

APPENDIX P

CLASSICAL RELIABILITY

**Table P-1. 2016 MCAS: Subgroup Reliabilities –
ELA**

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
3	All Students	19,682	48	37.28	7.63	0.90	2.36
	Economically Disadvantaged	4,626	48	33.48	8.90	0.91	2.61
	African American	744	48	32.79	9.13	0.92	2.65
	Asian	1,555	48	39.27	6.82	0.89	2.23
	Hispanic	2,176	48	33.37	9.34	0.92	2.62
	Multi-race	798	48	37.48	7.94	0.91	2.33
	Native American	30	48	29.87	10.22	0.93	2.70
	Pacific Islander/Hawaiian	21	48	39.00	7.44	0.92	2.16
	White	14,353	48	37.90	7.01	0.89	2.32
	Female	9,749	48	38.12	7.35	0.90	2.30
	Male	9,932	48	36.46	7.81	0.90	2.41
	LEP	1,477	48	31.32	9.41	0.91	2.75
	FLEP	495	48	37.91	6.90	0.88	2.37
	LEPFLEP	1,875	48	32.83	9.39	0.92	2.66
	Plan 504	942	48	36.35	7.28	0.89	2.44
	Special Education	3,322	48	29.58	9.45	0.91	2.80
	Title I	5,328	48	33.95	8.60	0.91	2.59
4	All Students	19,556	52	36.68	7.78	0.89	2.63
	Economically Disadvantaged	4,444	52	32.68	8.71	0.90	2.81
	African American	797	52	32.71	8.78	0.90	2.84
	Asian	1,485	52	39.11	7.16	0.87	2.53
	Hispanic	2,019	52	32.54	9.06	0.90	2.85
	Multi-race	738	52	36.81	7.90	0.89	2.60
	Native American	29	52	32.62	9.55	0.92	2.71
	Pacific Islander/Hawaiian	18	52	38.67	7.50	0.89	2.50
	White	14,467	52	37.22	7.30	0.87	2.59
	Female	9,539	52	37.85	7.48	0.88	2.58
	Male	10,016	52	35.56	7.90	0.89	2.64
	LEP	1,005	52	29.19	8.98	0.89	2.98
	FLEP	832	52	36.61	7.16	0.86	2.70
	LEPFLEP	1,782	52	32.51	9.07	0.90	2.87
	Plan 504	1,121	52	35.40	7.26	0.87	2.66
	Special Education	3,555	52	28.61	8.72	0.89	2.91
	Title I	4,964	52	33.15	8.34	0.89	2.81
5	All Students	19,793	52	36.03	8.48	0.89	2.79
	Economically Disadvantaged	4,290	52	31.38	9.09	0.89	3.00
	African American	779	52	31.89	9.09	0.89	3.00
	Asian	1,510	52	39.39	7.59	0.88	2.62
	Hispanic	1,822	52	31.76	9.48	0.90	3.01
	Multi-race	666	52	36.08	8.81	0.90	2.79
	Native American	27	52	33.30	8.40	0.88	2.92
	Pacific Islander/Hawaiian	15	52	36.73	6.98	0.85	2.69
	White	14,964	52	36.44	8.11	0.88	2.76
	Female	9,529	52	37.41	8.04	0.88	2.75
	Male	10,260	52	34.76	8.67	0.90	2.79

continued

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
5	LEP	698	52	26.65	9.00	0.88	3.16
	FLEP	777	52	35.22	7.68	0.86	2.92
	LEPFLEP	1,435	52	31.15	9.40	0.89	3.06
	Plan 504	1,290	52	34.47	7.88	0.87	2.85
	Special Education	3,659	52	27.31	9.05	0.89	3.05
	Title I	3,776	52	32.19	8.67	0.88	2.98
6	All Students	20,604	52	38.02	8.52	0.89	2.79
	Economically Disadvantaged	4,102	52	33.08	9.55	0.90	3.00
	African American	791	52	33.36	9.59	0.90	2.96
	Asian	1,487	52	41.05	7.84	0.89	2.61
	Hispanic	1,832	52	33.04	9.90	0.91	3.02
	Multi-race	715	52	38.65	8.57	0.89	2.79
	Native American	35	52	32.31	11.44	0.93	3.06
	Pacific Islander/Hawaiian	30	52	37.40	8.83	0.90	2.86
	White	15,705	52	38.53	8.02	0.88	2.75
	Female	10,153	52	39.49	8.02	0.89	2.71
	Male	10,450	52	36.59	8.74	0.90	2.81
	LEP	577	52	26.49	9.39	0.88	3.20
	FLEP	499	52	35.44	8.18	0.87	2.96
	LEPFLEP	1,058	52	30.64	9.94	0.90	3.12
	Plan 504	1,461	52	36.76	7.59	0.86	2.83
Special Education	3,674	52	28.58	9.34	0.89	3.05	
Title I	3,491	52	33.69	9.06	0.89	2.98	
7	All Students	20,031	52	39.45	7.92	0.89	2.65
	Economically Disadvantaged	3,807	52	34.78	9.18	0.90	2.93
	African American	722	52	35.14	9.06	0.90	2.91
	Asian	1,469	52	42.49	6.79	0.88	2.40
	Hispanic	1,598	52	35.04	9.50	0.91	2.92
	Multi-race	616	52	39.94	8.25	0.90	2.62
	Native American	45	52	36.00	9.01	0.90	2.87
	Pacific Islander/Hawaiian	13	52	34.69	6.10	0.78	2.87
	White	15,559	52	39.81	7.51	0.88	2.62
	Female	9,779	52	41.25	6.98	0.87	2.53
	Male	10,251	52	37.73	8.37	0.90	2.70
	LEP	356	52	28.14	9.17	0.88	3.19
	FLEP	292	52	35.34	8.29	0.88	2.93
	LEPFLEP	642	52	31.38	9.47	0.89	3.09
	Plan 504	1,372	52	38.56	6.74	0.84	2.67
Special Education	3,618	52	30.45	9.07	0.89	3.07	
Title I	2,560	52	36.27	8.49	0.89	2.82	
8	All Students	20,046	52	38.34	8.67	0.90	2.75
	Economically Disadvantaged	3,878	52	33.40	9.75	0.90	3.02
	African American	831	52	33.14	9.70	0.90	3.02
	Asian	1,450	52	41.82	7.80	0.90	2.52
	Hispanic	1,628	52	33.59	9.84	0.91	3.01
	Multi-race	589	52	38.23	9.74	0.92	2.78
	Native American	34	52	35.06	8.69	0.88	2.99

continued

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
8	Pacific Islander/Hawaiian	22	52	36.23	13.08	0.95	3.00
	White	15,482	52	38.81	8.19	0.89	2.71
	Female	9,769	52	40.20	7.75	0.88	2.63
	Male	10,274	52	36.58	9.13	0.91	2.81
	LEP	383	52	26.54	9.98	0.89	3.27
	FLEP	240	52	33.13	9.45	0.89	3.07
	LEPFLEP	610	52	29.00	10.30	0.90	3.22
	Plan 504	1,439	52	37.47	7.56	0.87	2.77
	Special Education	3,660	52	28.60	9.76	0.90	3.15
	Title I	2,406	52	34.44	9.20	0.90	2.94
10	All Students	69,028	72	52.84	10.18	0.89	3.34
	Economically Disadvantaged	17,833	72	47.70	11.06	0.88	3.75
	African American	5,919	72	48.08	10.52	0.88	3.69
	Asian	4,252	72	55.92	9.75	0.90	3.12
	Hispanic	11,031	72	46.49	11.97	0.89	3.95
	Multi-race	1,759	72	53.41	10.02	0.89	3.32
	Native American	134	72	50.98	10.01	0.88	3.47
	Pacific Islander/Hawaiian	78	72	54.67	10.12	0.88	3.46
	White	45,852	72	54.67	8.78	0.87	3.11
	Female	34,226	72	54.58	9.45	0.89	3.15
	Male	34,802	72	51.13	10.57	0.89	3.46
	LEP	3,153	72	34.92	11.81	0.83	4.84
	FLEP	1,981	72	46.74	8.91	0.83	3.65
	LEPFLEP	4,886	72	39.19	12.34	0.86	4.57
	Plan 504	4,326	72	52.73	8.74	0.86	3.28
	Special Education	10,792	72	43.07	11.07	0.87	4.00
	Title I	16,421	72	47.93	10.86	0.88	3.69

Table P-2. 2016 MCAS: Subgroup Reliabilities – Mathematics

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
3	All Students	19,700	40	30.04	7.42	0.89	2.48
	Economically Disadvantaged	4,617	40	26.22	8.25	0.89	2.73
	African American	738	40	24.98	8.35	0.89	2.77
	Asian	1,561	40	33.21	6.00	0.87	2.17
	Hispanic	2,178	40	26.04	8.51	0.90	2.72
	Multi-race	801	40	30.03	7.98	0.90	2.46
	Native American	30	40	24.20	6.95	0.82	2.95
	Pacific Islander/Hawaiian	21	40	30.14	7.91	0.90	2.44
	White	14,363	40	30.58	6.93	0.88	2.45
	Female	9,749	40	29.98	7.25	0.88	2.49
	Male	9,949	40	30.10	7.59	0.89	2.47
	LEP	1,469	40	25.57	8.26	0.89	2.74
	FLEP	495	40	30.51	7.25	0.89	2.44
	LEPFLEP	1,869	40	26.75	8.36	0.90	2.68

continued

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
3	Plan 504	937	40	29.18	7.39	0.88	2.55
	Special Education	3,334	40	23.04	8.68	0.89	2.85
	Title I	5,325	40	26.79	7.94	0.88	2.71
4	All Students	19,579	54	38.76	10.22	0.91	3.14
	Economically Disadvantaged	4,456	54	33.26	10.89	0.91	3.34
	African American	795	54	31.95	10.59	0.90	3.36
	Asian	1,482	54	43.91	8.48	0.89	2.78
	Hispanic	2,026	54	32.73	11.12	0.91	3.35
	Multi-race	741	54	38.82	10.64	0.91	3.16
	Native American	29	54	36.90	10.55	0.90	3.27
	Pacific Islander/Hawaiian	19	54	37.00	11.84	0.92	3.25
	White	14,479	54	39.45	9.66	0.90	3.09
	Female	9,540	54	38.81	9.90	0.90	3.10
	Male	10,037	54	38.71	10.51	0.91	3.16
	LEP	1,007	54	30.86	10.82	0.90	3.42
	FLEP	833	54	39.00	9.26	0.89	3.07
	LEPFLEP	1,784	54	34.50	10.97	0.91	3.32
	5	Plan 504	1,123	54	37.02	9.64	0.89
Special Education		3,562	54	28.63	10.97	0.90	3.46
Title I		4,961	54	34.02	10.29	0.90	3.30
All Students		19,826	54	38.41	11.18	0.91	3.36
Economically Disadvantaged		4,310	54	31.91	11.96	0.91	3.58
African American		781	54	30.76	11.43	0.90	3.60
Asian		1,513	54	44.64	9.21	0.90	2.88
Hispanic		1,832	54	31.70	12.20	0.91	3.60
Multi-race		665	54	38.38	11.81	0.92	3.38
Native American		28	54	33.82	11.76	0.90	3.66
Pacific Islander/Hawaiian		15	54	40.40	10.49	0.91	3.09
White		14,980	54	39.02	10.59	0.90	3.31
Female		9,533	54	38.61	10.85	0.90	3.36
Male		10,291	54	38.24	11.47	0.91	3.35
LEP		703	54	27.68	11.60	0.90	3.59
FLEP	777	54	37.45	10.98	0.91	3.38	
LEPFLEP	1,440	54	32.88	12.33	0.92	3.56	
6	Plan 504	1,281	54	36.28	10.48	0.89	3.43
	Special Education	3,668	54	27.10	11.45	0.90	3.61
	Title I	3,799	54	32.83	11.25	0.90	3.55
	All Students	20,594	54	38.53	11.09	0.91	3.29
	Economically Disadvantaged	4,090	54	31.79	11.63	0.91	3.54
	African American	785	54	30.75	11.40	0.90	3.53
	Asian	1,490	54	44.74	9.03	0.91	2.75
	Hispanic	1,832	54	31.80	12.00	0.91	3.54
	Multi-race	721	54	38.61	11.89	0.92	3.34
	Native American	36	54	31.47	15.28	0.94	3.60
	Pacific Islander/Hawaiian	29	54	39.41	10.53	0.90	3.29
	White	15,688	54	39.14	10.51	0.90	3.25
	Female	10,139	54	39.40	10.49	0.91	3.21
	Male	10,454	54	37.69	11.58	0.92	3.34

continued

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
6	LEP	575	54	27.44	11.50	0.90	3.59
	FLEP	497	54	36.72	10.37	0.90	3.34
	LEPFLEP	1,055	54	31.64	11.95	0.91	3.54
	Plan 504	1,462	54	36.60	9.98	0.89	3.36
	Special Education	3,660	54	26.22	11.44	0.90	3.59
	Title I	3,489	54	33.22	11.09	0.90	3.48
7	All Students	20,018	54	36.04	12.48	0.93	3.36
	Economically Disadvantaged	3,814	54	27.88	12.84	0.93	3.51
	African American	723	54	26.63	12.41	0.92	3.54
	Asian	1,467	54	43.25	10.56	0.92	2.92
	Hispanic	1,611	54	27.98	13.26	0.93	3.52
	Multi-race	612	54	36.72	12.92	0.93	3.35
	Native American	47	54	30.21	14.29	0.94	3.50
	Pacific Islander/Hawaiian	13	54	27.62	11.93	0.91	3.54
	White	15,534	54	36.65	11.87	0.92	3.34
	Female	9,776	54	36.54	12.08	0.92	3.34
	Male	10,239	54	35.57	12.84	0.93	3.38
	LEP	367	54	21.59	11.71	0.92	3.41
	FLEP	296	54	29.75	12.64	0.92	3.53
	LEPFLEP	656	54	25.22	12.75	0.92	3.50
	Plan 504	1,379	54	34.51	11.26	0.91	3.42
Special Education	3,620	54	22.48	11.69	0.91	3.45	
Title I	2,566	54	29.61	12.35	0.92	3.51	
8	All Students	20,030	54	36.42	12.04	0.93	3.25
	Economically Disadvantaged	3,857	54	29.14	12.37	0.92	3.40
	African American	829	54	28.30	11.82	0.92	3.37
	Asian	1,457	54	44.00	10.07	0.93	2.75
	Hispanic	1,619	54	29.58	12.71	0.93	3.39
	Multi-race	588	54	36.24	13.03	0.94	3.28
	Native American	34	54	30.15	12.45	0.93	3.31
	Pacific Islander/Hawaiian	22	54	34.86	16.93	0.96	3.41
	White	15,467	54	36.90	11.50	0.92	3.22
	Female	9,750	54	37.13	11.42	0.92	3.18
	Male	10,274	54	35.76	12.57	0.93	3.29
	LEP	382	54	26.38	13.29	0.93	3.40
	FLEP	238	54	32.32	12.83	0.93	3.36
	LEPFLEP	607	54	28.48	13.38	0.94	3.40
	Plan 504	1,439	54	34.28	10.86	0.91	3.30
Special Education	3,631	54	23.03	11.21	0.91	3.35	
Title I	2,401	54	30.94	11.82	0.92	3.35	
10	All Students	69,033	60	40.01	12.55	0.92	3.48
	Economically Disadvantaged	17,824	60	33.37	12.79	0.92	3.59
	African American	5,915	60	33.01	12.33	0.92	3.57
	Asian	4,262	60	47.17	11.02	0.92	3.14
	Hispanic	11,053	60	31.82	13.15	0.92	3.61
	Multi-race	1,754	60	40.73	12.40	0.92	3.46
	Native American	137	60	36.89	13.21	0.93	3.53

continued

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
10	Pacific Islander/Hawaiian	78	60	42.33	10.91	0.90	3.42
	White	45,831	60	42.20	11.23	0.91	3.36
	Female	34,169	60	40.31	12.24	0.92	3.44
	Male	34,864	60	39.71	12.84	0.93	3.51
	LEP	3,205	60	22.85	12.15	0.91	3.58
	FLEP	1,978	60	32.99	12.18	0.91	3.60
	LEPFLEP	4,934	60	26.38	13.01	0.92	3.63
	Plan 504	4,328	60	39.62	11.07	0.90	3.46
	Special Education Title I	10,823 16,441	60 60	27.88 34.17	11.85 12.91	0.91 0.92	3.56 3.58

**Table P-3. 2016 MCAS: Subgroup Reliabilities –
STE**

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
5	All Students	68,495	54	35.38	10.05	0.89	3.40
	Economically Disadvantaged	20,956	54	30.22	10.01	0.88	3.52
	African American	5,742	54	29.29	9.93	0.87	3.53
	Asian	4,453	54	38.99	9.45	0.88	3.25
	Hispanic	12,480	54	29.27	10.22	0.88	3.54
	Multi-race	2,368	54	36.11	10.21	0.89	3.38
	Native American	144	54	31.36	9.79	0.87	3.53
	Pacific Islander/Hawaiian	60	54	34.95	10.95	0.90	3.50
	White	43,213	54	37.56	8.92	0.86	3.30
	Female	33,483	54	35.61	9.98	0.88	3.42
	Male	34,996	54	35.16	10.12	0.89	3.37
	LEP	5,067	54	24.14	9.29	0.85	3.54
	FLEP	4,203	54	32.43	9.03	0.85	3.49
	LEPFLEP	8,750	54	27.80	10.14	0.88	3.57
	Plan 504	4,164	54	35.09	9.50	0.87	3.39
	Special Education Title I	12,234 25,845	54 54	27.61 30.70	9.96 10.14	0.88 0.88	3.51 3.51
	8	All Students	69,572	54	33.93	10.34	0.89
Economically Disadvantaged		19,534	54	28.29	10.21	0.88	3.56
African American		5,999	54	27.11	9.82	0.87	3.56
Asian		4,348	54	38.69	9.84	0.89	3.28
Hispanic		11,628	54	27.45	10.32	0.88	3.57
Multi-race		1,908	54	34.85	10.31	0.89	3.44
Native American		134	54	31.58	10.30	0.88	3.56
Pacific Islander/Hawaiian		70	54	31.11	10.81	0.89	3.62
White		45,451	54	36.01	9.26	0.87	3.39
Female		34,277	54	33.90	10.03	0.88	3.48
Male		35,285	54	33.95	10.63	0.89	3.47
LEP		3,781	54	20.56	8.65	0.84	3.46
FLEP		1,537	54	28.99	9.29	0.85	3.57
LEPFLEP		5,147	54	22.85	9.62	0.87	3.52

continued

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
8	Plan 504	4,563	54	33.87	9.34	0.86	3.45
	Special Education	11,989	54	25.05	9.68	0.87	3.48
	Title I	19,752	54	28.95	10.35	0.88	3.57

Table P-4. 2016 MCAS: Subgroup Reliabilities – High School Biology

Subgroup	Number of Students	Raw Score			Alpha	SEM
		Maximum	Mean	Standard Deviation		
All Students	51,147	60	39.94	11.63	0.91	3.48
Economically Disadvantaged	13,621	60	33.55	11.63	0.91	3.54
African American	3,914	60	33.59	11.27	0.90	3.53
Asian	3,188	60	44.80	11.11	0.91	3.33
Hispanic	8,333	60	31.85	11.82	0.91	3.54
Multi-race	1,383	60	39.92	11.39	0.91	3.50
Native American	124	60	36.64	11.28	0.90	3.58
Pacific Islander/Hawaiian	49	60	39.88	13.28	0.93	3.47
White	34,070	60	42.24	10.38	0.89	3.38
Female	25,549	60	40.53	11.19	0.90	3.46
Male	25,568	60	39.37	12.02	0.92	3.49
LEP	2,612	60	24.42	10.21	0.89	3.43
FLEP	1,334	60	32.41	10.74	0.89	3.53
LEPFLEP	3,774	60	26.93	11.07	0.90	3.49
Plan 504	3,140	60	39.83	10.70	0.90	3.46
Special Education	8,377	60	29.96	11.15	0.90	3.51
Title I	11,794	60	34.01	11.70	0.91	3.55

Table P-5. 2016 MCAS: Subgroup Reliabilities – High School Chemistry

Subgroup	Number of Students	Raw Score			Alpha	SEM
		Maximum	Mean	Standard Deviation		
All Students	840	60	37.26	12.71	0.92	3.58
Economically Disadvantaged	200	60	33.70	12.63	0.92	3.62
African American	191	60	36.31	10.32	0.89	3.47
Asian	76	60	43.34	10.62	0.90	3.44
Hispanic	119	60	27.91	14.47	0.94	3.69
Multi-race	29	60	35.48	14.09	0.93	3.64
Native American	1					
Pacific Islander/Hawaiian	2					
White	418	60	39.63	11.72	0.91	3.52
Female	418	60	36.69	12.19	0.91	3.61
Male	420	60	37.95	13.10	0.93	3.55

continued

Subgroup	Number of Students	Raw Score			Alpha	SEM
		<i>Maximum</i>	<i>Mean</i>	<i>Standard Deviation</i>		
LEP	59	60	20.58	12.17	0.92	3.43
FLEP	18	60	31.33	11.39	0.90	3.52
LEPFLEP	71	60	22.44	12.55	0.92	3.54
Plan 504	39	60	38.64	12.25	0.92	3.46
Special Education	49	60	28.76	12.99	0.92	3.65
Title I	123	60	25.75	9.39	0.86	3.51

Table P-6. 2016 MCAS: Subgroup Reliabilities – High School Introductory Physics

Subgroup	Number of Students	Raw Score			Alpha	SEM
		<i>Maximum</i>	<i>Mean</i>	<i>Standard Deviation</i>		
All Students	15,317	60	37.82	11.67	0.92	3.31
Economically Disadvantaged	4,189	60	30.66	11.30	0.91	3.43
African American	1,673	60	30.48	10.70	0.90	3.43
Asian	1,077	60	44.27	10.30	0.91	3.11
Hispanic	2,749	60	29.79	11.52	0.91	3.43
Multi-race	447	60	41.09	11.62	0.92	3.26
Native American	20	60	38.85	9.33	0.87	3.32
Pacific Islander/Hawaiian	17	60	41.12	12.49	0.93	3.28
White	9,312	60	40.64	10.12	0.90	3.19
Female	7,620	60	37.52	11.24	0.91	3.31
Male	7,682	60	38.16	12.06	0.93	3.30
LEP	1,096	60	24.75	9.88	0.88	3.44
FLEP	462	60	31.63	10.63	0.90	3.42
LEPFLEP	1,333	60	26.41	10.73	0.90	3.45
Plan 504	952	60	38.72	10.26	0.90	3.29
Special Education	2,442	60	28.59	10.93	0.90	3.44
Title I	3,852	60	29.73	11.20	0.91	3.42

Table P-7. 2016 MCAS: Subgroup Reliabilities – High School Technology/Engineering

Subgroup	Number of Students	Raw Score			Alpha	SEM
		<i>Maximum</i>	<i>Mean</i>	<i>Standard Deviation</i>		
All Students	2,713	60	35.95	10.29	0.89	3.48
Economically Disadvantaged	1,019	60	32.24	10.44	0.89	3.53
African American	203	60	31.30	9.19	0.85	3.51
Asian	84	60	35.99	10.19	0.89	3.43
Hispanic	568	60	29.54	10.19	0.88	3.55
Multi-race	75	60	35.85	9.34	0.86	3.53
Native American	7					
Pacific Islander/Hawaiian	2					
White	1,764	60	38.57	9.33	0.87	3.41

continued

Subgroup	Number of Students	Raw Score			Alpha	SEM
		Maximum	Mean	Standard Deviation		
Female	1,043	60	34.41	9.62	0.87	3.47
Male	1,664	60	36.92	10.56	0.89	3.47
LEP	166	60	24.98	9.97	0.88	3.48
FLEP	124	60	31.31	8.44	0.83	3.50
LEPFLEP	249	60	26.81	9.97	0.88	3.50
Plan 504	183	60	38.43	9.11	0.86	3.42
Special Education	709	60	29.65	10.15	0.88	3.54
Title I	1,391	60	34.16	10.51	0.89	3.50

Table P-8. 2016 MCAS: Reliabilities by Reporting Category by Grade – ELA

Grade	Item Reporting Category*	Number of Items	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
3	LA	9	9	7.56	1.70	0.68	0.96
	LT	32	39	29.72	6.25	0.88	2.15
4	LA	8	8	6.79	1.48	0.65	0.88
	LT	32	44	29.88	6.66	0.86	2.47
5	LA	6	6	4.09	1.45	0.50	1.03
	LT	34	46	31.95	7.52	0.88	2.59
6	LA	6	6	5.09	1.17	0.54	0.79
	LT	34	46	32.93	7.68	0.88	2.67
7	LA	5	5	4.31	0.92	0.43	0.69
	LT	35	47	35.14	7.35	0.88	2.55
8	LA	7	7	5.52	1.45	0.56	0.96
	LT	33	45	32.82	7.62	0.89	2.57
10	CC	1	8	7.02	1.42		
	CT	1	12	7.19	1.59		
	LA	5	5	4.15	1.03	0.44	0.77
	LT	35	47	34.49	7.47	0.88	2.60

* Reporting category definitions follow table P-14.

Table P-9. 2016 MCAS: Reliabilities by Reporting Category by Grade – Mathematics

Grade	Item Reporting Category*	Number of Items	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
3	GE	4	5	3.13	1.34	0.48	0.97
	MD	9	10	7.61	2.13	0.64	1.27
	NF	5	6	4.73	1.45	0.59	0.93
	NT	6	6	4.89	1.32	0.59	0.84
	OA	12	13	9.67	2.65	0.72	1.41
4	GE	8	8	5.81	1.89	0.68	1.08
	MD	8	11	6.86	2.55	0.67	1.47
	NF	8	11	7.66	2.52	0.64	1.51

continued

Grade	Item Reporting Category*	Number of Items	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
4	NT	8	11	7.85	2.53	0.65	1.50
	OA	10	13	10.58	2.43	0.67	1.41
5	GE	6	6	4.36	1.42	0.59	0.90
	MD	7	10	6.90	2.80	0.67	1.61
	NF	10	13	9.16	3.20	0.74	1.64
	NT	11	14	10.07	3.16	0.70	1.74
	OA	8	11	7.93	2.28	0.59	1.47
6	EE	13	16	11.61	3.55	0.77	1.72
	GE	5	8	4.66	2.52	0.62	1.55
	NS	10	10	7.68	2.02	0.68	1.14
	RP	8	11	9.31	2.14	0.64	1.29
	SP	6	9	5.26	2.43	0.59	1.55
7	EE	8	11	7.50	3.05	0.68	1.72
	GE	10	10	6.85	2.48	0.74	1.27
	NS	9	12	8.24	3.00	0.75	1.49
	RP	8	11	7.25	2.65	0.67	1.53
	SP	7	10	6.20	2.72	0.69	1.52
8	EE	13	16	10.80	4.09	0.81	1.78
	FN	10	13	9.21	2.98	0.70	1.64
	GE	13	16	10.75	3.80	0.80	1.71
	NS	3	3	2.03	0.99	0.58	0.64
	SP	3	6	3.63	1.55	0.36	1.24
10	AF	12	18	12.05	4.08	0.78	1.90
	GE	11	17	11.14	3.76	0.76	1.82
	NQ	10	13	8.64	3.24	0.72	1.72
	SP	9	12	8.18	2.65	0.67	1.53

* Reporting category definitions follow table P-14.

Table P-10. 2016 MCAS: Reliabilities by Reporting Category – STE

Grade	Item Reporting Category*	Number of Items	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
5	ES	13	16	9.61	3.15	0.65	1.87
	LS	13	16	11.43	3.53	0.76	1.74
	PS	11	14	9.89	2.96	0.64	1.79
	TE	5	8	4.45	1.87	0.44	1.40
8	ES	10	13	7.51	2.82	0.65	1.66
	LS	10	13	8.46	2.94	0.65	1.74
	PS	11	14	8.93	3.19	0.70	1.74
	TE	11	14	9.02	2.90	0.61	1.82

* Reporting category definitions follow table P-14.

Table P-12. 2016 MCAS: Reliabilities by Reporting Category – High School Biology

Item Reporting Category*	Number of Items	Raw Score			Alpha	SEM
		Maximum	Mean	Standard Deviation		
AP	6	9	5.38	2.21	0.54	1.50
BC	12	15	10.08	3.35	0.72	1.78
EC	9	12	8.49	2.53	0.61	1.57
EV	9	12	8.47	2.44	0.64	1.45
GE	9	12	7.52	2.76	0.70	1.52

* Reporting category definitions follow table P-14.

Table P-13. 2016 MCAS: Reliabilities by Reporting Category – High School Chemistry

Item Reporting Category*	Number of Items	Raw Score			Alpha	SEM
		Maximum	Mean	Standard Deviation		
AS	12	15	10.34	3.24	0.74	1.64
BR	12	18	11.27	4.51	0.78	2.13
SO	9	12	6.50	2.93	0.69	1.63
TH	12	15	9.16	3.30	0.73	1.72

* Reporting category definitions follow table P-14.

Table P-14. 2016 MCAS: Reliabilities by Reporting Category – High School Introductory Physics

Item Reporting Category*	Number of Items	Raw Score			Alpha	SEM
		Maximum	Mean	Standard Deviation		
EM	9	12	7.71	2.76	0.70	1.51
HT	6	9	5.27	1.95	0.60	1.24
MF	18	24	15.53	4.82	0.83	1.99
WV	12	15	9.31	3.45	0.73	1.78

* Reporting category definitions follow table P-14.

Table P-15. 2016 MCAS: Reliabilities by Reporting Category – High School Technology/Engineering

Item Reporting Category*	Number of Items	Raw Score			Alpha	SEM
		Maximum	Mean	Standard Deviation		
CM	9	12	8.34	2.54	0.65	1.50
ED	9	12	7.59	2.18	0.50	1.54
EL	12	18	9.03	3.59	0.69	2.00
FL	15	18	10.99	3.60	0.74	1.85

* Reporting category definitions follow table P-14.

Reporting Category Definitions

AP	=	Anatomy and Physiology
AS	=	Atomic Structure and Periodicity
BC	=	Biochemistry and Cell Biology
BI	=	Biology
BR	=	Bonding and Reactions
CC	=	Composition/Conventions
CH	=	Chemistry
CM	=	Construction and Manufacturing
CT	=	Composition/Topic Development
EC	=	Ecology
ED	=	Engineering Design
EL	=	Electrical and Communications Systems
EM	=	Electromagnetism
ES	=	Earth and Space Science
EV	=	Evolution and Biodiversity
FL	=	Fluid and Thermal Systems
GE	=	Genetics
GE	=	Geometry
HT	=	Heat and Heat Transfer
LA	=	Language
LS	=	Life Science
LT	=	Reading and Literature
ME	=	Measurement
MF	=	Motion and Forces
NS	=	Number Sense and Operations
PH	=	Introductory Physics
PR	=	Patterns, Relations, and Algebra
PS	=	Physical Sciences
SO	=	Solutions, Equilibrium, and Acid-Base Theory
SP	=	Data Analysis, Statistics, and probability
TE	=	Technology/Engineering
TH	=	Properties of Matter and Thermochemistry
WV	=	Waves and Radiation

**Table P-16. 2016 MCAS-Alt: Subgroup Reliabilities –
ELA**

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
3	All Students	1,131	39	29.38	3.23	0.63	1.96
	Economically Disadvantaged	643	39	29.41	3.39	0.66	1.97
	African American	173	39	29.60	3.13	0.51	2.19
	Asian	60	39	29.28	3.41	0.69	1.91
	Hispanic	299	39	29.73	2.60	0.51	1.81
	Multi-race	54	39	29.91	2.76	0.59	1.76
	Native American	2					
	Pacific Islander/Hawaiian	0					
	White	541	39	29.08	3.57	0.68	2.02
	Female	363	39	29.39	3.15	0.68	1.79
	Male	768	39	29.38	3.27	0.61	2.05
	LEP	125	39	29.78	2.42	0.36	1.94
	FLEP	26	39	29.12	3.53	0.72	1.85
	LEPFLEP	151	39	29.67	2.65	0.46	1.95
	Plan 504	10	39	29.50	2.32	0.37	1.84
	Special Education	1,131	39	29.38	3.23	0.63	1.96
	Title I	571	39	29.86	2.68	0.52	1.86
4	All Students	1,217	39	29.53	3.00	0.60	1.90
	Economically Disadvantaged	642	39	29.60	3.04	0.64	1.84
	African American	175	39	29.73	3.20	0.61	2.01
	Asian	71	39	29.14	3.08	0.42	2.35
	Hispanic	320	39	29.77	3.03	0.67	1.75
	Multi-race	44	39	30.23	2.62	0.23	2.30
	Native American	6					
	Pacific Islander/Hawaiian	2					
	White	599	39	29.33	2.94	0.57	1.93
	Female	378	39	29.46	3.04	0.61	1.89
	Male	839	39	29.56	2.99	0.59	1.91
	LEP	137	39	30.14	2.76	0.50	1.96
	FLEP	24	39	30.33	2.87	0.33	2.34
	LEPFLEP	161	39	30.17	2.77	0.48	2.00
	Plan 504	6					
	Special Education	1,217	39	29.53	3.00	0.60	1.90
	Title I	604	39	29.96	2.85	0.56	1.90
5	All Students	1,203	39	29.44	3.31	0.64	1.98
	Economically Disadvantaged	622	39	29.53	3.39	0.70	1.86
	African American	171	39	29.89	3.07	0.51	2.14
	Asian	64	39	28.84	3.69	0.71	1.99
	Hispanic	329	39	29.64	3.20	0.60	2.03
	Multi-race	37	39	29.19	2.99	0.67	1.71
	Native American	4					
	Pacific Islander/Hawaiian	1					
	White	593	39	29.29	3.38	0.66	1.98
	Female	423	39	29.42	3.21	0.63	1.96
	Male	779	39	29.46	3.35	0.65	1.99

continued

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
5	LEP	131	39	29.65	2.91	0.57	1.91
	FLEP	36	39	30.47	2.38	0.59	1.52
	LEPFLEP	167	39	29.83	2.82	0.58	1.83
	Plan 504	11	39	30.55	1.29	-0.27	1.46
	Special Education	1,203	39	29.44	3.31	0.64	1.98
	Title I	566	39	30.01	2.91	0.51	2.03
6	All Students	1,097	39	29.33	3.44	0.58	2.24
	Economically Disadvantaged	564	39	29.33	3.57	0.61	2.23
	African American	136	39	30.26	2.88	0.49	2.05
	Asian	51	39	29.10	3.23	0.53	2.21
	Hispanic	282	39	29.38	3.60	0.60	2.26
	Multi-race	31	39	28.68	3.80	0.65	2.23
	Native American	1					
	Pacific Islander/Hawaiian	3					
	White	591	39	29.15	3.46	0.57	2.26
	Female	368	39	29.48	3.36	0.59	2.16
	Male	727	39	29.26	3.48	0.57	2.27
	LEP	111	39	30.18	2.97	0.49	2.11
	FLEP	23	39	28.30	4.22	0.67	2.41
	LEPFLEP	134	39	29.86	3.27	0.52	2.26
Plan 504	6						
Special Education	1,097	39	29.33	3.44	0.58	2.24	
Title I	470	39	29.56	3.45	0.58	2.24	
7	All Students	1,119	39	29.26	3.67	0.64	2.20
	Economically Disadvantaged	557	39	29.50	3.57	0.68	2.01
	African American	175	39	30.38	2.96	0.55	1.98
	Asian	51	39	28.69	3.70	0.48	2.66
	Hispanic	289	39	29.39	3.56	0.66	2.09
	Multi-race	22	39	30.18	3.81	0.69	2.13
	Native American	2					
	Pacific Islander/Hawaiian	3					
	White	576	39	28.86	3.85	0.66	2.23
	Female	338	39	29.29	3.96	0.74	2.03
	Male	781	39	29.25	3.54	0.57	2.31
	LEP	116	39	29.55	3.37	0.58	2.18
	FLEP	17	39	29.29	4.01	0.47	2.91
	LEPFLEP	133	39	29.52	3.45	0.57	2.26
Plan 504	7						
Special Education	1,119	39	29.26	3.67	0.64	2.20	
Title I	444	39	29.77	3.40	0.65	2.01	
8	All Students	1,043	39	29.22	3.56	0.68	2.01
	Economically Disadvantaged	496	39	29.40	3.47	0.69	1.95
	African American	130	39	29.83	3.24	0.68	1.84
	Asian	63	39	28.68	3.96	0.76	1.94
	Hispanic	241	39	29.55	3.64	0.72	1.94
	Multi-race	25	39	29.64	3.49	0.79	1.61
	Native American	2					

continued

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
8	Pacific Islander/Hawaiian	0					
	White	579	39	28.99	3.53	0.66	2.07
	Female	333	39	29.13	3.77	0.74	1.92
	Male	709	39	29.27	3.45	0.64	2.06
	LEP	102	39	29.92	3.46	0.70	1.90
	FLEP	10	39	30.20	3.71	0.44	2.76
	LEPFLEP	112	39	29.95	3.47	0.70	1.91
	Plan 504	3					
	Special Education	1,043	39	29.22	3.56	0.68	2.01
	Title I	359	39	29.76	3.41	0.62	2.09
10	All Students	828	39	28.61	3.71	0.69	2.07
	Economically Disadvantaged	400	39	28.76	3.77	0.73	1.94
	African American	113	39	28.48	4.17	0.78	1.95
	Asian	41	39	29.15	3.20	0.63	1.96
	Hispanic	189	39	28.63	3.86	0.75	1.92
	Multi-race	16	39	28.94	3.55	0.67	2.05
	Native American	3					
	Pacific Islander/Hawaiian	2					
	White	464	39	28.58	3.59	0.62	2.20
	Female	283	39	28.66	3.85	0.72	2.06
	Male	545	39	28.58	3.63	0.67	2.07
	LEP	84	39	29.42	3.04	0.57	1.99
	FLEP	9					
	LEPFLEP	93	39	29.26	3.14	0.55	2.11
	Plan 504	2					
Special Education	828	39	28.61	3.71	0.69	2.07	
Title I	223	39	28.95	3.56	0.73	1.83	

Note: No reliability or SEM values are reported for some subgroups, because there were some items for which only one student in the subgroup received a score.

Table P-17. 2016 MCAS-Alt: Subgroup Reliabilities – Mathematics

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
3	All Students	1,064	26	21.47	1.31	0.72	0.70
	Economically Disadvantaged	602	26	21.45	1.46	0.76	0.71
	African American	164	26	21.55	1.08	0.65	0.64
	Asian	54	26	21.48	1.24	0.71	0.66
	Hispanic	291	26	21.63	0.95	0.61	0.59
	Multi-race	50	26	21.64	1.12	0.69	0.63
	Native American	1					
	Pacific Islander/Hawaiian	0					
	White	502	26	21.33	1.56	0.75	0.78
	Female	343	26	21.41	1.35	0.70	0.74
	Male	721	26	21.50	1.29	0.72	0.68

continued

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
3	LEP	119	26	21.64	0.83	0.59	0.53
	FLEP	23	26	21.43	1.04	0.61	0.64
	LEPFLEP	142	26	21.61	0.87	0.60	0.55
	Plan 504	8					
	Special Education	1,064	26	21.47	1.31	0.72	0.70
	Title I	544	26	21.65	0.92	0.63	0.56
4	All Students	1,154	26	21.49	1.11	0.62	0.68
	Economically Disadvantaged	605	26	21.51	1.10	0.63	0.67
	African American	168	26	21.71	0.95	0.68	0.53
	Asian	65	26	21.48	1.11	0.59	0.71
	Hispanic	300	26	21.52	1.15	0.67	0.66
	Multi-race	42	26	21.64	0.69	0.30	0.58
	Native American	5					
	Pacific Islander/Hawaiian	2					
	White	572	26	21.39	1.15	0.59	0.73
	Female	370	26	21.33	1.22	0.62	0.76
	Male	784	26	21.56	1.04	0.62	0.64
	LEP	126	26	21.75	0.67	0.56	0.44
	FLEP	23	26	21.78	0.74	0.72	0.39
	LEPFLEP	149	26	21.76	0.67	0.59	0.43
Plan 504	5						
Special Education	1,154	26	21.49	1.11	0.62	0.68	
Title I	576	26	21.66	0.92	0.62	0.56	
5	All Students	1,132	26	21.51	1.23	0.70	0.68
	Economically Disadvantaged	581	26	21.53	1.28	0.78	0.60
	African American	158	26	21.72	0.75	0.57	0.49
	Asian	55	26	20.95	1.43	0.50	1.01
	Hispanic	311	26	21.65	1.06	0.69	0.59
	Multi-race	34	26	21.32	1.09	0.52	0.75
	Native American	4					
	Pacific Islander/Hawaiian	1					
	White	565	26	21.45	1.39	0.73	0.72
	Female	410	26	21.56	1.18	0.71	0.63
	Male	721	26	21.48	1.26	0.69	0.70
	LEP	119	26	21.55	1.13	0.58	0.73
	FLEP	33	26	21.88	0.55	0.48	0.39
	LEPFLEP	152	26	21.63	1.03	0.58	0.67
Plan 504	10	26	21.80	0.42	-0.15	0.45	
Special Education	1,132	26	21.51	1.23	0.70	0.68	
Title I	523	26	21.73	0.81	0.62	0.50	
6	All Students	1,080	26	21.53	1.12	0.66	0.65
	Economically Disadvantaged	549	26	21.54	1.12	0.66	0.65
	African American	137	26	21.80	0.54	0.42	0.41
	Asian	46	26	21.61	1.22	0.87	0.45
	Hispanic	272	26	21.60	1.01	0.63	0.61
	Multi-race	32	26	21.28	1.22	0.52	0.85
	Native American	1					

continued

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
6	Pacific Islander/Hawaiian	3					
	White	587	26	21.45	1.24	0.67	0.71
	Female	375	26	21.51	1.17	0.73	0.61
	Male	703	26	21.54	1.09	0.63	0.66
	LEP	105	26	21.80	0.87	0.62	0.53
	FLEP	23	26	21.78	1.24	0.63	0.75
	LEPFLEP	128	26	21.80	0.94	0.62	0.58
	Plan 504	5					
	Special Education	1,080	26	21.53	1.12	0.66	0.65
	Title I	457	26	21.72	0.79	0.50	0.55
7	All Students	1,067	26	21.58	1.13	0.66	0.66
	Economically Disadvantaged	536	26	21.60	1.23	0.74	0.63
	African American	178	26	21.81	0.75	0.50	0.53
	Asian	53	26	21.43	1.07	0.47	0.77
	Hispanic	274	26	21.63	1.02	0.66	0.60
	Multi-race	24	26	22.08	1.32	0.59	0.84
	Native American	2					
	Pacific Islander/Hawaiian	3					
	White	532	26	21.48	1.27	0.69	0.70
	Female	330	26	21.54	1.39	0.75	0.70
Male	737	26	21.60	0.99	0.58	0.64	
LEP	118	26	21.64	0.88	0.57	0.58	
FLEP	15	26	21.33	1.11	0.33	0.91	
LEPFLEP	133	26	21.61	0.91	0.53	0.62	
Plan 504	5						
Special Education	1,067	26	21.58	1.13	0.66	0.66	
Title I	414	26	21.71	0.99	0.66	0.58	
8	All Students	1,020	26	21.43	1.27	0.68	0.72
	Economically Disadvantaged	484	26	21.40	1.28	0.74	0.66
	African American	133	26	21.56	1.16	0.73	0.61
	Asian	61	26	21.10	1.46	0.69	0.81
	Hispanic	230	26	21.63	1.20	0.67	0.69
	Multi-race	27	26	21.26	1.63	0.83	0.67
	Native American	2					
	Pacific Islander/Hawaiian	0					
	White	564	26	21.35	1.27	0.65	0.75
	Female	340	26	21.38	1.38	0.72	0.73
Male	679	26	21.45	1.21	0.65	0.71	
LEP	99	26	21.73	0.96	0.75	0.48	
FLEP	7						
LEPFLEP	106	26	21.75	0.93	0.75	0.46	
Plan 504	3						
Special Education	1,020	26	21.43	1.27	0.68	0.72	
Title I	348	26	21.73	0.98	0.59	0.63	
10	All Students	810	39	31.07	3.30	0.88	1.16
	Economically Disadvantaged	392	39	31.12	3.26	0.87	1.18
	African American	116	39	30.82	3.56	0.83	1.49
	Asian	36	39	30.83	3.19		

continued

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
10	Hispanic	184	39	31.32	3.24	0.92	0.89
	Multi-race	17	39	31.59	2.32		
	Native American	2					
	Pacific Islander/Hawaiian	2					
	White	453	39	31.02	3.31	0.86	1.25
	Female	283	39	30.95	3.28	0.88	1.14
	Male	527	39	31.14	3.31	0.87	1.18
	LEP	79	39	31.71	2.71	0.84	1.10
	FLEP	9					
	LEPFLEP	88	39	31.81	2.59	0.82	1.10
	Plan 504	2					
	Special Education	810	39	31.07	3.30	0.88	1.16
Title I	220	39	31.41	3.13	0.86	1.19	

Note: No reliability or SEM values are reported for some subgroups, because there were some items for which only one student in the subgroup received a score.

Table P-18. 2016 MCAS-Alt: Subgroup Reliabilities – STE

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
5	All Students	1,103	39	31.89	2.60	0.83	1.08
	Economically Disadvantaged	577	39	31.95	2.63	0.85	1.01
	African American	160	39	31.94	2.51	0.84	1.02
	Asian	53	39	30.74	3.80	0.88	1.32
	Hispanic	306	39	32.21	2.11	0.79	0.96
	Multi-race	32	39	31.50	2.86	0.68	1.63
	Native American	4					
	Pacific Islander/Hawaiian	1					
	White	543	39	31.85	2.66	0.83	1.09
	Female	387	39	31.86	2.71	0.85	1.05
	Male	715	39	31.91	2.54	0.82	1.09
	LEP	120	39	32.31	1.95	0.66	1.14
	FLEP	33	39	32.45	1.72	0.91	0.52
	LEPFLEP	153	39	32.34	1.90	0.71	1.02
	Plan 504	11	39	33.00	0.00		
	Special Education	1,103	39	31.89	2.60	0.83	1.08
	Title I	533	39	32.21	2.10	0.78	0.99
8	All Students	1,008	39	31.63	2.68	0.83	1.10
	Economically Disadvantaged	484	39	31.65	2.62	0.85	1.02
	African American	122	39	32.07	2.27	0.85	0.89
	Asian	63	39	31.46	2.68	0.84	1.08
	Hispanic	226	39	31.88	2.50	0.85	0.96
	Multi-race	27	39	31.04	3.30	0.92	0.93
	Native American	2					
	Pacific Islander/Hawaiian	0					
	White	565	39	31.49	2.76	0.81	1.19

continued

Grade	Subgroup	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
8	Female	327	39	31.64	2.70	0.86	1.02
	Male	680	39	31.63	2.65	0.82	1.14
	LEP	95	39	31.99	2.54	0.90	0.80
	FLEP	8					
	LEPFLEP	103	39	32.07	2.45	0.90	0.76
	Plan 504	3					
	Special Education	1,008	39	31.63	2.68	0.83	1.10
	Title I	335	39	31.96	2.37	0.80	1.07

Note: No reliability or SEM values are reported for some subgroups, because there were some items for which only one student in the subgroup received a score.

Table P-19. 2016 MCAS-Alt: Subgroup Reliabilities – High School Biology

Subgroup	Number of Students	Raw Score			Alpha	SEM
		Maximum	Mean	Standard Deviation		
All Students	664	39	31.35	2.93	0.77	1.40
Economically Disadvantaged	316	39	31.31	2.94	0.82	1.25
African American	91	39	31.32	3.01	0.78	1.41
Asian	34	39	31.24	2.74	0.46	2.01
Hispanic	154	39	31.01	3.28	0.84	1.30
Multi-race	14	39	32.50	2.07	0.74	1.06
Native American	3					
Pacific Islander/Hawaiian	1					
White	367	39	31.46	2.78	0.74	1.42
Female	213	39	31.43	2.80	0.77	1.35
Male	451	39	31.31	2.99	0.77	1.42
LEP	64	39	31.00	3.45	0.77	1.66
FLEP	14	39	31.29	2.79	0.22	2.47
LEPFLEP	78	39	31.05	3.32	0.71	1.80
Plan 504	1					
Special Education	664	39	31.35	2.93	0.77	1.40
Title I	191	39	31.17	3.04	0.80	1.35

Note: No reliability or SEM values are reported for some subgroups, because there were some items for which only one student in the subgroup received a score.

Table P-20. 2016 MCAS-Alt: Subgroup Reliabilities – High School Chemistry

Subgroup	Number of Students	Raw Score			Alpha	SEM
		Maximum	Mean	Standard Deviation		
All Students	34	39	30.56	2.50	0.55	1.67
Economically Disadvantaged	21	39	30.33	2.74	0.56	1.81
African American	3					
Asian	4					
Hispanic	9					

continued

Subgroup	Number of Students	Raw Score			Alpha	SEM
		<i>Maximum</i>	<i>Mean</i>	<i>Standard Deviation</i>		
Multi-race	0					
Native American	0					
Pacific Islander/Hawaiian	1					
White	17	39	31.41	2.00	0.54	1.36
Female	11	39	30.91	1.81	0.50	1.28
Male	23	39	30.39	2.79	0.57	1.82
LEP	4					
FLEP	0					
LEPFLEP	4					
Plan 504	1					
Special Education	34	39	30.56	2.50	0.55	1.67
Title I	5					

Note: No reliability or SEM values are reported for some subgroups, because there were some items for which only one student in the subgroup received a score.

Table P-21. 2016 MCAS-Alt: Subgroup Reliabilities – High School Introductory Physics

Subgroup	Number of Students	Raw Score			Alpha	SEM
		<i>Maximum</i>	<i>Mean</i>	<i>Standard Deviation</i>		
All Students	51	39	30.16	4.33	0.85	1.67
Economically Disadvantaged	21	39	29.10	4.27	0.82	1.80
African American	10	39	29.40	4.81	0.86	1.78
Asian	7					
Hispanic	10	39	29.90	5.17	0.91	1.58
Multi-race	0					
Native American	0					
Pacific Islander/Hawaiian	0					
White	23	39	30.30	3.52	0.83	1.47
Female	23	39	29.78	3.98	0.80	1.77
Male	28	39	30.46	4.65	0.88	1.64
LEP	7					
FLEP	0					
LEPFLEP	7					
Plan 504	0					
Special Education	51	39	30.16	4.33	0.85	1.67
Title I	10	39	28.10	3.98	0.82	1.70

Note: No reliability or SEM values are reported for some subgroups, because there were some items for which only one student in the subgroup received a score.

**Table P-22. 2016 MCAS-Alt: Subgroup Reliabilities –
High School Technology/Engineering**

Subgroup	Number of Students	Raw Score			Alpha	SEM
		<i>Maximum</i>	<i>Mean</i>	<i>Standard Deviation</i>		
All Students	86	39	30.52	3.53	0.84	1.42
Economically Disadvantaged	37	39	29.92	4.08	0.90	1.32
African American	10	39	28.30	3.71	0.76	1.84
Asian	2					
Hispanic	16	39	30.19	4.42	0.93	1.17
Multi-race	3					
Native American	0					
Pacific Islander/Hawaiian	0					
White	55	39	30.89	3.20	0.81	1.41
Female	25	39	29.64	3.84	0.72	2.04
Male	61	39	30.89	3.36	0.87	1.20
LEP	1					
FLEP	1					
LEPFLEP	2					
Plan 504	1					
Special Education	86	39	30.52	3.53	0.84	1.42
Title I	12	39	31.75	2.83	0.83	1.18

Note: No reliability or SEM values are reported for some subgroups, because there were some items for which only one student in the subgroup received a score.