 Scale Score Distribution: Grade 4

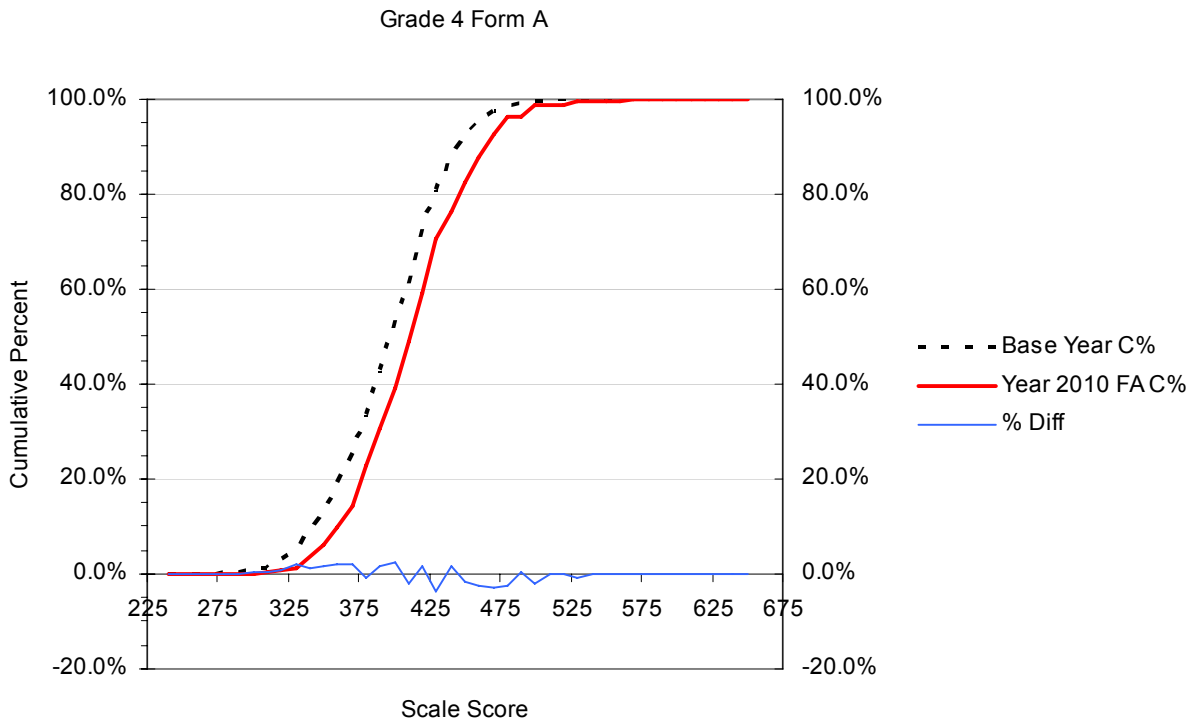
Year 2010 Grade=4 Form A

Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	0	0	0.00	0.00
250	0	0	0.00	0.00
260	0	0	0.00	0.00
270	1	1	0.00	0.00
280	6	7	0.02	0.02
290	9	16	0.03	0.05
300	13	29	0.04	0.10
310	64	93	0.22	0.31
320	154	247	0.52	0.83
330	118	365	0.40	1.23
340	674	1039	2.27	3.50
350	753	1792	2.53	6.03
360	1069	2861	3.60	9.63
370	1399	4260	4.71	14.34
380	2566	6826	8.64	22.98
390	2277	9103	7.67	30.64
400	2546	11649	8.57	39.21
410	2872	14521	9.67	48.88
420	3113	17634	10.48	59.36
430	3383	21017	11.39	70.75
440	1710	22727	5.76	76.51
450	1755	24482	5.91	82.41
460	1637	26119	5.51	87.92
470	1455	27574	4.90	92.82
480	1075	28649	3.62	96.44
490	0	28649	0.00	96.44
500	699	29348	2.35	98.79
510	0	29348	0.00	98.79
520	0	29348	0.00	98.79
530	281	29629	0.95	99.74
540	0	29629	0.00	99.74
550	0	29629	0.00	99.74
560	0	29629	0.00	99.74
570	60	29689	0.20	99.94
580	0	29689	0.00	99.94
590	0	29689	0.00	99.94
600	13	29702	0.04	99.99
610	0	29702	0.00	99.99
620	0	29702	0.00	99.99
630	0	29702	0.00	99.99
640	4	29706	0.01	100.00
650	0	29706	0.00	100.00

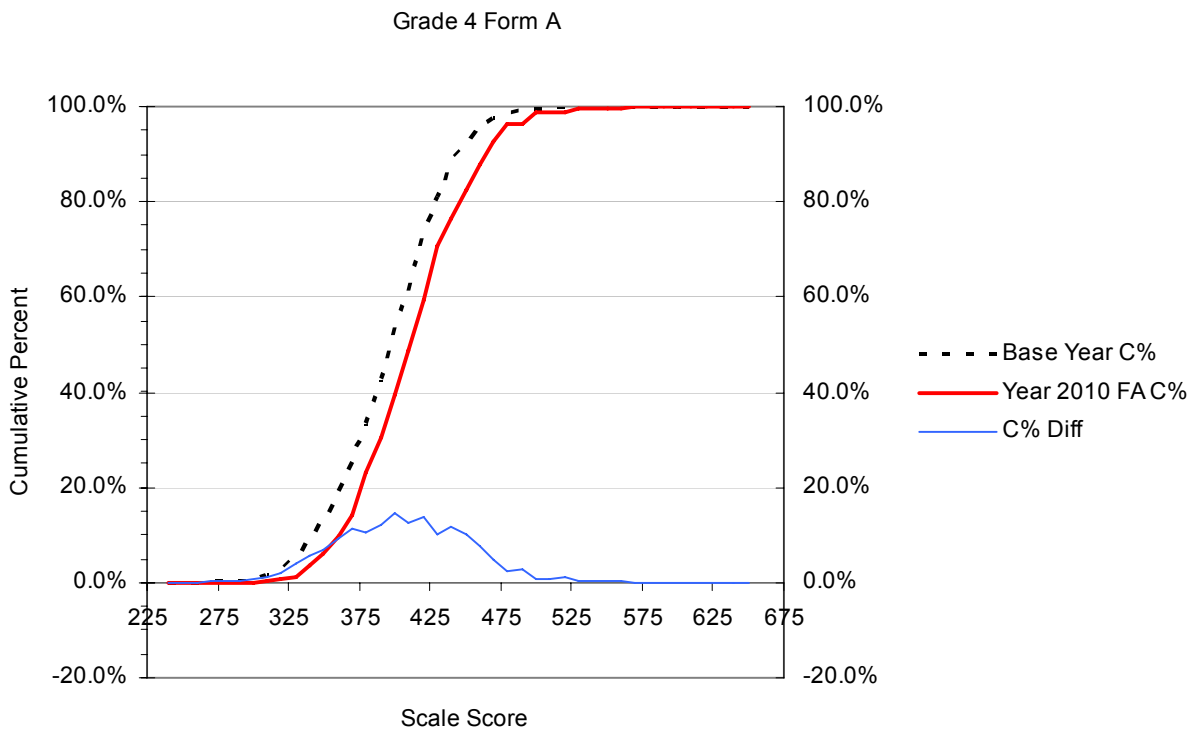
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 600      1200      1800      2400      3000  
 Frequency

Figure B.9 Year 2010 Scale Score Distribution: Grade 4 Form A





**Figure B.10 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2010 Scale Scores with the Percent Differences between CDFs: Grade 4 Form A**



**Figure B.11 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2010 Scale Scores with the Cumulative percent Differences between CDFs: Grade 4 Form A**

Year 2010 Grade=4 Form B

Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	1	1	0.00	0.00
250	0	1	0.00	0.00
260	0	1	0.00	0.00
270	2	3	0.01	0.01
280	4	7	0.01	0.02
290	6	13	0.02	0.04
300	40	53	0.14	0.18
310	37	90	0.13	0.30
320	112	202	0.38	0.68
330	132	334	0.45	1.13
340	327	661	1.11	2.24
350	966	1627	3.27	5.51
360	1015	2642	3.43	8.94
370	1403	4045	4.75	13.69
380	1761	5806	5.96	19.65
390	3410	9216	11.54	31.19
400	2775	11991	9.39	40.58
410	3188	15179	10.79	51.37
420	3405	18584	11.52	62.89
430	1945	20529	6.58	69.47
440	3542	24071	11.99	81.46
450	1633	25704	5.53	86.99
460	1389	27093	4.70	91.69
470	1066	28159	3.61	95.30
480	0	28159	0.00	95.30
490	729	28888	2.47	97.76
500	413	29301	1.40	99.16
510	0	29301	0.00	99.16
520	0	29301	0.00	99.16
530	180	29481	0.61	99.77
540	0	29481	0.00	99.77
550	53	29534	0.18	99.95
560	0	29534	0.00	99.95
570	0	29534	0.00	99.95
580	11	29545	0.04	99.99
590	0	29545	0.00	99.99
600	0	29545	0.00	99.99
610	0	29545	0.00	99.99
620	4	29549	0.01	100.00
630	0	29549	0.00	100.00
640	0	29549	0.00	100.00
650	0	29549	0.00	100.00

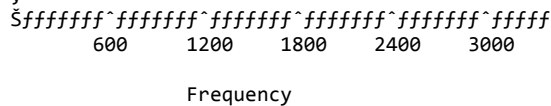
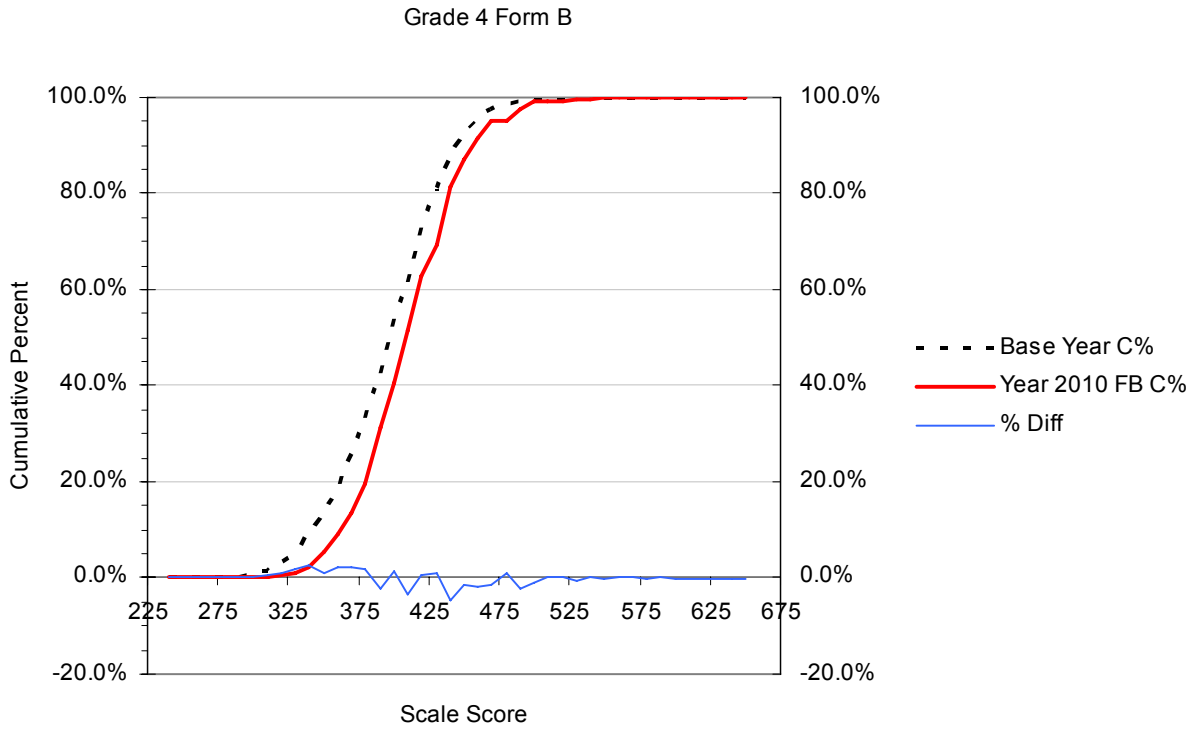
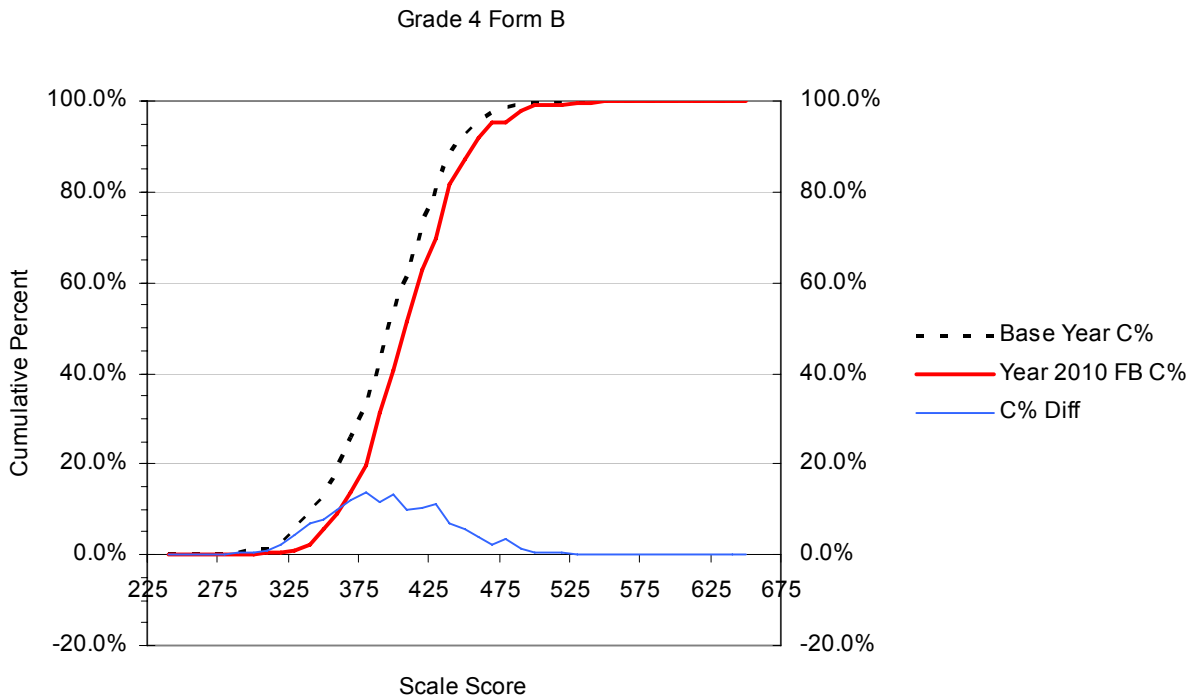


Figure B.12 Year 2010 Scale Score Distribution: Grade 4 Form B



**Figure B.13 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2010 Scale Scores with the Percent Differences between CDFs: Grade 4 Form B**



**Figure B.14 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2010 Scale Scores with the Cumulative percent Differences between CDFs: Grade 4 Form B**

**Year 2003 Grade=5 (Base Year)**

Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240 ,*	134	134	0.20	0.20
250 ,	4	138	0.01	0.20
260 ,	14	152	0.02	0.22
270 ,	15	167	0.02	0.25
280 ,	36	203	0.05	0.30
290 ,	59	262	0.09	0.39
300 ,*	160	422	0.24	0.62
310 ,**	395	817	0.58	1.21
320 ,****	721	1538	1.06	2.27
330 ,*****	1342	2880	1.98	4.25
340 ,*****	2255	5135	3.33	7.58
350 ,*****	2989	8124	4.41	12.00
360 ,*****	4227	12351	6.24	18.24
370 ,*****	5685	18036	8.39	26.63
380 ,*****	5646	23682	8.34	34.97
390 ,*****	6664	30346	9.84	44.81
400 ,*****	6750	37096	9.97	54.78
410 ,*****	6814	43910	10.06	64.84
420 ,*****	5659	49569	8.36	73.19
430 ,*****	5052	54621	7.46	80.65
440 ,*****	4698	59319	6.94	87.59
450 ,*****	2996	62315	4.42	92.02
460 ,*****	1996	64311	2.95	94.96
470 ,*****	1463	65774	2.16	97.12
480 ,****	720	66494	1.06	98.19
490 ,**	452	66946	0.67	98.85
500 ,**	383	67329	0.57	99.42
510 ,*	147	67476	0.22	99.64
520 ,*	121	67597	0.18	99.82
530 ,	58	67655	0.09	99.90
540 ,	20	67675	0.03	99.93
550 ,	17	67692	0.03	99.96
560 ,	14	67706	0.02	99.98
570 ,	12	67718	0.02	99.99
580 ,	2	67720	0.00	100.00
590 ,	2	67722	0.00	100.00
600 ,	0	67722	0.00	100.00
610 ,	0	67722	0.00	100.00
620 ,	0	67722	0.00	100.00
630 ,	0	67722	0.00	100.00
640 ,	0	67722	0.00	100.00
650 ,	0	67722	0.00	100.00

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Frequency

**Figure B.15 Year 2003 Scale Score Distribution: Grade 5**

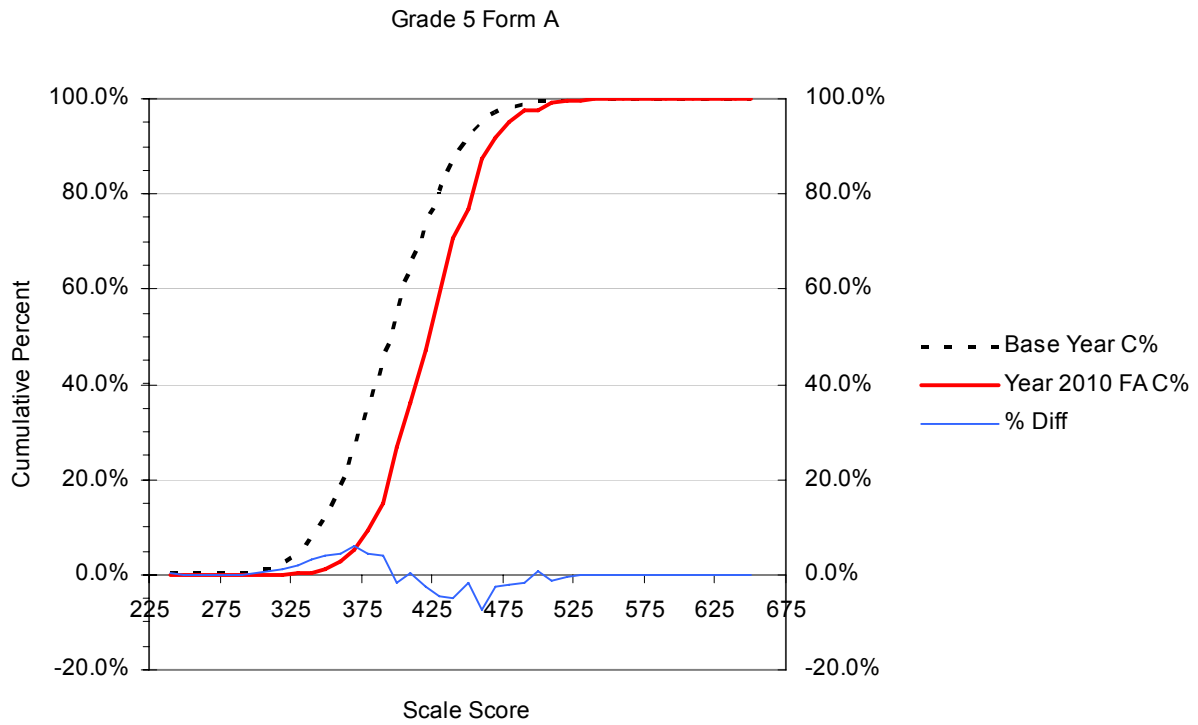
Year 2010 Grade=5 Form A

Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	1	1	0.00	0.00
250	0	1	0.00	0.00
260	0	1	0.00	0.00
270	0	1	0.00	0.00
280	0	1	0.00	0.00
290	0	1	0.00	0.00
300	3	4	0.01	0.01
310	11	15	0.04	0.05
320	10	25	0.03	0.09
330	54	79	0.18	0.27
340	50	129	0.17	0.44
350	161	290	0.55	0.99
360	558	848	1.91	2.90
370	698	1546	2.39	5.29
380	1137	2683	3.89	9.19
390	1650	4333	5.65	14.84
400	3449	7782	11.81	26.65
410	2807	10589	9.61	36.26
420	3152	13741	10.79	47.05
430	3484	17225	11.93	58.98
440	3474	20699	11.90	70.88
450	1729	22428	5.92	76.80
460	3075	25503	10.53	87.33
470	1315	26818	4.50	91.83
480	977	27795	3.35	95.18
490	693	28488	2.37	97.55
500	0	28488	0.00	97.55
510	430	28918	1.47	99.02
520	189	29107	0.65	99.67
530	0	29107	0.00	99.67
540	61	29168	0.21	99.88
550	0	29168	0.00	99.88
560	0	29168	0.00	99.88
570	27	29195	0.09	99.97
580	0	29195	0.00	99.97
590	0	29195	0.00	99.97
600	6	29201	0.02	99.99
610	0	29201	0.00	99.99
620	0	29201	0.00	99.99
630	0	29201	0.00	99.99
640	0	29201	0.00	99.99
650	2	29203	0.01	100.00

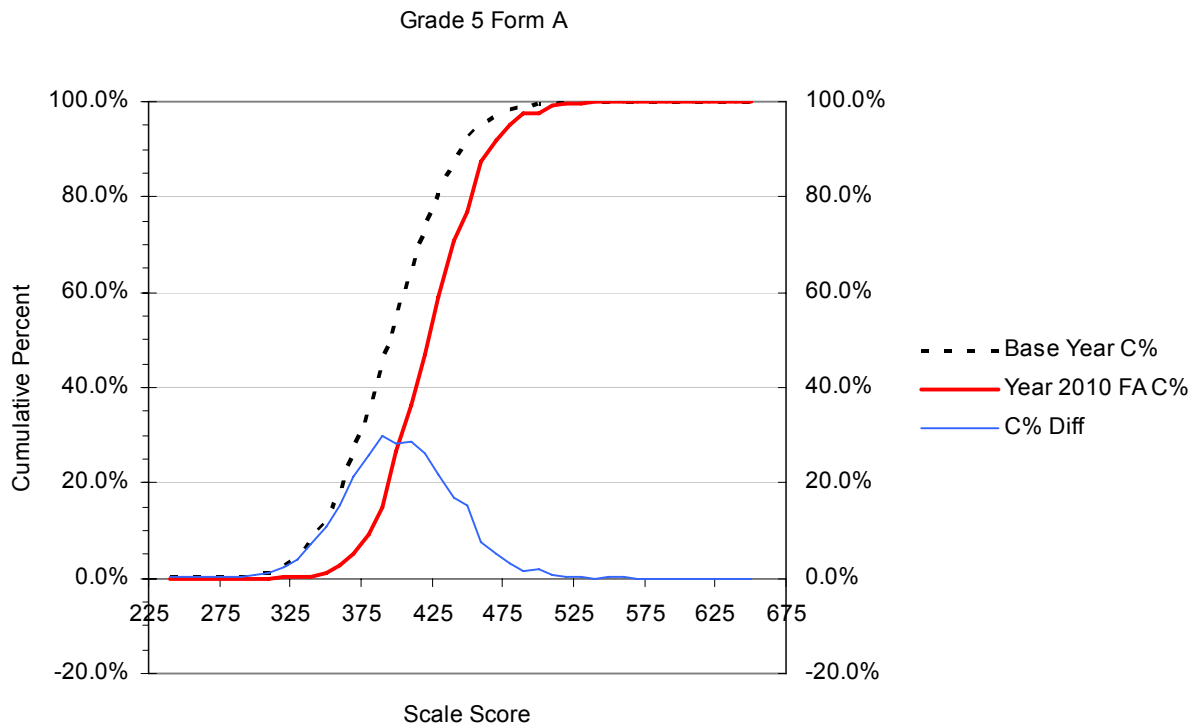
  

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 600 1200 1800 2400 3000  
 Frequency

Figure B.16 Year 2010 Scale Score Distribution: Grade 5 Form A



**Figure B.17 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2010 Scale Scores with the Percent Differences between CDFs: Grade 5 Form A**



**Figure B.18 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2010 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 5 Form A**

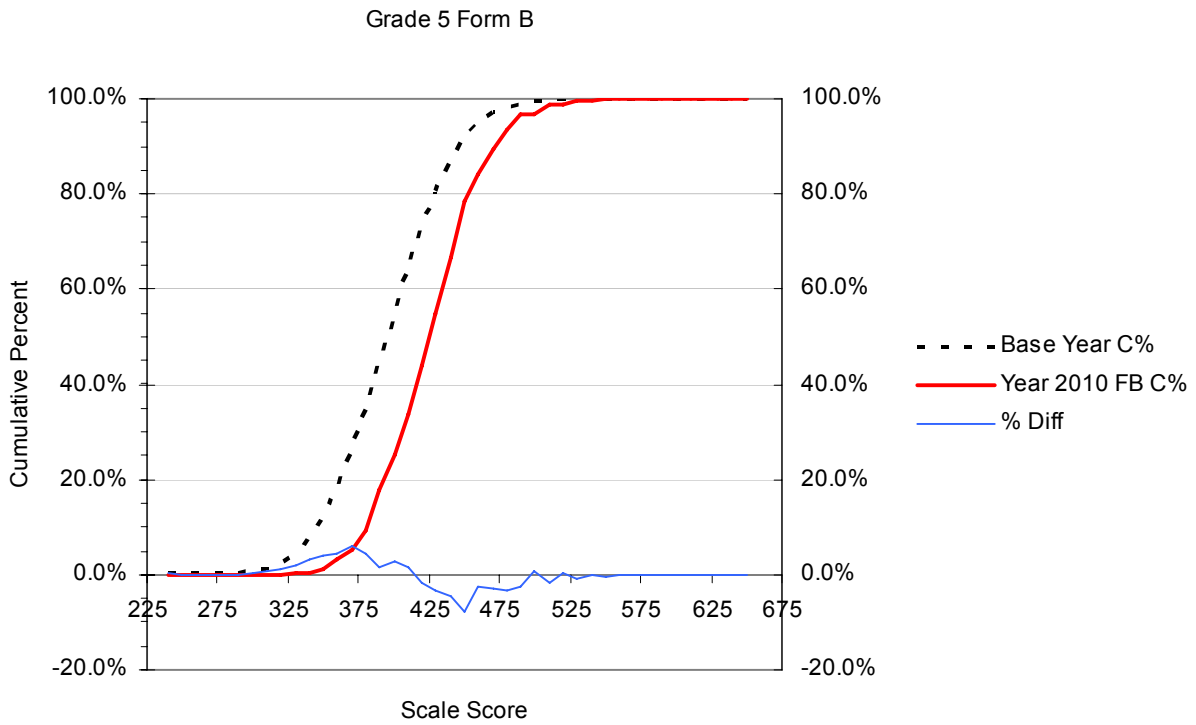
Year 2010 Grade=5 Form B

Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	0	0	0.00	0.00
250	0	0	0.00	0.00
260	0	0	0.00	0.00
270	0	0	0.00	0.00
280	0	0	0.00	0.00
290	0	0	0.00	0.00
300	2	2	0.01	0.01
310	6	8	0.02	0.03
320	12	20	0.04	0.07
330	60	80	0.21	0.28
340	52	132	0.18	0.46
350	166	298	0.57	1.03
360	567	865	1.96	2.98
370	706	1571	2.44	5.42
380	1152	2723	3.97	9.39
390	2457	5180	8.47	17.87
400	2135	7315	7.36	25.23
410	2496	9811	8.61	33.84
420	2954	12765	10.19	44.03
430	3146	15911	10.85	54.88
440	3354	19265	11.57	66.45
450	3510	22775	12.11	78.55
460	1639	24414	5.65	84.21
470	1522	25936	5.25	89.46
480	1214	27150	4.19	93.64
490	877	28027	3.02	96.67
500	0	28027	0.00	96.67
510	576	28603	1.99	98.65
520	0	28603	0.00	98.65
530	266	28869	0.92	99.57
540	0	28869	0.00	99.57
550	93	28962	0.32	99.89
560	0	28962	0.00	99.89
570	0	28962	0.00	99.89
580	25	28987	0.09	99.98
590	0	28987	0.00	99.98
600	0	28987	0.00	99.98
610	0	28987	0.00	99.98
620	5	28992	0.02	100.00
630	0	28992	0.00	100.00
640	0	28992	0.00	100.00
650	1	28993	0.00	100.00

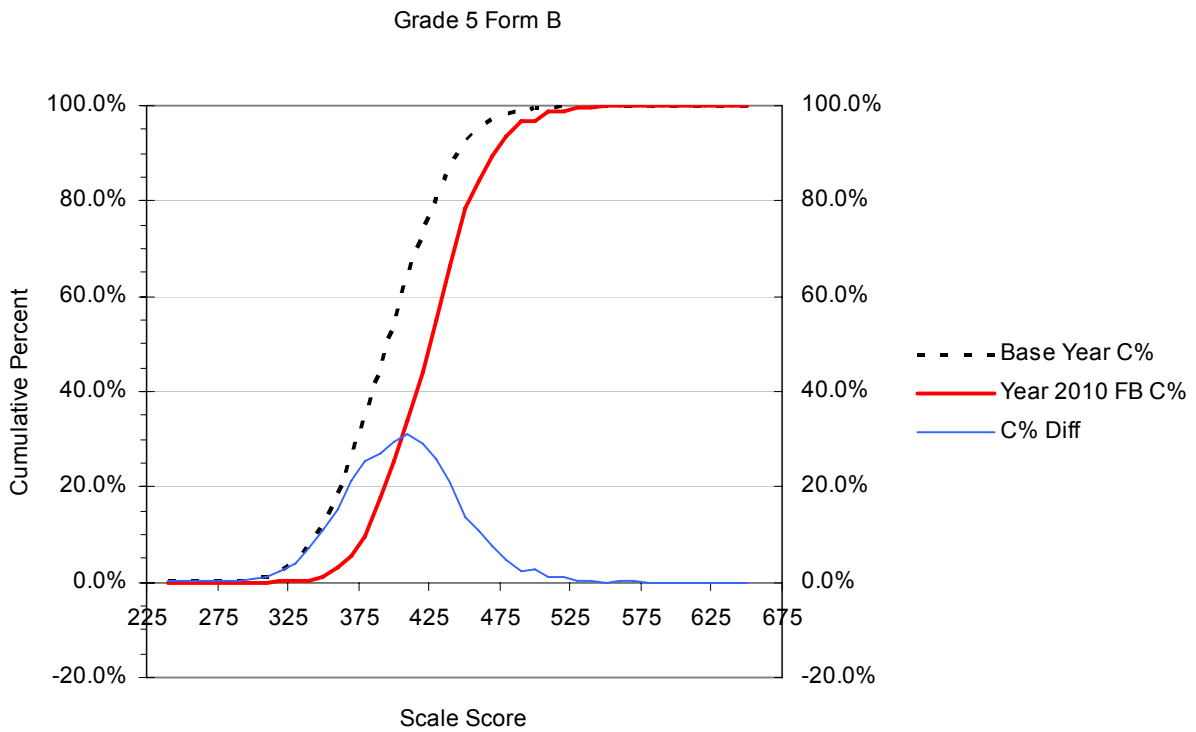
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 600 1200 1800 2400 3000

Frequency

Figure B.19 Year 2010 Scale Score Distribution: Grade 5 Form B



**Figure B.20 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2010 Scale Scores with the Percent Differences between CDFs: Grade 5 Form B**



**Figure B.21 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2010 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 5 Form B**





Year 2010 Grade=6 Form A

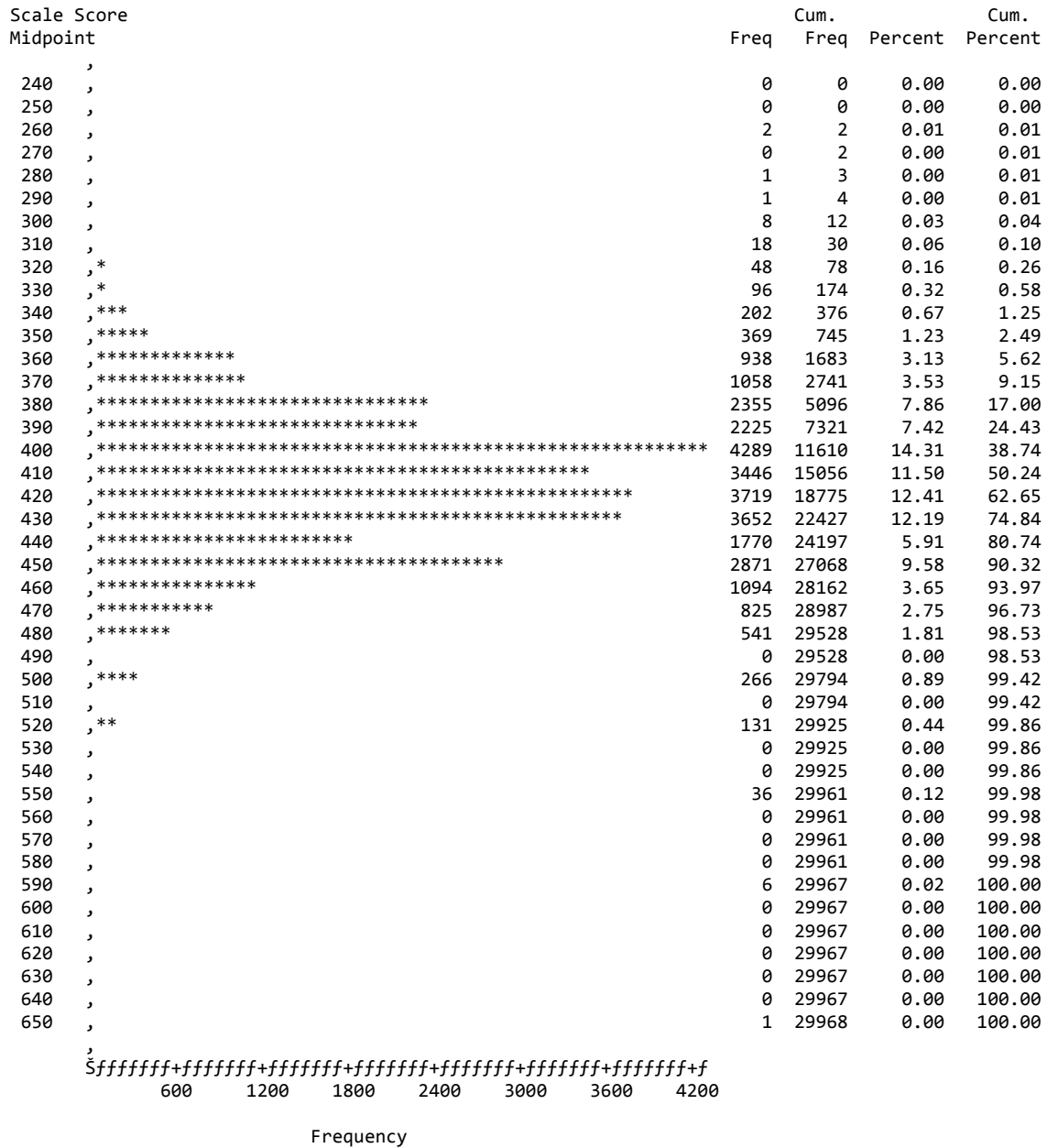
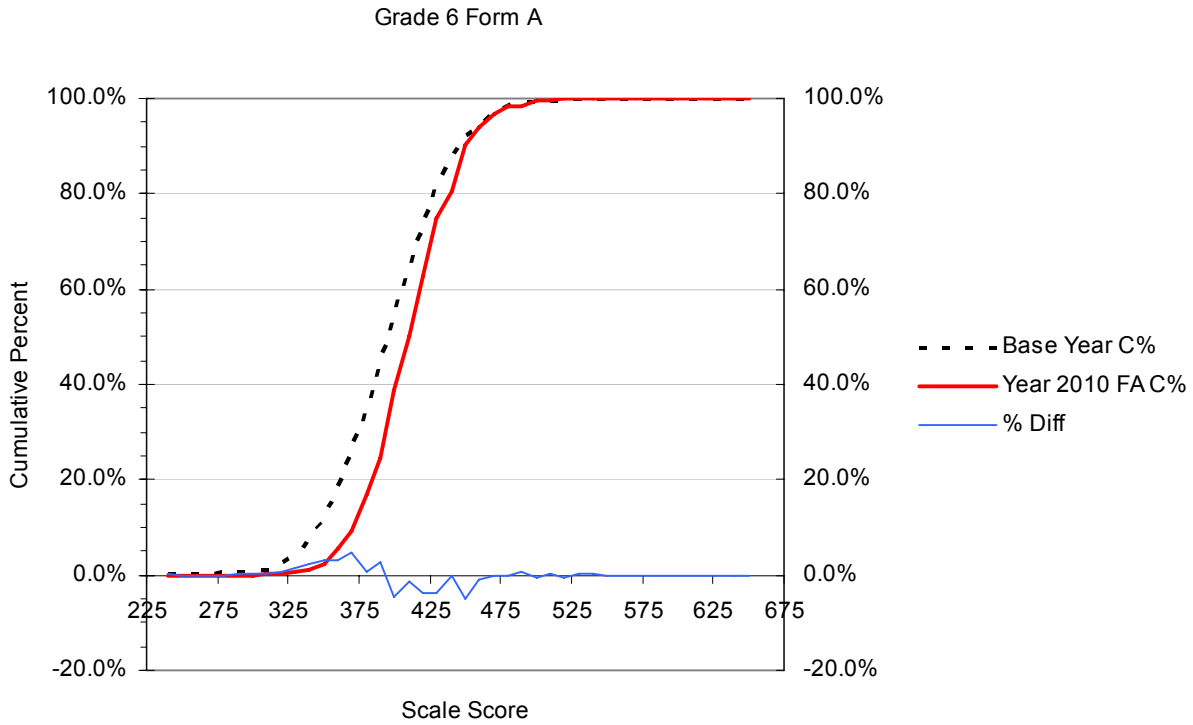
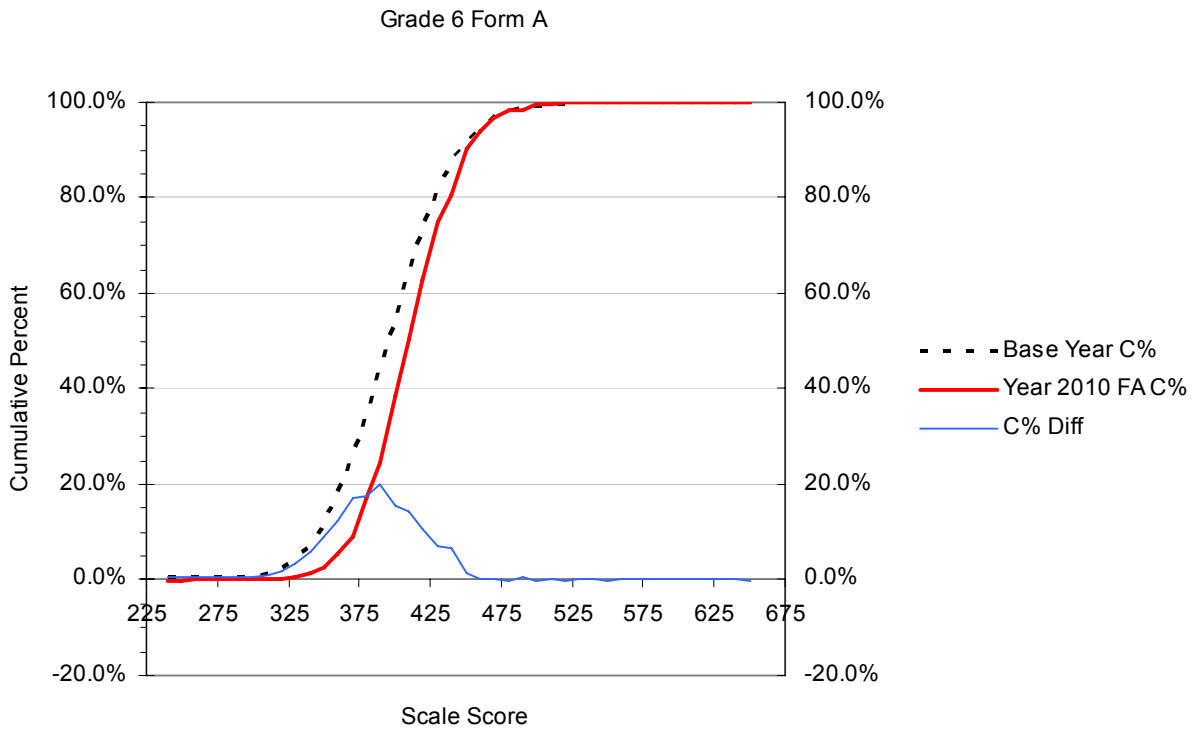


Figure B.23 Year 2010 Scale Score Distribution: Grade 6 Form A



**Figure B.24 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2010 Scale Scores with the Percent Differences between CDFs: Grade 6 Form A**



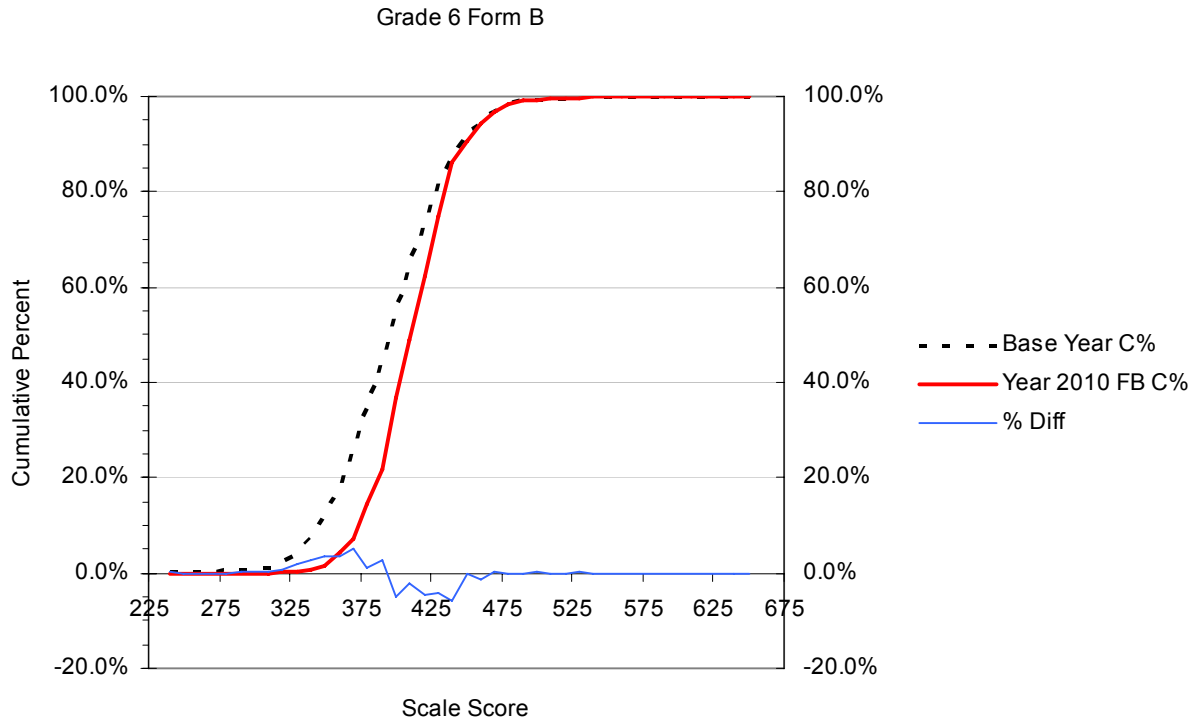
**Figure B.25 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2010 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 6 Form A**

Year 2010 Grade=6 Form B

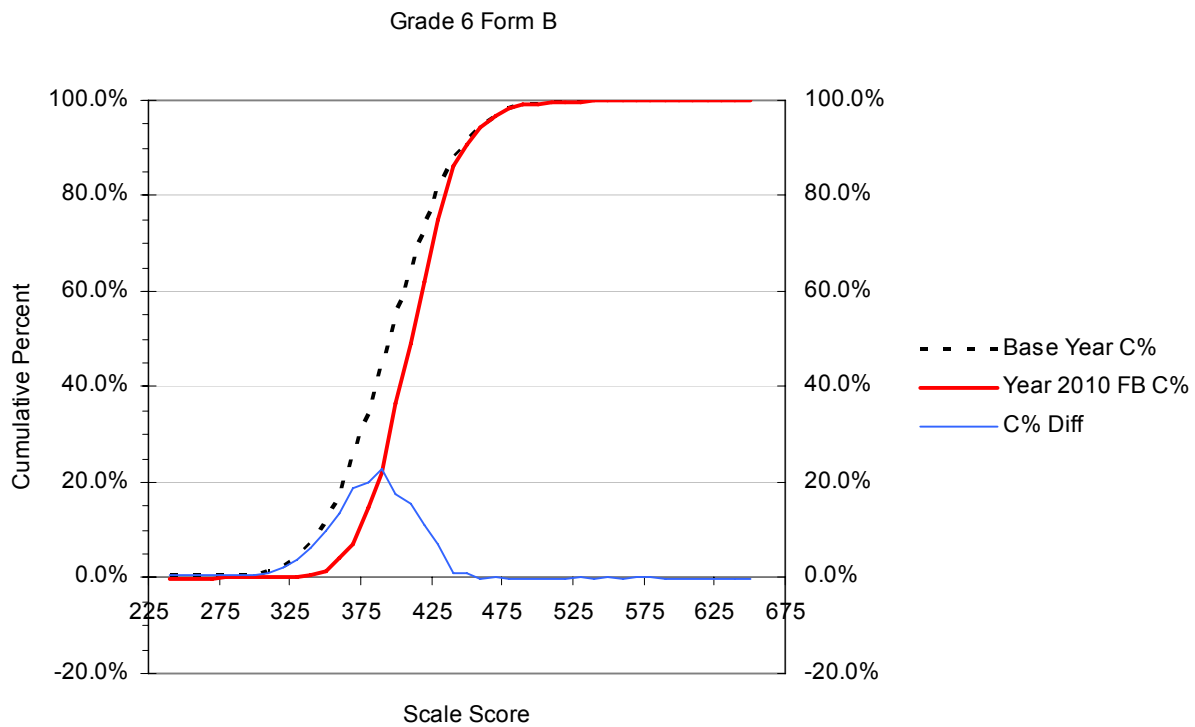
| Scale Score<br>Midpoint | Freq | Cum.<br>Freq | Percent | Cum.<br>Percent |
|-------------------------|------|--------------|---------|-----------------|
| 240                     | 0    | 0            | 0.00    | 0.00            |
| 250                     | 0    | 0            | 0.00    | 0.00            |
| 260                     | 0    | 0            | 0.00    | 0.00            |
| 270                     | 0    | 0            | 0.00    | 0.00            |
| 280                     | 1    | 1            | 0.00    | 0.00            |
| 290                     | 0    | 1            | 0.00    | 0.00            |
| 300                     | 7    | 8            | 0.02    | 0.03            |
| 310                     | 0    | 8            | 0.00    | 0.03            |
| 320                     | 21   | 29           | 0.07    | 0.10            |
| 330                     | 48   | 77           | 0.16    | 0.26            |
| 340                     | 134  | 211          | 0.46    | 0.72            |
| 350                     | 251  | 462          | 0.86    | 1.58            |
| 360                     | 782  | 1244         | 2.68    | 4.26            |
| 370                     | 860  | 2104         | 2.94    | 7.20            |
| 380                     | 2166 | 4270         | 7.41    | 14.61           |
| 390                     | 2106 | 6376         | 7.21    | 21.82           |
| 400                     | 4333 | 10709        | 14.83   | 36.65           |
| 410                     | 3600 | 14309        | 12.32   | 48.97           |
| 420                     | 3843 | 18152        | 13.15   | 62.12           |
| 430                     | 3711 | 21863        | 12.70   | 74.82           |
| 440                     | 3328 | 25191        | 11.39   | 86.21           |
| 450                     | 1291 | 26482        | 4.42    | 90.62           |
| 460                     | 1071 | 27553        | 3.67    | 94.29           |
| 470                     | 711  | 28264        | 2.43    | 96.72           |
| 480                     | 508  | 28772        | 1.74    | 98.46           |
| 490                     | 271  | 29043        | 0.93    | 99.39           |
| 500                     | 0    | 29043        | 0.00    | 99.39           |
| 510                     | 117  | 29160        | 0.40    | 99.79           |
| 520                     | 0    | 29160        | 0.00    | 99.79           |
| 530                     | 0    | 29160        | 0.00    | 99.79           |
| 540                     | 45   | 29205        | 0.15    | 99.94           |
| 550                     | 0    | 29205        | 0.00    | 99.94           |
| 560                     | 13   | 29218        | 0.04    | 99.99           |
| 570                     | 0    | 29218        | 0.00    | 99.99           |
| 580                     | 0    | 29218        | 0.00    | 99.99           |
| 590                     | 4    | 29222        | 0.01    | 100.00          |
| 600                     | 0    | 29222        | 0.00    | 100.00          |
| 610                     | 0    | 29222        | 0.00    | 100.00          |
| 620                     | 0    | 29222        | 0.00    | 100.00          |
| 630                     | 0    | 29222        | 0.00    | 100.00          |
| 640                     | 0    | 29222        | 0.00    | 100.00          |
| 650                     | 0    | 29222        | 0.00    | 100.00          |

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 600      1200      1800      2400      3000      3600      4200  
 Frequency

Figure B.26 Year 2010 Scale Score Distribution: Grade 6 Form B



**Figure B.27 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2010 Scale Scores with the Percent Differences between CDFs: Grade 6 Form B**



**Figure B.28 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2010 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 6 Form B**

**Year 2004 Grade=7 (Base Year)**

| Scale Score<br>Midpoint | Freq | Cum.<br>Freq | Percent | Cum.<br>Percent |
|-------------------------|------|--------------|---------|-----------------|
| 240 ,**                 | 436  | 436          | 0.63    | 0.63            |
| 250 ,                   | 0    | 436          | 0.00    | 0.63            |
| 260 ,                   | 31   | 467          | 0.04    | 0.68            |
| 270 ,                   | 12   | 479          | 0.02    | 0.69            |
| 280 ,                   | 32   | 511          | 0.05    | 0.74            |
| 290 ,                   | 62   | 573          | 0.09    | 0.83            |
| 300 ,*                  | 134  | 707          | 0.19    | 1.02            |
| 310 ,**                 | 410  | 1117         | 0.59    | 1.62            |
| 320 ,****               | 776  | 1893         | 1.12    | 2.74            |
| 330 ,*****              | 1288 | 3181         | 1.86    | 4.60            |
| 340 ,*****              | 1778 | 4959         | 2.57    | 7.17            |
| 350 ,*****              | 2797 | 7756         | 4.04    | 11.21           |
| 360 ,*****              | 3648 | 11404        | 5.27    | 16.49           |
| 370 ,*****              | 5034 | 16438        | 7.28    | 23.77           |
| 380 ,*****              | 5865 | 22303        | 8.48    | 32.25           |
| 390 ,*****              | 7817 | 30120        | 11.30   | 43.55           |
| 400 ,*****              | 6965 | 37085        | 10.07   | 53.62           |
| 410 ,*****              | 7175 | 44260        | 10.37   | 63.99           |
| 420 ,*****              | 6773 | 51033        | 9.79    | 73.79           |
| 430 ,*****              | 5910 | 56943        | 8.55    | 82.33           |
| 440 ,*****              | 4679 | 61622        | 6.77    | 89.10           |
| 450 ,*****              | 2633 | 64255        | 3.81    | 92.90           |
| 460 ,*****              | 1782 | 66037        | 2.58    | 95.48           |
| 470 ,*****              | 1546 | 67583        | 2.24    | 97.72           |
| 480 ,**                 | 414  | 67997        | 0.60    | 98.31           |
| 490 ,**                 | 563  | 68560        | 0.81    | 99.13           |
| 500 ,*                  | 257  | 68817        | 0.37    | 99.50           |
| 510 ,                   | 94   | 68911        | 0.14    | 99.64           |
| 520 ,*                  | 128  | 69039        | 0.19    | 99.82           |
| 530 ,                   | 54   | 69093        | 0.08    | 99.90           |
| 540 ,                   | 32   | 69125        | 0.05    | 99.95           |
| 550 ,                   | 11   | 69136        | 0.02    | 99.96           |
| 560 ,                   | 14   | 69150        | 0.02    | 99.98           |
| 570 ,                   | 5    | 69155        | 0.01    | 99.99           |
| 580 ,                   | 5    | 69160        | 0.01    | 100.00          |
| 590 ,                   | 1    | 69161        | 0.00    | 100.00          |
| 600 ,                   | 0    | 69161        | 0.00    | 100.00          |
| 610 ,                   | 2    | 69163        | 0.00    | 100.00          |
| 620 ,                   | 0    | 69163        | 0.00    | 100.00          |
| 630 ,                   | 0    | 69163        | 0.00    | 100.00          |
| 640 ,                   | 0    | 69163        | 0.00    | 100.00          |
| 650 ,                   | 0    | 69163        | 0.00    | 100.00          |

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 1000 2000 3000 4000 5000 6000 7000  
 Frequency

**Figure B.29 Year 2004 Scale Score Distribution: Grade 7**

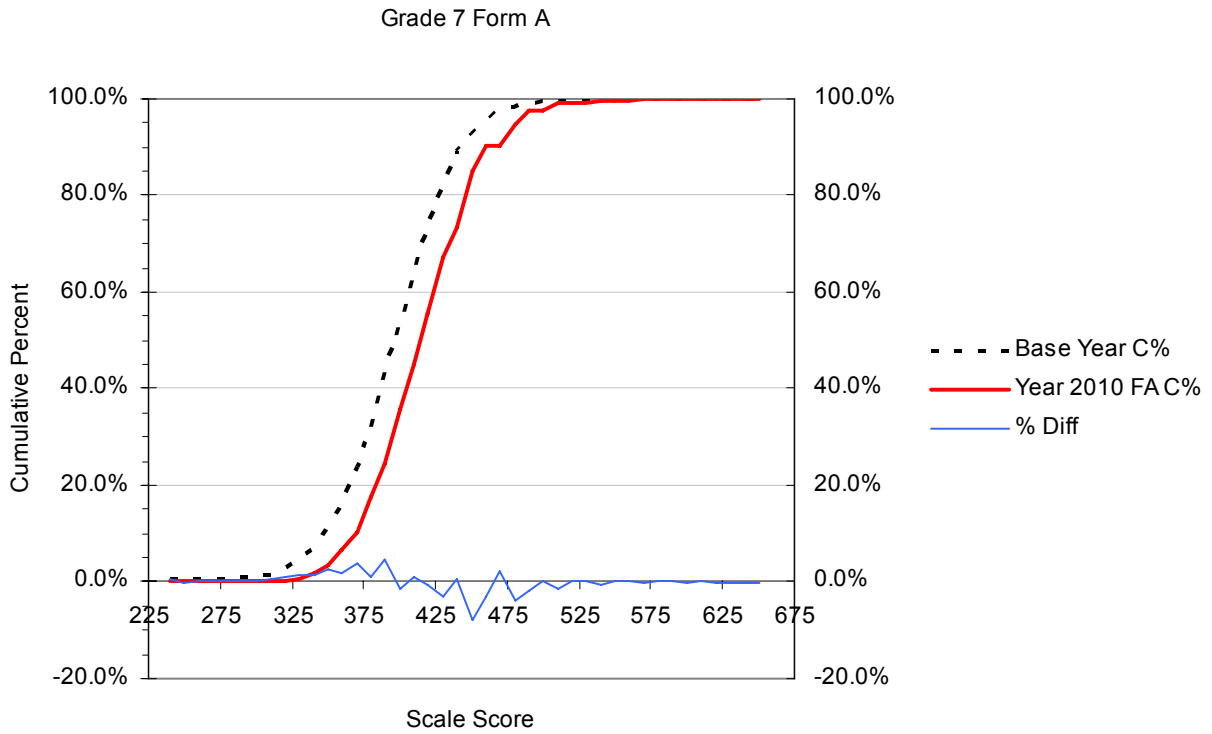
Year 2010 Grade=7 Form A

| Scale Score<br>Midpoint | Freq | Cum.<br>Freq | Percent | Cum.<br>Percent |
|-------------------------|------|--------------|---------|-----------------|
| 240                     | 1    | 1            | 0.00    | 0.00            |
| 250                     | 0    | 1            | 0.00    | 0.00            |
| 260                     | 0    | 1            | 0.00    | 0.00            |
| 270                     | 0    | 1            | 0.00    | 0.00            |
| 280                     | 1    | 2            | 0.00    | 0.01            |
| 290                     | 5    | 7            | 0.02    | 0.02            |
| 300                     | 9    | 16           | 0.03    | 0.05            |
| 310                     | 26   | 42           | 0.09    | 0.14            |
| 320                     | 16   | 58           | 0.05    | 0.19            |
| 330                     | 101  | 159          | 0.34    | 0.53            |
| 340                     | 350  | 509          | 1.18    | 1.71            |
| 350                     | 454  | 963          | 1.52    | 3.23            |
| 360                     | 1049 | 2012         | 3.52    | 6.76            |
| 370                     | 1066 | 3078         | 3.58    | 10.34           |
| 380                     | 2209 | 5287         | 7.42    | 17.75           |
| 390                     | 1939 | 7226         | 6.51    | 24.26           |
| 400                     | 3456 | 10682        | 11.60   | 35.87           |
| 410                     | 2768 | 13450        | 9.29    | 45.16           |
| 420                     | 3118 | 16568        | 10.47   | 55.63           |
| 430                     | 3455 | 20023        | 11.60   | 67.23           |
| 440                     | 1821 | 21844        | 6.11    | 73.35           |
| 450                     | 3473 | 25317        | 11.66   | 85.01           |
| 460                     | 1611 | 26928        | 5.41    | 90.42           |
| 470                     | 0    | 26928        | 0.00    | 90.42           |
| 480                     | 1268 | 28196        | 4.26    | 94.67           |
| 490                     | 836  | 29032        | 2.81    | 97.48           |
| 500                     | 0    | 29032        | 0.00    | 97.48           |
| 510                     | 457  | 29489        | 1.53    | 99.02           |
| 520                     | 0    | 29489        | 0.00    | 99.02           |
| 530                     | 0    | 29489        | 0.00    | 99.02           |
| 540                     | 197  | 29686        | 0.66    | 99.68           |
| 550                     | 0    | 29686        | 0.00    | 99.68           |
| 560                     | 0    | 29686        | 0.00    | 99.68           |
| 570                     | 75   | 29761        | 0.25    | 99.93           |
| 580                     | 0    | 29761        | 0.00    | 99.93           |
| 590                     | 0    | 29761        | 0.00    | 99.93           |
| 600                     | 18   | 29779        | 0.06    | 99.99           |
| 610                     | 0    | 29779        | 0.00    | 99.99           |
| 620                     | 0    | 29779        | 0.00    | 99.99           |
| 630                     | 0    | 29779        | 0.00    | 99.99           |
| 640                     | 0    | 29779        | 0.00    | 99.99           |
| 650                     | 3    | 29782        | 0.01    | 100.00          |

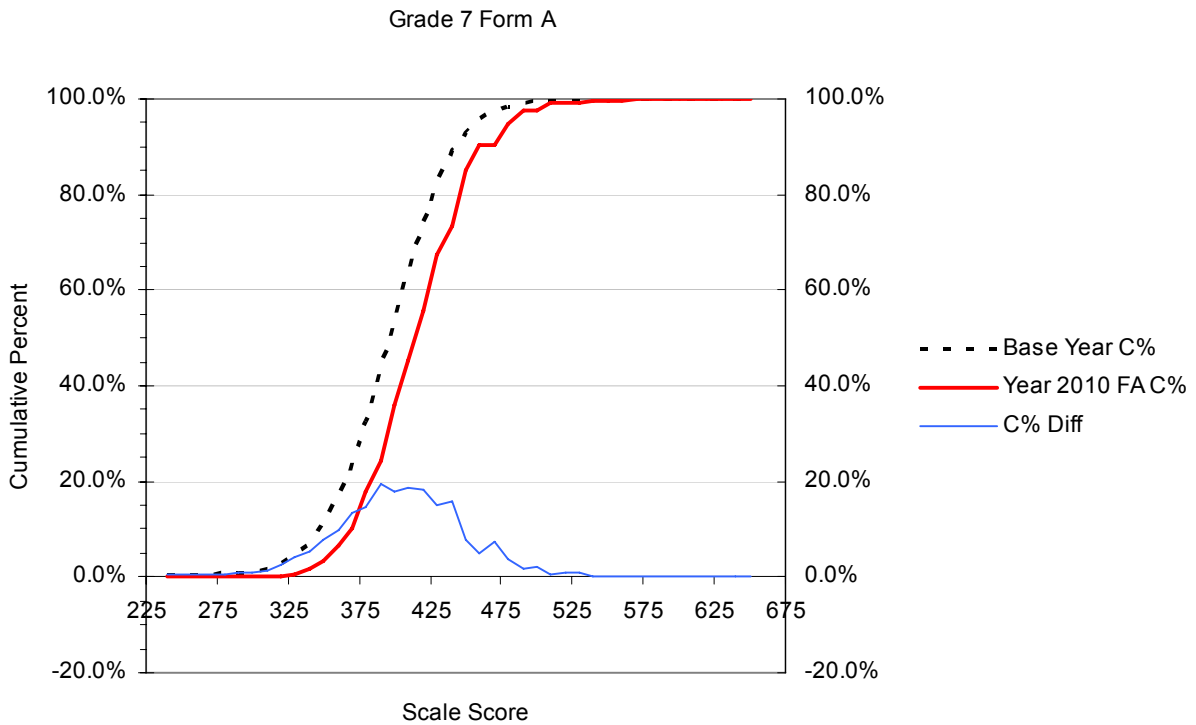
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 600      1200      1800      2400      3000

Frequency

Figure B.30 Year 2010 Scale Score Distribution: Grade 7 Form A



**Figure B.31 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2010 Scale Scores with the Percent Differences between CDFs: Grade 7 Form A**



**Figure B.32 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2010 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 7 Form A**

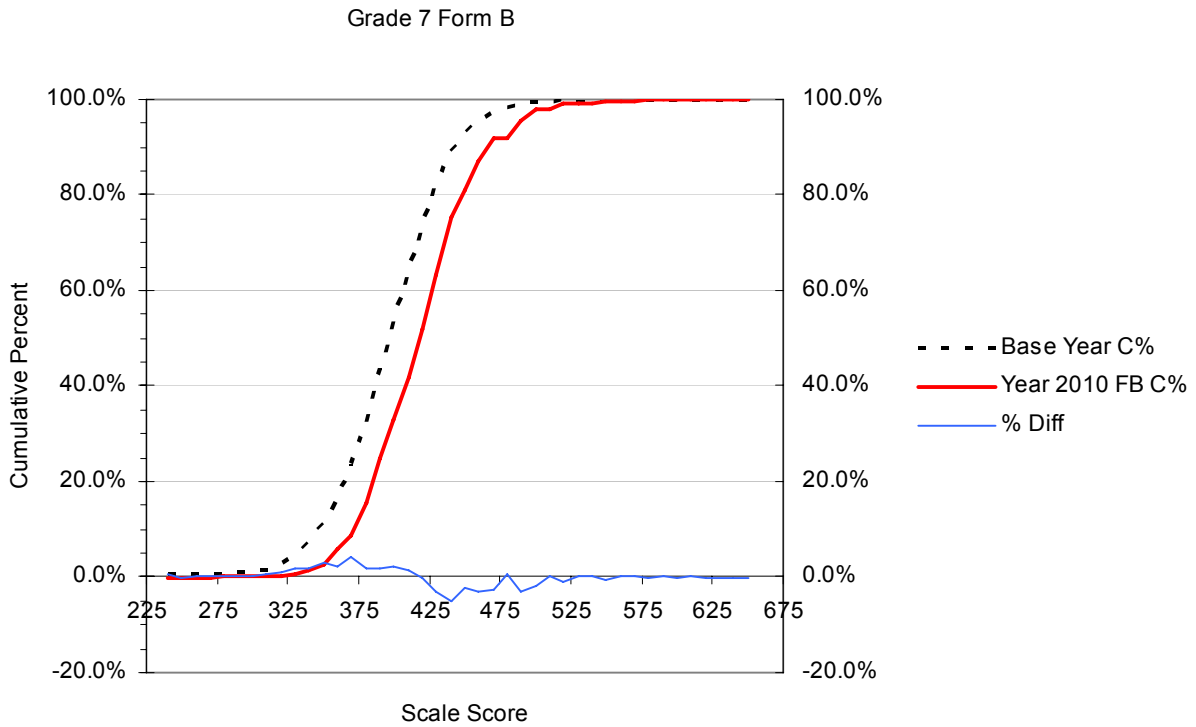


Year 2010 Grade=7 Form B

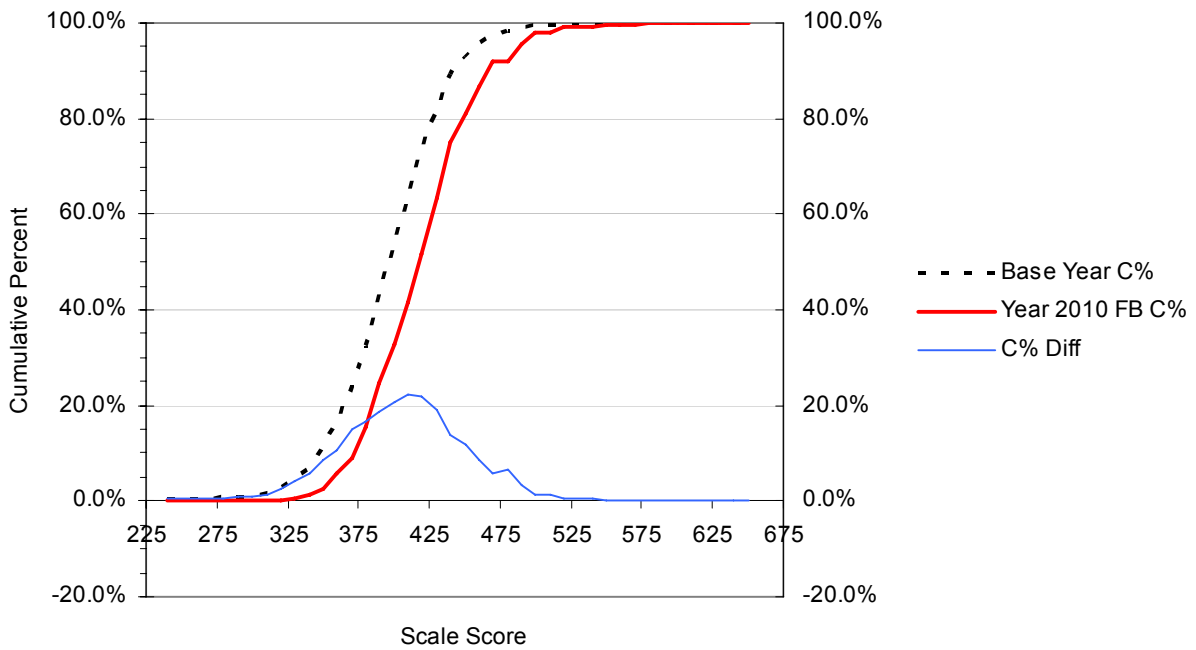
Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	0	0	0.00	0.00
250	0	0	0.00	0.00
260	0	0	0.00	0.00
270	0	0	0.00	0.00
280	3	3	0.01	0.01
290	3	6	0.01	0.02
300	3	9	0.01	0.03
310	27	36	0.09	0.12
320	23	59	0.08	0.20
330	64	123	0.22	0.42
340	257	380	0.88	1.30
350	349	729	1.20	2.50
360	934	1663	3.20	5.69
370	921	2584	3.15	8.85
380	1963	4547	6.72	15.57
390	2721	7268	9.32	24.89
400	2321	9589	7.95	32.84
410	2578	12167	8.83	41.66
420	2968	15135	10.16	51.83
430	3343	18478	11.45	63.28
440	3478	21956	11.91	75.19
450	1725	23681	5.91	81.09
460	1692	25373	5.79	86.89
470	1442	26815	4.94	91.83
480	0	26815	0.00	91.83
490	1144	27959	3.92	95.74
500	698	28657	2.39	98.13
510	0	28657	0.00	98.13
520	325	28982	1.11	99.25
530	0	28982	0.00	99.25
540	0	28982	0.00	99.25
550	150	29132	0.51	99.76
560	0	29132	0.00	99.76
570	0	29132	0.00	99.76
580	61	29193	0.21	99.97
590	0	29193	0.00	99.97
600	0	29193	0.00	99.97
610	0	29193	0.00	99.97
620	0	29193	0.00	99.97
630	0	29193	0.00	99.97
640	0	29193	0.00	99.97
650	9	29202	0.03	100.00

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 600      1200      1800      2400      3000  
 Frequency

Figure B.33 Year 2010 Scale Score Distribution: Grade 7 Form B



**Figure B.34 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2010 Scale Scores with the Percent Differences between CDFs: Grade 7 Form B**



**Figure B.35 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2010 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 7 Form B**

Year

Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	552	552	0.82	0.82
250	0	552	0.00	0.82
260	10	562	0.01	0.83
270	12	574	0.02	0.85
280	34	608	0.05	0.90
290	76	684	0.11	1.01
300	136	820	0.20	1.21
310	214	1034	0.32	1.53
320	566	1600	0.84	2.36
330	864	2464	1.28	3.64
340	1923	4387	2.84	6.48
350	2609	6996	3.85	10.33
360	3998	10994	5.90	16.24
370	5525	16519	8.16	24.40
380	5473	21992	8.08	32.48
390	7195	29187	10.63	43.11
400	7935	37122	11.72	54.83
410	6409	43531	9.47	64.29
420	6584	50115	9.72	74.02
430	5539	55654	8.18	82.20
440	3943	59597	5.82	88.02
450	3316	62913	4.90	92.92
460	1998	64911	2.95	95.87
470	1276	66187	1.88	97.76
480	699	66886	1.03	98.79
490	166	67052	0.25	99.03
500	403	67455	0.60	99.63
510	19	67474	0.03	99.66
520	140	67614	0.21	99.86
530	27	67641	0.04	99.90
540	33	67674	0.05	99.95
550	28	67702	0.04	99.99
560	0	67702	0.00	99.99
570	3	67705	0.00	100.00
580	1	67706	0.00	100.00
590	0	67706	0.00	100.00
600	0	67706	0.00	100.00
610	0	67706	0.00	100.00
620	0	67706	0.00	100.00
630	0	67706	0.00	100.00
640	0	67706	0.00	100.00
650	0	67706	0.00	100.00

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 1000 2000 3000 4000 5000 6000 7000 8000

Frequency

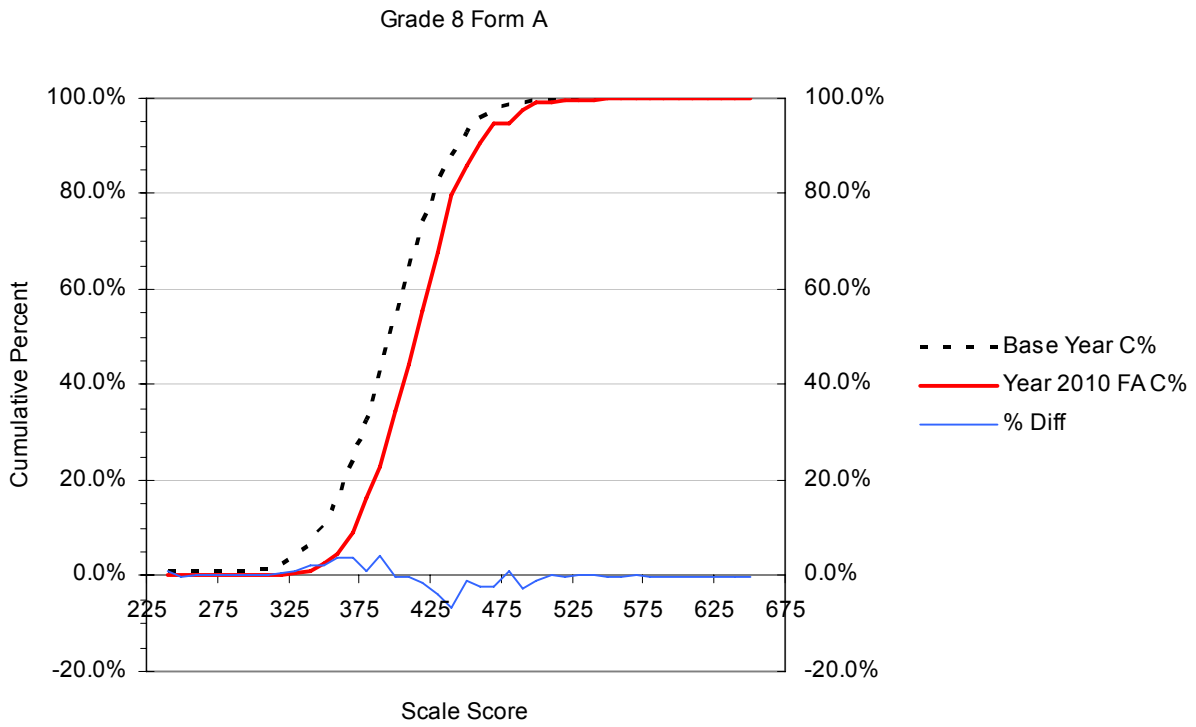
Figure B.36 Year 2003 Scale Score Distribution: Grade 8

Year 2010 Grade=8 Form A

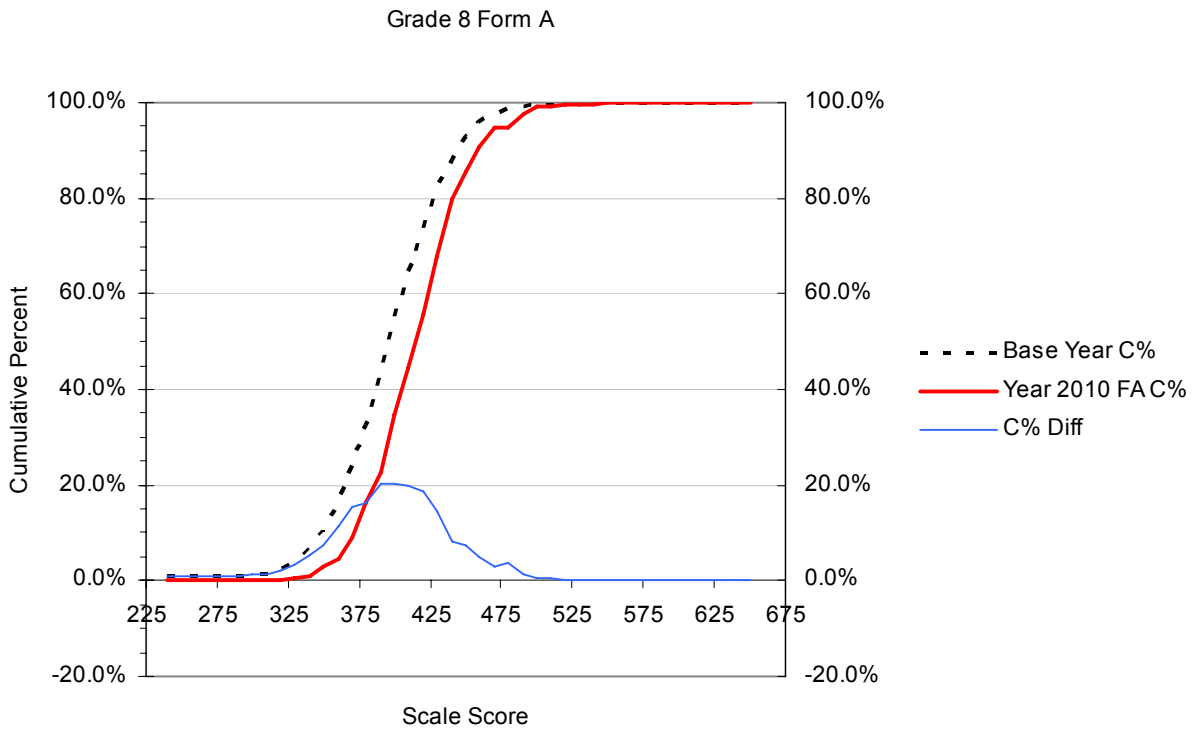
Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	1	1	0.00	0.00
250	0	1	0.00	0.00
260	0	1	0.00	0.00
270	0	1	0.00	0.00
280	1	2	0.00	0.01
290	3	5	0.01	0.02
300	8	13	0.03	0.04
310	7	20	0.02	0.07
320	31	51	0.10	0.17
330	91	142	0.30	0.47
340	181	323	0.60	1.07
350	513	836	1.70	2.77
360	585	1421	1.94	4.71
370	1340	2761	4.44	9.14
380	2122	4883	7.03	16.17
390	1968	6851	6.52	22.69
400	3592	10443	11.90	34.58
410	2977	13420	9.86	44.44
420	3351	16771	11.10	55.54
430	3648	20419	12.08	67.62
440	3713	24132	12.30	79.92
450	1734	25866	5.74	85.66
460	1557	27423	5.16	90.81
470	1226	28649	4.06	94.87
480	0	28649	0.00	94.87
490	859	29508	2.84	97.72
500	444	29952	1.47	99.19
510	0	29952	0.00	99.19
520	173	30125	0.57	99.76
530	0	30125	0.00	99.76
540	0	30125	0.00	99.76
550	51	30176	0.17	99.93
560	0	30176	0.00	99.93
570	0	30176	0.00	99.93
580	18	30194	0.06	99.99
590	0	30194	0.00	99.99
600	0	30194	0.00	99.99
610	0	30194	0.00	99.99
620	0	30194	0.00	99.99
630	0	30194	0.00	99.99
640	0	30194	0.00	99.99
650	3	30197	0.01	100.00

Figure B.37 Year 2010 Scale Score Distribution: Grade 8 Form A



**Figure B.38 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2010 Scale Scores with the Percent Differences between CDFs: Grade 8 Form A**



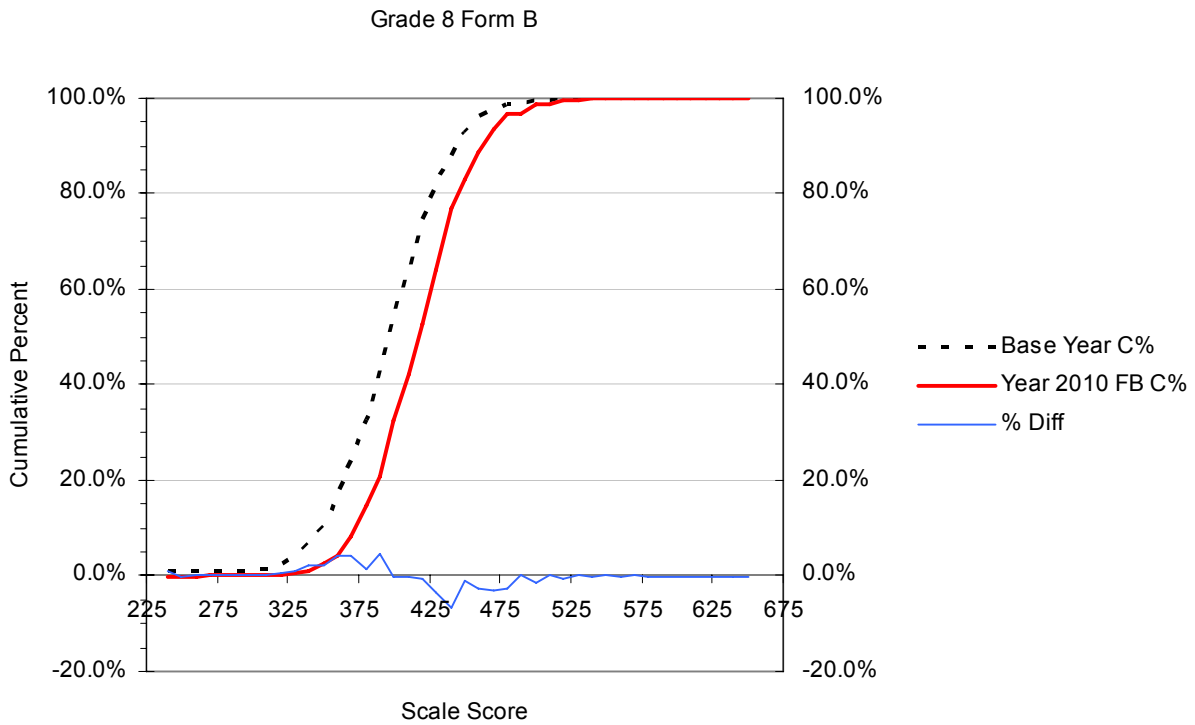
**Figure B.39 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2010 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 8 Form A**

Year 2010 Grade=8 Form B

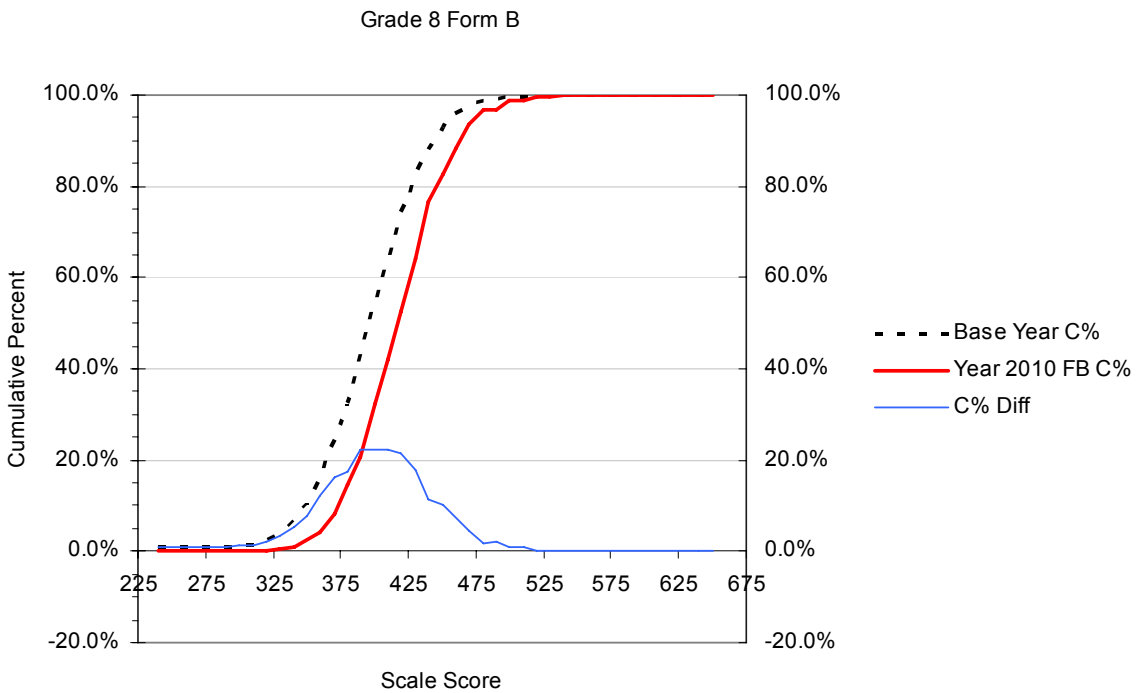
Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	0	0	0.00	0.00
250	0	0	0.00	0.00
260	0	0	0.00	0.00
270	2	2	0.01	0.01
280	2	4	0.01	0.01
290	0	4	0.00	0.01
300	5	9	0.02	0.03
310	9	18	0.03	0.06
320	37	55	0.12	0.19
330	87	142	0.29	0.48
340	164	306	0.55	1.03
350	425	731	1.43	2.46
360	486	1217	1.64	4.10
370	1192	2409	4.02	8.12
380	1991	4400	6.71	14.83
390	1763	6163	5.94	20.77
400	3491	9654	11.77	32.54
410	2815	12469	9.49	42.03
420	3124	15593	10.53	52.56
430	3465	19058	11.68	64.24
440	3722	22780	12.55	76.78
450	1802	24582	6.07	82.86
460	1673	26255	5.64	88.50
470	1443	27698	4.86	93.36
480	1050	28748	3.54	96.90
490	0	28748	0.00	96.90
500	585	29333	1.97	98.87
510	0	29333	0.00	98.87
520	233	29566	0.79	99.66
530	0	29566	0.00	99.66
540	75	29641	0.25	99.91
550	0	29641	0.00	99.91
560	0	29641	0.00	99.91
570	0	29641	0.00	99.91
580	21	29662	0.07	99.98
590	0	29662	0.00	99.98
600	0	29662	0.00	99.98
610	0	29662	0.00	99.98
620	0	29662	0.00	99.98
630	0	29662	0.00	99.98
640	0	29662	0.00	99.98
650	6	29668	0.02	100.00

5  
\$ffffffff^ffffffff^ffffffff^ffffffff^ffffffff^ffffffff^ff  
600 1200 1800 2400 3000 3600  
Frequency

Figure B.40 Year 2010 Scale Score Distribution: Grade 8 Form B



**Figure B.41 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2010 Scale Scores with the Percent Differences between CDFs: Grade 8 Form B**



**Figure B.42 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2010 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 8 Form B**