Tables for
CMAS Technical Report
2017-2018

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Table 1. CMAS Subject and Grade Combinations

Subject	Grade				
	4	5	7	8	HS
Science		X		X	X
Social Studies	X		X		X

Table 2. Scale Score Ranges

	Partially Met Expectations	Approached Expectation	Met Expectations	Exceeded Expectations
Grade 4 Social Studies	300–556	557–698	699–792	793–900
Grade 7 Social Studies	300–591	592–700	701–769	770–900
HS Social Studies*	n/a	n/a	n/a	n/a
Grade 5 Science	300–545	546–649	650–770	771–900
Grade 8 Science	300–555	556–651	652–784	785–900
HS Science	300–542	543–672	673–773	774–900

*Values are not available for HS SS because no cut scores have been approved.

Table 3. Coefficient Alpha

Content Area	Grade	Content Standard 1	Content Standard 2	Content Standard 3	Content Standard 4	Full Test
Social Studies	4	0.75	0.67	0.70	0.69	0.90
	7	0.79	0.76	0.69	0.77	0.93
	HS	n/a	n/a	n/a	n/a	n/a
Science	5	0.82	0.84	0.84	0.84	0.94
	8	0.84	0.84	0.84	0.83	0.94
	HS	0.83	0.83	0.86	0.87	0.94

Table 4. Grade 4 Performance by Subgroups

Subgroup	N	Mean	SD	Min	Max	Alpha
No IEP	19,156	623.00	105.86	300	900	0.89
IEP	2,285	487.74	126.38	300	867	0.92
No Accommodation	16,795	634.19	102.68	300	900	0.89
Accommodation	4,646	516.03	114.22	300	833	0.85
Am. Indian/Alaska Native	141	551.46	123.63	300	883	0.85
Asian	523	641.12	113.06	300	900	0.88
Black	1,031	544.71	118.88	300	829	0.87
Hispanic	7,841	561.43	109.41	300	900	0.87
White	10,958	646.08	105.08	300	900	0.88
Hawaiian/Pacific Islander	55	574.64	124.12	300	796	0.93
Two or More Races	888	629.32	109.89	300	900	0.88
Missing*	n/a	n/a	n/a	n/a	n/a	n/a
No Economic Disadvantage	11,893	650.01	103.33	300	900	0.88
Economic Disadvantage	9,548	556.98	110.07	300	900	0.87
Female	10,426	613.81	108.92	300	900	0.89
Male	11,015	603.64	122.11	300	900	0.90
Language Proficiency NA	16,388	625.70	111.62	300	900	0.89
Language Proficiency NEP	782	443.00	103.60	300	752	0.78
Language Proficiency LEP	2,804	535.62	91.31	300	799	0.80
Language Proficiency FEP	965	646.40	70.34	380	900	0.82
Not Migrant	21,370	608.81	115.96	300	900	0.90
Migrant	71	539.90	107.97	300	750	0.83

*n-count less than 16

Table 5. Grade 5 Performance by Subgroups

Subgroup	N	Mean	SD	Min	Max	Alpha
No IEP	58,137	613.38	101.23	300	900	0.93
IEP	7,091	479.82	111.39	300	899	0.92
No Accommodation	53,253	620.34	99.06	300	900	0.93
Accommodation	11,975	503.35	108.17	300	869	0.92
Am. Indian/Alaska Native	444	555.56	107.56	300	839	0.93
Asian	2,027	633.88	110.27	300	900	0.93
Black	2,977	534.42	110.53	300	900	0.93
Hispanic	22,834	548.14	104.85	300	895	0.92
White	33,860	636.00	97.60	300	900	0.92
Hawaiian/Pacific Islander	168	563.01	113.52	300	793	0.93
Two or More Races	2,911	615.15	105.44	300	900	0.93
Missing*	n/a	n/a	n/a	n/a	n/a	n/a
No Economic Disadvantage	38,219	635.63	98.71	300	900	0.92
Economic Disadvantage	27,009	546.83	105.25	300	899	0.92
Female	31,799	601.84	106.60	300	900	0.93
Male	33,429	596.03	114.01	300	900	0.94
Language Proficiency NA	50,636	615.45	105.06	300	900	0.93
Language Proficiency NEP	1,327	425.12	96.11	300	748	0.87
Language Proficiency LEP	6,890	496.13	86.63	300	796	0.88
Language Proficiency FEP	5,021	607.97	78.80	300	900	0.89
Not Migrant	65,031	599.17	110.37	300	900	0.93
Migrant	197	496.18	103.63	300	721	0.91

*n-count less than 16

Table 6. Grade 7 Performance by Subgroups

Subgroup	N	Mean	SD	Min	Max	Alpha
No IEP	18,299	599.17	110.10	300	900	0.92
IEP	1,961	456.77	111.24	300	834	0.87
No Accommodation	17,650	599.95	111.12	300	900	0.92
Accommodation	2,610	486.85	115.78	300	818	0.90
Am. Indian/Alaska Native	182	535.18	118.39	300	808	0.90
Asian	684	636.76	110.21	300	900	0.93
Black	1,009	526.87	115.69	300	799	0.90
Hispanic	7,258	538.73	112.13	300	870	0.90
White	10,256	619.95	108.09	300	900	0.92
Hawaiian/Pacific Islander	50	551.34	127.97	300	745	0.92
Two or More Races	817	609.03	118.07	300	856	0.93
Missing*	n/a	n/a	n/a	n/a	n/a	n/a
No Economic Disadvantage	11,851	623.02	106.70	300	900	0.92
Economic Disadvantage	8,409	532.34	112.60	300	816	0.90
Female	9,831	597.45	107.47	300	900	0.92
Male	10,429	574.01	126.04	300	900	0.93
Language Proficiency NA	15,257	601.12	115.18	300	900	0.92
Language Proficiency NEP	504	429.26	98.70	300	712	0.80
Language Proficiency LEP	1,909	480.86	94.75	300	734	0.81
Language Proficiency FEP	2,055	589.18	82.84	300	824	0.87
Not Migrant	20,176	585.71	117.90	300	900	0.92
Migrant	84	505.87	109.52	300	724	0.88

*n-count less than 16

Table 7. Grade 8 Performance by Subgroups

Subgroup	N	Mean	SD	Min	Max	Alpha
No IEP	52,557	594.66	118.05	300	900	0.93
IEP	5,579	444.51	115.55	300	870	0.91
No Accommodation	52,437	593.49	119.40	300	900	0.93
Accommodation	5,699	458.49	117.96	300	862	0.91
Am. Indian/Alaska Native	432	524.24	120.58	300	798	0.93
Asian	1,984	633.17	120.30	300	900	0.94
Black	2,588	512.20	126.84	300	862	0.93
Hispanic	20,279	525.38	119.72	300	900	0.92
White	30,512	618.54	113.47	300	900	0.93
Hawaiian/Pacific Islander	153	538.84	131.14	300	900	0.94
Two or More Races	2,181	601.91	120.51	300	900	0.93
Missing*	n/a	n/a	n/a	n/a	n/a	n/a
No Economic Disadvantage	35,759	617.37	115.23	300	900	0.93
Economic Disadvantage	22,377	520.94	119.17	300	900	0.92
Female	28,090	590.73	118.11	300	900	0.93
Male	30,046	570.46	131.91	300	900	0.94
Language Proficiency NA	45,054	597.16	121.53	300	900	0.94
Language Proficiency NEP	1,335	393.26	94.87	300	778	0.83
Language Proficiency LEP	4,560	459.88	93.78	300	769	0.83
Language Proficiency FEP	4,339	561.58	95.36	300	861	0.89
Not Migrant	57,963	580.59	125.72	300	900	0.94
Migrant	173	468.46	115.48	300	733	0.90

*n-count less than 16

Table 8. HS Science Performance by Subgroups

Subgroup	N	Mean	SD	Min	Max	Alpha
No IEP	35,746	598.10	109.58	300	900	0.93
IEP	3,164	485.39	102.51	300	866	0.89
No Accommodation	36,600	593.91	111.56	300	900	0.94
Accommodation	2,310	510.05	111.40	300	866	0.92
Am. Indian/Alaska Native	316	549.53	107.97	300	796	0.93
Asian	1,293	614.40	119.41	300	900	0.94
Black	1,878	531.12	109.21	300	793	0.91
Hispanic	14,560	549.66	103.72	300	896	0.91
White	19,432	622.03	108.10	300	900	0.94
Hawaiian/Pacific Islander	103	583.36	110.37	300	806	0.94
Two or More Races	1,320	602.87	117.52	300	869	0.94
Missing*	n/a	n/a	n/a	n/a	n/a	n/a
No Economic Disadvantage	24,825	611.58	111.96	300	900	0.94
Economic Disadvantage	14,085	549.01	104.24	300	873	0.91
Female	18,776	591.80	105.19	300	900	0.93
Male	20,134	586.26	120.30	300	900	0.94
Language Proficiency NA	29,453	603.17	111.66	300	900	0.94
Language Proficiency NEP	774	423.72	93.98	300	698	0.76
Language Proficiency LEP	2,518	483.86	85.88	300	760	0.77
Language Proficiency FEP	2,888	559.64	81.62	300	802	0.86
Not Migrant	38,780	589.24	113.20	300	900	0.94
Migrant	130	495.62	100.29	300	684	0.82

*n-count less than 16

Table 9. SEMs

Content Area	Grade	SEM
Social Studies	4	33.99
	7	31.82
	HS	n/a
Science	5	26.11
	8	30.34
	HS	29.54

Table 10. Accuracy and Consistency Estimates

Content Area	Grade	Accuracy	Consistency	PChance	Kappa
Social Studies	4	.78	.70	.32	.56
	7	.79	.73	.38	.57
	HS	n/a	n/a	n/a	n/a
Science	5	.82	.76	.32	.65
	8	.82	.76	.33	.65
	HS	.83	.77	.34	.65

Table 11. Accuracy of Cuts

Content Area	Grade	Approached Expectations Cut	Met Expectations Cut	Exceeded Expectations Cut
Social Studies	4	.93	.89	.97
	7	.93	.89	.97
	HS	n/a	n/a	n/a
Science	5	.94	.92	.96
	8	.94	.92	.97
	HS	.94	.92	.97

Table 12. Consistency of Cuts

Content Area	Grade	Approached Expectations Cut	Met Expectations Cut	Exceeded Expectations Cut
Social Studies	4	.89	.84	.96
	7	.90	.85	.97
	HS	n/a	n/a	n/a
Science	5	.90	.89	.95
	8	.90	.88	.97
	HS	.91	.88	.96

Table 13. Grade 4 Operational Rater Agreement Statistics

Item	Max Points	N	Exact	Adjacent	Non-Adjacent	Kappa	MD	CORR
1	3	1,951	75.1	23.8	1.1	0.84	0.01	0.84
2	3	1,956	81.8	16.5	1.7	0.89	0.00	0.89
3	3	1,955	73.1	24.7	2.1	0.82	0.00	0.82
4	3	1,945	76.9	21.5	1.5	0.86	0.01	0.86
5	3	1,953	78.1	19.8	2.1	0.82	0.02	0.83
6	3	1,950	80.7	16.8	2.5	0.87	0.02	0.87
7	3	1,954	77.1	21.0	1.8	0.83	0.01	0.83
8	3	1,954	73.7	23.7	2.6	0.86	0.01	0.86
9	3	1,954	77.2	20.9	1.9	0.84	0.02	0.85
10	3	1,957	81.2	17.2	1.5	0.88	0.02	0.88
11	3	1,956	83.6	15.6	0.8	0.89	0.01	0.89
12	3	1,957	82.6	15.9	1.5	0.90	0.00	0.90

Table 14. Grade 5 Operational Rater Agreement Statistics

Item	Max Points	N	Exact	Adjacent	Non-Adjacent	Kappa	MD	CORR
1	2	6,194	80.6	19.3	0.1	0.80	0.00	0.80
2	2	6,194	80.4	19.1	0.5	0.83	0.00	0.83
3	2	6,196	92.4	7.4	0.1	0.93	0.00	0.93
4	2	6,198	80.4	19.1	0.5	0.74	0.01	0.74
5	2	6,197	86.7	13.0	0.3	0.88	0.00	0.88
6	2	6,201	89.7	9.8	0.5	0.92	0.00	0.92
7	2	6,193	80.6	18.8	0.6	0.81	0.00	0.81
8	2	6,187	81.2	18.4	0.4	0.81	0.01	0.81
9	2	6,193	81.8	16.8	1.4	0.82	0.00	0.82
10	2	6,190	80.1	19.5	0.4	0.81	0.02	0.81
11	2	6,193	83.6	16.0	0.4	0.88	0.00	0.88
12	2	6,192	87.2	11.9	0.9	0.88	0.00	0.88
13	2	6,195	86.7	13.1	0.2	0.89	0.01	0.89
14	2	6,195	82.0	17.9	0.1	0.78	0.00	0.78
15	3	6,202	78.1	20.9	1.0	0.88	0.00	0.88
16	3	6,192	81.5	17.4	1.1	0.91	0.01	0.91
17	3	6,202	77.2	21.6	1.2	0.88	0.00	0.88

Table 15. Grade 7 Operational Rater Agreement Statistics

Item	Max Points	N	Exact	Adjacent	Non-Adjacent	Kappa	MD	CORR
1	3	1,909	70.8	25.4	3.8	0.81	0.01	0.81
2	3	1,904	82.3	15.7	2.0	0.90	0.01	0.90
3	3	1,910	72.8	24.2	3.0	0.82	0.01	0.82
4	3	1,906	80.2	17.7	2.0	0.85	0.00	0.85
5	3	1,905	74.8	22.7	2.5	0.82	0.01	0.82
6	3	1,904	70.2	27.8	2.0	0.80	0.02	0.80
7	3	1,899	70.6	27.5	1.9	0.85	0.00	0.85
8	3	1,905	71.4	26.1	2.5	0.84	0.01	0.84
9	3	1,900	75.3	23.1	1.6	0.88	0.01	0.88
10	3	1,903	72.6	24.6	2.8	0.82	0.02	0.82
11	3	1,903	83.1	15.1	1.7	0.86	0.02	0.86
12	3	1,905	77.5	21.9	0.6	0.84	0.01	0.84

Table 16. Grade 8 Operational Rater Agreement Statistics

Item	Max Points	N	Exact	Adjacent	Non-Adjacent	Kappa	MD	CORR
1	2	5,601	80.1	19.9	0.0	0.85	0.01	0.85
2	2	5,580	82.5	17.2	0.3	0.84	0.00	0.84
3	2	5,585	84.9	15.1	0.0	0.88	0.00	0.88
4	2	5,584	83.1	16.8	0.0	0.85	0.01	0.85
5	2	5,588	90.2	9.8	0.0	0.92	0.01	0.92
6	2	5,584	82.3	17.6	0.1	0.86	0.00	0.86
7	2	5,586	88.4	11.6	0.0	0.84	0.02	0.84
8	2	5,581	91.1	8.9	0.0	0.93	0.00	0.93
9	2	5,588	88.4	11.6	0.0	0.87	0.00	0.87
10	2	5,583	85.2	14.8	0.0	0.77	0.01	0.77
11	2	5,587	94.0	6.0	0.0	0.94	0.00	0.94
12	2	5,584	85.1	14.9	0.0	0.89	0.01	0.89
13	2	5,584	80.4	19.6	0.0	0.86	0.00	0.86
14	2	5,582	80.4	19.6	0.0	0.82	0.00	0.82
15	3	5,588	85.0	15.0	0.0	0.95	0.01	0.95
16	3	5,584	82.7	17.3	0.0	0.92	0.00	0.92
17	3	5,594	75.4	24.6	0.0	0.82	0.00	0.82

Table 17. HS Science Operational Rater Agreement Statistics

Item	Max Points	N	Exact	Adjacent	Non-Adjacent	Kappa	MD	CORR
1	2	3,731	90.6	9.2	0.2	0.87	0.00	0.87
2	2	3,720	92.3	7.6	0.1	0.94	0.01	0.94
3	2	3,717	83.7	16.1	0.2	0.71	0.02	0.71
4	2	3,731	88.4	11.3	0.3	0.84	0.00	0.84
5	2	3,732	91.4	8.4	0.2	0.87	0.01	0.87
6	2	3,729	83.9	15.7	0.5	0.86	0.01	0.86
7	2	3,724	80.9	18.8	0.2	0.78	0.03	0.78
8	2	3,734	89.1	10.7	0.2	0.77	0.01	0.77
9	2	3,730	88.8	9.6	1.6	0.90	0.00	0.90
10	2	3,738	87.0	12.1	0.9	0.86	0.02	0.86
11	2	3,741	80.1	19.9	0.0	0.71	0.00	0.71
12	2	3,739	85.6	14.1	0.3	0.84	0.00	0.84
13	2	3,727	89.7	10.0	0.2	0.90	0.00	0.90
14	2	3,723	82.1	16.4	1.5	0.84	0.00	0.84
15	3	3,724	92.6	7.4	0.0	0.95	0.01	0.95
16	3	3,736	80.6	18.5	0.9	0.89	0.01	0.89
17	3	3,719	78.8	19.1	2.2	0.82	0.01	0.82

Table 18. Grade 4 Field Test Rater Agreement Statistics

Item	Max Points	N	Exact	Adjacent	Non-Adjacent	Kappa	MD	CORR
1	3	148	75.7	23.0	1.4	0.83	0.06	0.84
2	3	150	81.3	17.3	1.3	0.86	0.06	0.86
3	3	152	82.2	17.8	0.0	0.89	0.01	0.89
4	3	150	84.7	15.3	0.0	0.90	0.02	0.90
5	3	148	91.2	7.4	1.4	0.94	0.01	0.94
6	3	150	86.0	14.0	0.0	0.93	0.02	0.93
7	3	148	87.2	12.2	0.7	0.91	0.02	0.91
8	3	150	78.0	20.7	1.3	0.89	0.03	0.89
9	3	150	76.0	23.3	0.7	0.88	0.07	0.89
10	3	150	82.7	16.0	1.3	0.90	0.00	0.90
11	3	149	90.6	7.4	2.0	0.91	0.05	0.91
12	3	150	92.7	7.3	0.0	0.97	0.02	0.97
13	3	149	87.9	12.1	0.0	0.95	0.00	0.95
14	3	149	83.9	16.1	0.0	0.94	0.00	0.94
15	3	150	84.7	15.3	0.0	0.95	0.02	0.95
16	3	148	91.2	8.8	0.0	0.96	0.03	0.96
17	3	150	88.0	12.0	0.0	0.95	0.02	0.95
18	3	150	84.0	16.0	0.0	0.92	0.05	0.92

Table 19. Grade 5 Field Test Rater Agreement Statistics

Item	Max Points	N	Exact	Adjacent	Non-Adjacent	Kappa	MD	CORR
1	2	2,998	89.7	10.3	0.0	0.89	0.02	0.89
2	2	2,999	87.3	12.7	0.0	0.69	0.01	0.69
3	2	3,000	86.4	13.5	0.1	0.89	0.00	0.89
4	2	2,990	97.1	2.3	0.6	0.97	0.01	0.97
5	2	2,991	97.9	2.1	0.0	0.98	0.00	0.98
6	2	2,998	94.4	5.2	0.5	0.95	0.00	0.95
7	2	2,999	89.7	9.3	1.0	0.89	0.00	0.89
8	2	2,998	85.8	13.4	0.8	0.86	0.00	0.86
9	2	2,991	90.4	9.6	0.1	0.92	0.01	0.92
10	2	2,996	90.1	9.9	0.0	0.92	0.01	0.92
11	2	2,991	95.4	3.7	0.8	0.93	0.01	0.93
12	2	2,996	94.2	4.7	1.1	0.93	0.01	0.93
13	2	2,991	87.8	12.2	0.0	0.87	0.01	0.87
14	2	2,999	90.2	9.7	0.1	0.90	0.00	0.90
15	2	2,989	85.2	14.3	0.5	0.85	0.00	0.85
16	2	2,999	87.0	13.0	0.0	0.87	0.01	0.87
17	2	2,999	88.5	9.2	2.4	0.81	0.01	0.81
18	2	2,972	86.2	12.9	0.9	0.81	0.01	0.81
19	2	2,999	85.7	14.3	0.0	0.88	0.00	0.88
20	2	2,972	91.2	8.7	0.1	0.92	0.01	0.92
21	2	2,999	93.7	6.3	0.0	0.95	0.01	0.95
22	2	3,000	94.5	5.5	0.0	0.96	0.00	0.96
23	2	2,999	92.9	6.9	0.2	0.94	0.00	0.94
24	2	3,000	95.8	4.2	0.0	0.97	0.01	0.97
25	2	2,999	85.5	14.5	0.0	0.75	0.01	0.75
26	2	3,000	85.2	14.8	0.0	0.76	0.01	0.76
27	2	2,999	87.6	12.4	0.0	0.71	0.03	0.71
28	2	2,998	85.2	14.8	0.0	0.75	0.01	0.75
29	2	2,999	90.6	9.0	0.4	0.87	0.00	0.87
30	2	2,998	91.8	7.9	0.3	0.89	0.01	0.89
31	2	2,999	95.4	4.6	0.0	0.91	0.00	0.91
32	2	3,000	96.0	4.0	0.0	0.93	0.01	0.93

Item	Max Points	N	Exact	Adjacent	Non-Adjacent	Kappa	MD	CORR
33	2	2,999	87.0	12.6	0.3	0.89	0.01	0.89
34	2	2,999	85.5	13.8	0.7	0.85	0.01	0.85
35	2	2,999	86.7	12.2	1.1	0.85	0.00	0.85
36	2	2,999	87.0	11.7	1.3	0.85	0.01	0.85
37	2	2,999	90.2	9.7	0.0	0.87	0.00	0.87
38	2	2,998	85.2	14.5	0.3	0.82	0.00	0.82
39	2	2,999	87.8	9.4	2.8	0.82	0.01	0.82
40	2	2,998	87.3	11.5	1.2	0.84	0.02	0.84
41	2	2,979	87.1	11.2	1.7	0.84	0.03	0.85
42	2	2,999	87.4	12.1	0.5	0.90	0.00	0.90
43	2	2,999	91.7	8.3	0.0	0.92	0.00	0.92
44	2	2,999	85.7	14.3	0.0	0.87	0.02	0.87
45	3	2,999	83.2	16.7	0.1	0.93	0.00	0.93
46	3	2,976	78.2	21.8	0.0	0.88	0.00	0.88
47	3	2,999	82.8	17.1	0.0	0.85	0.01	0.85
48	3	2,999	83.8	16.2	0.0	0.94	0.00	0.94
49	3	2,992	84.1	15.3	0.6	0.90	0.01	0.90
50	3	2,999	89.5	8.3	2.2	0.94	0.01	0.94
51	3	2,999	77.7	22.3	0.0	0.89	0.01	0.89
52	3	2,998	78.2	21.8	0.0	0.90	0.01	0.90
53	3	3,000	77.3	20.5	2.2	0.89	0.01	0.89
54	3	2,998	93.8	5.1	1.0	0.95	0.00	0.95
55	3	2,999	91.9	7.7	0.4	0.97	0.00	0.97
56	3	2,999	76.0	23.0	1.0	0.80	0.00	0.80

Table 20. Grade 7 Field Test Rater Agreement Statistics

Item	Max Points	N	Exact	Adjacent	Non-Adjacent	Kappa	MD	CORR
1	3	147	81.0	18.4	0.7	0.89	0.01	0.89
2	3	145	83.4	16.6	0.0	0.90	0.03	0.90
3	3	143	90.9	8.4	0.7	0.97	0.01	0.97
4	3	147	77.6	21.8	0.7	0.84	0.05	0.85
5	3	143	75.5	23.8	0.7	0.86	0.04	0.86
6	3	144	82.6	16.7	0.7	0.93	0.05	0.93
7	3	147	83.0	16.3	0.7	0.90	0.03	0.91
8	3	145	75.9	20.7	3.4	0.85	0.04	0.85
9	3	147	82.3	16.3	1.4	0.91	0.04	0.91
10	3	148	77.0	23.0	0.0	0.92	0.05	0.92
11	3	141	78.7	17.7	3.5	0.85	0.07	0.86
12	3	142	78.2	21.1	0.7	0.80	0.04	0.80
13	3	145	82.1	15.9	2.1	0.84	0.01	0.84
14	3	145	76.4	22.2	1.4	0.85	0.01	0.85
15	3	145	90.3	9.0	0.7	0.89	0.07	0.89
16	3	144	87.5	11.1	1.4	0.90	0.00	0.90
17	3	143	79.7	18.9	1.4	0.91	0.08	0.92
18	3	143	79.0	18.9	2.1	0.87	0.06	0.87
19	3	145	81.4	17.2	1.4	0.88	0.09	0.88
20	3	149	82.6	15.4	2.0	0.90	0.03	0.90
21	3	147	85.0	12.2	2.7	0.91	0.04	0.91
22	3	142	80.3	17.6	2.1	0.81	0.03	0.82
23	3	146	79.5	19.2	1.4	0.89	0.03	0.89
24	3	143	76.2	21.7	2.1	0.86	0.01	0.86
25	3	144	81.3	18.1	0.7	0.89	0.04	0.89
26	3	148	83.1	15.5	1.4	0.89	0.03	0.89
27	3	146	77.4	19.9	2.7	0.87	0.04	0.87
28	3	148	89.9	9.5	0.7	0.89	0.00	0.89
29	3	147	84.9	15.1	0.0	0.92	0.03	0.92
30	3	145	77.2	21.4	1.4	0.84	0.07	0.85

Table 21. Grade 8 Field Test Rater Agreement Statistics

Item	Max Points	N	Exact	Adjacent	Non-Adjacent	Kappa	MD	CORR
1	2	2,998	94.9	5.1	0.0	0.93	0.02	0.93
2	2	3,000	95.0	5.0	0.0	0.92	0.01	0.92
3	2	3,000	92.8	7.2	0.0	0.88	0.01	0.88
4	2	2,993	91.1	8.9	0.0	0.88	0.00	0.88
5	2	3,000	94.8	5.2	0.0	0.91	0.01	0.91
6	2	2,993	94.7	5.3	0.0	0.93	0.00	0.93
7	2	2,998	95.4	4.6	0.0	0.92	0.00	0.92
8	2	3,000	95.3	4.7	0.0	0.93	0.01	0.93
9	2	2,999	87.3	12.7	0.0	0.90	0.01	0.90
10	2	3,000	87.8	12.2	0.0	0.90	0.00	0.90
11	2	2,999	92.6	7.4	0.0	0.94	0.00	0.94
12	2	3,000	92.7	7.3	0.0	0.95	0.00	0.95
13	2	2,998	86.5	13.5	0.0	0.87	0.02	0.87
14	2	2,999	85.5	14.5	0.0	0.87	0.01	0.87
15	2	2,998	95.5	4.5	0.0	0.97	0.00	0.97
16	2	2,999	97.1	2.9	0.0	0.98	0.00	0.98
17	2	3,000	86.5	13.5	0.0	0.85	0.01	0.85
18	2	2,999	86.3	13.7	0.0	0.86	0.01	0.86
19	2	3,000	95.4	4.5	0.1	0.95	0.01	0.95
20	2	2,954	95.7	4.1	0.1	0.95	0.00	0.95
21	2	2,999	85.2	14.8	0.0	0.89	0.01	0.89
22	2	2,999	85.9	14.1	0.0	0.90	0.02	0.90
23	2	3,000	94.4	4.8	0.8	0.94	0.00	0.94
24	2	3,000	93.9	4.0	2.1	0.91	0.02	0.91
25	2	3,000	89.5	10.5	0.0	0.93	0.01	0.93
26	2	3,000	92.0	8.0	0.0	0.95	0.01	0.95
27	2	2,999	85.3	14.6	0.0	0.88	0.00	0.88
28	2	2,999	85.9	14.1	0.0	0.86	0.02	0.86
29	2	2,999	90.3	9.7	0.0	0.93	0.00	0.93
30	2	2,931	91.1	8.9	0.0	0.89	0.02	0.89
31	2	2,998	96.2	3.8	0.0	0.97	0.00	0.97
32	2	3,000	88.3	11.7	0.0	0.91	0.01	0.91

Item	Max Points	N	Exact	Adjacent	Non-Adjacent	Kappa	MD	CORR
33	2	2,915	87.0	13.0	0.0	0.88	0.01	0.88
34	2	2,999	92.8	7.2	0.0	0.94	0.01	0.94
35	2	2,973	93.6	6.2	0.3	0.93	0.00	0.93
36	2	2,920	92.3	7.6	0.0	0.92	0.00	0.92
37	2	3,000	88.0	12.0	0.0	0.89	0.01	0.89
38	2	3,000	86.3	13.6	0.0	0.90	0.00	0.90
39	2	2,999	86.8	13.2	0.0	0.83	0.02	0.83
40	2	3,000	85.4	14.6	0.0	0.82	0.00	0.82
41	2	2,954	85.7	14.3	0.0	0.85	0.00	0.85
42	2	3,000	85.1	14.9	0.0	0.84	0.01	0.84
43	2	2,999	85.3	14.7	0.0	0.84	0.01	0.84
44	3	2,924	84.3	15.7	0.0	0.93	0.00	0.93
45	3	2,938	86.6	13.4	0.0	0.92	0.01	0.92
46	3	2,974	93.2	6.8	0.0	0.91	0.00	0.91
47	3	2,921	84.7	15.2	0.0	0.93	0.00	0.93
48	3	2,927	89.3	10.7	0.0	0.96	0.00	0.96
49	3	2,999	75.8	24.2	0.0	0.84	0.02	0.84
50	3	2,904	86.2	13.8	0.0	0.94	0.01	0.94
51	3	2,915	81.9	18.1	0.0	0.90	0.01	0.90

Table 22. HS Science Field Test Rater Agreement Statistics

Item	Max Points	N	Exact	Adjacent	Non-Adjacent	Kappa	MD	CORR
1	2	2,100	90.1	9.6	0.3	0.80	0.00	0.80
2	2	2,127	99.0	1.0	0.0	0.98	0.00	0.98
3	2	2,193	95.2	4.8	0.0	0.92	0.01	0.92
4	2	2,163	92.8	7.2	0.0	0.81	0.01	0.81
5	2	2,241	97.6	2.4	0.0	0.97	0.00	0.97
6	2	1,887	96.4	3.6	0.0	0.87	0.00	0.87
7	2	2,020	96.9	3.1	0.0	0.90	0.00	0.90
8	2	1,982	94.7	5.0	0.4	0.94	0.01	0.94
9	2	1,946	94.8	4.8	0.4	0.94	0.00	0.94
10	2	1,999	94.5	5.5	0.0	0.87	0.00	0.87
11	2	1,959	95.6	4.4	0.0	0.89	0.01	0.89
12	2	1,909	90.0	9.2	0.8	0.81	0.00	0.81
13	2	1,991	91.4	7.8	0.8	0.85	0.02	0.85
14	2	1,842	95.5	4.5	0.0	0.76	0.02	0.76
15	2	1,960	95.7	4.1	0.2	0.82	0.02	0.82
16	2	2,132	95.6	3.9	0.4	0.88	0.00	0.88
17	2	2,136	94.6	4.6	0.8	0.86	0.01	0.86
18	2	2,131	92.3	7.4	0.3	0.88	0.00	0.88
19	2	2,168	93.8	6.0	0.2	0.91	0.00	0.91
20	2	2,015	91.4	8.6	0.0	0.85	0.01	0.85
21	2	2,030	90.3	9.7	0.0	0.84	0.01	0.84
22	2	2,107	85.3	14.7	0.0	0.75	0.02	0.75
23	2	1,956	85.1	14.9	0.0	0.74	0.04	0.74
24	2	1,974	97.1	2.9	0.0	0.86	0.00	0.86
25	2	1,959	95.5	4.5	0.0	0.81	0.00	0.81
26	2	2,030	88.4	11.6	0.0	0.84	0.01	0.84
27	2	2,133	85.1	14.6	0.3	0.83	0.00	0.83
28	2	2,142	88.7	10.2	1.1	0.86	0.00	0.86
29	2	2,125	85.2	14.8	0.0	0.87	0.02	0.87
30	2	2,143	85.5	14.1	0.4	0.88	0.01	0.88
31	2	2,144	87.6	12.1	0.2	0.90	0.00	0.90
32	2	2,117	93.8	6.2	0.0	0.94	0.01	0.94

Item	Max Points	N	Exact	Adjacent	Non-Adjacent	Kappa	MD	CORR
33	2	2,096	86.3	13.7	0.0	0.86	0.01	0.86
34	2	2,142	88.5	11.4	0.1	0.85	0.00	0.85
35	2	2,123	95.9	4.1	0.0	0.84	0.01	0.84
36	2	2,231	89.6	10.4	0.0	0.64	0.02	0.64
37	2	2,123	96.5	3.5	0.0	0.88	0.00	0.88
38	2	2,024	91.7	8.3	0.0	0.46	0.02	0.46
39	2	2,002	91.5	8.5	0.0	0.83	0.02	0.83
40	2	2,151	91.8	8.2	0.0	0.92	0.01	0.92
41	2	2,331	90.0	10.0	0.0	0.90	0.02	0.90
42	2	2,234	91.0	9.0	0.0	0.91	0.01	0.91
43	2	2,194	96.1	3.6	0.3	0.93	0.02	0.93
44	2	2,129	88.3	11.7	0.0	0.92	0.02	0.92
45	2	2,172	86.8	13.2	0.0	0.88	0.01	0.88
46	3	2,994	84.3	14.3	1.4	0.92	0.01	0.92
47	3	2,966	89.2	10.1	0.7	0.80	0.01	0.80
48	3	2,976	94.7	5.0	0.3	0.95	0.00	0.95
49	3	2,970	92.7	6.5	0.8	0.96	0.00	0.96
50	3	2,090	84.2	15.7	0.0	0.81	0.00	0.81
51	3	2,053	83.4	16.0	0.5	0.75	0.03	0.76
52	3	2,047	83.4	16.6	0.0	0.94	0.02	0.94
53	3	2,171	82.8	17.2	0.0	0.88	0.00	0.88
54	3	2,973	87.0	13.0	0.0	0.86	0.01	0.86
55	3	2,975	88.6	11.4	0.0	0.88	0.01	0.88

Table 23. N-Count by Form

Form	Grade					
	4	**5**	**7**	**8**	**HS SS**	**HS Sci**
Online	19,539	61,964	19,505	55,856	n/a	37,299
Spanish Online	348	320	81	185	n/a	84
Paper	1,506	2,993	653	2,067	n/a	1,518
Spanish Paper	37	35	17	10	n/a	1
Large Print	7	13	3	15	n/a	5
Braille	4	3	1	3	n/a	3
Total	21,441	65,228	20,260	58,136	n/a	38,910

Table 24. Demographic Distributions

Subgroup	Grade and Subject					
	4 SS	5 Sci	7 SS	8 Sci	11 SS	11 Sci
No IEP	19,156	58,137	18,299	52,557	n/a	35,746
IEP	2,285	7,091	1,961	5,579	n/a	3,164
No Accommodation	16,795	53,253	17,650	52,437	n/a	36,600
Accommodation	4,646	11,975	2,610	5,699	n/a	2,310
Am. Indian/Alaska Native	141	444	182	432	n/a	316
Asian	523	2,027	684	1,984	n/a	1,293
Black	1,031	2,977	1,009	2,588	n/a	1,878
Hispanic	7,841	22,834	7,258	20,279	n/a	14,560
White	10,958	33,860	10,256	30,512	n/a	19,432
Hawaiian/Pacific Islander	55	168	50	153	n/a	103
Two or More Races	888	2,911	817	2,181	n/a	1,320
Missing*	n/a	n/a	n/a	n/a	n/a	n/a
No Economic Disadvantage	10,386	31,964	10,369	29,909	n/a	20,316
Economic Disadvantage	9,548	27,009	8,409	22,377	n/a	14,085
Female	10,426	31,799	9,831	28,090	n/a	18,776
Male	11,015	33,429	10,429	30,046	n/a	20,134
Language Proficiency NA	16,388	50,636	15,257	45,054	n/a	29,453
Language Proficiency NEP	782	1,327	504	1,335	n/a	774
Language Proficiency LEP	2,804	6,890	1,909	4,560	n/a	2,518
Language Proficiency FEP	965	5,021	2,055	4,339	n/a	2,888
Not Migrant	21,370	65,031	20,176	57,963	n/a	38,780
Migrant	71	197	84	173	n/a	130

*n-count less than 16

Table 25. Grade 4 Operational Item Parameter Estimates

Item	Item	Model	A	B	C	D1	D2	D3	D4	Misfit
1	CR	GPC	0.911	-0.096		0.000	1.696	-0.177	-1.519	No
2	CR	GPC	0.859	1.277		0.000	-0.262	0.198	0.064	No
3	CR	GPC	0.641	0.709		0.000	1.003	0.818	-1.821	No
4	CR	GPC	0.901	0.648		0.000	1.063	0.202	-1.264	No
5	CR	GPC	0.650	1.671		0.000	0.301	0.080	-0.382	No
6	CR	GPC	0.608	1.396		0.000	-0.039	0.222	-0.183	No
7	CR	GPC	0.693	1.292		0.000	1.285	-0.111	-1.174	No
8	CR	GPC	0.863	0.696		0.000	0.350	0.278	-0.628	No
9	CR	GPC	0.920	1.349		0.000	0.402	0.185	-0.587	No
10	CR	GPC	0.831	1.333		0.000	0.315	0.380	-0.695	No
11	CR	GPC	1.020	0.985		0.000	1.061	-0.034	-1.027	No
12	CR	GPC	0.807	1.028		0.000	0.171	0.307	-0.478	No
13	SR	3PL	2.544	1.259	0.259					No
14	SR	3PL	1.465	0.635	0.248					No
15	SR	3PL	1.758	1.000	0.271					No
16	SR	3PL	0.596	-0.078	0.120					No
17	SR	3PL	1.726	1.900	0.096					No
18	SR	3PL	1.862	-0.266	0.243					No
19	SR	3PL	1.793	0.723	0.145					No
20	SR	3PL	1.618	1.268	0.288					No
21	SR	3PL	1.482	1.712	0.193					No
22	SR	3PL	1.198	0.709	0.138					No
23	SR	3PL	1.501	1.109	0.246					No
24	SR	3PL	1.793	1.189	0.156					No
25	SR	3PL	1.640	0.437	0.190					No
26	SR	3PL	2.033	-0.096	0.222					No
27	SR	3PL	0.868	-1.191	0.108					No
28	SR	3PL	0.811	-0.080	0.256					No
29	SR	3PL	1.215	1.824	0.376					No
30	SR	3PL	1.290	-0.863	0.364					No
31	SR	3PL	1.643	0.418	0.254					No
32	SR	3PL	1.160	0.845	0.242					No
33	SR	3PL	1.456	1.395	0.312					No
34	SR	3PL	0.604	1.160	0.269					No
35	XI	2PL	1.308	0.304	0.000					No
36	XI	3PL	0.768	0.521	0.264					No
37	XI	3PL	1.147	-0.479	0.093					No
38	XI	3PL	1.266	-1.535	0.136					No
39	XI	3PL	1.703	1.938	0.218					No
40	XI	3PL	1.276	1.835	0.188					No
41	XI	3PL	2.417	0.860	0.235					No
42	XI	3PL	1.591	1.225	0.197					No
43	XI	3PL	0.908	-0.016	0.365					No

Item	Item	Model	A	B	C	D1	D2	D3	D4	Misfit
44	XI	3PL	1.742	-0.019	0.040					No
45	XI	3PL	1.498	-0.115	0.325					No
46	XI	3PL	1.267	1.435	0.009					No
47	XI	3PL	0.829	2.110	0.253					No
48	XI	3PL	1.447	1.027	0.192					No
49	XI	3PL	1.467	2.143	0.222					No
50	XI	3PL	0.750	-0.217	0.032					No
51	XI	3PL	1.328	-0.062	0.340					No

Table 26. Grade 5 Operational Item Parameter Estimates

Item	Item Type	Model	A	B	C	D1	D2	D3	D4	Misfit Flag
1	CR	GPC	0.964	0.619		0.000	1.066	-1.066		No
2	CR	GPC	1.241	0.507		0.000	0.463	-0.463		No
3	CR	GPC	1.067	-0.506		0.000	0.753	-0.753		No
4	CR	GPC	0.999	1.266		0.000	1.105	-1.105		No
5	CR	GPC	1.136	0.343		0.000	0.532	-0.532		No
6	CR	GPC	0.982	-0.457		0.000	0.157	-0.157		No
7	CR	GPC	1.340	0.542		0.000	0.614	-0.614		No
8	CR	GPC	0.774	0.441		0.000	0.959	-0.959		Yes
9	CR	GPC	1.229	0.757		0.000	0.069	-0.069		No
10	CR	GPC	1.060	-0.019		0.000	0.802	-0.802		No
11	CR	GPC	0.993	0.501		0.000	-0.090	0.090		No
12	CR	GPC	0.570	-1.306		0.000	-1.145	1.145		No
13	CR	GPC	1.405	0.578		0.000	0.349	-0.349		No
14	CR	GPC	1.168	0.831		0.000	1.194	-1.194		No
15	CR	GPC	0.868	0.753		0.000	0.898	-1.059	0.161	No
16	CR	GPC	0.921	0.147		0.000	0.504	0.584	-1.088	No
17	CR	GPC	1.085	0.493		0.000	0.779	0.025	-0.804	No
18	SR	3PL	1.587	-0.952	0.194					No
19	SR	3PL	0.539	0.101	0.024					No
20	SR	3PL	1.399	-0.358	0.351					No
21	SR	3PL	1.278	-0.954	0.317					No
22	SR	3PL	0.741	-0.717	0.106					No
23	SR	3PL	1.483	0.135	0.309					No
24	SR	3PL	1.821	-0.377	0.177					No
25	SR	3PL	1.368	-0.642	0.184					No
26	SR	3PL	1.972	1.199	0.228					No
27	SR	3PL	1.082	-1.089	0.150					No
28	SR	3PL	1.148	-1.673	0.092					No
29	SR	3PL	0.627	-0.224	0.040					No
30	SR	3PL	2.022	1.340	0.352					No
31	SR	3PL	1.226	-0.475	0.334					No
32	SR	3PL	1.709	0.699	0.227					No
33	SR	3PL	1.976	0.311	0.260					No
34	SR	3PL	1.444	1.716	0.290					No
35	SR	3PL	1.856	1.198	0.142					No
36	SR	3PL	1.140	-2.125	0.077					No
37	SR	3PL	2.107	0.187	0.213					No
38	SR	3PL	1.280	-1.781	0.262					No
39	SR	3PL	0.903	1.263	0.250					No
40	SR	3PL	1.742	-0.024	0.405					No
41	XI	2PL	1.074	-1.469						No

Item	Item Type	Model	A	B	C	D1	D2	D3	D4	Misfit Flag
42	XI	2PL	1.225	-0.829						No
43	XI	2PL	1.302	1.366						No
44	XI	2PL	1.291	-1.894						No
45	XI	2PL	1.283	-1.155						No
46	XI	2PL	1.122	-0.443						No
47	XI	2PL	1.379	0.113						No
48	XI	2PL	0.907	1.915						No
49	XI	2PL	1.941	-1.193						No
50	XI	3PL	1.587	0.777	0.070					No
51	XI	3PL	1.343	-0.473	0.022					No
52	XI	3PL	1.363	-0.385	0.023					No
53	XI	3PL	0.892	-1.274	0.008					No
54	XI	3PL	1.315	1.197	0.199					No
55	XI	3PL	1.323	0.980	0.019					No
56	XI	3PL	2.244	0.492	0.184					No
57	XI	3PL	1.014	0.580	0.262					No
58	XI	3PL	0.932	-1.030	0.056					No
59	XI	3PL	1.656	0.569	0.148					No
60	XI	3PL	2.253	0.765	0.288					No

Table 27. Grade 7 Operational Item Parameter Estimates

Item	Item Type	Model	A	B	C	D1	D2	D3	D4	Misfit Flag
1	CR	GPC	0.762	0.807		0.000	0.044	0.478	-0.522	No
2	CR	GPC	0.753	0.956		0.000	-0.737	0.608	0.129	No
3	CR	GPC	1.102	0.786		0.000	0.626	0.037	-0.663	No
4	CR	GPC	1.494	0.953		0.000	0.734	0.079	-0.813	No
5	CR	GPC	1.006	0.440		0.000	1.176	0.222	-1.398	No
6	CR	GPC	0.926	0.280		0.000	1.251	0.122	-1.373	No
7	CR	GPC	1.090	0.131		0.000	0.652	0.016	-0.668	No
8	CR	GPC	1.133	0.251		0.000	0.879	-0.203	-0.676	No
9	CR	GPC	0.852	0.138		0.000	0.611	-0.047	-0.564	No
10	CR	GPC	1.307	0.683		0.000	0.724	0.192	-0.917	No
11	CR	GPC	1.012	1.119		0.000	0.784	-0.066	-0.718	No
12	CR	GPC	1.161	0.943		0.000	1.240	-0.066	-1.174	No
13	SR	3PL	1.481	0.777	0.341					No
14	SR	3PL	0.950	0.853	0.089					No
15	SR	3PL	1.430	1.198	0.250					No
16	SR	3PL	1.309	0.334	0.253					No
17	SR	3PL	1.885	-0.039	0.254					No
18	SR	3PL	2.449	1.971	0.268					No
19	SR	3PL	1.847	0.956	0.122					No
20	SR	3PL	2.309	-0.680	0.259					No
21	SR	3PL	2.615	0.084	0.227					No
22	SR	3PL	1.921	0.249	0.246					No
23	SR	3PL	1.527	-0.730	0.388					No
24	SR	3PL	1.036	0.861	0.227					No
25	SR	3PL	2.490	1.165	0.263					No
26	SR	3PL	1.851	1.152	0.202					No
27	SR	3PL	1.361	0.123	0.421					No
28	SR	3PL	1.604	1.086	0.356					No
29	SR	3PL	2.407	0.697	0.400					No
30	SR	3PL	1.132	-0.313	0.096					No
31	SR	3PL	1.270	1.912	0.079					No
32	SR	3PL	1.741	-0.202	0.075					No
33	XI	2PL	0.718	-0.874						No
34	XI	2PL	1.295	0.229						No
35	XI	2PL	1.292	1.207						No
36	XI	2PL	1.910	0.908						No
37	XI	2PL	0.958	0.130						No
38	XI	3PL	1.285	-0.461	0.133					No
39	XI	3PL	1.385	2.071	0.127					No
40	XI	3PL	1.506	-1.049	0.355					No
41	XI	3PL	1.698	0.130	0.265					No

Item	Item Type	Model	A	B	C	D1	D2	D3	D4	Misfit Flag
42	XI	3PL	1.676	0.211	0.055					No
43	XI	3PL	0.622	0.452	0.088					No
44	XI	3PL	2.100	0.404	0.056					No
45	XI	3PL	1.463	1.155	0.071					No
46	XI	3PL	1.764	0.750	0.072					No
47	XI	3PL	1.817	1.672	0.090					No
48	XI	3PL	1.750	1.140	0.061					No

Table 28. Grade 8 Operational Item Parameter Estimates

Item	Item Type	Model	A	B	C	D1	D2	D3	D4	Misfit Flag
1	CR	GPC	1.194	-0.056		0.000	0.436	-0.436		No
2	CR	GPC	1.247	-0.050		0.000	0.776	-0.776		No
3	CR	GPC	1.248	-0.776		0.000	0.275	-0.275		No
4	CR	GPC	0.957	-0.645		0.000	0.925	-0.925		Yes
5	CR	GPC	1.154	0.311		0.000	0.374	-0.374		No
6	CR	GPC	1.167	-0.274		0.000	0.559	-0.559		No
7	CR	GPC	0.980	1.408		0.000	1.228	-1.228		No
8	CR	GPC	1.037	0.793		0.000	0.132	-0.132		No
9	CR	GPC	1.139	1.287		0.000	0.004	-0.004		No
10	CR	GPC	0.906	1.910		0.000	0.745	-0.745		No
11	CR	GPC	0.565	-1.037		0.000	1.189	-1.189		Yes
12	CR	GPC	0.815	0.402		0.000	0.063	-0.063		No
13	CR	GPC	1.258	0.282		0.000	0.162	-0.162		No
14	CR	GPC	1.359	0.746		0.000	0.443	-0.443		No
15	CR	GPC	1.182	0.402		0.000	0.029	0.398	-0.427	No
16	CR	GPC	1.307	0.413		0.000	0.880	-0.112	-0.768	No
17	CR	GPC	1.065	1.352		0.000	1.294	0.181	-1.475	No
18	SR	3PL	1.061	1.034	0.080					No
19	SR	3PL	1.017	-0.866	0.013					No
20	SR	3PL	0.922	1.656	0.278					No
21	SR	3PL	1.173	0.766	0.150					No
22	SR	3PL	0.987	-1.499	0.020					No
23	SR	3PL	1.572	-0.234	0.342					No
24	SR	3PL	1.199	0.269	0.411					No
25	SR	3PL	1.063	1.090	0.281					No
26	SR	3PL	0.526	-0.230	0.012					No
27	SR	3PL	0.701	0.798	0.255					No
28	SR	3PL	1.232	0.651	0.169					No
29	SR	3PL	1.588	0.988	0.357					No
30	SR	3PL	0.919	-2.752	0.095					No
31	SR	3PL	0.706	0.278	0.043					No
32	SR	3PL	1.238	-0.032	0.077					No
33	SR	3PL	1.231	-0.925	0.266					No
34	SR	3PL	1.473	0.983	0.124					No
35	SR	3PL	1.292	-0.408	0.141					No
36	SR	3PL	1.089	0.099	0.085					No
37	SR	3PL	1.359	0.456	0.374					No
38	SR	3PL	1.365	0.376	0.323					No
39	XI	2PL	0.677	1.206						No
40	XI	2PL	1.150	0.465						No
41	XI	2PL	1.266	1.180						No

Item	Item Type	Model	A	B	C	D1	D2	D3	D4	Misfit Flag
42	XI	2PL	1.208	-0.243						No
43	XI	2PL	1.025	0.263						No
44	XI	2PL	1.374	1.099						No
45	XI	2PL	0.743	1.690						No
46	XI	3PL	0.598	-0.593	0.053					No
47	XI	3PL	1.488	1.559	0.152					No
48	XI	3PL	1.367	1.232	0.064					No
49	XI	3PL	1.710	0.496	0.015					No
50	XI	3PL	1.498	0.802	0.350					No
51	XI	3PL	0.664	0.016	0.014					No
52	XI	3PL	1.286	1.537	0.020					No
53	XI	3PL	0.918	0.314	0.065					No
54	XI	3PL	0.962	1.101	0.107					No
55	XI	3PL	0.957	1.332	0.039					No
56	XI	3PL	1.257	0.984	0.142					No
57	XI	3PL	1.978	0.503	0.158					No
58	XI	3PL	1.246	0.782	0.021					No
59	XI	3PL	1.203	0.721	0.256					No
60	XI	3PL	1.836	1.488	0.178					No

Table 29. HS Science Operational Item Parameter Estimates

Item	Item Type	Model	A	B	C	D1	D2	D3	D4	Misfit Flag
1	CR	GPC	1.167	1.353		0.000	0.532	-0.532		No
2	CR	GPC	0.600	1.047		0.000	-0.635	0.635		No
3	CR	GPC	1.384	1.653		0.000	0.709	-0.709		No
4	CR	GPC	1.148	1.198		0.000	0.992	-0.992		No
5	CR	GPC	1.478	1.307		0.000	0.899	-0.899		No
6	CR	GPC	1.121	-0.250		0.000	0.638	-0.638		No
7	CR	GPC	1.311	0.526		0.000	1.023	-1.023		No
8	CR	GPC	1.659	1.654		0.000	0.416	-0.416		No
9	CR	GPC	1.295	0.494		0.000	-0.467	0.467		No
10	CR	GPC	1.538	0.977		0.000	-0.142	0.142		No
11	CR	GPC	1.231	1.446		0.000	0.934	-0.934		No
12	CR	GPC	1.251	1.108		0.000	-0.060	0.060		No
13	CR	GPC	1.246	0.620		0.000	0.686	-0.686		No
14	CR	GPC	1.057	0.073		0.000	0.241	-0.241		No
15	CR	GPC	1.213	1.444		0.000	0.000	0.320	-0.320	No
16	CR	GPC	1.020	1.030		0.000	0.035	0.359	-0.394	No
17	CR	GPC	1.207	1.237		0.000	0.451	0.044	-0.495	No
18	SR	3PL	1.264	1.196	0.143					No
19	SR	3PL	1.475	-0.788	0.243					No
20	SR	3PL	3.300	1.497	0.362					No
21	SR	3PL	1.421	1.517	0.231					No
22	SR	3PL	2.059	0.147	0.094					No
23	SR	3PL	2.253	1.123	0.316					No
24	SR	3PL	1.678	0.636	0.338					No
25	SR	3PL	1.409	0.176	0.056					No
26	SR	3PL	1.277	-0.777	0.041					No
27	SR	3PL	1.423	0.453	0.245					No
28	SR	3PL	1.974	0.793	0.285					No
29	SR	3PL	1.545	0.573	0.124					No
30	SR	3PL	1.329	1.213	0.111					No
31	SR	3PL	1.088	-0.610	0.148					No
32	SR	3PL	1.259	0.676	0.156					No
33	SR	3PL	0.831	0.251	0.057					No
34	SR	3PL	1.922	1.422	0.205					No
35	SR	3PL	0.691	0.688	0.020					No
36	SR	3PL	0.991	1.091	0.067					No
37	SR	3PL	1.423	0.042	0.439					No
38	SR	3PL	2.755	1.467	0.067					No
39	SR	3PL	0.737	1.764	0.243					No
40	XI	2PL	1.432	0.968						No
41	XI	2PL	0.986	2.822						No

Item	Item Type	Model	A	B	C	D1	D2	D3	D4	Misfit Flag
42	XI	2PL	1.054	1.811						No
43	XI	2PL	1.234	0.718						No
44	XI	2PL	0.831	0.032						No
45	XI	2PL	1.671	1.099						No
46	XI	2PL	1.490	0.290						No
47	XI	2PL	0.930	0.648						No
48	XI	2PL	0.963	1.035						No
49	XI	2PL	1.349	0.636						No
50	XI	2PL	1.644	0.591						No
51	XI	3PL	1.228	0.440	0.186					No
52	XI	3PL	1.884	0.899	0.075					No
53	XI	3PL	1.222	-2.456	0.085					No
54	XI	3PL	2.419	0.359	0.006					No
55	XI	3PL	1.757	-0.257	0.059					No
56	XI	3PL	2.139	2.137	0.037					No
57	XI	3PL	1.989	1.134	0.028					No
58	XI	3PL	1.438	0.127	0.017					No
59	XI	3PL	1.322	0.960	0.129					No
60	XI	3PL	1.823	1.316	0.037					No

Table 30. Grade 4 Cumulative Frequency Distribution of Scale Scores

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
300	549	2.56	549	2.56	345	3	0.01	765	3.57	390	12	0.06	1,186	5.53
301	1	0.00	550	2.57	346	5	0.02	770	3.59	391	6	0.03	1,192	5.56
302	5	0.02	555	2.59	347	5	0.02	775	3.61	392	15	0.07	1,207	5.63
303	2	0.01	557	2.60	348	13	0.06	788	3.68	393	7	0.03	1,214	5.66
304	4	0.02	561	2.62	349	4	0.02	792	3.69	394	21	0.10	1,235	5.76
305	5	0.02	566	2.64	350	10	0.05	802	3.74	395	8	0.04	1,243	5.80
306	5	0.02	571	2.66	351	6	0.03	808	3.77	396	13	0.06	1,256	5.86
307	6	0.03	577	2.69	352	6	0.03	814	3.80	397	14	0.07	1,270	5.92
308	1	0.00	578	2.70	353	6	0.03	820	3.82	398	9	0.04	1,279	5.97
309	1	0.00	579	2.70	354	8	0.04	828	3.86	399	15	0.07	1,294	6.04
310	3	0.01	582	2.71	355	8	0.04	836	3.90	400	15	0.07	1,309	6.11
311	1	0.00	583	2.72	356	6	0.03	842	3.93	401	12	0.06	1,321	6.16
312	6	0.03	589	2.75	357	9	0.04	851	3.97	402	14	0.07	1,335	6.23
313	1	0.00	590	2.75	358	10	0.05	861	4.02	403	10	0.05	1,345	6.27
314	2	0.01	592	2.76	359	9	0.04	870	4.06	404	11	0.05	1,356	6.32
315	5	0.02	597	2.78	360	9	0.04	879	4.10	405	11	0.05	1,367	6.38
316	5	0.02	602	2.81	361	10	0.05	889	4.15	406	6	0.03	1,373	6.40
317	6	0.03	608	2.84	362	8	0.04	897	4.18	407	6	0.03	1,379	6.43
318	4	0.02	612	2.85	363	6	0.03	903	4.21	408	16	0.07	1,395	6.51
319	4	0.02	616	2.87	364	6	0.03	909	4.24	409	15	0.07	1,410	6.58
320	3	0.01	619	2.89	365	8	0.04	917	4.28	410	17	0.08	1,427	6.66
321	4	0.02	623	2.91	366	8	0.04	925	4.31	411	16	0.07	1,443	6.73
322	4	0.02	627	2.92	367	13	0.06	938	4.37	412	8	0.04	1,451	6.77
323	4	0.02	631	2.94	368	9	0.04	947	4.42	413	15	0.07	1,466	6.84
324	9	0.04	640	2.98	369	10	0.05	957	4.46	414	16	0.07	1,482	6.91
325	8	0.04	648	3.02	370	15	0.07	972	4.53	415	14	0.07	1,496	6.98
326	7	0.03	655	3.05	371	10	0.05	982	4.58	416	19	0.09	1,515	7.07
327	2	0.01	657	3.06	372	9	0.04	991	4.62	417	15	0.07	1,530	7.14
328	2	0.01	659	3.07	373	15	0.07	1,006	4.69	418	19	0.09	1,549	7.22
329	7	0.03	666	3.11	374	11	0.05	1,017	4.74	419	15	0.07	1,564	7.29
330	8	0.04	674	3.14	375	11	0.05	1,028	4.79	420	11	0.05	1,575	7.35
331	2	0.01	676	3.15	376	14	0.07	1,042	4.86	421	9	0.04	1,584	7.39
332	3	0.01	679	3.17	377	10	0.05	1,052	4.91	422	14	0.07	1,598	7.45
333	6	0.03	685	3.19	378	11	0.05	1,063	4.96	423	13	0.06	1,611	7.51
334	5	0.02	690	3.22	379	9	0.04	1,072	5.00	424	12	0.06	1,623	7.57
335	6	0.03	696	3.25	380	9	0.04	1,081	5.04	425	22	0.10	1,645	7.67
336	7	0.03	703	3.28	381	9	0.04	1,090	5.08	426	13	0.06	1,658	7.73
337	11	0.05	714	3.33	382	15	0.07	1,105	5.15	427	20	0.09	1,678	7.83
338	8	0.04	722	3.37	383	11	0.05	1,116	5.20	428	11	0.05	1,689	7.88
339	9	0.04	731	3.41	384	5	0.02	1,121	5.23	429	11	0.05	1,700	7.93
340	9	0.04	740	3.45	385	7	0.03	1,128	5.26	430	19	0.09	1,719	8.02
341	5	0.02	745	3.47	386	18	0.08	1,146	5.34	431	21	0.10	1,740	8.12
342	7	0.03	752	3.51	387	7	0.03	1,153	5.38	432	19	0.09	1,759	8.20
343	4	0.02	756	3.53	388	13	0.06	1,166	5.44	433	16	0.07	1,775	8.28
344	6	0.03	762	3.55	389	8	0.04	1,174	5.48	434	16	0.07	1,791	8.35

Table 30. Grade 4 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
435	16	0.07	1,807	8.43	480	29	0.14	2,852	13.30	525	44	0.21	4,499	20.98
436	18	0.08	1,825	8.51	481	28	0.13	2,880	13.43	526	52	0.24	4,551	21.23
437	24	0.11	1,849	8.62	482	24	0.11	2,904	13.54	527	56	0.26	4,607	21.49
438	11	0.05	1,860	8.67	483	34	0.16	2,938	13.70	528	49	0.23	4,656	21.72
439	16	0.07	1,876	8.75	484	28	0.13	2,966	13.83	529	48	0.22	4,704	21.94
440	21	0.10	1,897	8.85	485	31	0.14	2,997	13.98	530	47	0.22	4,751	22.16
441	20	0.09	1,917	8.94	486	30	0.14	3,027	14.12	531	45	0.21	4,796	22.37
442	17	0.08	1,934	9.02	487	28	0.13	3,055	14.25	532	41	0.19	4,837	22.56
443	11	0.05	1,945	9.07	488	33	0.15	3,088	14.40	533	35	0.16	4,872	22.72
444	20	0.09	1,965	9.16	489	33	0.15	3,121	14.56	534	43	0.20	4,915	22.92
445	21	0.10	1,986	9.26	490	34	0.16	3,155	14.71	535	54	0.25	4,969	23.18
446	15	0.07	2,001	9.33	491	35	0.16	3,190	14.88	536	63	0.29	5,032	23.47
447	22	0.10	2,023	9.44	492	34	0.16	3,224	15.04	537	65	0.30	5,097	23.77
448	24	0.11	2,047	9.55	493	33	0.15	3,257	15.19	538	64	0.30	5,161	24.07
449	30	0.14	2,077	9.69	494	31	0.14	3,288	15.34	539	62	0.29	5,223	24.36
450	16	0.07	2,093	9.76	495	42	0.20	3,330	15.53	540	60	0.28	5,283	24.64
451	21	0.10	2,114	9.86	496	33	0.15	3,363	15.68	541	46	0.21	5,329	24.85
452	28	0.13	2,142	9.99	497	34	0.16	3,397	15.84	542	47	0.22	5,376	25.07
453	19	0.09	2,161	10.08	498	41	0.19	3,438	16.03	543	51	0.24	5,427	25.31
454	20	0.09	2,181	10.17	499	39	0.18	3,477	16.22	544	56	0.26	5,483	25.57
455	28	0.13	2,209	10.30	500	31	0.14	3,508	16.36	545	70	0.33	5,553	25.90
456	16	0.07	2,225	10.38	501	37	0.17	3,545	16.53	546	47	0.22	5,600	26.12
457	31	0.14	2,256	10.52	502	37	0.17	3,582	16.71	547	42	0.20	5,642	26.31
458	27	0.13	2,283	10.65	503	33	0.15	3,615	16.86	548	46	0.21	5,688	26.53
459	24	0.11	2,307	10.76	504	32	0.15	3,647	17.01	549	62	0.29	5,750	26.82
460	15	0.07	2,322	10.83	505	37	0.17	3,684	17.18	550	68	0.32	5,818	27.13
461	26	0.12	2,348	10.95	506	32	0.15	3,716	17.33	551	43	0.20	5,861	27.34
462	19	0.09	2,367	11.04	507	33	0.15	3,749	17.49	552	52	0.24	5,913	27.58
463	19	0.09	2,386	11.13	508	33	0.15	3,782	17.64	553	58	0.27	5,971	27.85
464	29	0.14	2,415	11.26	509	44	0.21	3,826	17.84	554	60	0.28	6,031	28.13
465	20	0.09	2,435	11.36	510	32	0.15	3,858	17.99	555	67	0.31	6,098	28.44
466	22	0.10	2,457	11.46	511	31	0.14	3,889	18.14	556	65	0.30	6,163	28.74
467	43	0.20	2,500	11.66	512	42	0.20	3,931	18.33	557	55	0.26	6,218	29.00
468	27	0.13	2,527	11.79	513	38	0.18	3,969	18.51	558	53	0.25	6,271	29.25
469	21	0.10	2,548	11.88	514	46	0.21	4,015	18.73	559	55	0.26	6,326	29.50
470	29	0.14	2,577	12.02	515	52	0.24	4,067	18.97	560	59	0.28	6,385	29.78
471	23	0.11	2,600	12.13	516	37	0.17	4,104	19.14	561	63	0.29	6,448	30.07
472	20	0.09	2,620	12.22	517	35	0.16	4,139	19.30	562	60	0.28	6,508	30.35
473	22	0.10	2,642	12.32	518	43	0.20	4,182	19.50	563	57	0.27	6,565	30.62
474	35	0.16	2,677	12.49	519	41	0.19	4,223	19.70	564	79	0.37	6,644	30.99
475	28	0.13	2,705	12.62	520	42	0.20	4,265	19.89	565	69	0.32	6,713	31.31
476	29	0.14	2,734	12.75	521	40	0.19	4,305	20.08	566	54	0.25	6,767	31.56
477	22	0.10	2,756	12.85	522	53	0.25	4,358	20.33	567	65	0.30	6,832	31.86
478	37	0.17	2,793	13.03	523	43	0.20	4,401	20.53	568	73	0.34	6,905	32.20
479	30	0.14	2,823	13.17	524	54	0.25	4,455	20.78	569	72	0.34	6,977	32.54

Table 30. Grade 4 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
570	62	0.29	7,039	32.83	615	93	0.43	10,256	47.83	660	74	0.35	13,738	64.07
571	62	0.29	7,101	33.12	616	70	0.33	10,326	48.16	661	85	0.40	13,823	64.47
572	63	0.29	7,164	33.41	617	68	0.32	10,394	48.48	662	84	0.39	13,907	64.86
573	73	0.34	7,237	33.75	618	76	0.35	10,470	48.83	663	79	0.37	13,986	65.23
574	58	0.27	7,295	34.02	619	85	0.40	10,555	49.23	664	91	0.42	14,077	65.65
575	73	0.34	7,368	34.36	620	76	0.35	10,631	49.58	665	76	0.35	14,153	66.01
576	55	0.26	7,423	34.62	621	77	0.36	10,708	49.94	666	71	0.33	14,224	66.34
577	61	0.28	7,484	34.91	622	89	0.42	10,797	50.36	667	72	0.34	14,296	66.68
578	58	0.27	7,542	35.18	623	71	0.33	10,868	50.69	668	67	0.31	14,363	66.99
579	68	0.32	7,610	35.49	624	87	0.41	10,955	51.09	669	77	0.36	14,440	67.35
580	65	0.30	7,675	35.80	625	82	0.38	11,037	51.48	670	110	0.51	14,550	67.86
581	65	0.30	7,740	36.10	626	76	0.35	11,113	51.83	671	74	0.35	14,624	68.21
582	74	0.35	7,814	36.44	627	70	0.33	11,183	52.16	672	76	0.35	14,700	68.56
583	63	0.29	7,877	36.74	628	94	0.44	11,277	52.60	673	65	0.30	14,765	68.86
584	72	0.34	7,949	37.07	629	73	0.34	11,350	52.94	674	68	0.32	14,833	69.18
585	80	0.37	8,029	37.45	630	89	0.42	11,439	53.35	675	69	0.32	14,902	69.50
586	64	0.30	8,093	37.75	631	73	0.34	11,512	53.69	676	61	0.28	14,963	69.79
587	61	0.28	8,154	38.03	632	69	0.32	11,581	54.01	677	86	0.40	15,049	70.19
588	80	0.37	8,234	38.40	633	98	0.46	11,679	54.47	678	81	0.38	15,130	70.57
589	70	0.33	8,304	38.73	634	82	0.38	11,761	54.85	679	79	0.37	15,209	70.93
590	69	0.32	8,373	39.05	635	76	0.35	11,837	55.21	680	81	0.38	15,290	71.31
591	86	0.40	8,459	39.45	636	75	0.35	11,912	55.56	681	69	0.32	15,359	71.63
592	80	0.37	8,539	39.83	637	82	0.38	11,994	55.94	682	76	0.35	15,435	71.99
593	62	0.29	8,601	40.11	638	68	0.32	12,062	56.26	683	78	0.36	15,513	72.35
594	89	0.42	8,690	40.53	639	78	0.36	12,140	56.62	684	79	0.37	15,592	72.72
595	56	0.26	8,746	40.79	640	70	0.33	12,210	56.95	685	90	0.42	15,682	73.14
596	79	0.37	8,825	41.16	641	86	0.40	12,296	57.35	686	84	0.39	15,766	73.53
597	72	0.34	8,897	41.50	642	82	0.38	12,378	57.73	687	93	0.43	15,859	73.97
598	75	0.35	8,972	41.85	643	67	0.31	12,445	58.04	688	71	0.33	15,930	74.30
599	65	0.30	9,037	42.15	644	73	0.34	12,518	58.38	689	75	0.35	16,005	74.65
600	74	0.35	9,111	42.49	645	74	0.35	12,592	58.73	690	90	0.42	16,095	75.07
601	78	0.36	9,189	42.86	646	72	0.34	12,664	59.06	691	75	0.35	16,170	75.42
602	72	0.34	9,261	43.19	647	96	0.45	12,760	59.51	692	66	0.31	16,236	75.72
603	75	0.35	9,336	43.54	648	85	0.40	12,845	59.91	693	58	0.27	16,294	75.99
604	81	0.38	9,417	43.92	649	78	0.36	12,923	60.27	694	67	0.31	16,361	76.31
605	77	0.36	9,494	44.28	650	86	0.40	13,009	60.67	695	68	0.32	16,429	76.62
606	85	0.40	9,579	44.68	651	80	0.37	13,089	61.05	696	64	0.30	16,493	76.92
607	83	0.39	9,662	45.06	652	62	0.29	13,151	61.34	697	65	0.30	16,558	77.23
608	60	0.28	9,722	45.34	653	62	0.29	13,213	61.62	698	74	0.35	16,632	77.57
609	66	0.31	9,788	45.65	654	76	0.35	13,289	61.98	699	82	0.38	16,714	77.95
610	87	0.41	9,875	46.06	655	76	0.35	13,365	62.33	700	51	0.24	16,765	78.19
611	65	0.30	9,940	46.36	656	91	0.42	13,456	62.76	701	60	0.28	16,825	78.47
612	75	0.35	10,015	46.71	657	69	0.32	13,525	63.08	702	78	0.36	16,903	78.83
613	85	0.40	10,100	47.11	658	63	0.29	13,588	63.37	703	71	0.33	16,974	79.17
614	63	0.29	10,163	47.40	659	76	0.35	13,664	63.73	704	74	0.35	17,048	79.51

Table 30. Grade 4 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
705	65	0.30	17,113	79.81	750	49	0.23	19,549	91.18	795	17	0.08	20,857	97.28
706	68	0.32	17,181	80.13	751	43	0.20	19,592	91.38	796	9	0.04	20,866	97.32
707	73	0.34	17,254	80.47	752	49	0.23	19,641	91.60	797	19	0.09	20,885	97.41
708	86	0.40	17,340	80.87	753	51	0.24	19,692	91.84	798	10	0.05	20,895	97.45
709	67	0.31	17,407	81.19	754	42	0.20	19,734	92.04	799	19	0.09	20,914	97.54
710	57	0.27	17,464	81.45	755	41	0.19	19,775	92.23	800	8	0.04	20,922	97.58
711	69	0.32	17,533	81.77	756	46	0.21	19,821	92.44	801	16	0.07	20,938	97.65
712	70	0.33	17,603	82.10	757	41	0.19	19,862	92.64	802	13	0.06	20,951	97.71
713	70	0.33	17,673	82.43	758	26	0.12	19,888	92.76	803	15	0.07	20,966	97.78
714	64	0.30	17,737	82.72	759	39	0.18	19,927	92.94	804	9	0.04	20,975	97.83
715	69	0.32	17,806	83.05	760	49	0.23	19,976	93.17	805	10	0.05	20,985	97.87
716	65	0.30	17,871	83.35	761	41	0.19	20,017	93.36	806	10	0.05	20,995	97.92
717	54	0.25	17,925	83.60	762	29	0.14	20,046	93.49	807	7	0.03	21,002	97.95
718	64	0.30	17,989	83.90	763	25	0.12	20,071	93.61	808	16	0.07	21,018	98.03
719	67	0.31	18,056	84.21	764	34	0.16	20,105	93.77	809	9	0.04	21,027	98.07
720	70	0.33	18,126	84.54	765	35	0.16	20,140	93.93	810	14	0.07	21,041	98.13
721	45	0.21	18,171	84.75	766	19	0.09	20,159	94.02	811	20	0.09	21,061	98.23
722	51	0.24	18,222	84.99	767	34	0.16	20,193	94.18	812	15	0.07	21,076	98.30
723	55	0.26	18,277	85.24	768	27	0.13	20,220	94.31	813	9	0.04	21,085	98.34
724	61	0.28	18,338	85.53	769	26	0.12	20,246	94.43	814	9	0.04	21,094	98.38
725	37	0.17	18,375	85.70	770	26	0.12	20,272	94.55	815	9	0.04	21,103	98.42
726	56	0.26	18,431	85.96	771	21	0.10	20,293	94.65	816	9	0.04	21,112	98.47
727	48	0.22	18,479	86.19	772	26	0.12	20,319	94.77	817	7	0.03	21,119	98.50
728	50	0.23	18,529	86.42	773	24	0.11	20,343	94.88	818	6	0.03	21,125	98.53
729	40	0.19	18,569	86.61	774	30	0.14	20,373	95.02	819	11	0.05	21,136	98.58
730	55	0.26	18,624	86.86	775	22	0.10	20,395	95.12	820	7	0.03	21,143	98.61
731	53	0.25	18,677	87.11	776	33	0.15	20,428	95.28	821	12	0.06	21,155	98.67
732	59	0.28	18,736	87.38	777	30	0.14	20,458	95.42	822	9	0.04	21,164	98.71
733	47	0.22	18,783	87.60	778	29	0.14	20,487	95.55	823	3	0.01	21,167	98.72
734	45	0.21	18,828	87.81	779	25	0.12	20,512	95.67	824	5	0.02	21,172	98.75
735	41	0.19	18,869	88.00	780	26	0.12	20,538	95.79	825	5	0.02	21,177	98.77
736	46	0.21	18,915	88.22	781	19	0.09	20,557	95.88	826	6	0.03	21,183	98.80
737	47	0.22	18,962	88.44	782	32	0.15	20,589	96.03	827	8	0.04	21,191	98.83
738	46	0.21	19,008	88.65	783	21	0.10	20,610	96.12	828	10	0.05	21,201	98.88
739	40	0.19	19,048	88.84	784	18	0.08	20,628	96.21	829	4	0.02	21,205	98.90
740	43	0.20	19,091	89.04	785	27	0.13	20,655	96.33	830	9	0.04	21,214	98.94
741	51	0.24	19,142	89.28	786	21	0.10	20,676	96.43	831	11	0.05	21,225	98.99
742	51	0.24	19,193	89.52	787	22	0.10	20,698	96.53	832	6	0.03	21,231	99.02
743	45	0.21	19,238	89.73	788	23	0.11	20,721	96.64	833	5	0.02	21,236	99.04
744	41	0.19	19,279	89.92	789	19	0.09	20,740	96.73	834	5	0.02	21,241	99.07
745	37	0.17	19,316	90.09	790	19	0.09	20,759	96.82	835	4	0.02	21,245	99.09
746	49	0.23	19,365	90.32	791	15	0.07	20,774	96.89	836	5	0.02	21,250	99.11
747	55	0.26	19,420	90.57	792	18	0.08	20,792	96.97	837	7	0.03	21,257	99.14
748	36	0.17	19,456	90.74	793	20	0.09	20,812	97.07	838	7	0.03	21,264	99.17
749	44	0.21	19,500	90.95	794	28	0.13	20,840	97.20	839	7	0.03	21,271	99.21

Table 30. Grade 4 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
840	6	0.03	21,277	99.24	897	1	0.00	21,408	99.85
841	1	0.00	21,278	99.24	898	3	0.01	21,411	99.86
842	4	0.02	21,282	99.26	900	30	0.14	21,441	100.00
843	5	0.02	21,287	99.28					
844	8	0.04	21,295	99.32					
845	5	0.02	21,300	99.34					
846	4	0.02	21,304	99.36					
847	5	0.02	21,309	99.38					
848	4	0.02	21,313	99.40					
849	4	0.02	21,317	99.42					
850	2	0.01	21,319	99.43					
851	5	0.02	21,324	99.45					
852	5	0.02	21,329	99.48					
853	3	0.01	21,332	99.49					
854	3	0.01	21,335	99.51					
856	3	0.01	21,338	99.52					
858	4	0.02	21,342	99.54					
859	4	0.02	21,346	99.56					
860	5	0.02	21,351	99.58					
861	3	0.01	21,354	99.59					
862	1	0.00	21,355	99.60					
863	2	0.01	21,357	99.61					
864	3	0.01	21,360	99.62					
865	3	0.01	21,363	99.64					
866	2	0.01	21,365	99.65					
867	2	0.01	21,367	99.65					
868	3	0.01	21,370	99.67					
869	4	0.02	21,374	99.69					
870	1	0.00	21,375	99.69					
871	3	0.01	21,378	99.71					
872	4	0.02	21,382	99.72					
873	2	0.01	21,384	99.73					
876	4	0.02	21,388	99.75					
877	1	0.00	21,389	99.76					
879	1	0.00	21,390	99.76					
880	3	0.01	21,393	99.78					
881	1	0.00	21,394	99.78					
883	1	0.00	21,395	99.79					
884	1	0.00	21,396	99.79					
885	4	0.02	21,400	99.81					
886	1	0.00	21,401	99.81					
889	2	0.01	21,403	99.82					
890	2	0.01	21,405	99.83					
895	1	0.00	21,406	99.84					
896	1	0.00	21,407	99.84					

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Table 31. Grade 5 Cumulative Frequency Distribution of Scale Scores

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
300	857	1.31	857	1.31	345	28	0.04	1,629	2.50	390	32	0.05	3,045	4.67
301	11	0.02	868	1.33	346	13	0.02	1,642	2.52	391	46	0.07	3,091	4.74
302	10	0.02	878	1.35	347	19	0.03	1,661	2.55	392	39	0.06	3,130	4.80
303	20	0.03	898	1.38	348	31	0.05	1,692	2.59	393	48	0.07	3,178	4.87
304	11	0.02	909	1.39	349	35	0.05	1,727	2.65	394	48	0.07	3,226	4.95
305	12	0.02	921	1.41	350	25	0.04	1,752	2.69	395	48	0.07	3,274	5.02
306	4	0.01	925	1.42	351	29	0.04	1,781	2.73	396	42	0.06	3,316	5.08
307	19	0.03	944	1.45	352	21	0.03	1,802	2.76	397	46	0.07	3,362	5.15
308	14	0.02	958	1.47	353	23	0.04	1,825	2.80	398	36	0.06	3,398	5.21
309	16	0.02	974	1.49	354	30	0.05	1,855	2.84	399	35	0.05	3,433	5.26
310	8	0.01	982	1.51	355	26	0.04	1,881	2.88	400	41	0.06	3,474	5.33
311	11	0.02	993	1.52	356	33	0.05	1,914	2.93	401	42	0.06	3,516	5.39
312	15	0.02	1,008	1.55	357	28	0.04	1,942	2.98	402	41	0.06	3,557	5.45
313	18	0.03	1,026	1.57	358	21	0.03	1,963	3.01	403	44	0.07	3,601	5.52
314	14	0.02	1,040	1.59	359	26	0.04	1,989	3.05	404	53	0.08	3,654	5.60
315	15	0.02	1,055	1.62	360	32	0.05	2,021	3.10	405	49	0.08	3,703	5.68
316	14	0.02	1,069	1.64	361	27	0.04	2,048	3.14	406	53	0.08	3,756	5.76
317	15	0.02	1,084	1.66	362	25	0.04	2,073	3.18	407	44	0.07	3,800	5.83
318	18	0.03	1,102	1.69	363	27	0.04	2,100	3.22	408	58	0.09	3,858	5.91
319	11	0.02	1,113	1.71	364	25	0.04	2,125	3.26	409	46	0.07	3,904	5.99
320	11	0.02	1,124	1.72	365	31	0.05	2,156	3.31	410	48	0.07	3,952	6.06
321	21	0.03	1,145	1.76	366	34	0.05	2,190	3.36	411	55	0.08	4,007	6.14
322	12	0.02	1,157	1.77	367	31	0.05	2,221	3.40	412	57	0.09	4,064	6.23
323	13	0.02	1,170	1.79	368	26	0.04	2,247	3.44	413	43	0.07	4,107	6.30
324	20	0.03	1,190	1.82	369	28	0.04	2,275	3.49	414	50	0.08	4,157	6.37
325	29	0.04	1,219	1.87	370	36	0.06	2,311	3.54	415	48	0.07	4,205	6.45
326	17	0.03	1,236	1.89	371	26	0.04	2,337	3.58	416	58	0.09	4,263	6.54
327	14	0.02	1,250	1.92	372	34	0.05	2,371	3.63	417	59	0.09	4,322	6.63
328	16	0.02	1,266	1.94	373	33	0.05	2,404	3.69	418	58	0.09	4,380	6.71
329	17	0.03	1,283	1.97	374	35	0.05	2,439	3.74	419	65	0.10	4,445	6.81
330	19	0.03	1,302	2.00	375	35	0.05	2,474	3.79	420	68	0.10	4,513	6.92
331	21	0.03	1,323	2.03	376	40	0.06	2,514	3.85	421	75	0.11	4,588	7.03
332	23	0.04	1,346	2.06	377	30	0.05	2,544	3.90	422	60	0.09	4,648	7.13
333	19	0.03	1,365	2.09	378	33	0.05	2,577	3.95	423	64	0.10	4,712	7.22
334	23	0.04	1,388	2.13	379	41	0.06	2,618	4.01	424	63	0.10	4,775	7.32
335	18	0.03	1,406	2.16	380	37	0.06	2,655	4.07	425	71	0.11	4,846	7.43
336	22	0.03	1,428	2.19	381	39	0.06	2,694	4.13	426	69	0.11	4,915	7.54
337	16	0.02	1,444	2.21	382	41	0.06	2,735	4.19	427	79	0.12	4,994	7.66
338	22	0.03	1,466	2.25	383	35	0.05	2,770	4.25	428	62	0.10	5,056	7.75
339	17	0.03	1,483	2.27	384	39	0.06	2,809	4.31	429	55	0.08	5,111	7.84
340	22	0.03	1,505	2.31	385	43	0.07	2,852	4.37	430	59	0.09	5,170	7.93
341	28	0.04	1,533	2.35	386	34	0.05	2,886	4.42	431	72	0.11	5,242	8.04
342	26	0.04	1,559	2.39	387	40	0.06	2,926	4.49	432	67	0.10	5,309	8.14
343	18	0.03	1,577	2.42	388	45	0.07	2,971	4.55	433	60	0.09	5,369	8.23
344	24	0.04	1,601	2.45	389	42	0.06	3,013	4.62	434	64	0.10	5,433	8.33

Table 31. Grade 5 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
435	59	0.09	5,492	8.42	480	106	0.16	9,563	14.66	525	163	0.25	15,700	24.07
436	82	0.13	5,574	8.55	481	117	0.18	9,680	14.84	526	148	0.23	15,848	24.30
437	75	0.11	5,649	8.66	482	111	0.17	9,791	15.01	527	153	0.23	16,001	24.53
438	55	0.08	5,704	8.74	483	116	0.18	9,907	15.19	528	173	0.27	16,174	24.80
439	64	0.10	5,768	8.84	484	108	0.17	10,015	15.35	529	152	0.23	16,326	25.03
440	75	0.11	5,843	8.96	485	125	0.19	10,140	15.55	530	172	0.26	16,498	25.29
441	64	0.10	5,907	9.06	486	105	0.16	10,245	15.71	531	168	0.26	16,666	25.55
442	79	0.12	5,986	9.18	487	127	0.19	10,372	15.90	532	177	0.27	16,843	25.82
443	75	0.11	6,061	9.29	488	128	0.20	10,500	16.10	533	180	0.28	17,023	26.10
444	67	0.10	6,128	9.39	489	131	0.20	10,631	16.30	534	157	0.24	17,180	26.34
445	80	0.12	6,208	9.52	490	113	0.17	10,744	16.47	535	167	0.26	17,347	26.59
446	69	0.11	6,277	9.62	491	132	0.20	10,876	16.67	536	167	0.26	17,514	26.85
447	91	0.14	6,368	9.76	492	139	0.21	11,015	16.89	537	173	0.27	17,687	27.12
448	87	0.13	6,455	9.90	493	139	0.21	11,154	17.10	538	168	0.26	17,855	27.37
449	74	0.11	6,529	10.01	494	120	0.18	11,274	17.28	539	162	0.25	18,017	27.62
450	70	0.11	6,599	10.12	495	136	0.21	11,410	17.49	540	152	0.23	18,169	27.85
451	86	0.13	6,685	10.25	496	145	0.22	11,555	17.71	541	183	0.28	18,352	28.14
452	83	0.13	6,768	10.38	497	131	0.20	11,686	17.92	542	190	0.29	18,542	28.43
453	96	0.15	6,864	10.52	498	137	0.21	11,823	18.13	543	186	0.29	18,728	28.71
454	86	0.13	6,950	10.65	499	122	0.19	11,945	18.31	544	191	0.29	18,919	29.00
455	95	0.15	7,045	10.80	500	151	0.23	12,096	18.54	545	167	0.26	19,086	29.26
456	76	0.12	7,121	10.92	501	136	0.21	12,232	18.75	546	194	0.30	19,280	29.56
457	95	0.15	7,216	11.06	502	133	0.20	12,365	18.96	547	197	0.30	19,477	29.86
458	84	0.13	7,300	11.19	503	130	0.20	12,495	19.16	548	192	0.29	19,669	30.15
459	90	0.14	7,390	11.33	504	136	0.21	12,631	19.36	549	205	0.31	19,874	30.47
460	96	0.15	7,486	11.48	505	125	0.19	12,756	19.56	550	197	0.30	20,071	30.77
461	97	0.15	7,583	11.63	506	131	0.20	12,887	19.76	551	200	0.31	20,271	31.08
462	99	0.15	7,682	11.78	507	132	0.20	13,019	19.96	552	197	0.30	20,468	31.38
463	86	0.13	7,768	11.91	508	156	0.24	13,175	20.20	553	192	0.29	20,660	31.67
464	80	0.12	7,848	12.03	509	132	0.20	13,307	20.40	554	205	0.31	20,865	31.99
465	98	0.15	7,946	12.18	510	153	0.23	13,460	20.64	555	177	0.27	21,042	32.26
466	90	0.14	8,036	12.32	511	131	0.20	13,591	20.84	556	207	0.32	21,249	32.58
467	106	0.16	8,142	12.48	512	137	0.21	13,728	21.05	557	205	0.31	21,454	32.89
468	105	0.16	8,247	12.64	513	156	0.24	13,884	21.29	558	195	0.30	21,649	33.19
469	101	0.15	8,348	12.80	514	132	0.20	14,016	21.49	559	198	0.30	21,847	33.49
470	99	0.15	8,447	12.95	515	166	0.25	14,182	21.74	560	211	0.32	22,058	33.82
471	99	0.15	8,546	13.10	516	146	0.22	14,328	21.97	561	178	0.27	22,236	34.09
472	121	0.19	8,667	13.29	517	136	0.21	14,464	22.17	562	192	0.29	22,428	34.38
473	98	0.15	8,765	13.44	518	178	0.27	14,642	22.45	563	198	0.30	22,626	34.69
474	115	0.18	8,880	13.61	519	150	0.23	14,792	22.68	564	204	0.31	22,830	35.00
475	115	0.18	8,995	13.79	520	140	0.21	14,932	22.89	565	193	0.30	23,023	35.30
476	121	0.19	9,116	13.98	521	157	0.24	15,089	23.13	566	186	0.29	23,209	35.58
477	112	0.17	9,228	14.15	522	157	0.24	15,246	23.37	567	218	0.33	23,427	35.92
478	118	0.18	9,346	14.33	523	158	0.24	15,404	23.62	568	209	0.32	23,636	36.24
479	111	0.17	9,457	14.50	524	133	0.20	15,537	23.82	569	190	0.29	23,826	36.53

Table 31. Grade 5 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
570	190	0.29	24,016	36.82	615	231	0.35	33,936	52.03	660	254	0.39	44,712	68.55
571	200	0.31	24,216	37.13	616	226	0.35	34,162	52.37	661	223	0.34	44,935	68.89
572	219	0.34	24,435	37.46	617	215	0.33	34,377	52.70	662	245	0.38	45,180	69.26
573	205	0.31	24,640	37.78	618	231	0.35	34,608	53.06	663	225	0.34	45,405	69.61
574	201	0.31	24,841	38.08	619	252	0.39	34,860	53.44	664	220	0.34	45,625	69.95
575	205	0.31	25,046	38.40	620	247	0.38	35,107	53.82	665	219	0.34	45,844	70.28
576	179	0.27	25,225	38.67	621	218	0.33	35,325	54.16	666	224	0.34	46,068	70.63
577	217	0.33	25,442	39.00	622	251	0.38	35,576	54.54	667	224	0.34	46,292	70.97
578	204	0.31	25,646	39.32	623	247	0.38	35,823	54.92	668	261	0.40	46,553	71.37
579	209	0.32	25,855	39.64	624	230	0.35	36,053	55.27	669	236	0.36	46,789	71.73
580	226	0.35	26,081	39.98	625	245	0.38	36,298	55.65	670	223	0.34	47,012	72.07
581	212	0.33	26,293	40.31	626	230	0.35	36,528	56.00	671	204	0.31	47,216	72.39
582	210	0.32	26,503	40.63	627	251	0.38	36,779	56.39	672	246	0.38	47,462	72.76
583	219	0.34	26,722	40.97	628	238	0.36	37,017	56.75	673	203	0.31	47,665	73.07
584	218	0.33	26,940	41.30	629	259	0.40	37,276	57.15	674	255	0.39	47,920	73.47
585	220	0.34	27,160	41.64	630	239	0.37	37,515	57.51	675	230	0.35	48,150	73.82
586	224	0.34	27,384	41.98	631	256	0.39	37,771	57.91	676	216	0.33	48,366	74.15
587	212	0.33	27,596	42.31	632	230	0.35	38,001	58.26	677	220	0.34	48,586	74.49
588	202	0.31	27,798	42.62	633	212	0.33	38,213	58.58	678	203	0.31	48,789	74.80
589	215	0.33	28,013	42.95	634	219	0.34	38,432	58.92	679	192	0.29	48,981	75.09
590	249	0.38	28,262	43.33	635	217	0.33	38,649	59.25	680	240	0.37	49,221	75.46
591	213	0.33	28,475	43.65	636	224	0.34	38,873	59.60	681	227	0.35	49,448	75.81
592	237	0.36	28,712	44.02	637	251	0.38	39,124	59.98	682	239	0.37	49,687	76.17
593	217	0.33	28,929	44.35	638	245	0.38	39,369	60.36	683	201	0.31	49,888	76.48
594	232	0.36	29,161	44.71	639	270	0.41	39,639	60.77	684	230	0.35	50,118	76.84
595	218	0.33	29,379	45.04	640	226	0.35	39,865	61.12	685	212	0.33	50,330	77.16
596	209	0.32	29,588	45.36	641	259	0.40	40,124	61.51	686	221	0.34	50,551	77.50
597	238	0.36	29,826	45.73	642	247	0.38	40,371	61.89	687	236	0.36	50,787	77.86
598	232	0.36	30,058	46.08	643	247	0.38	40,618	62.27	688	206	0.32	50,993	78.18
599	242	0.37	30,300	46.45	644	227	0.35	40,845	62.62	689	228	0.35	51,221	78.53
600	239	0.37	30,539	46.82	645	252	0.39	41,097	63.01	690	224	0.34	51,445	78.87
601	207	0.32	30,746	47.14	646	233	0.36	41,330	63.36	691	198	0.30	51,643	79.17
602	222	0.34	30,968	47.48	647	250	0.38	41,580	63.75	692	188	0.29	51,831	79.46
603	231	0.35	31,199	47.83	648	251	0.38	41,831	64.13	693	191	0.29	52,022	79.75
604	254	0.39	31,453	48.22	649	259	0.40	42,090	64.53	694	238	0.36	52,260	80.12
605	230	0.35	31,683	48.57	650	209	0.32	42,299	64.85	695	200	0.31	52,460	80.43
606	232	0.36	31,915	48.93	651	234	0.36	42,533	65.21	696	199	0.31	52,659	80.73
607	224	0.34	32,139	49.27	652	235	0.36	42,768	65.57	697	233	0.36	52,892	81.09
608	212	0.33	32,351	49.60	653	238	0.36	43,006	65.93	698	204	0.31	53,096	81.40
609	231	0.35	32,582	49.95	654	237	0.36	43,243	66.30	699	182	0.28	53,278	81.68
610	221	0.34	32,803	50.29	655	245	0.38	43,488	66.67	700	210	0.32	53,488	82.00
611	241	0.37	33,044	50.66	656	232	0.36	43,720	67.03	701	211	0.32	53,699	82.33
612	221	0.34	33,265	51.00	657	239	0.37	43,959	67.39	702	163	0.25	53,862	82.57
613	224	0.34	33,489	51.34	658	248	0.38	44,207	67.77	703	206	0.32	54,068	82.89
614	216	0.33	33,705	51.67	659	251	0.38	44,458	68.16	704	200	0.31	54,268	83.20

Table 31. Grade 5 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
705	192	0.29	54,460	83.49	750	144	0.22	61,007	93.53	795	45	0.07	64,016	98.14
706	162	0.25	54,622	83.74	751	110	0.17	61,117	93.70	796	40	0.06	64,056	98.20
707	194	0.30	54,816	84.04	752	118	0.18	61,235	93.88	797	44	0.07	64,100	98.27
708	179	0.27	54,995	84.31	753	96	0.15	61,331	94.03	798	41	0.06	64,141	98.33
709	178	0.27	55,173	84.58	754	115	0.18	61,446	94.20	799	33	0.05	64,174	98.38
710	179	0.27	55,352	84.86	755	76	0.12	61,522	94.32	800	32	0.05	64,206	98.43
711	192	0.29	55,544	85.15	756	89	0.14	61,611	94.45	801	30	0.05	64,236	98.48
712	180	0.28	55,724	85.43	757	84	0.13	61,695	94.58	802	35	0.05	64,271	98.53
713	188	0.29	55,912	85.72	758	85	0.13	61,780	94.71	803	24	0.04	64,295	98.57
714	164	0.25	56,076	85.97	759	105	0.16	61,885	94.87	804	30	0.05	64,325	98.62
715	161	0.25	56,237	86.22	760	76	0.12	61,961	94.99	805	28	0.04	64,353	98.66
716	163	0.25	56,400	86.47	761	84	0.13	62,045	95.12	806	28	0.04	64,381	98.70
717	179	0.27	56,579	86.74	762	70	0.11	62,115	95.23	807	20	0.03	64,401	98.73
718	151	0.23	56,730	86.97	763	80	0.12	62,195	95.35	808	21	0.03	64,422	98.76
719	172	0.26	56,902	87.24	764	60	0.09	62,255	95.44	809	29	0.04	64,451	98.81
720	159	0.24	57,061	87.48	765	81	0.12	62,336	95.57	810	24	0.04	64,475	98.85
721	140	0.21	57,201	87.69	766	76	0.12	62,412	95.68	811	28	0.04	64,503	98.89
722	140	0.21	57,341	87.91	767	65	0.10	62,477	95.78	812	25	0.04	64,528	98.93
723	167	0.26	57,508	88.16	768	83	0.13	62,560	95.91	813	20	0.03	64,548	98.96
724	166	0.25	57,674	88.42	769	75	0.11	62,635	96.02	814	22	0.03	64,570	98.99
725	151	0.23	57,825	88.65	770	57	0.09	62,692	96.11	815	19	0.03	64,589	99.02
726	135	0.21	57,960	88.86	771	66	0.10	62,758	96.21	816	31	0.05	64,620	99.07
727	146	0.22	58,106	89.08	772	71	0.11	62,829	96.32	817	18	0.03	64,638	99.10
728	154	0.24	58,260	89.32	773	41	0.06	62,870	96.38	818	21	0.03	64,659	99.13
729	128	0.20	58,388	89.51	774	57	0.09	62,927	96.47	819	21	0.03	64,680	99.16
730	156	0.24	58,544	89.75	775	75	0.11	63,002	96.59	820	17	0.03	64,697	99.19
731	133	0.20	58,677	89.96	776	76	0.12	63,078	96.70	821	19	0.03	64,716	99.22
732	139	0.21	58,816	90.17	777	58	0.09	63,136	96.79	822	16	0.02	64,732	99.24
733	142	0.22	58,958	90.39	778	71	0.11	63,207	96.90	823	20	0.03	64,752	99.27
734	129	0.20	59,087	90.59	779	64	0.10	63,271	97.00	824	12	0.02	64,764	99.29
735	163	0.25	59,250	90.84	780	62	0.10	63,333	97.09	825	19	0.03	64,783	99.32
736	107	0.16	59,357	91.00	781	57	0.09	63,390	97.18	826	14	0.02	64,797	99.34
737	138	0.21	59,495	91.21	782	48	0.07	63,438	97.26	827	13	0.02	64,810	99.36
738	131	0.20	59,626	91.41	783	49	0.08	63,487	97.33	828	20	0.03	64,830	99.39
739	123	0.19	59,749	91.60	784	48	0.07	63,535	97.40	829	14	0.02	64,844	99.41
740	123	0.19	59,872	91.79	785	46	0.07	63,581	97.48	830	16	0.02	64,860	99.44
741	101	0.15	59,973	91.94	786	47	0.07	63,628	97.55	831	12	0.02	64,872	99.45
742	113	0.17	60,086	92.12	787	37	0.06	63,665	97.60	832	13	0.02	64,885	99.47
743	134	0.21	60,220	92.32	788	50	0.08	63,715	97.68	833	21	0.03	64,906	99.51
744	103	0.16	60,323	92.48	789	41	0.06	63,756	97.74	834	11	0.02	64,917	99.52
745	112	0.17	60,435	92.65	790	38	0.06	63,794	97.80	835	7	0.01	64,924	99.53
746	111	0.17	60,546	92.82	791	46	0.07	63,840	97.87	836	11	0.02	64,935	99.55
747	124	0.19	60,670	93.01	792	38	0.06	63,878	97.93	837	10	0.02	64,945	99.57
748	93	0.14	60,763	93.15	793	43	0.07	63,921	98.00	838	6	0.01	64,951	99.58
749	100	0.15	60,863	93.31	794	50	0.08	63,971	98.07	839	7	0.01	64,958	99.59

Table 31. Grade 5 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
840	8	0.01	64,966	99.60	886	2	0.00	65,169	99.91
841	6	0.01	64,972	99.61	887	2	0.00	65,171	99.91
842	11	0.02	64,983	99.62	888	4	0.01	65,175	99.92
843	8	0.01	64,991	99.64	889	1	0.00	65,176	99.92
844	7	0.01	64,998	99.65	890	3	0.00	65,179	99.92
845	11	0.02	65,009	99.66	891	1	0.00	65,180	99.93
846	2	0.00	65,011	99.67	892	1	0.00	65,181	99.93
847	1	0.00	65,012	99.67	893	2	0.00	65,183	99.93
848	8	0.01	65,020	99.68	894	2	0.00	65,185	99.93
849	5	0.01	65,025	99.69	895	2	0.00	65,187	99.94
850	8	0.01	65,033	99.70	896	3	0.00	65,190	99.94
851	5	0.01	65,038	99.71	898	1	0.00	65,191	99.94
852	5	0.01	65,043	99.72	899	3	0.00	65,194	99.95
853	4	0.01	65,047	99.72	900	34	0.05	65,228	100.00
854	4	0.01	65,051	99.73					
855	5	0.01	65,056	99.74					
856	5	0.01	65,061	99.74					
857	3	0.00	65,064	99.75					
858	6	0.01	65,070	99.76					
859	6	0.01	65,076	99.77					
860	2	0.00	65,078	99.77					
861	4	0.01	65,082	99.78					
862	4	0.01	65,086	99.78					
863	5	0.01	65,091	99.79					
864	6	0.01	65,097	99.80					
865	8	0.01	65,105	99.81					
866	4	0.01	65,109	99.82					
867	2	0.00	65,111	99.82					
868	6	0.01	65,117	99.83					
869	5	0.01	65,122	99.84					
870	4	0.01	65,126	99.84					
871	3	0.00	65,129	99.85					
872	4	0.01	65,133	99.85					
873	3	0.00	65,136	99.86					
874	5	0.01	65,141	99.87					
875	3	0.00	65,144	99.87					
877	3	0.00	65,147	99.88					
878	6	0.01	65,153	99.89					
879	3	0.00	65,156	99.89					
880	3	0.00	65,159	99.89					
881	1	0.00	65,160	99.90					
882	1	0.00	65,161	99.90					
883	1	0.00	65,162	99.90					
884	3	0.00	65,165	99.90					
885	2	0.00	65,167	99.91					

Table 32. Grade 7 Cumulative Frequency Distribution of Scale Scores

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
300	753	3.72	753	3.72	345	5	0.02	1,082	5.34	390	16	0.08	1,589	7.84
301	10	0.05	763	3.77	346	4	0.02	1,086	5.36	391	10	0.05	1,599	7.89
302	8	0.04	771	3.81	347	7	0.03	1,093	5.39	392	13	0.06	1,612	7.96
303	12	0.06	783	3.86	348	10	0.05	1,103	5.44	393	10	0.05	1,622	8.01
304	10	0.05	793	3.91	349	5	0.02	1,108	5.47	394	15	0.07	1,637	8.08
305	3	0.01	796	3.93	350	13	0.06	1,121	5.53	395	18	0.09	1,655	8.17
306	11	0.05	807	3.98	351	9	0.04	1,130	5.58	396	12	0.06	1,667	8.23
307	3	0.01	810	4.00	352	8	0.04	1,138	5.62	397	11	0.05	1,678	8.28
308	5	0.02	815	4.02	353	5	0.02	1,143	5.64	398	15	0.07	1,693	8.36
309	7	0.03	822	4.06	354	9	0.04	1,152	5.69	399	11	0.05	1,704	8.41
310	9	0.04	831	4.10	355	9	0.04	1,161	5.73	400	16	0.08	1,720	8.49
311	6	0.03	837	4.13	356	8	0.04	1,169	5.77	401	17	0.08	1,737	8.57
312	11	0.05	848	4.19	357	15	0.07	1,184	5.84	402	17	0.08	1,754	8.66
313	5	0.02	853	4.21	358	16	0.08	1,200	5.92	403	13	0.06	1,767	8.72
314	5	0.02	858	4.23	359	9	0.04	1,209	5.97	404	17	0.08	1,784	8.81
315	2	0.01	860	4.24	360	9	0.04	1,218	6.01	405	15	0.07	1,799	8.88
316	7	0.03	867	4.28	361	7	0.03	1,225	6.05	406	17	0.08	1,816	8.96
317	8	0.04	875	4.32	362	8	0.04	1,233	6.09	407	14	0.07	1,830	9.03
318	8	0.04	883	4.36	363	9	0.04	1,242	6.13	408	20	0.10	1,850	9.13
319	5	0.02	888	4.38	364	10	0.05	1,252	6.18	409	20	0.10	1,870	9.23
320	1	0.00	889	4.39	365	11	0.05	1,263	6.23	410	13	0.06	1,883	9.29
321	6	0.03	895	4.42	366	13	0.06	1,276	6.30	411	14	0.07	1,897	9.36
322	10	0.05	905	4.47	367	15	0.07	1,291	6.37	412	16	0.08	1,913	9.44
323	10	0.05	915	4.52	368	10	0.05	1,301	6.42	413	20	0.10	1,933	9.54
324	4	0.02	919	4.54	369	12	0.06	1,313	6.48	414	21	0.10	1,954	9.64
325	7	0.03	926	4.57	370	13	0.06	1,326	6.54	415	19	0.09	1,973	9.74
326	14	0.07	940	4.64	371	10	0.05	1,336	6.59	416	18	0.09	1,991	9.83
327	4	0.02	944	4.66	372	13	0.06	1,349	6.66	417	23	0.11	2,014	9.94
328	6	0.03	950	4.69	373	12	0.06	1,361	6.72	418	16	0.08	2,030	10.02
329	7	0.03	957	4.72	374	13	0.06	1,374	6.78	419	9	0.04	2,039	10.06
330	4	0.02	961	4.74	375	9	0.04	1,383	6.83	420	24	0.12	2,063	10.18
331	10	0.05	971	4.79	376	16	0.08	1,399	6.91	421	20	0.10	2,083	10.28
332	10	0.05	981	4.84	377	10	0.05	1,409	6.95	422	21	0.10	2,104	10.38
333	6	0.03	987	4.87	378	10	0.05	1,419	7.00	423	18	0.09	2,122	10.47
334	7	0.03	994	4.91	379	15	0.07	1,434	7.08	424	21	0.10	2,143	10.58
335	5	0.02	999	4.93	380	12	0.06	1,446	7.14	425	21	0.10	2,164	10.68
336	8	0.04	1,007	4.97	381	12	0.06	1,458	7.20	426	23	0.11	2,187	10.79
337	7	0.03	1,014	5.00	382	16	0.08	1,474	7.28	427	11	0.05	2,198	10.85
338	9	0.04	1,023	5.05	383	19	0.09	1,493	7.37	428	21	0.10	2,219	10.95
339	7	0.03	1,030	5.08	384	11	0.05	1,504	7.42	429	21	0.10	2,240	11.06
340	10	0.05	1,040	5.13	385	17	0.08	1,521	7.51	430	27	0.13	2,267	11.19
341	12	0.06	1,052	5.19	386	10	0.05	1,531	7.56	431	21	0.10	2,288	11.29
342	12	0.06	1,064	5.25	387	18	0.09	1,549	7.65	432	15	0.07	2,303	11.37
343	7	0.03	1,071	5.29	388	10	0.05	1,559	7.69	433	23	0.11	2,326	11.48
344	6	0.03	1,077	5.32	389	14	0.07	1,573	7.76	434	27	0.13	2,353	11.61

Table 32. Grade 7 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
435	23	0.11	2,376	11.73	480	37	0.18	3,625	17.89	525	52	0.26	5,478	27.04
436	17	0.08	2,393	11.81	481	34	0.17	3,659	18.06	526	46	0.23	5,524	27.27
437	13	0.06	2,406	11.88	482	29	0.14	3,688	18.20	527	59	0.29	5,583	27.56
438	26	0.13	2,432	12.00	483	31	0.15	3,719	18.36	528	58	0.29	5,641	27.84
439	25	0.12	2,457	12.13	484	44	0.22	3,763	18.57	529	56	0.28	5,697	28.12
440	16	0.08	2,473	12.21	485	33	0.16	3,796	18.74	530	43	0.21	5,740	28.33
441	21	0.10	2,494	12.31	486	40	0.20	3,836	18.93	531	45	0.22	5,785	28.55
442	17	0.08	2,511	12.39	487	40	0.20	3,876	19.13	532	52	0.26	5,837	28.81
443	29	0.14	2,540	12.54	488	41	0.20	3,917	19.33	533	53	0.26	5,890	29.07
444	33	0.16	2,573	12.70	489	32	0.16	3,949	19.49	534	58	0.29	5,948	29.36
445	24	0.12	2,597	12.82	490	47	0.23	3,996	19.72	535	56	0.28	6,004	29.63
446	26	0.13	2,623	12.95	491	41	0.20	4,037	19.93	536	41	0.20	6,045	29.84
447	25	0.12	2,648	13.07	492	39	0.19	4,076	20.12	537	53	0.26	6,098	30.10
448	30	0.15	2,678	13.22	493	35	0.17	4,111	20.29	538	52	0.26	6,150	30.36
449	27	0.13	2,705	13.35	494	36	0.18	4,147	20.47	539	54	0.27	6,204	30.62
450	24	0.12	2,729	13.47	495	25	0.12	4,172	20.59	540	47	0.23	6,251	30.85
451	20	0.10	2,749	13.57	496	40	0.20	4,212	20.79	541	59	0.29	6,310	31.15
452	34	0.17	2,783	13.74	497	34	0.17	4,246	20.96	542	67	0.33	6,377	31.48
453	21	0.10	2,804	13.84	498	42	0.21	4,288	21.16	543	47	0.23	6,424	31.71
454	29	0.14	2,833	13.98	499	50	0.25	4,338	21.41	544	59	0.29	6,483	32.00
455	32	0.16	2,865	14.14	500	41	0.20	4,379	21.61	545	55	0.27	6,538	32.27
456	28	0.14	2,893	14.28	501	39	0.19	4,418	21.81	546	64	0.32	6,602	32.59
457	29	0.14	2,922	14.42	502	46	0.23	4,464	22.03	547	57	0.28	6,659	32.87
458	41	0.20	2,963	14.62	503	54	0.27	4,518	22.30	548	53	0.26	6,712	33.13
459	23	0.11	2,986	14.74	504	34	0.17	4,552	22.47	549	55	0.27	6,767	33.40
460	34	0.17	3,020	14.91	505	34	0.17	4,586	22.64	550	57	0.28	6,824	33.68
461	22	0.11	3,042	15.01	506	42	0.21	4,628	22.84	551	52	0.26	6,876	33.94
462	24	0.12	3,066	15.13	507	43	0.21	4,671	23.06	552	62	0.31	6,938	34.24
463	22	0.11	3,088	15.24	508	55	0.27	4,726	23.33	553	46	0.23	6,984	34.47
464	32	0.16	3,120	15.40	509	54	0.27	4,780	23.59	554	57	0.28	7,041	34.75
465	27	0.13	3,147	15.53	510	44	0.22	4,824	23.81	555	50	0.25	7,091	35.00
466	38	0.19	3,185	15.72	511	41	0.20	4,865	24.01	556	62	0.31	7,153	35.31
467	33	0.16	3,218	15.88	512	40	0.20	4,905	24.21	557	64	0.32	7,217	35.62
468	26	0.13	3,244	16.01	513	35	0.17	4,940	24.38	558	69	0.34	7,286	35.96
469	28	0.14	3,272	16.15	514	41	0.20	4,981	24.59	559	62	0.31	7,348	36.27
470	34	0.17	3,306	16.32	515	42	0.21	5,023	24.79	560	58	0.29	7,406	36.55
471	27	0.13	3,333	16.45	516	40	0.20	5,063	24.99	561	61	0.30	7,467	36.86
472	38	0.19	3,371	16.64	517	34	0.17	5,097	25.16	562	56	0.28	7,523	37.13
473	29	0.14	3,400	16.78	518	64	0.32	5,161	25.47	563	52	0.26	7,575	37.39
474	32	0.16	3,432	16.94	519	48	0.24	5,209	25.71	564	58	0.29	7,633	37.68
475	36	0.18	3,468	17.12	520	43	0.21	5,252	25.92	565	53	0.26	7,686	37.94
476	33	0.16	3,501	17.28	521	31	0.15	5,283	26.08	566	66	0.33	7,752	38.26
477	24	0.12	3,525	17.40	522	49	0.24	5,332	26.32	567	62	0.31	7,814	38.57
478	35	0.17	3,560	17.57	523	49	0.24	5,381	26.56	568	67	0.33	7,881	38.90
479	28	0.14	3,588	17.71	524	45	0.22	5,426	26.78	569	68	0.34	7,949	39.23

Table 32. Grade 7 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
570	79	0.39	8,028	39.62	615	70	0.35	11,126	54.92	660	84	0.41	14,432	71.23
571	72	0.36	8,100	39.98	616	73	0.36	11,199	55.28	661	76	0.38	14,508	71.61
572	71	0.35	8,171	40.33	617	72	0.36	11,271	55.63	662	73	0.36	14,581	71.97
573	58	0.29	8,229	40.62	618	85	0.42	11,356	56.05	663	75	0.37	14,656	72.34
574	50	0.25	8,279	40.86	619	67	0.33	11,423	56.38	664	73	0.36	14,729	72.70
575	69	0.34	8,348	41.20	620	81	0.40	11,504	56.78	665	92	0.45	14,821	73.15
576	60	0.30	8,408	41.50	621	56	0.28	11,560	57.06	666	67	0.33	14,888	73.48
577	71	0.35	8,479	41.85	622	80	0.39	11,640	57.45	667	70	0.35	14,958	73.83
578	73	0.36	8,552	42.21	623	65	0.32	11,705	57.77	668	72	0.36	15,030	74.19
579	63	0.31	8,615	42.52	624	88	0.43	11,793	58.21	669	61	0.30	15,091	74.49
580	62	0.31	8,677	42.83	625	79	0.39	11,872	58.60	670	62	0.31	15,153	74.79
581	50	0.25	8,727	43.08	626	80	0.39	11,952	58.99	671	66	0.33	15,219	75.12
582	62	0.31	8,789	43.38	627	60	0.30	12,012	59.29	672	71	0.35	15,290	75.47
583	63	0.31	8,852	43.69	628	75	0.37	12,087	59.66	673	74	0.37	15,364	75.83
584	58	0.29	8,910	43.98	629	75	0.37	12,162	60.03	674	77	0.38	15,441	76.21
585	64	0.32	8,974	44.29	630	69	0.34	12,231	60.37	675	71	0.35	15,512	76.56
586	69	0.34	9,043	44.63	631	78	0.38	12,309	60.76	676	81	0.40	15,593	76.96
587	74	0.37	9,117	45.00	632	71	0.35	12,380	61.11	677	69	0.34	15,662	77.31
588	77	0.38	9,194	45.38	633	65	0.32	12,445	61.43	678	76	0.38	15,738	77.68
589	87	0.43	9,281	45.81	634	70	0.35	12,515	61.77	679	68	0.34	15,806	78.02
590	68	0.34	9,349	46.15	635	82	0.40	12,597	62.18	680	74	0.37	15,880	78.38
591	75	0.37	9,424	46.52	636	59	0.29	12,656	62.47	681	69	0.34	15,949	78.72
592	73	0.36	9,497	46.88	637	69	0.34	12,725	62.81	682	64	0.32	16,013	79.04
593	66	0.33	9,563	47.20	638	88	0.43	12,813	63.24	683	53	0.26	16,066	79.30
594	71	0.35	9,634	47.55	639	61	0.30	12,874	63.54	684	61	0.30	16,127	79.60
595	71	0.35	9,705	47.90	640	81	0.40	12,955	63.94	685	62	0.31	16,189	79.91
596	70	0.35	9,775	48.25	641	67	0.33	13,022	64.27	686	60	0.30	16,249	80.20
597	59	0.29	9,834	48.54	642	82	0.40	13,104	64.68	687	50	0.25	16,299	80.45
598	69	0.34	9,903	48.88	643	73	0.36	13,177	65.04	688	55	0.27	16,354	80.72
599	67	0.33	9,970	49.21	644	84	0.41	13,261	65.45	689	61	0.30	16,415	81.02
600	55	0.27	10,025	49.48	645	70	0.35	13,331	65.80	690	58	0.29	16,473	81.31
601	69	0.34	10,094	49.82	646	70	0.35	13,401	66.15	691	60	0.30	16,533	81.60
602	77	0.38	10,171	50.20	647	80	0.39	13,481	66.54	692	68	0.34	16,601	81.94
603	77	0.38	10,248	50.58	648	71	0.35	13,552	66.89	693	67	0.33	16,668	82.27
604	62	0.31	10,310	50.89	649	87	0.43	13,639	67.32	694	58	0.29	16,726	82.56
605	69	0.34	10,379	51.23	650	73	0.36	13,712	67.68	695	57	0.28	16,783	82.84
606	84	0.41	10,463	51.64	651	67	0.33	13,779	68.01	696	62	0.31	16,845	83.14
607	73	0.36	10,536	52.00	652	65	0.32	13,844	68.33	697	53	0.26	16,898	83.41
608	71	0.35	10,607	52.35	653	81	0.40	13,925	68.73	698	60	0.30	16,958	83.70
609	68	0.34	10,675	52.69	654	74	0.37	13,999	69.10	699	61	0.30	17,019	84.00
610	77	0.38	10,752	53.07	655	77	0.38	14,076	69.48	700	51	0.25	17,070	84.25
611	78	0.38	10,830	53.46	656	71	0.35	14,147	69.83	701	62	0.31	17,132	84.56
612	72	0.36	10,902	53.81	657	73	0.36	14,220	70.19	702	69	0.34	17,201	84.90
613	70	0.35	10,972	54.16	658	68	0.34	14,288	70.52	703	53	0.26	17,254	85.16
614	84	0.41	11,056	54.57	659	60	0.30	14,348	70.82	704	54	0.27	17,308	85.43

Table 32. Grade 7 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
705	45	0.22	17,353	85.65	750	26	0.13	19,232	94.93	795	5	0.02	20,010	98.77
706	72	0.36	17,425	86.01	751	23	0.11	19,255	95.04	796	6	0.03	20,016	98.80
707	59	0.29	17,484	86.30	752	33	0.16	19,288	95.20	797	8	0.04	20,024	98.84
708	53	0.26	17,537	86.56	753	29	0.14	19,317	95.35	798	8	0.04	20,032	98.87
709	66	0.33	17,603	86.89	754	26	0.13	19,343	95.47	799	7	0.03	20,039	98.91
710	56	0.28	17,659	87.16	755	19	0.09	19,362	95.57	800	9	0.04	20,048	98.95
711	52	0.26	17,711	87.42	756	36	0.18	19,398	95.75	801	6	0.03	20,054	98.98
712	68	0.34	17,779	87.75	757	25	0.12	19,423	95.87	802	9	0.04	20,063	99.03
713	51	0.25	17,830	88.01	758	23	0.11	19,446	95.98	803	4	0.02	20,067	99.05
714	37	0.18	17,867	88.19	759	25	0.12	19,471	96.11	804	10	0.05	20,077	99.10
715	43	0.21	17,910	88.40	760	20	0.10	19,491	96.20	805	5	0.02	20,082	99.12
716	61	0.30	17,971	88.70	761	28	0.14	19,519	96.34	806	7	0.03	20,089	99.16
717	51	0.25	18,022	88.95	762	19	0.09	19,538	96.44	807	10	0.05	20,099	99.21
718	41	0.20	18,063	89.16	763	16	0.08	19,554	96.52	808	12	0.06	20,111	99.26
719	49	0.24	18,112	89.40	764	16	0.08	19,570	96.59	809	2	0.01	20,113	99.27
720	49	0.24	18,161	89.64	765	18	0.09	19,588	96.68	810	6	0.03	20,119	99.30
721	47	0.23	18,208	89.87	766	19	0.09	19,607	96.78	811	5	0.02	20,124	99.33
722	49	0.24	18,257	90.11	767	26	0.13	19,633	96.91	812	9	0.04	20,133	99.37
723	44	0.22	18,301	90.33	768	21	0.10	19,654	97.01	813	5	0.02	20,138	99.40
724	45	0.22	18,346	90.55	769	18	0.09	19,672	97.10	814	1	0.00	20,139	99.40
725	41	0.20	18,387	90.76	770	9	0.04	19,681	97.14	815	3	0.01	20,142	99.42
726	26	0.13	18,413	90.88	771	24	0.12	19,705	97.26	816	6	0.03	20,148	99.45
727	49	0.24	18,462	91.13	772	14	0.07	19,719	97.33	817	2	0.01	20,150	99.46
728	47	0.23	18,509	91.36	773	18	0.09	19,737	97.42	818	6	0.03	20,156	99.49
729	34	0.17	18,543	91.53	774	14	0.07	19,751	97.49	819	4	0.02	20,160	99.51
730	35	0.17	18,578	91.70	775	16	0.08	19,767	97.57	820	4	0.02	20,164	99.53
731	35	0.17	18,613	91.87	776	12	0.06	19,779	97.63	821	4	0.02	20,168	99.55
732	38	0.19	18,651	92.06	777	16	0.08	19,795	97.70	822	4	0.02	20,172	99.57
733	37	0.18	18,688	92.24	778	12	0.06	19,807	97.76	823	3	0.01	20,175	99.58
734	26	0.13	18,714	92.37	779	19	0.09	19,826	97.86	824	8	0.04	20,183	99.62
735	38	0.19	18,752	92.56	780	14	0.07	19,840	97.93	825	1	0.00	20,184	99.62
736	41	0.20	18,793	92.76	781	19	0.09	19,859	98.02	826	4	0.02	20,188	99.64
737	29	0.14	18,822	92.90	782	17	0.08	19,876	98.10	827	4	0.02	20,192	99.66
738	29	0.14	18,851	93.05	783	22	0.11	19,898	98.21	829	1	0.00	20,193	99.67
739	29	0.14	18,880	93.19	784	7	0.03	19,905	98.25	830	2	0.01	20,195	99.68
740	31	0.15	18,911	93.34	785	11	0.05	19,916	98.30	831	1	0.00	20,196	99.68
741	45	0.22	18,956	93.56	786	11	0.05	19,927	98.36	832	4	0.02	20,200	99.70
742	37	0.18	18,993	93.75	787	9	0.04	19,936	98.40	833	1	0.00	20,201	99.71
743	32	0.16	19,025	93.90	788	11	0.05	19,947	98.46	834	3	0.01	20,204	99.72
744	34	0.17	19,059	94.07	789	14	0.07	19,961	98.52	835	2	0.01	20,206	99.73
745	35	0.17	19,094	94.24	790	6	0.03	19,967	98.55	836	2	0.01	20,208	99.74
746	30	0.15	19,124	94.39	791	5	0.02	19,972	98.58	837	3	0.01	20,211	99.76
747	34	0.17	19,158	94.56	792	10	0.05	19,982	98.63	838	2	0.01	20,213	99.77
748	24	0.12	19,182	94.68	793	9	0.04	19,991	98.67	839	4	0.02	20,217	99.79
749	24	0.12	19,206	94.80	794	14	0.07	20,005	98.74	840	1	0.00	20,218	99.79

Table 32. Grade 7 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %
841	2	0.01	20,220	99.80
842	2	0.01	20,222	99.81
843	1	0.00	20,223	99.82
844	2	0.01	20,225	99.83
845	1	0.00	20,226	99.83
846	1	0.00	20,227	99.84
847	2	0.01	20,229	99.85
849	2	0.01	20,231	99.86
854	2	0.01	20,233	99.87
855	1	0.00	20,234	99.87
856	2	0.01	20,236	99.88
857	2	0.01	20,238	99.89
858	3	0.01	20,241	99.91
861	3	0.01	20,244	99.92
862	1	0.00	20,245	99.93
868	1	0.00	20,246	99.93
870	1	0.00	20,247	99.94
871	2	0.01	20,249	99.95
872	1	0.00	20,250	99.95
890	1	0.00	20,251	99.96
898	1	0.00	20,252	99.96
900	8	0.04	20,260	100.00

Table 33. Grade 8 Cumulative Frequency Distribution of Scale Scores

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
300	2,511	4.32	2,511	4.32	345	38	0.07	3,746	6.44	390	48	0.08	5,626	9.68
301	32	0.06	2,543	4.37	346	44	0.08	3,790	6.52	391	54	0.09	5,680	9.77
302	20	0.03	2,563	4.41	347	33	0.06	3,823	6.58	392	50	0.09	5,730	9.86
303	21	0.04	2,584	4.44	348	36	0.06	3,859	6.64	393	49	0.08	5,779	9.94
304	15	0.03	2,599	4.47	349	29	0.05	3,888	6.69	394	46	0.08	5,825	10.02
305	21	0.04	2,620	4.51	350	44	0.08	3,932	6.76	395	49	0.08	5,874	10.10
306	26	0.04	2,646	4.55	351	29	0.05	3,961	6.81	396	36	0.06	5,910	10.17
307	31	0.05	2,677	4.60	352	26	0.04	3,987	6.86	397	54	0.09	5,964	10.26
308	23	0.04	2,700	4.64	353	34	0.06	4,021	6.92	398	47	0.08	6,011	10.34
309	25	0.04	2,725	4.69	354	39	0.07	4,060	6.98	399	58	0.10	6,069	10.44
310	33	0.06	2,758	4.74	355	35	0.06	4,095	7.04	400	56	0.10	6,125	10.54
311	21	0.04	2,779	4.78	356	30	0.05	4,125	7.10	401	54	0.09	6,179	10.63
312	28	0.05	2,807	4.83	357	38	0.07	4,163	7.16	402	50	0.09	6,229	10.71
313	24	0.04	2,831	4.87	358	34	0.06	4,197	7.22	403	45	0.08	6,274	10.79
314	14	0.02	2,845	4.89	359	32	0.06	4,229	7.27	404	56	0.10	6,330	10.89
315	34	0.06	2,879	4.95	360	34	0.06	4,263	7.33	405	53	0.09	6,383	10.98
316	27	0.05	2,906	5.00	361	33	0.06	4,296	7.39	406	56	0.10	6,439	11.08
317	26	0.04	2,932	5.04	362	34	0.06	4,330	7.45	407	42	0.07	6,481	11.15
318	31	0.05	2,963	5.10	363	49	0.08	4,379	7.53	408	50	0.09	6,531	11.23
319	25	0.04	2,988	5.14	364	48	0.08	4,427	7.61	409	71	0.12	6,602	11.36
320	31	0.05	3,019	5.19	365	47	0.08	4,474	7.70	410	54	0.09	6,656	11.45
321	37	0.06	3,056	5.26	366	41	0.07	4,515	7.77	411	57	0.10	6,713	11.55
322	27	0.05	3,083	5.30	367	47	0.08	4,562	7.85	412	53	0.09	6,766	11.64
323	21	0.04	3,104	5.34	368	39	0.07	4,601	7.91	413	64	0.11	6,830	11.75
324	22	0.04	3,126	5.38	369	37	0.06	4,638	7.98	414	74	0.13	6,904	11.88
325	30	0.05	3,156	5.43	370	39	0.07	4,677	8.04	415	65	0.11	6,969	11.99
326	36	0.06	3,192	5.49	371	34	0.06	4,711	8.10	416	60	0.10	7,029	12.09
327	30	0.05	3,222	5.54	372	55	0.09	4,766	8.20	417	53	0.09	7,082	12.18
328	23	0.04	3,245	5.58	373	37	0.06	4,803	8.26	418	61	0.10	7,143	12.29
329	28	0.05	3,273	5.63	374	49	0.08	4,852	8.35	419	60	0.10	7,203	12.39
330	19	0.03	3,292	5.66	375	50	0.09	4,902	8.43	420	57	0.10	7,260	12.49
331	26	0.04	3,318	5.71	376	48	0.08	4,950	8.51	421	59	0.10	7,319	12.59
332	28	0.05	3,346	5.76	377	47	0.08	4,997	8.60	422	64	0.11	7,383	12.70
333	28	0.05	3,374	5.80	378	45	0.08	5,042	8.67	423	62	0.11	7,445	12.81
334	26	0.04	3,400	5.85	379	29	0.05	5,071	8.72	424	66	0.11	7,511	12.92
335	27	0.05	3,427	5.89	380	48	0.08	5,119	8.81	425	68	0.12	7,579	13.04
336	26	0.04	3,453	5.94	381	64	0.11	5,183	8.92	426	65	0.11	7,644	13.15
337	23	0.04	3,476	5.98	382	48	0.08	5,231	9.00	427	54	0.09	7,698	13.24
338	26	0.04	3,502	6.02	383	35	0.06	5,266	9.06	428	63	0.11	7,761	13.35
339	33	0.06	3,535	6.08	384	49	0.08	5,315	9.14	429	56	0.10	7,817	13.45
340	36	0.06	3,571	6.14	385	50	0.09	5,365	9.23	430	59	0.10	7,876	13.55
341	39	0.07	3,610	6.21	386	64	0.11	5,429	9.34	431	52	0.09	7,928	13.64
342	37	0.06	3,647	6.27	387	51	0.09	5,480	9.43	432	51	0.09	7,979	13.72
343	38	0.07	3,685	6.34	388	49	0.08	5,529	9.51	433	62	0.11	8,041	13.83
344	23	0.04	3,708	6.38	389	49	0.08	5,578	9.59	434	68	0.12	8,109	13.95

Table 33. Grade 8 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
435	76	0.13	8,185	14.08	480	100	0.17	11,818	20.33	525	132	0.23	17,304	29.76
436	65	0.11	8,250	14.19	481	113	0.19	11,931	20.52	526	159	0.27	17,463	30.04
437	80	0.14	8,330	14.33	482	102	0.18	12,033	20.70	527	141	0.24	17,604	30.28
438	79	0.14	8,409	14.46	483	111	0.19	12,144	20.89	528	136	0.23	17,740	30.51
439	78	0.13	8,487	14.60	484	95	0.16	12,239	21.05	529	146	0.25	17,886	30.77
440	80	0.14	8,567	14.74	485	107	0.18	12,346	21.24	530	133	0.23	18,019	30.99
441	72	0.12	8,639	14.86	486	128	0.22	12,474	21.46	531	146	0.25	18,165	31.25
442	72	0.12	8,711	14.98	487	112	0.19	12,586	21.65	532	138	0.24	18,303	31.48
443	66	0.11	8,777	15.10	488	105	0.18	12,691	21.83	533	155	0.27	18,458	31.75
444	62	0.11	8,839	15.20	489	118	0.20	12,809	22.03	534	129	0.22	18,587	31.97
445	56	0.10	8,895	15.30	490	101	0.17	12,910	22.21	535	156	0.27	18,743	32.24
446	77	0.13	8,972	15.43	491	87	0.15	12,997	22.36	536	147	0.25	18,890	32.49
447	75	0.13	9,047	15.56	492	107	0.18	13,104	22.54	537	143	0.25	19,033	32.74
448	70	0.12	9,117	15.68	493	106	0.18	13,210	22.72	538	148	0.25	19,181	32.99
449	80	0.14	9,197	15.82	494	116	0.20	13,326	22.92	539	145	0.25	19,326	33.24
450	71	0.12	9,268	15.94	495	125	0.22	13,451	23.14	540	163	0.28	19,489	33.52
451	79	0.14	9,347	16.08	496	99	0.17	13,550	23.31	541	144	0.25	19,633	33.77
452	76	0.13	9,423	16.21	497	92	0.16	13,642	23.47	542	163	0.28	19,796	34.05
453	90	0.15	9,513	16.36	498	127	0.22	13,769	23.68	543	171	0.29	19,967	34.35
454	70	0.12	9,583	16.48	499	125	0.22	13,894	23.90	544	156	0.27	20,123	34.61
455	68	0.12	9,651	16.60	500	119	0.20	14,013	24.10	545	175	0.30	20,298	34.91
456	64	0.11	9,715	16.71	501	108	0.19	14,121	24.29	546	169	0.29	20,467	35.21
457	83	0.14	9,798	16.85	502	137	0.24	14,258	24.53	547	180	0.31	20,647	35.51
458	76	0.13	9,874	16.98	503	125	0.22	14,383	24.74	548	140	0.24	20,787	35.76
459	70	0.12	9,944	17.10	504	144	0.25	14,527	24.99	549	165	0.28	20,952	36.04
460	88	0.15	10,032	17.26	505	140	0.24	14,667	25.23	550	168	0.29	21,120	36.33
461	87	0.15	10,119	17.41	506	117	0.20	14,784	25.43	551	150	0.26	21,270	36.59
462	83	0.14	10,202	17.55	507	119	0.20	14,903	25.63	552	179	0.31	21,449	36.89
463	86	0.15	10,288	17.70	508	120	0.21	15,023	25.84	553	140	0.24	21,589	37.14
464	79	0.14	10,367	17.83	509	122	0.21	15,145	26.05	554	191	0.33	21,780	37.46
465	73	0.13	10,440	17.96	510	130	0.22	15,275	26.27	555	160	0.28	21,940	37.74
466	91	0.16	10,531	18.11	511	126	0.22	15,401	26.49	556	167	0.29	22,107	38.03
467	87	0.15	10,618	18.26	512	119	0.20	15,520	26.70	557	161	0.28	22,268	38.30
468	95	0.16	10,713	18.43	513	116	0.20	15,636	26.90	558	178	0.31	22,446	38.61
469	99	0.17	10,812	18.60	514	122	0.21	15,758	27.11	559	165	0.28	22,611	38.89
470	96	0.17	10,908	18.76	515	161	0.28	15,919	27.38	560	173	0.30	22,784	39.19
471	82	0.14	10,990	18.90	516	142	0.24	16,061	27.63	561	181	0.31	22,965	39.50
472	90	0.15	11,080	19.06	517	107	0.18	16,168	27.81	562	185	0.32	23,150	39.82
473	108	0.19	11,188	19.24	518	157	0.27	16,325	28.08	563	187	0.32	23,337	40.14
474	92	0.16	11,280	19.40	519	132	0.23	16,457	28.31	564	161	0.28	23,498	40.42
475	86	0.15	11,366	19.55	520	133	0.23	16,590	28.54	565	188	0.32	23,686	40.74
476	72	0.12	11,438	19.67	521	141	0.24	16,731	28.78	566	183	0.31	23,869	41.06
477	101	0.17	11,539	19.85	522	140	0.24	16,871	29.02	567	185	0.32	24,054	41.38
478	97	0.17	11,636	20.02	523	150	0.26	17,021	29.28	568	193	0.33	24,247	41.71
479	82	0.14	11,718	20.16	524	151	0.26	17,172	29.54	569	187	0.32	24,434	42.03

Table 33. Grade 8 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
570	178	0.31	24,612	42.34	615	190	0.33	32,852	56.51	660	188	0.32	41,674	71.68
571	174	0.30	24,786	42.63	616	189	0.33	33,041	56.83	661	152	0.26	41,826	71.95
572	174	0.30	24,960	42.93	617	194	0.33	33,235	57.17	662	189	0.33	42,015	72.27
573	171	0.29	25,131	43.23	618	198	0.34	33,433	57.51	663	170	0.29	42,185	72.56
574	182	0.31	25,313	43.54	619	214	0.37	33,647	57.88	664	172	0.30	42,357	72.86
575	196	0.34	25,509	43.88	620	228	0.39	33,875	58.27	665	182	0.31	42,539	73.17
576	159	0.27	25,668	44.15	621	209	0.36	34,084	58.63	666	174	0.30	42,713	73.47
577	189	0.33	25,857	44.48	622	183	0.31	34,267	58.94	667	186	0.32	42,899	73.79
578	187	0.32	26,044	44.80	623	209	0.36	34,476	59.30	668	172	0.30	43,071	74.09
579	191	0.33	26,235	45.13	624	209	0.36	34,685	59.66	669	168	0.29	43,239	74.38
580	178	0.31	26,413	45.43	625	193	0.33	34,878	59.99	670	191	0.33	43,430	74.70
581	182	0.31	26,595	45.75	626	194	0.33	35,072	60.33	671	146	0.25	43,576	74.96
582	198	0.34	26,793	46.09	627	221	0.38	35,293	60.71	672	165	0.28	43,741	75.24
583	184	0.32	26,977	46.40	628	192	0.33	35,485	61.04	673	181	0.31	43,922	75.55
584	164	0.28	27,141	46.69	629	180	0.31	35,665	61.35	674	179	0.31	44,101	75.86
585	159	0.27	27,300	46.96	630	218	0.37	35,883	61.72	675	162	0.28	44,263	76.14
586	184	0.32	27,484	47.28	631	193	0.33	36,076	62.05	676	172	0.30	44,435	76.43
587	193	0.33	27,677	47.61	632	199	0.34	36,275	62.40	677	190	0.33	44,625	76.76
588	178	0.31	27,855	47.91	633	195	0.34	36,470	62.73	678	176	0.30	44,801	77.06
589	182	0.31	28,037	48.23	634	172	0.30	36,642	63.03	679	158	0.27	44,959	77.33
590	174	0.30	28,211	48.53	635	186	0.32	36,828	63.35	680	195	0.34	45,154	77.67
591	182	0.31	28,393	48.84	636	178	0.31	37,006	63.65	681	173	0.30	45,327	77.97
592	185	0.32	28,578	49.16	637	212	0.36	37,218	64.02	682	176	0.30	45,503	78.27
593	194	0.33	28,772	49.49	638	213	0.37	37,431	64.39	683	190	0.33	45,693	78.60
594	195	0.34	28,967	49.83	639	209	0.36	37,640	64.74	684	149	0.26	45,842	78.85
595	179	0.31	29,146	50.13	640	200	0.34	37,840	65.09	685	183	0.31	46,025	79.17
596	195	0.34	29,341	50.47	641	191	0.33	38,031	65.42	686	196	0.34	46,221	79.50
597	191	0.33	29,532	50.80	642	204	0.35	38,235	65.77	687	143	0.25	46,364	79.75
598	173	0.30	29,705	51.10	643	218	0.37	38,453	66.14	688	170	0.29	46,534	80.04
599	203	0.35	29,908	51.44	644	203	0.35	38,656	66.49	689	152	0.26	46,686	80.30
600	201	0.35	30,109	51.79	645	214	0.37	38,870	66.86	690	169	0.29	46,855	80.60
601	191	0.33	30,300	52.12	646	187	0.32	39,057	67.18	691	153	0.26	47,008	80.86
602	189	0.33	30,489	52.44	647	188	0.32	39,245	67.51	692	154	0.26	47,162	81.12
603	186	0.32	30,675	52.76	648	177	0.30	39,422	67.81	693	165	0.28	47,327	81.41
604	168	0.29	30,843	53.05	649	188	0.32	39,610	68.13	694	156	0.27	47,483	81.68
605	199	0.34	31,042	53.40	650	207	0.36	39,817	68.49	695	159	0.27	47,642	81.95
606	166	0.29	31,208	53.68	651	189	0.33	40,006	68.81	696	142	0.24	47,784	82.19
607	192	0.33	31,400	54.01	652	183	0.31	40,189	69.13	697	165	0.28	47,949	82.48
608	172	0.30	31,572	54.31	653	199	0.34	40,388	69.47	698	171	0.29	48,120	82.77
609	182	0.31	31,754	54.62	654	179	0.31	40,567	69.78	699	136	0.23	48,256	83.01
610	165	0.28	31,919	54.90	655	200	0.34	40,767	70.12	700	141	0.24	48,397	83.25
611	190	0.33	32,109	55.23	656	184	0.32	40,951	70.44	701	140	0.24	48,537	83.49
612	188	0.32	32,297	55.55	657	176	0.30	41,127	70.74	702	132	0.23	48,669	83.72
613	202	0.35	32,499	55.90	658	186	0.32	41,313	71.06	703	141	0.24	48,810	83.96
614	163	0.28	32,662	56.18	659	173	0.30	41,486	71.36	704	137	0.24	48,947	84.19

Table 33. Grade 8 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
705	136	0.23	49,083	84.43	750	95	0.16	54,253	93.32	795	36	0.06	56,915	97.90
706	157	0.27	49,240	84.70	751	89	0.15	54,342	93.47	796	34	0.06	56,949	97.96
707	135	0.23	49,375	84.93	752	86	0.15	54,428	93.62	797	40	0.07	56,989	98.03
708	145	0.25	49,520	85.18	753	79	0.14	54,507	93.76	798	36	0.06	57,025	98.09
709	142	0.24	49,662	85.42	754	98	0.17	54,605	93.93	799	32	0.06	57,057	98.14
710	144	0.25	49,806	85.67	755	84	0.14	54,689	94.07	800	35	0.06	57,092	98.20
711	144	0.25	49,950	85.92	756	69	0.12	54,758	94.19	801	31	0.05	57,123	98.26
712	135	0.23	50,085	86.15	757	80	0.14	54,838	94.33	802	32	0.06	57,155	98.31
713	142	0.24	50,227	86.40	758	79	0.14	54,917	94.46	803	29	0.05	57,184	98.36
714	122	0.21	50,349	86.61	759	81	0.14	54,998	94.60	804	28	0.05	57,212	98.41
715	130	0.22	50,479	86.83	760	66	0.11	55,064	94.72	805	28	0.05	57,240	98.46
716	117	0.20	50,596	87.03	761	63	0.11	55,127	94.82	806	17	0.03	57,257	98.49
717	145	0.25	50,741	87.28	762	80	0.14	55,207	94.96	807	24	0.04	57,281	98.53
718	118	0.20	50,859	87.48	763	68	0.12	55,275	95.08	808	27	0.05	57,308	98.58
719	136	0.23	50,995	87.72	764	65	0.11	55,340	95.19	809	31	0.05	57,339	98.63
720	123	0.21	51,118	87.93	765	79	0.14	55,419	95.33	810	32	0.06	57,371	98.68
721	107	0.18	51,225	88.11	766	58	0.10	55,477	95.43	811	20	0.03	57,391	98.72
722	112	0.19	51,337	88.31	767	71	0.12	55,548	95.55	812	23	0.04	57,414	98.76
723	123	0.21	51,460	88.52	768	64	0.11	55,612	95.66	813	26	0.04	57,440	98.80
724	117	0.20	51,577	88.72	769	53	0.09	55,665	95.75	814	24	0.04	57,464	98.84
725	116	0.20	51,693	88.92	770	61	0.10	55,726	95.85	815	19	0.03	57,483	98.88
726	125	0.22	51,818	89.13	771	66	0.11	55,792	95.97	816	20	0.03	57,503	98.91
727	136	0.23	51,954	89.37	772	47	0.08	55,839	96.05	817	24	0.04	57,527	98.95
728	126	0.22	52,080	89.58	773	63	0.11	55,902	96.16	818	15	0.03	57,542	98.98
729	115	0.20	52,195	89.78	774	56	0.10	55,958	96.25	819	11	0.02	57,553	99.00
730	109	0.19	52,304	89.97	775	52	0.09	56,010	96.34	820	16	0.03	57,569	99.02
731	108	0.19	52,412	90.15	776	51	0.09	56,061	96.43	821	15	0.03	57,584	99.05
732	119	0.20	52,531	90.36	777	68	0.12	56,129	96.55	822	18	0.03	57,602	99.08
733	111	0.19	52,642	90.55	778	53	0.09	56,182	96.64	823	16	0.03	57,618	99.11
734	93	0.16	52,735	90.71	779	49	0.08	56,231	96.72	824	13	0.02	57,631	99.13
735	124	0.21	52,859	90.92	780	48	0.08	56,279	96.81	825	20	0.03	57,651	99.17
736	104	0.18	52,963	91.10	781	60	0.10	56,339	96.91	826	19	0.03	57,670	99.20
737	75	0.13	53,038	91.23	782	42	0.07	56,381	96.98	827	17	0.03	57,687	99.23
738	103	0.18	53,141	91.41	783	65	0.11	56,446	97.09	828	10	0.02	57,697	99.24
739	84	0.14	53,225	91.55	784	40	0.07	56,486	97.16	829	9	0.02	57,706	99.26
740	102	0.18	53,327	91.73	785	51	0.09	56,537	97.25	830	15	0.03	57,721	99.29
741	97	0.17	53,424	91.89	786	45	0.08	56,582	97.33	831	9	0.02	57,730	99.30
742	101	0.17	53,525	92.07	787	39	0.07	56,621	97.39	832	8	0.01	57,738	99.32
743	102	0.18	53,627	92.24	788	39	0.07	56,660	97.46	833	14	0.02	57,752	99.34
744	65	0.11	53,692	92.36	789	40	0.07	56,700	97.53	834	13	0.02	57,765	99.36
745	107	0.18	53,799	92.54	790	33	0.06	56,733	97.59	835	16	0.03	57,781	99.39
746	84	0.14	53,883	92.68	791	45	0.08	56,778	97.66	836	9	0.02	57,790	99.40
747	92	0.16	53,975	92.84	792	31	0.05	56,809	97.72	837	12	0.02	57,802	99.43
748	97	0.17	54,072	93.01	793	38	0.07	56,847	97.78	838	7	0.01	57,809	99.44
749	86	0.15	54,158	93.16	794	32	0.06	56,879	97.84	839	13	0.02	57,822	99.46

Table 33. Grade 8 Cumulative Frequency Distribution of Scale Scores (Continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
840	9	0.02	57,831	99.48	885	2	0.00	58,074	99.89
841	8	0.01	57,839	99.49	886	2	0.00	58,076	99.90
842	7	0.01	57,846	99.50	887	3	0.01	58,079	99.90
843	5	0.01	57,851	99.51	889	2	0.00	58,081	99.91
844	8	0.01	57,859	99.52	890	5	0.01	58,086	99.91
845	12	0.02	57,871	99.54	891	2	0.00	58,088	99.92
846	11	0.02	57,882	99.56	892	1	0.00	58,089	99.92
847	10	0.02	57,892	99.58	893	1	0.00	58,090	99.92
848	7	0.01	57,899	99.59	894	1	0.00	58,091	99.92
849	8	0.01	57,907	99.61	895	2	0.00	58,093	99.93
850	7	0.01	57,914	99.62	898	1	0.00	58,094	99.93
851	4	0.01	57,918	99.63	900	42	0.07	58,136	100.00
852	10	0.02	57,928	99.64					
853	9	0.02	57,937	99.66					
854	6	0.01	57,943	99.67					
855	6	0.01	57,949	99.68					
856	3	0.01	57,952	99.68					
857	4	0.01	57,956	99.69					
858	6	0.01	57,962	99.70					
859	9	0.02	57,971	99.72					
860	8	0.01	57,979	99.73					
861	9	0.02	57,988	99.75					
862	5	0.01	57,993	99.75					
863	11	0.02	58,004	99.77					
864	7	0.01	58,011	99.78					
865	2	0.00	58,013	99.79					
866	5	0.01	58,018	99.80					
867	4	0.01	58,022	99.80					
868	7	0.01	58,029	99.82					
869	2	0.00	58,031	99.82					
870	1	0.00	58,032	99.82					
871	4	0.01	58,036	99.83					
872	1	0.00	58,037	99.83					
873	2	0.00	58,039	99.83					
874	2	0.00	58,041	99.84					
875	5	0.01	58,046	99.85					
876	2	0.00	58,048	99.85					
877	4	0.01	58,052	99.86					
878	6	0.01	58,058	99.87					
879	2	0.00	58,060	99.87					
880	4	0.01	58,064	99.88					
881	1	0.00	58,065	99.88					
882	2	0.00	58,067	99.88					
883	1	0.00	58,068	99.88					
884	4	0.01	58,072	99.89					

Table 34. HS Science Frequency Distribution of Scale Scores

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
300	989	2.54	989	2.54	345	19	0.05	1,510	3.88	390	21	0.05	2,380	6.12
301	7	0.02	996	2.56	346	18	0.05	1,528	3.93	391	18	0.05	2,398	6.16
302	10	0.03	1,006	2.59	347	15	0.04	1,543	3.97	392	30	0.08	2,428	6.24
303	8	0.02	1,014	2.61	348	9	0.02	1,552	3.99	393	24	0.06	2,452	6.30
304	4	0.01	1,018	2.62	349	17	0.04	1,569	4.03	394	12	0.03	2,464	6.33
305	14	0.04	1,032	2.65	350	14	0.04	1,583	4.07	395	26	0.07	2,490	6.40
306	5	0.01	1,037	2.67	351	16	0.04	1,599	4.11	396	25	0.06	2,515	6.46
307	8	0.02	1,045	2.69	352	21	0.05	1,620	4.16	397	21	0.05	2,536	6.52
308	9	0.02	1,054	2.71	353	14	0.04	1,634	4.20	398	21	0.05	2,557	6.57
309	9	0.02	1,063	2.73	354	13	0.03	1,647	4.23	399	29	0.07	2,586	6.65
310	8	0.02	1,071	2.75	355	18	0.05	1,665	4.28	400	25	0.06	2,611	6.71
311	10	0.03	1,081	2.78	356	15	0.04	1,680	4.32	401	33	0.08	2,644	6.80
312	7	0.02	1,088	2.80	357	15	0.04	1,695	4.36	402	26	0.07	2,670	6.86
313	10	0.03	1,098	2.82	358	18	0.05	1,713	4.40	403	25	0.06	2,695	6.93
314	5	0.01	1,103	2.83	359	21	0.05	1,734	4.46	404	28	0.07	2,723	7.00
315	9	0.02	1,112	2.86	360	16	0.04	1,750	4.50	405	25	0.06	2,748	7.06
316	10	0.03	1,122	2.88	361	19	0.05	1,769	4.55	406	33	0.08	2,781	7.15
317	10	0.03	1,132	2.91	362	20	0.05	1,789	4.60	407	28	0.07	2,809	7.22
318	10	0.03	1,142	2.93	363	24	0.06	1,813	4.66	408	29	0.07	2,838	7.29
319	6	0.02	1,148	2.95	364	19	0.05	1,832	4.71	409	28	0.07	2,866	7.37
320	8	0.02	1,156	2.97	365	19	0.05	1,851	4.76	410	37	0.10	2,903	7.46
321	15	0.04	1,171	3.01	366	26	0.07	1,877	4.82	411	24	0.06	2,927	7.52
322	11	0.03	1,182	3.04	367	19	0.05	1,896	4.87	412	34	0.09	2,961	7.61
323	12	0.03	1,194	3.07	368	21	0.05	1,917	4.93	413	32	0.08	2,993	7.69
324	12	0.03	1,206	3.10	369	14	0.04	1,931	4.96	414	30	0.08	3,023	7.77
325	8	0.02	1,214	3.12	370	17	0.04	1,948	5.01	415	31	0.08	3,054	7.85
326	11	0.03	1,225	3.15	371	26	0.07	1,974	5.07	416	28	0.07	3,082	7.92
327	16	0.04	1,241	3.19	372	13	0.03	1,987	5.11	417	46	0.12	3,128	8.04
328	13	0.03	1,254	3.22	373	24	0.06	2,011	5.17	418	41	0.11	3,169	8.14
329	13	0.03	1,267	3.26	374	21	0.05	2,032	5.22	419	34	0.09	3,203	8.23
330	8	0.02	1,275	3.28	375	27	0.07	2,059	5.29	420	43	0.11	3,246	8.34
331	14	0.04	1,289	3.31	376	14	0.04	2,073	5.33	421	37	0.10	3,283	8.44
332	21	0.05	1,310	3.37	377	19	0.05	2,092	5.38	422	39	0.10	3,322	8.54
333	9	0.02	1,319	3.39	378	23	0.06	2,115	5.44	423	27	0.07	3,349	8.61
334	14	0.04	1,333	3.43	379	27	0.07	2,142	5.51	424	29	0.07	3,378	8.68
335	12	0.03	1,345	3.46	380	24	0.06	2,166	5.57	425	44	0.11	3,422	8.79
336	19	0.05	1,364	3.51	381	18	0.05	2,184	5.61	426	35	0.09	3,457	8.88
337	21	0.05	1,385	3.56	382	21	0.05	2,205	5.67	427	32	0.08	3,489	8.97
338	24	0.06	1,409	3.62	383	21	0.05	2,226	5.72	428	41	0.11	3,530	9.07
339	11	0.03	1,420	3.65	384	27	0.07	2,253	5.79	429	40	0.10	3,570	9.18
340	7	0.02	1,427	3.67	385	23	0.06	2,276	5.85	430	37	0.10	3,607	9.27
341	16	0.04	1,443	3.71	386	24	0.06	2,300	5.91	431	33	0.08	3,640	9.35
342	17	0.04	1,460	3.75	387	20	0.05	2,320	5.96	432	40	0.10	3,680	9.46
343	15	0.04	1,475	3.79	388	18	0.05	2,338	6.01	433	39	0.10	3,719	9.56
344	16	0.04	1,491	3.83	389	21	0.05	2,359	6.06	434	34	0.09	3,753	9.65

Table 34. HS Science Cumulative Frequency Distribution of Scale Scores (continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
435	35	0.09	3,788	9.74	480	83	0.21	6,290	16.17	525	107	0.27	10,185	26.18
436	43	0.11	3,831	9.85	481	67	0.17	6,357	16.34	526	110	0.28	10,295	26.46
437	44	0.11	3,875	9.96	482	70	0.18	6,427	16.52	527	101	0.26	10,396	26.72
438	46	0.12	3,921	10.08	483	71	0.18	6,498	16.70	528	106	0.27	10,502	26.99
439	33	0.08	3,954	10.16	484	67	0.17	6,565	16.87	529	96	0.25	10,598	27.24
440	45	0.12	3,999	10.28	485	66	0.17	6,631	17.04	530	104	0.27	10,702	27.50
441	33	0.08	4,032	10.36	486	73	0.19	6,704	17.23	531	91	0.23	10,793	27.74
442	48	0.12	4,080	10.49	487	73	0.19	6,777	17.42	532	114	0.29	10,907	28.03
443	56	0.14	4,136	10.63	488	86	0.22	6,863	17.64	533	110	0.28	11,017	28.31
444	36	0.09	4,172	10.72	489	74	0.19	6,937	17.83	534	114	0.29	11,131	28.61
445	57	0.15	4,229	10.87	490	88	0.23	7,025	18.05	535	108	0.28	11,239	28.88
446	38	0.10	4,267	10.97	491	85	0.22	7,110	18.27	536	121	0.31	11,360	29.20
447	44	0.11	4,311	11.08	492	71	0.18	7,181	18.46	537	121	0.31	11,481	29.51
448	47	0.12	4,358	11.20	493	84	0.22	7,265	18.67	538	118	0.30	11,599	29.81
449	66	0.17	4,424	11.37	494	91	0.23	7,356	18.91	539	111	0.29	11,710	30.10
450	51	0.13	4,475	11.50	495	80	0.21	7,436	19.11	540	112	0.29	11,822	30.38
451	48	0.12	4,523	11.62	496	77	0.20	7,513	19.31	541	128	0.33	11,950	30.71
452	47	0.12	4,570	11.75	497	76	0.20	7,589	19.50	542	104	0.27	12,054	30.98
453	72	0.19	4,642	11.93	498	83	0.21	7,672	19.72	543	129	0.33	12,183	31.31
454	46	0.12	4,688	12.05	499	89	0.23	7,761	19.95	544	122	0.31	12,305	31.62
455	51	0.13	4,739	12.18	500	76	0.20	7,837	20.14	545	112	0.29	12,417	31.91
456	56	0.14	4,795	12.32	501	67	0.17	7,904	20.31	546	120	0.31	12,537	32.22
457	60	0.15	4,855	12.48	502	83	0.21	7,987	20.53	547	120	0.31	12,657	32.53
458	58	0.15	4,913	12.63	503	93	0.24	8,080	20.77	548	127	0.33	12,784	32.86
459	60	0.15	4,973	12.78	504	90	0.23	8,170	21.00	549	128	0.33	12,912	33.18
460	49	0.13	5,022	12.91	505	103	0.26	8,273	21.26	550	120	0.31	13,032	33.49
461	55	0.14	5,077	13.05	506	93	0.24	8,366	21.50	551	117	0.30	13,149	33.79
462	66	0.17	5,143	13.22	507	96	0.25	8,462	21.75	552	122	0.31	13,271	34.11
463	58	0.15	5,201	13.37	508	97	0.25	8,559	22.00	553	124	0.32	13,395	34.43
464	55	0.14	5,256	13.51	509	106	0.27	8,665	22.27	554	128	0.33	13,523	34.75
465	66	0.17	5,322	13.68	510	96	0.25	8,761	22.52	555	134	0.34	13,657	35.10
466	56	0.14	5,378	13.82	511	95	0.24	8,856	22.76	556	104	0.27	13,761	35.37
467	56	0.14	5,434	13.97	512	89	0.23	8,945	22.99	557	129	0.33	13,890	35.70
468	53	0.14	5,487	14.10	513	82	0.21	9,027	23.20	558	136	0.35	14,026	36.05
469	63	0.16	5,550	14.26	514	86	0.22	9,113	23.42	559	104	0.27	14,130	36.31
470	49	0.13	5,599	14.39	515	79	0.20	9,192	23.62	560	124	0.32	14,254	36.63
471	62	0.16	5,661	14.55	516	81	0.21	9,273	23.83	561	120	0.31	14,374	36.94
472	65	0.17	5,726	14.72	517	94	0.24	9,367	24.07	562	109	0.28	14,483	37.22
473	70	0.18	5,796	14.90	518	98	0.25	9,465	24.33	563	128	0.33	14,611	37.55
474	63	0.16	5,859	15.06	519	92	0.24	9,557	24.56	564	132	0.34	14,743	37.89
475	71	0.18	5,930	15.24	520	124	0.32	9,681	24.88	565	138	0.35	14,881	38.24
476	73	0.19	6,003	15.43	521	109	0.28	9,790	25.16	566	126	0.32	15,007	38.57
477	70	0.18	6,073	15.61	522	104	0.27	9,894	25.43	567	132	0.34	15,139	38.91
478	61	0.16	6,134	15.76	523	88	0.23	9,982	25.65	568	120	0.31	15,259	39.22
479	73	0.19	6,207	15.95	524	96	0.25	10,078	25.90	569	134	0.34	15,393	39.56

Table 34. HS Science Cumulative Frequency Distribution of Scale Scores (continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
570	140	0.36	15,533	39.92	615	150	0.39	21,806	56.04	660	128	0.33	28,007	71.98
571	123	0.32	15,656	40.24	616	136	0.35	21,942	56.39	661	142	0.36	28,149	72.34
572	152	0.39	15,808	40.63	617	148	0.38	22,090	56.77	662	138	0.35	28,287	72.70
573	133	0.34	15,941	40.97	618	126	0.32	22,216	57.10	663	128	0.33	28,415	73.03
574	150	0.39	16,091	41.35	619	147	0.38	22,363	57.47	664	126	0.32	28,541	73.35
575	135	0.35	16,226	41.70	620	152	0.39	22,515	57.86	665	130	0.33	28,671	73.69
576	124	0.32	16,350	42.02	621	146	0.38	22,661	58.24	666	116	0.30	28,787	73.98
577	145	0.37	16,495	42.39	622	130	0.33	22,791	58.57	667	110	0.28	28,897	74.27
578	132	0.34	16,627	42.73	623	158	0.41	22,949	58.98	668	136	0.35	29,033	74.62
579	140	0.36	16,767	43.09	624	169	0.43	23,118	59.41	669	137	0.35	29,170	74.97
580	144	0.37	16,911	43.46	625	115	0.30	23,233	59.71	670	112	0.29	29,282	75.26
581	144	0.37	17,055	43.83	626	155	0.40	23,388	60.11	671	134	0.34	29,416	75.60
582	131	0.34	17,186	44.17	627	131	0.34	23,519	60.44	672	106	0.27	29,522	75.87
583	111	0.29	17,297	44.45	628	140	0.36	23,659	60.80	673	115	0.30	29,637	76.17
584	136	0.35	17,433	44.80	629	119	0.31	23,778	61.11	674	114	0.29	29,751	76.46
585	143	0.37	17,576	45.17	630	145	0.37	23,923	61.48	675	140	0.36	29,891	76.82
586	130	0.33	17,706	45.51	631	137	0.35	24,060	61.84	676	113	0.29	30,004	77.11
587	133	0.34	17,839	45.85	632	171	0.44	24,231	62.27	677	121	0.31	30,125	77.42
588	127	0.33	17,966	46.17	633	144	0.37	24,375	62.64	678	126	0.32	30,251	77.75
589	144	0.37	18,110	46.54	634	139	0.36	24,514	63.00	679	128	0.33	30,379	78.08
590	136	0.35	18,246	46.89	635	131	0.34	24,645	63.34	680	103	0.26	30,482	78.34
591	153	0.39	18,399	47.29	636	165	0.42	24,810	63.76	681	109	0.28	30,591	78.62
592	153	0.39	18,552	47.68	637	139	0.36	24,949	64.12	682	124	0.32	30,715	78.94
593	141	0.36	18,693	48.04	638	125	0.32	25,074	64.44	683	101	0.26	30,816	79.20
594	153	0.39	18,846	48.43	639	147	0.38	25,221	64.82	684	134	0.34	30,950	79.54
595	140	0.36	18,986	48.79	640	125	0.32	25,346	65.14	685	130	0.33	31,080	79.88
596	138	0.35	19,124	49.15	641	127	0.33	25,473	65.47	686	123	0.32	31,203	80.19
597	152	0.39	19,276	49.54	642	144	0.37	25,617	65.84	687	99	0.25	31,302	80.45
598	165	0.42	19,441	49.96	643	139	0.36	25,756	66.19	688	105	0.27	31,407	80.72
599	152	0.39	19,593	50.35	644	151	0.39	25,907	66.58	689	106	0.27	31,513	80.99
600	146	0.38	19,739	50.73	645	140	0.36	26,047	66.94	690	104	0.27	31,617	81.26
601	141	0.36	19,880	51.09	646	139	0.36	26,186	67.30	691	109	0.28	31,726	81.54
602	139	0.36	20,019	51.45	647	139	0.36	26,325	67.66	692	107	0.27	31,833	81.81
603	133	0.34	20,152	51.79	648	128	0.33	26,453	67.99	693	121	0.31	31,954	82.12
604	145	0.37	20,297	52.16	649	142	0.36	26,595	68.35	694	117	0.30	32,071	82.42
605	157	0.40	20,454	52.57	650	116	0.30	26,711	68.65	695	106	0.27	32,177	82.70
606	122	0.31	20,576	52.88	651	123	0.32	26,834	68.96	696	111	0.29	32,288	82.98
607	126	0.32	20,702	53.20	652	146	0.38	26,980	69.34	697	118	0.30	32,406	83.28
608	132	0.34	20,834	53.54	653	140	0.36	27,120	69.70	698	107	0.27	32,513	83.56
609	143	0.37	20,977	53.91	654	118	0.30	27,238	70.00	699	106	0.27	32,619	83.83
610	130	0.33	21,107	54.25	655	125	0.32	27,363	70.32	700	105	0.27	32,724	84.10
611	139	0.36	21,246	54.60	656	119	0.31	27,482	70.63	701	111	0.29	32,835	84.39
612	139	0.36	21,385	54.96	657	136	0.35	27,618	70.98	702	72	0.19	32,907	84.57
613	138	0.35	21,523	55.31	658	135	0.35	27,753	71.33	703	105	0.27	33,012	84.84
614	133	0.34	21,656	55.66	659	126	0.32	27,879	71.65	704	99	0.25	33,111	85.10

Table 34. HS Science Cumulative Frequency Distribution of Scale Scores (continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
705	96	0.25	33,207	85.34	750	61	0.16	36,637	94.16	795	25	0.06	38,286	98.40
706	95	0.24	33,302	85.59	751	51	0.13	36,688	94.29	796	18	0.05	38,304	98.44
707	101	0.26	33,403	85.85	752	59	0.15	36,747	94.44	797	19	0.05	38,323	98.49
708	98	0.25	33,501	86.10	753	56	0.14	36,803	94.58	798	26	0.07	38,349	98.56
709	93	0.24	33,594	86.34	754	48	0.12	36,851	94.71	799	17	0.04	38,366	98.60
710	115	0.30	33,709	86.63	755	40	0.10	36,891	94.81	800	18	0.05	38,384	98.65
711	108	0.28	33,817	86.91	756	47	0.12	36,938	94.93	801	9	0.02	38,393	98.67
712	101	0.26	33,918	87.17	757	48	0.12	36,986	95.06	802	15	0.04	38,408	98.71
713	104	0.27	34,022	87.44	758	45	0.12	37,031	95.17	803	17	0.04	38,425	98.75
714	80	0.21	34,102	87.64	759	51	0.13	37,082	95.30	804	15	0.04	38,440	98.79
715	86	0.22	34,188	87.86	760	41	0.11	37,123	95.41	805	13	0.03	38,453	98.83
716	85	0.22	34,273	88.08	761	52	0.13	37,175	95.54	806	20	0.05	38,473	98.88
717	105	0.27	34,378	88.35	762	48	0.12	37,223	95.66	807	14	0.04	38,487	98.91
718	100	0.26	34,478	88.61	763	42	0.11	37,265	95.77	808	12	0.03	38,499	98.94
719	81	0.21	34,559	88.82	764	52	0.13	37,317	95.91	809	10	0.03	38,509	98.97
720	76	0.20	34,635	89.01	765	52	0.13	37,369	96.04	810	17	0.04	38,526	99.01
721	79	0.20	34,714	89.22	766	36	0.09	37,405	96.13	811	15	0.04	38,541	99.05
722	79	0.20	34,793	89.42	767	41	0.11	37,446	96.24	812	16	0.04	38,557	99.09
723	81	0.21	34,874	89.63	768	36	0.09	37,482	96.33	813	15	0.04	38,572	99.13
724	76	0.20	34,950	89.82	769	45	0.12	37,527	96.45	814	10	0.03	38,582	99.16
725	73	0.19	35,023	90.01	770	33	0.08	37,560	96.53	815	7	0.02	38,589	99.18
726	62	0.16	35,085	90.17	771	40	0.10	37,600	96.63	816	9	0.02	38,598	99.20
727	86	0.22	35,171	90.39	772	34	0.09	37,634	96.72	817	11	0.03	38,609	99.23
728	74	0.19	35,245	90.58	773	32	0.08	37,666	96.80	818	16	0.04	38,625	99.27
729	92	0.24	35,337	90.82	774	39	0.10	37,705	96.90	819	11	0.03	38,636	99.30
730	74	0.19	35,411	91.01	775	44	0.11	37,749	97.02	820	3	0.01	38,639	99.30
731	64	0.16	35,475	91.17	776	29	0.07	37,778	97.09	821	6	0.02	38,645	99.32
732	71	0.18	35,546	91.35	777	29	0.07	37,807	97.17	822	6	0.02	38,651	99.33
733	63	0.16	35,609	91.52	778	32	0.08	37,839	97.25	823	7	0.02	38,658	99.35
734	75	0.19	35,684	91.71	779	34	0.09	37,873	97.33	824	6	0.02	38,664	99.37
735	62	0.16	35,746	91.87	780	25	0.06	37,898	97.40	825	10	0.03	38,674	99.39
736	65	0.17	35,811	92.04	781	30	0.08	37,928	97.48	826	10	0.03	38,684	99.42
737	64	0.16	35,875	92.20	782	34	0.09	37,962	97.56	827	13	0.03	38,697	99.45
738	64	0.16	35,939	92.36	783	28	0.07	37,990	97.64	828	6	0.02	38,703	99.47
739	54	0.14	35,993	92.50	784	31	0.08	38,021	97.72	829	9	0.02	38,712	99.49
740	54	0.14	36,047	92.64	785	27	0.07	38,048	97.78	830	5	0.01	38,717	99.50
741	61	0.16	36,108	92.80	786	24	0.06	38,072	97.85	831	3	0.01	38,720	99.51
742	66	0.17	36,174	92.97	787	21	0.05	38,093	97.90	832	9	0.02	38,729	99.53
743	59	0.15	36,233	93.12	788	24	0.06	38,117	97.96	833	8	0.02	38,737	99.56
744	64	0.16	36,297	93.28	789	28	0.07	38,145	98.03	834	5	0.01	38,742	99.57
745	55	0.14	36,352	93.43	790	19	0.05	38,164	98.08	835	5	0.01	38,747	99.58
746	53	0.14	36,405	93.56	791	25	0.06	38,189	98.15	836	4	0.01	38,751	99.59
747	65	0.17	36,470	93.73	792	22	0.06	38,211	98.20	837	7	0.02	38,758	99.61
748	63	0.16	36,533	93.89	793	20	0.05	38,231	98.25	838	9	0.02	38,767	99.63
749	43	0.11	36,576	94.00	794	30	0.08	38,261	98.33	839	2	0.01	38,769	99.64

Table 34. HS Science Cumulative Frequency Distribution of Scale Scores (continued)

SS	Freq	%	Cum Freq	Cum %	SS	Freq	%	Cum Freq	Cum %
840	7	0.02	38,776	99.66	896	2	0.01	38,896	99.96
841	5	0.01	38,781	99.67	897	1	0.00	38,897	99.97
842	4	0.01	38,785	99.68	900	13	0.03	38,910	100.00
843	5	0.01	38,790	99.69					
844	3	0.01	38,793	99.70					
845	5	0.01	38,798	99.71					
846	4	0.01	38,802	99.72					
847	4	0.01	38,806	99.73					
848	6	0.02	38,812	99.75					
849	4	0.01	38,816	99.76					
850	3	0.01	38,819	99.77					
851	2	0.01	38,821	99.77					
852	4	0.01	38,825	99.78					
853	2	0.01	38,827	99.79					
854	5	0.01	38,832	99.80					
855	3	0.01	38,835	99.81					
856	1	0.00	38,836	99.81					
857	3	0.01	38,839	99.82					
858	1	0.00	38,840	99.82					
859	4	0.01	38,844	99.83					
860	2	0.01	38,846	99.84					
861	1	0.00	38,847	99.84					
862	3	0.01	38,850	99.85					
863	5	0.01	38,855	99.86					
864	1	0.00	38,856	99.86					
866	2	0.01	38,858	99.87					
867	4	0.01	38,862	99.88					
868	1	0.00	38,863	99.88					
869	2	0.01	38,865	99.88					
870	2	0.01	38,867	99.89					
871	1	0.00	38,868	99.89					
872	2	0.01	38,870	99.90					
873	4	0.01	38,874	99.91					
874	4	0.01	38,878	99.92					
875	1	0.00	38,879	99.92					
877	1	0.00	38,880	99.92					
878	2	0.01	38,882	99.93					
879	1	0.00	38,883	99.93					
880	3	0.01	38,886	99.94					
882	2	0.01	38,888	99.94					
883	2	0.01	38,890	99.95					
884	1	0.00	38,891	99.95					
885	1	0.00	38,892	99.95					
888	1	0.00	38,893	99.96					
892	1	0.00	38,894	99.96					

Table 35. Scale Score Performance Summary

Content Area	Grade	N	Mean	SD	Median
Social Studies	4	21,441	609	116.0	622
	7	20,260	585	118.0	602
	HS	n/a	n/a	n/a	n/a
Science	5	65,228	599	110.5	610
	8	58,136	580	125.8	595
	HS	38,910	589	113.3	599

Table 36. Performance Level Distribution

Content Area	Grade	Partially Met Expectations	Approached Expectations	Met Expectations	Exceeded Expectations
Social Studies	4	28.7%	48.8%	19.4%	3.0%
	7	46.5%	37.7%	12.8%	2.9%
	HS	n/a	n/a	n/a	n/a
Science	5	29.3%	35.3%	31.6%	3.9%
	8	37.7%	31.1%	28.3%	2.8%
	HS	31.0%	44.9%	20.9%	3.2%

*Percentages may not sum to 100 due to rounding.

Table 37. Scale Score Performance Summary by Content Standard

Content Area	Grade	Content Standard											
		1			2			3			4		
		Mean	SD	Mdn*	Mean	SD	Mdn*	Mean	SD	Mdn*	Mean	SD	Mdn*
Social Studies	4	599	140.0	619	610	130.5	622	607	131.6	621	595	144.5	625
	7	584	130.2	602	580	136.7	600	577	141.0	600	575	141.9	603
	HS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Science	5	599	122.4	609	600	119.0	608	598	118.5	610	597	119.5	610
	8	579	134.9	595	579	135.9	593	578	134.5	594	579	134.1	595
	HS	581	129.6	597	585	122.5	598	585	124.3	600	583	126.0	600

*Mdn = median

Table 38. Scale Score Performance Summary by Item Type

Content Area	Grade	Selected-Response		Constructed-Response	
		Mean	SD	Mean	SD
Social Studies	4	607	123.7	605	127.2
	7	585	126.1	583	126.0
	HS	n/a	n/a	n/a	n/a
Science	5	601	115.5	596	119.8
	8	580	131.1	579	131.9
	HS	588	117.4	581	129.3

Table 39. Grade 4 Percent Correct Performance Summary by GLE

Content Standard	GLE	Mean	SD	Average Percent Correct
History	1	3.8	2.2	42.2%
	2	3.6	2.4	36.4%
Geography	1	5.6	2.1	50.5%
	2	4.4	2.1	48.7%
Economics	1	3.7	2.1	40.6%
	2	4.3	1.9	53.9%
Civics	1	3.3	2.2	36.4%
	2	3.4	2.2	33.8%

Table 40. Grade 5 Percent Correct Performance Summary by GLE

Content Standard	GLE	Mean	SD	Average Percent Correct
Physical Science	1	9.8	4.6	48.9%
Life Science	1	7.2	3.0	55.3%
	2	9.5	3.7	55.8%
Earth Systems Science	1	4.8	2.4	47.7%
	2	4.6	2.4	46.0%
	3	5.8	2.4	57.5%

Table 41. Grade 7 Percent Correct Performance Summary by GLE

Content Standard	GLE	Mean	SD	Average Percent Correct
History	1	3.4	2.2	43.0%
	2	5.3	3.0	44.0%
Geography	1	3.7	2.3	36.6%
	2	3.5	1.9	43.9%
Economics	1	3.4	1.9	42.5%
	2	3.0	2.1	37.6%
Civics	1	3.5	2.3	38.8%
	2	3.8	2.3	42.6%

Table 42. Grade 8 Percent Correct Performance Summary by GLE

Content Standard	GLE	Mean	SD	Average Percent Correct
Physical Science	1	4.0	2.2	49.9%
	2	3.2	1.7	46.3%
	3	2.8	1.9	39.3%
	4	2.7	1.6	38.5%
Life Science	1	6.0	2.6	54.7%
	2	5.0	3.7	38.2%
Earth Systems Science	1	2.2	1.5	36.7%
	2	2.9	1.8	41.5%
	3	3.5	1.8	50.4%
	4	1.9	1.8	27.0%

Table 43. HS Science Percent Correct Performance Summary by PGC

Content Standard	PGC	Mean	SD	Average Percent Correct
Physical Science	1	2.4	1.5	39.6%
	2	3.2	2.6	29.4%
	3	2.9	2.1	32.6%
Life Science	1	2.6	2.4	37.7%
	2	2.6	1.8	23.2%
	3	1.5	1.4	24.4%
	4	n/a	n/a	n/a
Earth Systems Science	1	3.1	2.0	38.8%
	2	5.6	3.5	37.1%
	3	n/a	n/a	n/a

*n/a represents a PGC where there are too few points to reliably report out on.

Table 44. Grade 4 Selected-Response Classical Statistics

Item	% Omit	p-value	Item-Total Corr.
1	0.05	0.59	0.28
2	0.17	0.59	0.27
3	0.04	0.76	0.33
4	0.07	0.83	0.35
5	0.06	0.71	0.38
6	0.13	0.20	0.30
7	0.55	0.43	0.39
8	0.22	0.24	0.43
9	1.34	0.40	0.20
10	2.27	0.45	0.48
11	2.34	0.68	0.42
12	2.48	0.68	0.51
13	4.98	0.58	0.56
14	5.64	0.47	0.45
15	0.16	0.54	0.40
16	0.14	0.36	0.41
17	0.04	0.72	0.41
18	0.06	0.47	0.51
19	0.09	0.39	0.36
20	2.06	0.48	0.20
21	2.06	0.72	0.48
22	3.04	0.32	0.28
23	3.33	0.45	0.35
24	0.07	0.47	0.41
25	0.09	0.86	0.36
26	0.04	0.66	0.30
27	0.18	0.71	0.29
28	0.06	0.32	0.27
29	0.05	0.48	0.37
30	0.33	0.30	0.20
31	0.28	0.54	0.22
32	0.15	0.58	0.34
33	0.51	0.40	0.35
34	0.69	0.54	0.47
35	0.68	0.30	0.23
36	0.88	0.45	0.32
37	1.38	0.51	0.35
38	1.48	0.58	0.44
39	1.59	0.46	0.29

Table 45. Grade 4 Constructed-Response Classical Statistics

Item	Omit %	%0	%1	%2	%3	p-value	Item-Total Corr.
1	3.10	53.01	24.38	12.89	6.63	0.23	0.50
2	3.25	34.69	35.99	19.27	6.80	0.32	0.51
3	5.82	31.56	23.39	23.18	16.04	0.39	0.64
4	6.47	47.39	23.71	15.09	7.34	0.25	0.60
5	5.65	22.28	31.17	29.10	11.79	0.42	0.61
6	0.56	11.06	33.98	35.45	18.95	0.54	0.60
7	7.24	45.20	22.32	15.06	10.18	0.28	0.51
8	1.19	25.34	27.10	35.09	11.29	0.44	0.53
9	1.97	50.10	22.83	17.26	7.84	0.27	0.59
10	2.46	34.14	34.15	21.08	8.16	0.34	0.63
11	2.54	44.05	22.23	18.86	12.32	0.32	0.61
12	3.82	56.07	17.21	11.99	10.91	0.25	0.60

Table 46. Grade 5 Selected-Response Classical Statistics

Item	% Omit	p-value	Item-Total Corr.	Item	% Omit	p-value	Item-Total Corr.
1	0.03	0.89	0.35	26	0.67	0.81	0.55
2	0.14	0.36	0.48	27	1.11	0.76	0.49
3	0.10	0.69	0.49	28	1.05	0.61	0.53
4	0.08	0.78	0.43	29	0.02	0.50	0.39
5	0.38	0.39	0.32	30	0.02	0.55	0.32
6	0.07	0.30	0.45	31	0.05	0.71	0.39
7	0.16	0.72	0.41	32	0.03	0.64	0.41
8	0.19	0.84	0.39	33	0.05	0.39	0.21
9	0.46	0.48	0.54	34	0.08	0.32	0.37
10	0.41	0.76	0.40	35	0.06	0.46	0.26
11	1.75	0.38	0.32	36	0.04	0.72	0.46
12	3.30	0.46	0.47	37	0.05	0.87	0.41
13	3.74	0.49	0.51	38	0.12	0.21	0.42
14	0.03	0.69	0.53	39	0.14	0.46	0.24
15	0.03	0.19	0.32	40	0.24	0.55	0.31
16	0.02	0.81	0.39	41	0.41	0.88	0.35
17	0.14	0.48	0.41	42	0.65	0.58	0.52
18	0.08	0.58	0.47	43	0.67	0.73	0.38
19	0.05	0.66	0.33				
20	0.06	0.79	0.48				
21	0.08	0.74	0.40				
22	0.12	0.50	0.27				
23	0.19	0.60	0.48				
24	0.21	0.75	0.38				
25	0.49	0.63	0.52				

Table 47. Grade 5 Constructed-Response Classical Statistics

Item	Max Points	Omit %	%0	%1	%2	%3	p-value	Item-Total Corr.
1	2	1.14	37.91	50.36	10.59		0.36	0.56
2	2	2.01	46.46	30.03	21.50		0.37	0.65
3	3	1.71	31.28	28.80	23.77	14.43	0.40	0.68
4	2	4.71	39.25	33.95	22.09		0.39	0.63
5	2	0.70	36.05	47.24	16.01		0.40	0.53
6	2	1.46	54.76	23.40	20.38		0.32	0.62
7	2	0.69	34.10	44.10	21.11		0.43	0.48
8	3	0.92	24.75	20.88	33.84	19.61	0.49	0.65
9	2	0.86	24.16	27.63	47.35		0.61	0.60
10	2	1.28	41.47	37.78	19.48		0.38	0.64
11	2	1.21	17.95	15.65	65.19		0.73	0.44
12	2	0.29	26.98	43.31	29.43		0.51	0.59
13	2	1.02	47.97	23.73	27.29		0.39	0.60
14	3	1.30	38.14	36.34	10.63	13.59	0.33	0.60
15	2	1.36	37.16	36.48	25.00		0.43	0.61
16	2	1.41	48.59	41.90	8.11		0.29	0.51
17	2	1.20	17.95	39.92	40.93		0.61	0.59

Table 48. Grade 7 Selected-Response Classical Statistics

Item	% Omit	p-value	Item-Total Corr.
1	0.03	0.60	0.46
2	0.06	0.68	0.35
3	0.07	0.47	0.32
4	0.11	0.50	0.28
5	0.03	0.79	0.40
6	0.10	0.59	0.44
7	0.21	0.18	0.30
8	0.23	0.22	0.44
9	1.04	0.21	0.22
10	1.24	0.33	0.43
11	1.37	0.56	0.48
12	2.32	0.19	0.27
13	2.36	0.56	0.39
14	2.58	0.43	0.51
15	0.04	0.25	0.44
16	0.02	0.83	0.39
17	0.03	0.27	0.41
18	0.06	0.64	0.46
19	0.57	0.35	0.34
20	0.91	0.62	0.49
21	0.99	0.62	0.36
22	1.05	0.30	0.12
23	1.13	0.38	0.36
24	0.05	0.34	0.50
25	0.01	0.47	0.29
26	0.04	0.53	0.33
27	0.03	0.38	0.31
28	0.04	0.76	0.52
29	0.07	0.46	0.43
30	0.08	0.57	0.57
31	0.16	0.24	0.55
32	0.13	0.46	0.55
33	0.12	0.41	0.30
34	0.27	0.58	0.55
35	0.29	0.57	0.35
36	0.35	0.40	0.59

Table 49. Grade 7 Constructed-Response Classical Statistics

Item	Omit %	%0	%1	%2	%3	p-value	Item-Total Corr.
1	1.67	44.04	26.86	17.90	9.53	0.30	0.67
2	1.60	27.85	25.64	24.55	20.36	0.45	0.70
3	2.53	27.44	31.03	21.96	17.03	0.42	0.70
4	3.66	25.72	26.27	23.48	20.86	0.45	0.65
5	4.46	23.41	32.13	30.18	9.81	0.41	0.64
6	1.08	23.23	32.85	30.72	12.13	0.44	0.61
7	3.65	47.38	26.69	16.46	5.82	0.26	0.70
8	0.70	46.68	20.69	19.67	12.26	0.32	0.60
9	1.20	40.76	26.59	22.47	8.98	0.33	0.71
10	1.24	49.62	29.16	14.17	5.81	0.25	0.61
11	1.95	37.58	36.98	18.62	4.87	0.30	0.65
12	2.03	56.84	13.98	13.93	13.22	0.27	0.60

Table 50. Grade 8 Selected-Response Classical Statistics

Item	% Omit	p-value	Item-Total Corr.	Item	% Omit	p-value	Item-Total Corr.
1	0.02	0.75	0.43	26	0.20	0.50	0.46
2	0.08	0.58	0.33	27	0.29	0.42	0.49
3	0.06	0.51	0.31	28	0.31	0.44	0.52
4	0.04	0.59	0.39	29	0.01	0.61	0.36
5	0.13	0.51	0.30	30	0.02	0.50	0.36
6	0.13	0.28	0.31	31	0.04	0.66	0.34
7	0.09	0.23	0.48	32	0.06	0.36	0.36
8	0.08	0.29	0.30	33	0.06	0.52	0.27
9	0.13	0.46	0.37	34	0.07	0.26	0.42
10	0.18	0.48	0.36	35	0.05	0.74	0.43
11	0.59	0.34	0.42	36	0.07	0.31	0.34
12	1.00	0.54	0.34	37	0.05	0.37	0.39
13	1.05	0.38	0.51	38	0.08	0.19	0.41
14	0.02	0.42	0.40	39	0.20	0.62	0.50
15	0.15	0.23	0.34	40	0.15	0.24	0.50
16	0.04	0.46	0.42	41	0.24	0.45	0.41
17	0.04	0.52	0.51	42	0.28	0.47	0.30
18	0.20	0.53	0.53	43	0.34	0.34	0.40
19	0.07	0.69	0.44				
20	0.16	0.36	0.60				
21	0.09	0.27	0.38				
22	0.12	0.32	0.49				
23	0.14	0.64	0.47				
24	0.13	0.43	0.24				
25	0.14	0.89	0.32				

Table 51. Grade 8 Constructed-Response Classical Statistics

Item	Max Points	Omit %	%0	%1	%2	%3	p-value	Item-Total Corr.
1	2	1.56	52.59	39.66	6.19		0.26	0.53
2	2	1.11	28.29	34.99	35.61		0.53	0.66
3	3	1.90	46.07	32.51	16.71	2.81	0.25	0.63
4	2	2.34	67.73	25.09	4.84		0.17	0.46
5	2	0.99	46.11	26.87	26.03		0.40	0.57
6	2	0.70	34.65	32.29	32.36		0.49	0.67
7	2	0.65	17.12	42.36	39.87		0.61	0.40
8	3	1.53	43.48	15.46	20.16	19.37	0.38	0.75
9	2	0.89	21.70	25.35	52.06		0.65	0.66
10	2	1.32	19.00	41.86	37.83		0.59	0.57
11	2	2.01	42.32	30.55	25.12		0.40	0.65
12	2	0.73	56.96	24.16	18.15		0.30	0.60
13	2	1.42	70.25	17.45	10.88		0.20	0.56
14	3	1.46	34.27	29.41	20.71	14.14	0.38	0.74
15	2	1.54	53.62	28.97	15.87		0.30	0.66
16	2	1.94	44.93	25.25	27.88		0.41	0.68

Table 52. HS Science Selected-Response Classical Statistics

Item	% Omit	p-value	Item-Total Corr.	Item	% Omit	p-value	Item-Total Corr.
1	0.03	0.42	0.18	26	0.61	0.54	0.37
2	0.31	0.29	0.40	27	0.91	0.47	0.50
3	0.17	0.37	0.41	28	1.55	0.08	0.28
4	0.12	0.76	0.41	29	0.02	0.68	0.45
5	0.31	0.08	0.26	30	0.32	0.41	0.55
6	0.29	0.34	0.52	31	0.46	0.51	0.40
7	0.16	0.53	0.39	32	0.25	0.47	0.52
8	0.18	0.71	0.34	33	0.41	0.21	0.52
9	0.38	0.67	0.40	34	9.05	0.33	0.56
10	0.53	0.36	0.28	35	0.13	0.50	0.57
11	1.73	0.40	0.32	36	0.30	0.37	0.40
12	4.88	0.26	0.51	37	0.20	0.16	0.39
13	4.35	0.42	0.21	38	0.25	0.44	0.32
14	0.10	0.35	0.35	39	0.46	0.49	0.40
15	0.09	0.30	0.50	40	0.98	0.22	0.52
16	0.15	0.48	0.39	41	0.61	0.32	0.31
17	0.22	0.47	0.36	42	0.62	0.44	0.40
18	0.30	0.59	0.55	43	0.86	0.38	0.67
19	1.98	0.92	0.26				
20	0.20	0.31	0.38				
21	0.18	0.33	0.37				
22	0.23	0.19	0.46				
23	1.48	0.17	0.37				
24	0.52	0.42	0.47				
25	0.67	0.33	0.48				

Table 53. HS Science Constructed-Response Classical Statistics

Item	Max Points	Omit %	%0	%1	%2	%3	p-value	Item-Total Corr.
1	2	4.11	65.42	17.49	12.98		0.22	0.61
2	2	5.75	55.06	34.09	5.11		0.22	0.55
3	3	12.17	60.52	13.70	8.97	4.64	0.15	0.63
4	2	13.50	45.44	20.32	20.74		0.31	0.45
5	2	4.57	55.63	34.54	5.26		0.23	0.60
6	2	3.70	22.38	39.01	34.91		0.54	0.58
7	2	6.45	30.70	48.68	14.17		0.39	0.59
8	3	8.11	53.24	21.90	11.28	5.48	0.20	0.65
9	2	9.16	43.91	39.24	7.70		0.27	0.55
10	2	11.55	59.90	24.55	4.00		0.16	0.55
11	2	8.12	57.96	26.20	7.72		0.21	0.55
12	2	5.52	31.77	30.72	31.98		0.47	0.59
13	2	6.35	38.99	38.52	16.15		0.35	0.61
14	3	5.99	51.92	18.10	14.63	9.36	0.25	0.65
15	2	9.98	69.56	16.66	3.80		0.12	0.56
16	2	7.93	50.11	13.86	28.10		0.35	0.67
17	2	10.76	60.26	14.26	14.72		0.22	0.66

Table 54. Correlations Between Content Standards

Grade	Content Standard	2	3	4	Full Test
4	1	0.707	0.703	0.704	0.876
	2		0.706	0.701	0.880
	3			0.700	0.877
	4				0.856
5	1	0.818	0.832	0.908	0.930
	2		0.840	0.898	0.942
	3			0.890	0.947
	4				0.954
7	1	0.754	0.710	0.766	0.918
	2		0.716	0.752	0.888
	3			0.720	0.839
	4				0.888
8	1	0.828	0.842	0.868	0.943
	2		0.840	0.913	0.940
	3			0.897	0.941
	4				0.944
HS SS	1	n/a	n/a	n/a	n/a
	2		n/a	n/a	n/a
	3			n/a	n/a
	4				n/a
HS Sci	1	0.775	0.787	0.840	0.903
	2		0.810	0.866	0.917
	3			0.898	0.942
	4				0.939

Table 55. Number of Items Field Tested

	Grade 4	Grade 7	Grade 5	Grade 8	HS SS	HS Sci
Number of Field Test Forms	6	6	16	16	n/a	16
Number of Items Field Tested	52	71	124	121	n/a	115

Table 56. Data Review Outcomes

	Grade 4	Grade 7	Grade 5	Grade 8	HS Social Studies	HS Science
Number of Items Field Tested	52	71	124	121	n/a	115
Number of Items Flagged and Reviewed	14	18	37	42	n/a	63
Data Review Outcome					n/a	
• Accept	10	17	29	31	n/a	59
• Reject	2	0	8	11	n/a	13
• Revise and Re-Field Test	2	1	0	0	n/a	0