

STATISTICAL SUMMARY

SPRING 2019 ADMINISTRATION OF OHIO'S STATE TESTS (OST) IN ENGLISH LANGUAGE ARTS, MATHEMATICS, SCIENCE AND SOCIAL STUDIES

The State Board of Education of Ohio adopted Ohio's Learning Standards in English language arts and mathematics in 2010 as part of a multi-state effort. Also that year, the State Board adopted new, more rigorous, standards in science and social studies. Ohio's Learning Standards for English language arts, mathematics, science and social studies describe the educational targets for students in each subject area. The Ohio's State Tests are designed to measure student progress toward achievement of Ohio's Learning Standards. In spring 2016, the Ohio Department of Education administered, for the first time, Ohio's State Tests in English language arts (ELA) and mathematics to assess proficiency with respect to Ohio's Learning Standards. Specifically, the state tests assess student achievement in meeting: The English language arts and mathematics standards in grades 3 through 8 and high school coursework; and social studies standards in high school coursework in U.S. history and U.S. government. In science, students take state tests in grades 5 and 8, and following instruction in physical science and biology in high school.

Ohio's State Tests are a series of fixed form assessments that were intended for online administration. However, because some schools were not ready to transition to the online testing environment, the assessments were offered in both online and paper formats.

Statistics reported here are based on the results of all public school and community students participating in the spring 2019 administration in elementary, middle and high school. The statistics include repeat as well as first-time examinees; most of the repeaters are either third graders who had taken the ELA test in the fall or high school students attempting to earn additional points toward the state's graduation requirement.

Table 1 – Operational Summary Statistics

Test	N-count	Max Raw Score	Raw Score Mean	Raw Score Standard Deviation	Raw Score SEM	Max Scale Score	Min Scale Score	Scale Score Mean	Scale Score Standard Deviation	Scale Score SEM	Reliability
English Language Arts											
Grade 3 ELA	122,651	41	19.49	7.80	2.92	863	545	715.55	45.38	16.90	0.86
Grade 4 ELA	125,000	40	20.38	7.44	2.78	846	549	714.16	42.24	15.92	0.86
Grade 5 ELA	127,078	41	23.52	7.74	2.79	848	552	720.18	45.72	16.79	0.87
Grade 6 ELA	128,248	62	31.75	11.10	3.51	851	555	703.57	39.46	12.69	0.90
Grade 7 ELA	127,331	61	32.70	11.38	3.22	833	568	714.05	41.54	12.11	0.92
Grade 8 ELA	123,330	60	31.81	10.49	3.32	805	586	704.02	31.10	9.81	0.90
High School ELA I	147,510	62	30.27	11.95	3.59	800	606	706.19	27.15	8.24	0.91
High School ELA II	139,351	60	29.69	12.09	3.63	808	597	705.18	31.68	9.26	0.91
Mathematics											
Grade 3 Math	123,453	49	29.26	10.95	3.10	818	587	720.38	47.06	12.96	0.92
Grade 4 Math	124,480	49	26.11	10.95	2.90	835	605	729.55	46.30	12.53	0.93
Grade 5 Math	125,342	49	23.30	11.47	3.03	804	624	712.03	37.44	9.80	0.93
Grade 6 Math	126,402	52	27.91	12.18	2.98	790	616	708.67	37.74	9.47	0.94
Grade 7 Math	122,126	52	25.05	12.01	3.18	806	605	707.63	39.38	10.31	0.93
Grade 8 Math	98,858	52	25.50	11.03	3.12	774	633	703.24	26.81	7.40	0.92
Algebra	143,506	54	22.03	11.38	3.22	814	618	704.39	36.18	10.02	0.92
Geometry	128,205	55	19.95	12.99	3.44	810	604	697.51	39.22	10.73	0.93
Integrated Math 1	10,969	56	18.88	11.21	3.36	814	618	690.12	35.53	10.37	0.91
Integrated Math 2	9,450	55	18.24	11.21	3.17	813	594	685.80	39.96	11.58	0.92

Test	N-count	Max Raw Score	Raw Score Mean	Raw Score Standard Deviation	Raw Score SEM	Max Scale Score	Min Scale Score	Scale Score Mean	Scale Score Standard Deviation	Scale Score SEM	Reliability
Science											
Grade 5 Science	126,961	56	31.14	10.49	3.15	845	559	719.75	46.51	13.91	0.91
Grade 8 Science	124,337	56	26.78	10.77	3.23	868	575	721.96	47.49	14.05	0.91
Biology	131,573	56	26.74	11.16	3.35	823	617	715.75	31.20	9.45	0.91
Physical Science	179	56	9.08	4.83	NA	815	634	676.78	18.06	NA	NA
Social Studies											
American Government	83,646	64	33.79	12.95	3.66	774	642	714.38	19.64	5.61	0.92
American History	126,134	63	35.25	13.06	3.69	800	619	718.86	27.06	7.88	0.92

Note: SEM is standard error of measurement. Min and Max Scale Score and Max Raw Score show the highest and lowest possible scores the students could achieve. NA = Not enough information (i.e., too few test takers) to estimate reliably. The Physical Science assessment is being phased out, and only members of the Class of 2018 can use it to meet graduation requirements. The population of Physical Science test takers is too small and nonrepresentative to allow meaningful reliability analysis, so reliability and SEM data are suppressed.

Table 2 – Scale Score Cut Points for the Basic, Proficient, Accelerated, and Advanced Performance Levels

Test	Basic	Proficient	Accelerated	Advanced
English Language Arts				
Grade 3 ELA	672	700	725	752
Grade 4 ELA	674	700	725	753
Grade 5 ELA	669	700	725	755
Grade 6 ELA	668	700	725	751
Grade 7 ELA	670	700	725	749
Grade 8 ELA	682	700	725	744
High School ELA I	683	700	725	739
High School ELA II	679	700	725	742
Mathematics				
Grade 3 Math	683	700	725	753
Grade 4 Math	686	700	725	759
Grade 5 Math	687	700	725	749
Grade 6 Math	682	700	725	744
Grade 7 Math	684	700	725	755
Grade 8 Math	690	700	725	744
Algebra	682	700	725	754
Geometry	678	700	725	756
Integrated Math 1	682	700	725	754
Integrated Math 2	677	700	725	758
Science				
Grade 5 Science	664	700	725	753
Grade 8 Science	674	700	725	766
Biology	685	700	725	735
Physical Science	684	700	725	749
Social Studies				
American Government	687	700	725	739
American History	684	700	725	738

Table 3 – Percent of Students at Each Performance Level

Test	N-Count	Limited	Basic	Proficient	Accelerated	Advanced	At or Above Proficient
English Language Arts							
Grade 3 ELA	122,651	15	19	21	24	22	66
Grade 4 ELA	125,000	17	21	22	21	20	63
Grade 5 ELA	127,078	13	18	20	24	26	70
Grade 6 ELA	128,248	18	26	25	20	11	56
Grade 7 ELA	127,331	15	18	22	23	22	67
Grade 8 ELA	123,330	23	19	32	17	9	58
High School ELA I	147,510	20	19	35	15	11	61
High School ELA II	139,351	19	20	30	18	12	61
Mathematics							
Grade 3 Math	123,453	21	11	20	20	27	67
Grade 4 Math	124,480	18	8	20	26	29	74
Grade 5 Math	125,342	24	14	25	20	18	62
Grade 6 Math	126,402	23	17	27	15	18	60
Grade 7 Math	122,126	29	13	23	22	13	57
Grade 8 Math	98,858	29	14	36	13	7	57
Algebra	143,506	29	18	24	20	10	53
Geometry	128,205	36	19	21	15	9	46
Integrated Math 1	10,969	45	18	20	12	5	37
Integrated Math 2	9,450	49	19	14	12	6	32
Science							
Grade 5 Science	126,961	12	23	18	19	28	65
Grade 8 Science	124,337	15	17	19	31	19	68
Biology	131,573	18	13	31	12	28	70
Physical Science	179	59	35	4	2	0	6
Social Studies							
American Government	83,646	7	17	48	17	11	77
American History	126,134	9	17	33	15	26	75

Table 4 – Raw Score Subscale Ranges for Below Proficient, At/Near Proficient and Above Proficient

Test	Strand	Below Proficient	At/Near Proficient	Above Proficient
Grade 3 ELA	RI	0-5	6-9	10-16
	RL	0-4	5-8	9-15
	W	0-1	2-4	5-10
Grade 4 ELA	RI	0-4	5-8	9-15
	RL	0-5	6-9	10-15
	W	0-2	3-4	5-10
Grade 5 ELA	RI	0-5	6-9	10-15
	RL	0-5	6-9	10-16
	W	0-3	4-5	6-10
Grade 6 ELA	RI	0-8	9-13	14-24
	RL	0-7	8-11	12-18
	W	0-8	9-12	13-20
Grade 7 ELA	RI	0-8	9-12	13-23
	RL	0-6	7-11	12-18
	W	0-7	8-10	11-20
Grade 8 ELA	RI	0-9	10-14	15-22
	RL	0-6	7-10	11-18
	W	0-8	9-11	12-20
High School ELA I	RI	0-7	8-12	13-25
	RL	0-4	5-9	10-17
	W	0-7	8-11	12-20
High School ELA II	RI	0-9	10-14	15-24
	RL	0-4	5-8	9-16
	W	0-6	7-10	11-20

Note: RL = Reading Literary Text; RI = Reading Informational Text; W = Writing. The ranges are based on the online test form, and there may be slight differences between the online and paper forms of the same test.

Table 4 – Continued

Test	Strand	Below Proficient	At/Near Proficient	Above Proficient
Grade 3 Math	FRA	0-3	4-6	7-11
	G	0-4	5-7	8-12
	MUD	0-5	6-9	10-14
	MR	0-10	11-15	16-30
	NO	0-4	5-7	8-12
Grade 4 Math	FRA	0-4	5-8	9-19
	G	0-4	5-7	8-11
	MUD	0-4	5-7	8-19
	MR	0-5	6-9	10-28
	MR *	0-4	5-8	9-27
Grade 5 Math	D	0-6	7-10	11-17
	FRA	0-3	4-7	8-20
	G	0-2	3-5	6-12
	MR	0-7	8-12	13-32
Grade 6 Math	EE	0-6	7-9	10-17
	GS	0-3	4-5	6-11
	MR	0-5	6-10	11-22
	NS	0-4	5-6	7-11
	RP	0-5	6-8	9-13
Grade 7 Math	G	0-3	4-6	7-12
	MR	0-10	11-15	16-33
	NS	0-6	7-10	11-16
	RP	0-2	3-5	6-12
	SP	0-4	5-7	8-12
Grade 8 Math	EE	0-4	5-7	8-13
	F	0-4	5-7	8-11
	G	0-4	5-8	9-16
	MR	0-7	8-12	13-29
	NS	0-3	4-6	7-12
Algebra	F	0-6	7-10	11-24
	MR	0-7	8-11	12-27
	NQEE	0-6	7-9	10-20
	S	0-2	3-5	6-10
Geometry	CP	0-4	5-8	9-20
	C	0-2	3-5	6-10
	MR	0-9	10-15	16-37

Test	Strand	Below Proficient	At/Near Proficient	Above Proficient
	P	0-1	2-4	5-10
	ST	0-4	5-7	8-15
Integrated Math 1	A	0-4	5-7	8-13
	G	0-3	4-6	7-13
	MR	0-8	9-13	14-30
	NQF	0-3	4-7	8-19
	S	0-3	4-6	7-11
Integrated Math 2	F	0-1	2-4	5-11
	G	0-8	9-12	13-20
	MR	0-9	10-15	16-33
	NQEE	0-2	3-5	6-14
	P	0-2	3-5	6-10

Note: MR * = a separate conversion table was used for a small number of students because an item was dropped due to a Spanish mistranslation. MR = Modeling & Reasoning; MUD = Multiplication & Division; NO = Numbers & Operations; G = Geometry; FRA = Fractions; D = Decimals; EE = Expressions & Equations; NS = The Number System; GS = Geometry & Statistics; RP = Ratios & Proportions; SP = Statistics & Probability; F = Functions; NQEE = Number, Quantities, Equations & Expressions; S = Statistics; CP = Congruence & Proof; ST = Similarity & Trigonometry; C = Circles; P = Probability; A = Algebra; NQF = Number & Quantity/Functions. The ranges are based on the online test form, and there may be slight differences between the online and paper forms of the same test. The Modeling and Reasoning items are embedded within the other strands.

Table 4 – Continued

Test	Strand	Below Proficient	At/Near Proficient	Above Proficient
Grade 5 Science	ES	0-6	7-10	11-17
	LS	0-6	7-11	12-19
	PS	0-7	8-10	11-20
Grade 8 Science	ES	0-6	7-10	11-22
	LS	0-3	4-7	8-16
	PS	0-5	6-9	10-18
Biology	BS-A	0-3	4-7	8-15
	BS-B	0-4	5-7	8-15
	BS-C	0-2	3-6	7-13
	BS-D	0-3	4-6	7-13
Physical Science	PS-A	0-2	3-6	7-17
	PS-B	0-1	2-5	6-15
	PS-C	0-3	4-6	7-15
	PS-D	0-2	3-5	6-9

Note: ES = Earth Science; LS = Life Science; PS = Physical Science; BS-A = Heredity; BS-B = Evolution; BS-C = Diversity & Interdependence of Life; BS-D = Cells; PS-A = Study of Matter; PS-B = Energy & Waves; PS-C = Forces & Motion; PS-D = The Universe. The ranges are based on the online test form, and there may be slight differences between the online and paper forms of the same test.

Test	Strand	Below Proficient	At/Near Proficient	Above Proficient
American Government	AGA	0-5	6-10	11-23
	AGB	0-6	7-11	12-25
	AGC	0-4	5-8	9-16
American History	AHA	0-5	6-9	10-18
	AHB	0-8	9-13	14-25
	AHC	0-4	5-9	10-20

Note: EG = Economics & Geography; GO=Government; HI=History; EC=Economics; GE=Geography; HG=History & Government; AGA = Historic Documents; AGB = Principles & Structure; AGC = Ohio/Policy/Economy; AHA = Skills & Documents; AHB = 1877-1945; AHC = 1945-Present. The ranges are based on the online test form, and there may be slight differences between the online and paper forms of the same test.

Subscale data

Table 5 - Percent of Students Below Proficient, At/Near Proficient and Above Proficient

Test	Strand	Below Proficient	At/Near Proficient	Above Proficient
Grade 3 ELA	RI	22	42	36
	RL	23	37	40
	W	21	45	35
Grade 4 ELA	RI	16	41	43
	RL	27	37	36
	W	13	37	51
Grade 5 ELA	RI	24	35	41
	RL	15	28	57
	W	17	23	60
Grade 6 ELA	RI	26	34	40
	RL	28	38	34
	W	36	39	26
Grade 7 ELA	RI	25	26	49
	RL	16	40	45
	W	32	17	51
Grade 8 ELA	RI	26	38	36
	RL	28	38	34
	W	30	18	52
High School ELA I	RI	19	36	45
	RL	18	40	43
	W	35	21	45
High School ELA II	RI	26	30	44
	RL	25	35	40
	W	30	28	42

Note: RL = Reading Literary Text; RI = Reading Informational Text; W = Writing.

Table 5 - Continued

Test	Strand	Below Proficient	At/Near Proficient	Above Proficient
Grade 3 Math	FRA	19	36	45
	G	17	35	48
	MUD	21	30	48
	MR	23	20	57
	NO	24	22	54
Grade 4 Math	FRA	14	28	58
	G	19	28	52
	MUD	18	23	59
	MR	20	21	60
Grade 5 Math	D	25	25	50
	FRA	20	32	48
	G	21	32	46
	MR	27	24	48
Grade 6 Math	EE	31	21	48
	GS	29	26	45
	MR	30	32	39
	NS	29	23	48
	RP	30	28	41
Grade 7 Math	G	31	32	37
	MR	35	21	44
	NS	33	31	36
	RP	31	28	40
	SP	32	37	31
Grade 8 Math	EE	32	30	37
	F	20	40	40
	G	30	33	38
	MR	29	27	43
	NS	26	35	39
Algebra	F	37	25	39
	MR	34	23	43
	NQEE	38	20	42
	S	26	48	26
Geometry	CP	40	27	33
	C	41	35	24
	MR	45	20	35
	P	27	41	32
	ST	47	19	34
Integrated Math 1	A	44	28	28
	G	54	31	15

Test	Strand	Below Proficient	At/Near Proficient	Above Proficient
	MR	53	21	26
	NQF	45	30	25
	S	42	35	23
Integrated Math 2	F	35	41	24
	G	61	20	19
	MR	56	21	23
	NQEE	45	32	23
	P	40	37	23

Note: MR = Modeling & Reasoning; MUD = Multiplication & Division; NO = Numbers & Operations; G = Geometry; FRA = Fractions; D = Decimals; EE = Expressions & Equations; NS = The Number System; GS = Geometry & Statistics; RP = Ratios & Proportions; SP = Statistics & Probability; F = Functions; NQEE = Number, Quantities, Equations & Expressions; S = Statistics; CP = Congruence & Proof; ST = Similarity & Trigonometry; C = Circles; P = Probability; A = Algebra; NQF = Number & Quantity/Functions. The Modeling and Reasoning items are embedded within the other strands.

Table 5 - Continued

Test	Strand	Below Proficient	At/Near Proficient	Above Proficient
Grade 5 Science	ES	16	32	52
	LS	23	31	46
	PS	23	30	46
Grade 8 Science	ES	25	28	47
	LS	12	41	47
	PS	19	37	44
Biology	BS-A	19	35	46
	BS-B	23	29	48
	BS-C	12	46	42
	BS-D	22	30	48
Physical Science	PS-A	73	26	2
	PS-B	36	61	2
	PS-C	80	18	2
	PS-D	46	49	6

Note: ES = Earth Science; LS = Life Science; PS = Physical Science; BS-A = Heredity; BS-B = Evolution; BS-C = Diversity & Interdependence of Life; BS-D = Cells; PS-A = Study of Matter; PS-B = Energy & Waves; PS-C = Forces & Motion; PS-D = The Universe.

Test	Strand	Below Proficient	At/Near Proficient	Above Proficient
American Government	AGA	14	26	59
	AGB	12	28	60
	AGC	12	41	47
American History	AHA	14	28	58
	AHB	19	21	60
	AHC	8	41	52

Note: EG = Economics & Geography; GO=Government; HI=History; EC=Economics; GE=Geography; HG=History & Government; AGA = Historic Documents; AGB = Principles & Structure; AGC = Ohio/Policy/Economy; AHA = Skills & Documents; AHB = 1877-1945; AHC = 1945-Present.

The raw score to scale score conversion tables are presented in Appendix G of the full technical report. The scale score frequency tables are presented in Appendix D. The report may be found here:

https://oh.portal.airast.org/core/fileparse.php/3094/urlt/OST_Annual_Technical_Report_Spring2019.pdf