Chapter 9

BRT

08-26-2020

Fairness and Accessibility

As noted in the Standards for Educational and Psychological Testing, Standard 3.3 specifies that "Those responsible for test development should include relevant subgroups in validity, reliability/precision, and other preliminary studies used when constructing the test" (p. 64). This argument is expanded to include reporting outcomes by relevant subgroups, noting however, that "subgroup differences do not in and of themselves indicate lack of fairness, but such differences should trigger follow-up studies, where feasible, to identify the potential causes of such differences" (p. 65). American Educational Research Association, American Psychological Association, National Council on Measurement in Education (2014). Standards for Educational and Psychological Testing. Washington, DC: Authors. This evaluation was completed by comparing the performance (by subject area, grade level, and Tier) for the following student groups: (a) sex, (b) race-ethnicity, (c) (Limited) English Proficiency, (d) disability, and (e) free-reduced price lunch. This evaluation involved comparing student counts and average differences (using the mean relative to the standard deviation). The tables are displayed in an appendix.

English Language Arts

Gender

Few differences were reported by gender. Most of the student counts, averages, and standard deviations were similar for males and females. In Tier 2, slight difference (half a standard deviation) were present in the earlier (elementary) grades.

Grade	Tier	Cohen's D (Female - Male)
3	1	0.17
3	2	-0.42
4	1	-0.02
4	2	-0.25
5	1	-0.06
5	2	-0.19
6	1	0.07
6	2	0.05
7	1	0.00
7	2	-0.08
8	1	0.02
8	2	-0.14
11	1	-0.03
11	2	0.13

Limited English Proficiency

With Limited English Proficiency (coded as No versus Yes) within Tiers and grade levels, few differences were apparent in averages and standard deviations. On the other hand, as expected, great differences were present in the number of students (count) in these two groups.

Grade	Tier	Cohen's D (No - Yes)
3	1	-0.08
3	2	0.05
4	1	0.06
4	2	0.05
5	1	-0.02
5	2	0.47
6	1	-0.11
6	2	0.50
7	1	-0.26
7	2	0.36
8	1	0.06
8	2	0.26
11	1	0.05
11	2	0.66

Economically Disadvantaged

For the analyses comparing students receiving free and reduced price lunch, slightly higher performances were present for those not receiving such support; this was true across grades and as well as Tiers.

Grade	Tier	Cohen's D (No - Yes)
3	1	-0.23
3	2	-0.18
4	1	-0.44
4	2	-0.23
5	1	-0.42
5	2	-0.10
6	1	-0.42
6	2	-0.31
7	1	-0.35
7	2	-0.31
8	1	-0.26
8	2	-0.24
11	1	-0.22
11	2	-0.24

Disability

Like race-ethnicity (which had many different coded values), the analysis by disability resulted in great variation in counts, averages, and standard deviations. The two most present disabilities were Autism and Intellectual Disabilities, with Multiple Disabilities also quite prominent. This was true for both Tiers

and across grade levels. Please see the appendix for descriptive statistics (counts, means, and standard deviations).

Ethnicity

When comparing the performance of students from different racial and ethnic groups, across the grade levels and Tiers, considerable variation was present in all aspects of count (number of students), averages, and standard deviations. Please see the appendix for descriptive statistics (counts, means, and standard deviations).

Mathematics

Gender

We found more males participating in the PASA than females, sometimes double the number. This was true across grades and Tiers. Furthermore, performance differences were slightly greater for males than females, across grades and Tiers. Both males and females had similar variance (standard deviations).

Grade	Tier	Cohen's D (Female - Male)
3	1	0.01
3	2	-0.61
4	1	-0.17
4	2	-0.48
5	1	-0.13
5	2	-0.41
6	1	-0.05
6	2	-0.26
7	1	-0.12
7	2	-0.18
8	1	-0.06
8	2	-0.18
11	1	0.03
11	2	-0.11

Limited English Proficiency

Limited English Proficient students, though fewer than the number of students deemed proficient, performed equally as well to those proficient, in all grades and Tiers; the variance in these two groups was comparable.

Grade	Tier	Cohen's D (No - Yes)
3	1	0.04
3	2	-0.34
4	1	-0.01
4	2	0.00
5	1	-0.14
5	2	-0.03
6	1	-0.15
6	2	-0.04
7	1	-0.17
7	2	0.07
8	1	-0.06
8	2	-0.23
11	1	-0.01
11	2	-0.15

Economically Disadvantaged

Students receiving free and reduced price lunch performed comparably to students who did not receive such support. The count of students in both groups was much greater in Tier 1. Though fewer in number (by half), the averages and standard deviations were quite similar with those receiving support often a bit higher (by a half standard deviation).

Grade	Tier	Cohen's D (No - Yes)
3	1	-0.18
3	2	-0.18
4	1	-0.30
4	2	-0.11
5	1	-0.40
5	2	-0.09
6	1	-0.40
6	2	-0.23
7	1	-0.40
7	2	-0.16
8	1	-0.21
8	2	-0.09
11	1	-0.16
11	2	-0.22

Ethnicity

The largest group of students were White, followed by Black/African American, and finally Hispanic students. This was true for all grades and Tiers. Wide variation existed in both the averages and standard deviations. Please see the appendix for descriptive statistics (counts, means, and standard deviations).

Disability

The largest group of students were with Intellectual Disabilities or Autism, followed by Multiple Disabilities. Great variation was present in averages and standard divisions. Many disabilities had very few students participating in the PASA. Please see the appendix for descriptive statistics (counts, means, and standard deviations).

Science

Gender

In most grades and Tiers, far more males than females participated in the Science PASA and for both groups, more students took Tier 2 than Tier 1. Their performance (averages and standard deviations) were comparable.

Grade	Tier	Cohen's D (Female - Male)
4	1	0.20
4	2	-0.21
8	1	-0.01
8	2	-0.32
11	1	0.20
11	2	-0.12

Limited English Proficiency

The number of students with Limited English Proficiency was fairly small and much less than those with English proficiency. Both groups performed comparably (in averages and standard deviations) across the grades and Tiers.

Grade	Tier	Cohen's D (No - Yes)
4	1	-0.16
4	2	0.28
8	1	0.08
8	2	0.25
11	1	-0.02
11	2	0.30

Ethnicity

The count was greatest with White, then Black-African American, and Hispanic students. Values (averages and standard deviations) were slightly varied across the grades and Tiers but not as much as in ELA and Mathematics. Please see the appendix for descriptive statistics (counts, means, and standard deviations).

Disability

As in ELA and Mathematics, the count of students was greatest with Autism and Intellectual Disabilities. Performance was somewhat varied (in averaged and standard deviations) across the grades and Tiers. Some

disability areas were represented with only a few students, making it difficult to generalize. Please see the appendix for descriptive statistics (counts, means, and standard deviations).

Appendix

Note - cell sizes less than 5 not reported.

English/Language Arts

Gender

Grade 3 Tier 1

Group	n	mean	sd
Female	407	293.15	52.92
Male	937	284.23	51.85

Grade 3 Tier 2

Group	n	mean	sd
Female	59	524.86	48.00
Male	142	544.40	43.99

Grade 4 Tier 1

Group	n	mean	sd
Female	416	307.53	54.63
Male	915	308.84	51.21

Grade 4 Tier 2

Group	n	mean	sd
Female	91	558.29	34.88
Male	185	567.11	35.10

Grade 5 Tier 1

Group	n	mean	sd
Female	343	288.50	40.22
Male	734	290.87	38.93

Grade 5 Tier 2

Group	n	mean	sd
Female	141	516.19	42.82
Male	359	524.44	43.05

Grade 6 Tier 1

Group	n	mean	sd
Female	312	308.44	56.66
Male	673	304.46	56.95

Grade 6 Tier 2

Group	n	mean	sd
Female	171	548.92	40.25
Male	405	546.98	42.09

Grade 7 Tier 1

Group	n	mean	sd
Female	299	303.40	54.55
Male	579	303.47	55.70

Grade 7 Tier 2

Group	n	mean	sd
Female	235	535.27	36.80
Male	516	538.25	38.95

Grade 8 Tier 1

Group	n	mean	sd
Female	270	300.86	23.23
Male	488	300.41	24.02

Grade 8 Tier 2

Group	n	mean	sd
Female	237	515.34	44.56
Male	506	521.86	47.54

Grade 11 Tier 1

Group	n	mean	sd
Female	199	286.13	49.87
Male	435	287.72	50.58

Grade 11 Tier 2

Group	n	mean	sd
Female	156	554.76	41.72
Male	316	549.44	42.98

Limited English Proficient

Grade 3 Tier 1

Group	n	mean	sd
No	1256	286.66	52.19
Yes	88	290.74	54.29

Grade 3 Tier 2

Group	n	mean	sd
No	189	538.80	46.60
Yes	12	536.58	35.78

Grade 4 Tier 1

Group	n	mean	sd
No	1240	308.63	52.45
Yes	91	305.69	50.20

Grade 4 Tier 2

Group	n	mean	sd
No	263	564.28	35.31
Yes	13	562.62	34.40

Grade 5 Tier 1

Group	n	mean	sd
No	1000	290.06	39.47
Yes	77	290.78	37.87

Grade 5 Tier 2

Group	n	mean	sd
No	474	523.03	43.51
Yes	26	505.46	30.82

Grade 6 Tier 1

Group	n	mean	sd
No	915	305.31	57.42
Yes	70	311.11	49.02

Grade 6 Tier 2

Group	n	mean	sd
No	551	548.44	41.44
Yes	25	528.04	39.39

Grade 7 Tier 1

Group	n	mean	sd
No	811	302.38	55.49
Yes	67	316.36	51.23

Grade 7 Tier 2

Group	n	mean	sd
No	714	537.94	38.55
Yes	37	525.41	30.98

Grade 8 Tier 1

Group	n	mean	sd
No	697	300.69	23.77
Yes	61	299.23	23.35

Grade 8 Tier 2

Group	n	mean	sd
No	707	520.38	46.52
Yes	36	508.03	48.88

Grade 11 Tier 1

Group	n	mean	sd
No	588	287.39	50.70
Yes	46	285.09	45.73

Grade 11 Tier 2

Group	n	mean	sd
No	453	552.36	42.12
Yes	19	523.58	45.63

Economically Disadvantaged

Grade 3 Tier 1

Group	n	mean	sd
NO	531	279.75	49.91
YES	813	291.62	53.35

Grade 3 Tier 2

Group	n	mean	sd
NO	70	533.30	44.92
YES	131	541.53	46.42

Grade 4 Tier 1

Group	n	mean	sd
NO	480	294.03	51.68
YES	851	316.55	50.89

Grade 4 Tier 2

Group	n	mean	sd
NO	95	558.93	37.65
YES	181	566.97	33.64

Grade 5 Tier 1

Group	n	mean	sd
NO	370	279.46	38.88
YES	707	295.69	38.44

Grade 5 Tier 2

Group	n	mean	sd
NO	156	519.08	47.05
YES	344	523.49	41.19

Grade 6 Tier 1

Group	n	mean	sd
NO	360	290.91	54.34
YES	625	314.25	56.57

Grade 6 Tier 2

Group	n	mean	sd
NO	188	538.87	44.60
YES	388	551.76	39.32

Grade 7 Tier 1

Group	n	mean	sd
NO	327	291.44	53.41
YES	551	310.57	55.18

Grade 7 Tier 2

Group	n	mean	sd
NO	241	529.24	40.22
YES	510	541.14	36.77

Grade 8 Tier 1

Group	n	mean	sd
NO	299	296.90	21.93
YES	459	302.96	24.56

Grade 8 Tier 2

Group	n	mean	sd
NO	289	512.91	47.88
YES	454	524.15	45.41

Grade 11 Tier 1

Group	n	mean	sd
NO	244	280.40	48.95
YES	390	291.49	50.76

Grade 11 Tier 2

Group	n	mean	sd
NO	156	544.23	45.61
YES	316	554.64	40.66

Disability

Grade 3 Tier 1

Group	n	mean	sd
AUT	617	278.11	50.00
DB	4	NA	NA
DEF	2	NA	NA
ED	11	332.45	49.18
ID	461	298.30	45.58
LD	40	346.20	30.79
MUL	107	241.34	47.78
OHI	81	319.52	48.71
SL	7	326.29	38.66
TBI	6	292.67	65.10
VI	8	219.62	37.39

Grade 3 Tier 2

Group	n	mean	sd
AUT	100	546.82	46.33
DB	1	NA	NA
DEF	1	NA	NA
ED	1	NA	NA
ID	61	524.34	40.07
LD	15	559.27	45.28
MUL	2	NA	NA
OHI	18	529.17	48.84
SL	1	NA	NA
TBI	1	NA	NA

Grade 4 Tier 1

Group	n	mean	sd
AUT	544	299.33	52.97
DB	1	NA	NA
DEF	4	NA	NA
ED	2	NA	NA
ID	540	320.84	45.42
LD	49	357.84	26.24
MUL	105	261.66	46.86
OHI	66	331.23	42.88
ORT	5	317.20	22.19
SL	4	NA	NA
TBI	6	285.50	44.90
VI	5	210.20	22.81

Grade 4 Tier 2

Group	n	mean	sd
AUT	111	562.67	40.51
ED	7	570.86	32.98
ID	98	560.87	32.24
LD	24	575.17	28.29
MUL	1	NA	NA
OHI	29	571.59	27.54
ORT	2	NA	NA
SL	4	NA	NA

Grade 5 Tier 1

Group	n	mean	sd
AUT	411	286.24	38.49
DB	2	NA	NA
DEF	2	NA	NA
ED	13	317.85	29.98
ID	436	299.80	31.64
LD	29	329.69	17.15
MUL	112	251.50	43.09
OHI	60	302.53	30.78
TBI	4	NA	NA
VI	8	227.88	36.00

Grade 5 Tier 2

Group	n	mean	sd
AUT	231	522.16	46.35
DB	1	NA	NA
ED	11	531.64	26.36
ID	167	519.14	39.94
LD	28	540.36	33.58
MUL	9	486.44	44.44
OHI	46	526.85	40.28
SL	1	NA	NA
TBI	5	509.80	47.12
VI	1	NA	NA

Grade 6 Tier 1

Group	n	mean	sd
AUT	383	293.12	51.17
DB	2	NA	NA
DEF	12	305.92	31.05
ED	9	363.11	30.98
ID	410	322.15	50.95
LD	32	369.41	34.23
MUL	88	245.08	48.92
OHI	37	340.92	51.51
ORT	3	NA	NA
SL	2	NA	NA
TBI	1	NA	NA
VI	6	248.33	64.35

Grade 6 Tier 2

Group	n	mean	sd
AUT	215	542.05	46.31
DEF	5	504.20	38.59
ED	11	548.73	48.41
ID	230	545.60	37.46
LD	54	569.59	32.80
MUL	8	554.25	49.85
OHI	44	555.98	34.13
ORT	3	NA	NA
SL	2	NA	NA
TBI	3	NA	NA
VI	1	NA	NA

Grade 7 Tier 1

Group	n	mean	sd
AUT	302	290.76	48.33
DB	1	NA	NA
DEF	8	284.25	67.46
ED	9	350.78	27.12
ID	382	320.47	49.18
LD	20	380.05	17.93
MUL	97	249.48	48.17
OHI	40	332.30	41.25
ORT	3	NA	NA
SL	2	NA	NA
TBI	7	281.71	61.67
VI	7	238.43	72.78

Grade 7 Tier 2

Group	n	mean	sd
AUT	277	535.16	41.07
DEF	4	NA	NA
ED	11	550.27	38.45
ID	312	535.55	35.42
LD	66	553.53	28.43
MUL	6	514.50	26.52
OHI	63	538.33	38.37
SL	4	NA	NA
TBI	5	575.60	11.24
VI	3	NA	NA

Grade 8 Tier 1

Group	n	mean	sd
AUT	268	297.36	22.86
DB	1	NA	NA
DEF	3	NA	NA
ED	8	327.75	13.26
ID	344	306.01	20.77
LD	10	332.90	9.34
MUL	83	280.18	22.88
OHI	25	311.72	18.81
ORT	2	NA	NA
SL	2	NA	NA
TBI	3	NA	NA
VI	9	281.00	33.37

Grade 8 Tier 2

Group	n	mean	sd
AUT	249	516.31	49.23
DEF	4	NA	NA
ED	14	538.79	42.16
ID	326	515.40	44.81
LD	70	543.94	38.36
MUL	13	494.46	67.66
OHI	56	533.88	39.52
ORT	3	NA	NA
SL	5	502.80	34.62
TBI	3	NA	NA

Grade 11 Tier 1

Group	n	mean	sd
AUT	187	271.79	46.99
DEF	1	NA	NA
ED	3	NA	NA
ID	334	298.71	44.56
LD	15	358.93	33.11
MUL	60	247.87	48.50
OHI	20	322.05	40.73
ORT	3	NA	NA
SL	1	NA	NA
TBI	2	NA	NA
VI	8	229.50	25.82

Grade 11 Tier 2

Group	n	mean	sd
AUT	127	543.80	45.69
DEF	1	NA	NA
ED	11	555.09	52.64
ID	231	548.69	42.41
LD	56	565.02	30.66
MUL	6	535.00	45.49
OHI	33	574.97	30.17
ORT	4	NA	NA
SL	3	NA	NA

Race/Ethnicity

Grade 3 Tier 1

Group	n	mean	sd
American Indian	5	278.60	51.91
Asian	59	261.00	43.79
Black or African American	322	287.30	50.66
Hispanic	188	289.70	50.25
Multiracial	76	284.74	54.82
White	694	288.51	53.58

Grade 3 Tier 2

Group	n	mean	sd
Asian	7	505.86	30.44
Black or African American	46	534.98	46.95
Hispanic	26	539.46	46.50
Multiracial	15	546.40	57.93
White	107	541.12	44.18

Grade 4 Tier 1

Group	n	mean	sd
American Indian	2	NA	NA
Asian	47	294.89	56.71
Black or African American	362	308.86	49.50
Hispanic	202	306.23	54.20
Multiracial	91	304.22	54.72
White	627	310.32	52.45

Grade 4 Tier 2

Group	n	mean	sd
American Indian	1	NA	NA
Asian	7	550.00	29.17
Black or African American	56	560.88	36.17
Hispanic	34	557.53	39.25
Multiracial	13	583.62	23.95
White	165	565.56	34.58

Grade 5 Tier 1

Group	n	mean	sd
American Indian	4	NA	NA
Asian	37	280.65	33.53
Black or African American	290	293.78	37.05
Hispanic	162	293.83	38.75
Multiracial	64	277.91	37.26
White	520	289.37	40.94

Grade 5 Tier 2

Group	n	mean	sd
American Indian	1	NA	NA
Asian	13	502.46	43.06
Black or African American	130	524.17	41.03
Hispanic	66	517.17	43.49
Multiracial	28	527.89	41.84
White	262	522.66	44.17

Grade 6 Tier 1

Group	n	mean	sd
Asian	26	285.85	45.40
Black or African American	233	307.85	56.70
Hispanic	163	307.98	56.09
Multiracial	55	309.85	54.92
White	508	304.59	57.87

Grade 6 Tier 2

Group	n	mean	sd
American Indian	1	NA	NA
Asian	11	515.09	36.18
Black or African American	151	546.41	41.00
Hispanic	71	543.08	43.97
Multiracial	31	546.84	43.66
White	311	550.55	40.71

Grade 7 Tier 1

Group	n	mean	sd
American Indian	1	NA	NA
Asian	29	303.86	59.96
Black or African American	223	310.53	55.94
Hispanic	118	302.01	58.41
Multiracial	53	301.92	53.05
White	454	300.43	54.03

Grade 7 Tier 2

Group	n	mean	sd
Asian	12	514.50	34.46
Black or African American	185	536.74	34.27
Hispanic	97	535.19	39.01
Multiracial	44	536.80	48.01
White	413	538.80	38.71

Grade 8 Tier 1

Group	n	mean	sd
Asian	27	296.67	20.22
Black or African American	185	304.81	24.83
Hispanic	120	301.90	22.15
Multiracial	32	292.66	22.44
White	394	299.08	23.73

Grade 8 Tier 2

Group	n	mean	sd
American Indian	2	NA	NA
Asian	19	508.21	48.25
Black or African American	185	518.22	47.80
Hispanic	72	513.64	50.15
Multiracial	32	510.34	42.77
White	433	522.91	45.68

Grade 11 Tier 1

Group	n	mean	sd
Asian	28	264.82	47.82
Black or African American	136	288.93	47.71
Hispanic	63	286.25	47.75
Multiracial	22	306.32	51.05
White	385	287.31	51.43

Grade 11 Tier 2

Group	n	mean	sd
American Indian	2	NA	NA
Asian	7	530.29	41.54
Black or African American	90	553.57	40.39
Hispanic	42	539.64	45.80
Multiracial	16	578.19	27.79
White	315	551.27	42.91

Mathematics

Gender

Grade 3 Tier 1

Group	n	mean	sd
Female	386	352.83	13.26
Male	862	352.75	13.52

Grade 3 Tier 2

Group	n	mean	sd
Female	56	516.88	45.01
Male	135	544.87	46.36

Grade 4 Tier 1

Group	n	mean	sd
Female	392	300.43	39.29
Male	835	307.19	39.92

Grade 4 Tier 2

Group	n	mean	sd
Female	93	527.38	44.95
Male	183	549.77	47.90

Grade 5 Tier 1

Group	n	mean	sd
Female	324	290.69	50.80
Male	691	297.23	51.07

Grade 5 Tier 2

Group	n	mean	sd
Female	121	497.17	40.14
Male	321	514.23	43.37

Grade 6 Tier 1

Group	n	mean	sd
Female	307	288.84	49.57
Male	615	291.43	51.24

Grade 6 Tier 2

Group	n	mean	sd
Female	146	523.55	54.36
Male	361	537.40	50.09

Grade 7 Tier 1

Group	n	mean	sd
Female	300	283.58	50.80
Male	578	289.74	54.25

Grade 7 Tier 2

Group	n	mean	sd
Female	198	522.50	44.82
Male	430	530.51	46.59

Grade 8 Tier 1

Group	n	mean	sd
Female	260	340.41	8.72
Male	449	340.98	9.31

Grade 8 Tier 2

Group	n	mean	sd
Female	209	499.93	26.39
Male	451	504.75	26.05

Grade 11 Tier 1

Group	n	mean	sd
Female	198	342.42	11.06
Male	411	342.10	10.58

Grade 11 Tier 2

Group	n	mean	sd
Female	140	533.99	34.10
Male	288	537.82	32.48

Limited English Proficient

Grade 3 Tier 1

Group	n	mean	sd
No	1167	352.81	13.51
Yes	81	352.23	12.32

Grade 3 Tier 2

Group	n	mean	sd
No	178	535.67	48.15
Yes	13	550.23	38.12

Grade 4 Tier 1

Group	n	mean	sd
No	1141	305.01	40.05
Yes	86	305.28	37.02

Grade 4 Tier 2

Group	n	mean	sd
No	260	542.22	48.61
Yes	16	542.31	38.70

Grade 5 Tier 1

Group	n	mean	sd
No	949	294.70	51.21
Yes	66	301.53	48.58

Grade 5 Tier 2

Group	n	mean	sd
No	418	509.48	43.11
Yes	24	510.88	44.65

Grade 6 Tier 1

Group	n	mean	sd
No	861	290.09	50.86
Yes	61	297.31	47.93

Grade 6 Tier 2

Group	n	mean	sd
No	484	533.32	51.87
Yes	23	535.30	48.64

Grade 7 Tier 1

Group	n	mean	sd
No	813	286.96	53.31
Yes	65	296.02	50.71

Grade 7 Tier 2

Group	n	mean	sd
No	595	528.16	46.14
Yes	33	524.85	47.14

Grade 8 Tier 1

Group	n	mean	sd
No	657	340.73	9.1
Yes	52	341.27	9.1

Grade 8 Tier 2

Group	n	mean	sd
No	628	502.91	26.08
Yes	32	509.31	28.85

Grade 11 Tier 1

Group	n	mean	sd
No	568	342.20	10.90
Yes	41	342.27	8.05

Grade 11 Tier 2

Group	n	mean	sd
No	408	536.34	33.11
Yes	20	541.15	31.69

Economically Disadvantaged

Grade 3 Tier 1

Group	n	mean	sd
NO	506	351.38	12.98
YES	742	353.73	13.66

Grade 3 Tier 2

Group	n	mean	sd
NO	69	531.06	48.58
YES	122	539.84	46.94

Grade 4 Tier 1

Group	n	mean	sd
NO	454	297.52	39.60
YES	773	309.44	39.33

Grade 4 Tier 2

Group	n	mean	sd
NO	91	538.56	48.09
YES	185	544.02	48.03

Grade 5 Tier 1

Group	n	mean	sd
NO	348	281.91	48.83
YES	667	302.04	50.86

Grade 5 Tier 2

Group	n	mean	sd
NO	139	506.94	47.87
YES	303	510.76	40.82

Grade 6 Tier 1

Group	n	mean	sd
NO	347	278.18	48.78
YES	575	298.04	50.38

Grade 6 Tier 2

Group	n	mean	sd
NO	158	525.15	55.87
YES	349	537.15	49.30

Grade 7 Tier 1

Group	n	mean	sd
NO	315	274.58	48.37
YES	563	294.93	54.33

Grade 7 Tier 2

Group	n	mean	sd
NO	217	523.16	45.39
YES	411	530.54	46.41

Grade 8 Tier 1

Group	n	mean	sd
NO	281	339.64	8.61
YES	428	341.52	9.33

Grade 8 Tier 2

Group	n	mean	sd
NO	261	501.79	27.94
YES	399	504.16	25.04

Grade 11 Tier 1

Group	n	mean	sd
NO	238	341.14	10.72
YES	371	342.89	10.69

Grade 11 Tier 2

Group	n	mean	sd
NO	138	531.51	35.58
YES	290	538.98	31.52

Disability

Grade 3 Tier 1

Group	n	mean	sd
AUT	566	352.49	13.45
DB	4	NA	NA
DEF	2	NA	NA
ED	5	356.60	9.21
ID	437	354.77	10.42
LD	38	365.61	7.81
MUL	99	337.61	14.23
OHI	78	358.86	11.97
SL	5	362.60	7.02
TBI	6	349.67	16.54
VI	8	331.62	10.95

Grade 3 Tier 2

Group	n	mean	sd
AUT	96	549.41	45.87
DEF	1	NA	NA
ED	2	NA	NA
ID	55	511.04	40.30
LD	16	567.38	40.04
MUL	2	NA	NA
OHI	17	521.12	46.26
SL	1	NA	NA
TBI	1	NA	NA

Grade 4 Tier 1

Group	n	mean	sd
AUT	498	301.52	40.81
DB	1	NA	NA
DEF	4	NA	NA
ED	2	NA	NA
ID	498	312.71	34.64
LD	47	333.43	24.82
MUL	97	265.52	35.16
OHI	62	318.61	34.42
ORT	6	311.67	29.19
SL	2	NA	NA
TBI	5	295.40	47.57
VI	5	224.40	21.02

Grade 4 Tier 2

Group	n	mean	sd
AUT	108	549.27	50.92
ED	6	560.67	47.90
ID	95	530.33	43.93
LD	26	557.77	38.36
MUL	2	NA	NA
OHI	34	542.50	47.96
ORT	1	NA	NA
SL	4	NA	NA

Grade 5 Tier 1

Group	n	mean	sd
AUT	387	297.30	54.48
DB	2	NA	NA
DEF	2	NA	NA
ED	13	323.77	40.87
ID	407	301.59	42.11
LD	22	347.27	42.26
MUL	109	251.74	46.15
OHI	60	301.43	45.07
TBI	5	304.60	38.52
VI	8	229.25	40.54

Grade 5 Tier 2

Group	n	mean	sd
AUT	200	515.78	46.96
DB	1	NA	NA
DEF	1	NA	NA
ED	11	501.18	26.48
ID	151	497.95	36.03
LD	34	530.91	40.65
MUL	4	NA	NA
OHI	34	514.74	40.99
SL	1	NA	NA
TBI	4	NA	NA
VI	1	NA	NA

Grade 6 Tier 1

Group	n	mean	sd
AUT	352	289.00	49.50
DB	2	NA	NA
DEF	9	300.11	34.26
ED	8	335.00	37.97
ID	383	296.39	44.78
LD	33	342.00	41.79
MUL	86	233.66	35.02
OHI	39	325.62	43.80
ORT	2	NA	NA
SL	2	NA	NA
TBI	1	NA	NA
VI	5	250.20	63.97

Grade 6 Tier 2

Group	n	mean	sd
AUT	189	544.95	49.89
DEF	5	539.60	45.98
ED	9	517.56	64.76
ID	196	520.76	51.52
LD	51	544.12	40.51
MUL	6	507.17	65.17
OHI	41	540.44	50.32
ORT	3	NA	NA
SL	2	NA	NA
TBI	3	NA	NA
VI	2	NA	NA

Grade 7 Tier 1

Group	n	mean	sd
AUT	298	285.78	52.94
DB	1	NA	NA
DEF	9	300.33	74.60
ED	10	314.60	32.18
ID	384	297.86	48.73
LD	19	346.21	39.55
MUL	96	238.47	41.72
OHI	45	298.98	43.74
ORT	2	NA	NA
SL	1	NA	NA
TBI	7	254.86	42.14
VI	6	217.00	19.30

Grade 7 Tier 2

Group	n	mean	sd
AUT	235	534.02	47.69
DEF	4	NA	NA
ED	8	573.50	26.54
ID	248	514.73	42.62
LD	65	545.72	38.44
MUL	5	496.40	61.03
OHI	50	532.34	42.93
SL	5	540.20	50.20
TBI	5	572.00	22.09
VI	3	NA	NA

Grade 8 Tier 1

Group	n	mean	sd
AUT	240	340.01	8.73
DB	1	NA	NA
DEF	3	NA	NA
ED	11	349.82	6.85
ID	329	342.25	7.98
LD	11	352.82	7.68
MUL	76	333.72	9.57
OHI	23	343.52	6.90
ORT	2	NA	NA
SL	2	NA	NA
TBI	3	NA	NA
VI	8	328.62	10.18

Grade 8 Tier 2

Group	n	mean	sd
AUT	227	506.48	27.14
DEF	4	NA	NA
ED	9	496.11	15.37
ID	284	499.72	25.61
LD	62	513.32	24.59
MUL	10	491.30	26.30
OHI	53	501.85	26.08
ORT	3	NA	NA
SL	5	493.60	27.29
TBI	3	NA	NA

Grade 11 Tier 1

Group	n	mean	sd
AUT	171	340.53	10.09
ED	3	NA	NA
ID	332	344.26	9.07
LD	15	354.33	6.86
MUL	54	330.87	11.26
OHI	20	350.20	9.24
ORT	4	NA	NA
SL	1	NA	NA
TBI	3	NA	NA
VI	6	326.00	10.71

Grade 11 Tier 2

Group	n	mean	sd
AUT	117	539.49	35.65
DEF	1	NA	NA
ED	8	520.88	30.02
ID	205	531.72	31.97
LD	54	545.94	25.14
MUL	6	516.33	9.31
OHI	31	551.81	38.43
ORT	3	NA	NA
SL	3	NA	NA

Race/Ethnicity

Grade 3 Tier 1

Group	n	mean	sd
American Indian	5	348.40	18.37
Asian	50	349.06	13.70
Black or African American	286	353.26	12.73
Hispanic	180	352.62	12.92
Multiracial	72	351.21	14.23
White	655	353.09	13.71

Grade 3 Tier 2

Group	n	mean	sd
Asian	9	530.33	34.05
Black or African American	42	522.52	48.34
Hispanic	25	537.56	51.66
Multiracial	14	544.50	52.51
White	101	541.80	46.17

Grade 4 Tier 1

Group	n	mean	sd
American Indian	1	NA	NA
Asian	43	301.19	44.45
Black or African American	309	306.07	39.41
Hispanic	201	304.63	39.87
Multiracial	78	298.87	43.22
White	595	305.61	39.23

Grade 4 Tier 2

Group	n	mean	sd
American Indian	1	NA	NA
Asian	9	547.78	37.66
Black or African American	61	540.51	46.28
Hispanic	35	539.17	49.17
Multiracial	15	532.07	58.70
White	155	544.15	48.41

Grade 5 Tier 1

Group	n	mean	sd
American Indian	5	268.20	47.13
Asian	31	293.03	56.68
Black or African American	263	298.25	49.34
Hispanic	157	300.20	51.38
Multiracial	60	288.05	51.71
White	499	293.16	51.38

Grade 5 Tier 2

Group	n	mean	sd
Asian	14	533.57	45.70
Black or African American	107	514.51	45.43
Hispanic	55	510.36	41.40
Multiracial	26	511.00	41.35
White	240	505.61	42.17

Grade 6 Tier 1

Group	n	mean	sd
Asian	24	287.46	45.85
Black or African American	226	296.68	50.09
Hispanic	133	291.88	50.71
Multiracial	51	286.06	48.72
White	488	288.00	51.29

Grade 6 Tier 2

Group	n	mean	sd
American Indian	1	NA	NA
Asian	11	548.45	51.32
Black or African American	119	533.83	52.96
Hispanic	68	534.56	46.51
Multiracial	26	534.23	64.98
White	282	532.14	51.27

Grade 7 Tier 1

Group	n	mean	sd
American Indian	1	NA	NA
Asian	29	284.41	48.97
Black or African American	221	291.93	52.22
Hispanic	124	289.40	58.11
Multiracial	50	294.66	55.86
White	453	284.41	52.14

Grade 7 Tier 2

Group	n	mean	sd
Asian	11	528.18	55.38
Black or African American	154	523.78	46.47
Hispanic	79	527.06	44.41
Multiracial	31	524.13	44.93
White	353	530.36	46.32

Grade 8 Tier 1

Group	n	mean	sd
Asian	24	338.12	8.15
Black or African American	181	342.34	9.52
Hispanic	103	341.07	8.62
Multiracial	32	340.75	9.04
White	369	340.09	9.00

Grade 8 Tier 2

Group	n	mean	sd
American Indian	2	NA	NA
Asian	19	507.84	30.15
Black or African American	153	504.63	26.66
Hispanic	66	511.20	21.78
Multiracial	28	494.71	21.42
White	392	501.75	26.65

Grade 11 Tier 1

Group	n	mean	sd
American Indian	1	NA	NA
Asian	27	337.22	12.29
Black or African American	123	342.24	9.85
Hispanic	58	342.79	8.53
Multiracial	23	343.57	11.70
White	377	342.39	11.10

Grade 11 Tier 2

Group	n	mean	sd
American Indian	1	NA	NA
Asian	5	548.00	49.74
Black or African American	80	537.14	31.00
Hispanic	40	539.28	33.74
Multiracial	12	545.00	29.33
White	290	535.34	33.38

Science

Gender

Grade 4 Tier 1

Group	n	mean	sd
Female	142	294.27	17.79
Male	353	290.65	17.62

Grade 4 Tier 2

Group	n	mean	sd
Female	267	491.99	28.43
Male	574	497.89	27.60

Grade 8 Tier 1

Group	n	mean	sd
Female	133	270.26	32.93
Male	227	270.60	33.24

Grade 8 Tier 2

Group	n	mean	sd
Female	300	493.89	43.33
Male	593	508.26	46.40

Grade 11 Tier 1

Group	n	mean	sd
Female	94	316.69	27.34
Male	176	311.30	27.40

Grade 11 Tier 2

Group	n	mean	sd
Female	218	512.19	38.76
Male	488	516.80	40.93

Limited English Proficient

Grade 4 Tier 1

Group	n	mean	sd
No	466	291.53	17.78
Yes	29	294.28	16.87

Grade 4 Tier 2

Group	n	mean	sd
No	784	496.56	27.84
Yes	57	488.56	29.17

Grade 8 Tier 1

Group	n	mean	sd
No	337	270.64	32.97
Yes	23	268.00	35.34

Grade 8 Tier 2

Group	n	mean	sd
No	840	504.13	45.55
Yes	53	492.38	49.90

Grade 11 Tier 1

Group	n	mean	sd
No	250	313.13	27.37
Yes	20	313.75	29.18

Grade 11 Tier 2

Group	n	mean	sd
No	666	516.11	39.97
Yes	40	503.25	44.26

Economically Disadvantaged

Grade 4 Tier 1

Group	n	mean	sd
NA	495	291.69	17.73

Grade 4 Tier 2

Group	n	mean	sd
NA	841	496.02	27.99

Grade 8 Tier 1

Group	n	mean	sd
NA	360	270.48	33.08

Grade 8 Tier 2

Group	n	mean	sd
NA	893	503.43	45.87

Grade 11 Tier 1

Group	n	mean	sd
NA	270	313.17	27.45

Grade 11 Tier 2

Group	n	mean	sd
NA	706	515.38	40.3

Disability

Grade 4 Tier 1

Group	n	mean	sd
AUT	233	287.83	17.33
DB	1	NA	NA
DEF	3	NA	NA
ID	175	296.77	17.21
LD	2	NA	NA
MUL	58	287.64	16.73
OHI	16	302.88	13.78
ORT	2	NA	NA
TBI	4	NA	NA
VI	1	NA	NA

Grade 4 Tier 2

Group	n	mean	sd
AUT	300	494.37	31.12
ED	8	514.12	27.11
ID	379	495.20	26.07
LD	65	506.14	24.59
MUL	8	482.38	27.15
OHI	71	497.66	26.14
ORT	4	NA	NA
SL	5	501.00	14.95
TBI	1	NA	NA

Grade 8 Tier 1

Group	n	mean	sd
AUT	139	266.50	31.62
DEF	3	NA	NA
ED	3	NA	NA
ID	157	274.99	32.87
LD	4	NA	NA
MUL	39	250.97	29.28
OHI	10	293.70	20.61
SL	1	NA	NA
TBI	2	NA	NA
VI	2	NA	NA

Grade 8 Tier 2

Group	n	mean	sd
AUT	280	503.47	48.05
DEF	3	NA	NA
ED	16	529.50	48.00
ID	427	497.70	43.45
LD	69	532.91	38.68
MUL	17	480.12	56.50
OHI	66	510.30	42.01
ORT	5	515.80	33.00
SL	6	474.50	50.50
TBI	2	NA	NA
VI	2	NA	NA

Grade 11 Tier 1

Group	n	mean	sd
AUT	95	309.56	25.28
DEF	1	NA	NA
ED	1	NA	NA
ID	139	317.11	27.38
MUL	24	300.33	29.47
OHI	5	323.60	33.13
ORT	2	NA	NA
TBI	2	NA	NA
VI	1	NA	NA

Grade 11 Tier 2

Group	n	mean	sd
AUT	170	512.21	42.75
ED	9	530.89	43.61
ID	393	512.46	39.18
LD	68	535.16	34.63
MUL	14	483.07	31.25
OHI	43	532.23	34.59
ORT	3	NA	NA
SL	3	NA	NA
TBI	2	NA	NA
VI	1	NA	NA

Race/Ethnicity

Grade 4 Tier 1

Group	n	mean	sd
Asian	25	289.76	17.53
Black or African American	134	293.25	17.94
Hispanic	76	291.00	17.34
Multiracial	27	291.89	17.84
White	233	291.20	17.82

Grade 4 Tier 2

Group	n	mean	sd
American Indian	2	NA	NA
Asian	19	498.95	22.01
Black or African American	194	494.16	26.02
Hispanic	134	492.46	27.66
Multiracial	51	491.41	32.98
White	441	498.26	28.45

Grade 8 Tier 1

Group	n	mean	sd
American Indian	1	NA	NA
Asian	16	264.50	30.41
Black or African American	79	275.10	34.70
Hispanic	46	268.43	31.08
Multiracial	21	267.57	30.06
White	197	269.93	33.56

Grade 8 Tier 2

Group	n	mean	sd
American Indian	1	NA	NA
Asian	20	503.10	54.73
Black or African American	220	501.39	44.29
Hispanic	104	498.98	48.98
Multiracial	36	494.11	43.11
White	512	505.98	45.68

Grade 11 Tier 1

Group	n	mean	sd
American Indian	1	NA	NA
Asian	14	300.29	28.40
Black or African American	62	316.81	27.00
Hispanic	33	313.18	32.61
Multiracial	6	319.83	14.15
White	154	312.42	26.60

Grade 11 Tier 2

Group	n	mean	sd
American Indian	1	NA	NA
Asian	12	486.17	35.39
Black or African American	135	510.71	37.89
Hispanic	63	515.51	46.18
Multiracial	28	522.86	43.77
White	467	517.01	39.82