

Statistical Summary of the Ohio Graduation Tests March 2005 Administration

DESCRIPTIVE STATISTICS

These statistics were computed using the entire population of students tested (from both public and non public schools) who were tested during the March 2005 administration of the Ohio Graduation Tests (OGT). These are readjusted numbers and as such they may not match those preliminary data already posted on the web site.

Table 1 summarizes all five tests (Reading, Mathematics, Writing, Science, and Social Studies) for March 2005 administration. All tests are highly reliable with alpha coefficients exceeding .88.

Table 1 – Summary statistics for March 2005

	Reading	Math.	Writing	Science	Social Studies
N-count	148,518	148,614	147,751	147,790	147,306
Raw Score Minimum	0	0	0	0	0
Raw Score Maximum	48	46	48	48	48
Raw Score Mean	33.26	27.30	32.05	28.39	30.12
Raw Score Standard Deviation	9.37	9.56	7.42	9.20	10.13
Raw Score SEM	2.90	2.88	2.56	3.02	3.04
Scaled Score Minimum	268	260	250	211	231
Scaled Score Maximum	545	568	611	591	565
Scaled Score Mean	434.17	426.41	427.61	415.90	423.58
Scaled Score Standard Deviation	24.34	29.88	31.27	31.89	31.28
Scaled Score SEM	7.54	9.01	10.79	10.48	9.38
Reliability (Cronbach alpha)	0.904	0.909	0.881	0.892	0.910
Public Students	134,698	134,799	133,936	134,003	133,520
Non-public Students	13,820	13,815	13,815	13,787	13,786

DETERMINING THE LEVELS OF PERFORMANCE AND CUT SCORES

In August of 2003, House Bill 3 was signed into law. The most significant impact of this law on the Ohio Graduation Tests was the use of five categories for performance, instead of four. Intended to better show progress that schools were making both in moving students toward proficient and to the higher levels above proficient, the new categories included: Limited, Basic, Proficient, Accelerated, and Advanced. In spring of

2004, groups of Ohio educators met to recommend cut scores for the Reading and Mathematics tests. Those recommendations were adopted by the State Board of Education in June of 2004. Similarly, groups of Ohio educators met in June 2005 to recommend cut scores for Writing, Science and Social Studies; those recommendations were adopted by the State Board of education in June 2005.

Table 2 presents the scaled scores associated with each of the five performance levels and the associated raw score ranges for the March 2005 administration of the Reading, Mathematics, Writing, Science and Social Studies tests.

Table 2 – Score ranges for all subjects and all performance levels

Subject	Performance Level	Raw Score	Scaled Score
Reading	Advanced	40.0 – 48.0	448 – 545
	Accelerated	32.0 – 39.5	429 – 447
	Proficient	18.0 – 31.5	400 – 428
	Basic	12.0 – 17.5	383 – 399
	Limited	0.0 – 11.5	268 – 382
Mathematics	Advanced	34.5 – 46.0	444 – 568
	Accelerated	27.5 – 34.0	425 – 443
	Proficient	18.0 – 27.0	400 – 424
	Basic	12.5 – 17.5	384 – 399
	Limited	0.0 – 12.0	260 – 383
Writing	Advanced	41.0 – 48.0	476 – 611
	Accelerated	34.0 – 40.5	430 – 475
	Proficient	25.5 – 33.5	400 – 429
	Basic	18.0 – 25.0	378 – 399
	Limited	0.0 – 17.5	258 – 377
Science	Advanced	37.5 – 48.0	445 – 591
	Accelerated	32.0 – 37.0	425 – 444
	Proficient	23.5 – 31.5	400 – 424
	Basic	14.5 – 23.0	371 – 399
	Limited	0.0 – 14.0	211 – 370
Social Studies	Advanced	39.0 – 48.0	446 – 565
	Accelerated	33.0 – 38.5	429 – 445
	Proficient	21.5 – 32.5	400 – 428
	Basic	15.0 – 21.0	382 – 399
	Limited	0.0 – 14.5	231 – 381

TEST RESULTS

Table 3 presents summarized results of student performance on the March 2005 OGT. A total of 134,698 public school tenth grade students took the Reading Test, a total of 134,799 took the Mathematics Test, a total of 133,936 took the Writing Test, a total of 134,003 took the Science Test and a total of 133,520 took the Social Studies Tests. These figures include students enrolled in community schools and other public educational entities. Students with Individualized Education Plans (IEP) and/or Limited English Proficiency (LEP) are also included in the figures. Students enrolled in chartered non-public schools are not included.

In the March 2005 test administration, about 91% of students were proficient or above in Reading, about 80% were proficient in Mathematics, about 82% were proficient in Writing, about 71% were proficient in science and about 78% were proficient in Social Studies.

Table 3 - Results of the March 2005 OGT administration for public schools

Reading				
Performance Level		Number	Percent	
Proficient or above:	Advanced	36,469	27.1	90.7
	Accelerated	46,790	34.7	
	Proficient	38,886	28.9	
Below proficient:	Basic	7,644	5.7	9.3
	Limited	4,909	3.6	

Mathematics				
Performance Level		Number	Percent	
Proficient or above:	Advanced	35,329	26.2	79.6
	Accelerated	33,434	24.8	
	Proficient	38,495	28.6	
Below proficient:	Basic	15,844	11.8	20.4
	Limited	11,697	8.7	

Writing				
Performance Level		Number	Percent	
Proficient or above:	Advanced	7,405	5.5	82.1
	Accelerated	56,254	42.0	
	Proficient	46,276	34.6	
Below proficient:	Basic	16,404	12.2	17.9
	Limited	7,597	5.7	

Table 3 Results of the March 2005 OGT administration for public schools (continued)

Science				
Performance Level		Number	Percent	
Proficient or above:	Advanced	22,115	16.5	70.9
	Accelerated	30,000	22.4	
	Proficient	42,844	32.0	
Below proficient:	Basic	25,212	18.8	29.1
	Limited	13,832	10.3	

Social Studies				
Performance Level		Number	Percent	
Proficient or above:	Advanced	29,924	22.4	77.5
	Accelerated	28,544	21.4	
	Proficient	44,947	33.7	
Below proficient:	Basic	16,297	12.2	22.5
	Limited	13,808	10.3	

Note: Percents may not add up to 100 percent due to rounding

PROCEDURE FOR IDENTIFICATION OF MID-RANGE OF MINIMUMALLY PROFICIENT BY CONTENT STANDARD AND RESULTS REPORTING

To provide useful feedback on student performance at content standards within a test, ODE also reports a range score for the content standards or strands, called “mid-range”. The mid-range is defined for each content standard as the area surrounding the critical theta student ability level associated with the proficient cut point for a whole test, adjusted upward by the standard error of measurement. Most examinees (65% to 95%, depending on the strand) fall within or above this “mid-range.”

Detailed descriptions of the strands are available on the Ohio Department of Education web site under postings for Academic Content Standards. The test blueprint calls for some of the strands to be combined in the number of points assigned for those strands. For example, in Social Studies, the combined number of points for People in Societies and Geography is 12 points. More details are provided in the OGT interpretive guide, also available at the Ohio Department of Education Web site.

The number of points for the midrange of each strand is reported in raw score points and shown in Table 4.

Table 4 – Mid-Range Values for each content standard reported

Subject	Strand (Standard)	Mid-Range	Possible Points
READING	AV (Acquisition of Vocabulary)	2.0 – 4.0	8
	IT (Informational Text)	4.5 – 6.5	16
	LT (Literary Text)	4.0 – 5.5	12
	RP (Reading Process)	6.0 – 8.0	12
	Total Points:		48
MATHEMATICS	A (Algebra)	4.5 – 6.0	10
	D (Data Analysis)	3.5 – 5.0	11
	G (Geometry)	3.0 – 4.5	8
	M (Measurement)	2.5 – 4.0	8
	N (Numbers, Number Sense)	3.0 – 4.5	9
	Total Points:		46
WRITING	WP (Writing Processes)	8.5 – 9.5	12
	WA (Writing Applications)	10.0 – 11.0	24
	WC (Writing Conventions)	7.0 – 8.0	12
	Total Points:		48
SCIENCE	ES (Earth and Space Sciences)	7.0 – 8.5	12
	LS (Life Sciences)	5.0 – 6.5	12
	PS (Physical Sciences)	5.0 – 6.5	12
	ST (Science and Technology)	5.5 – 7.5	12
	SI (Scientific Inquiry)		
	SK (Scientific Ways of Knowing)		
	Total Points:		48
SOCIAL STUDIES	HI (History)	4.5 – 6.5	14
	PE (People in Societies)	6.0 – 7.5	12
	GE (Geography)		
	SO (Social Studies, Skills and Methods)	4.5 – 6.0	9
	EC (Economics)	5.5 – 7.0	13
	GO (Government)		
	CI (Citizenship, Rights and Responsibilities)		
Total Points:		48	

CONVERSION TABLE OF RAW SCORES TO SCALED SCORES

Table 5 presents raw scores and associated scaled scores for the reading, mathematics, writing, science, and social studies tests. That conversion is based on student ability measure (theta). Raw scores are transferred into student ability scores (theta) based on the functions of items in the particular test. The theta is converted into scaled score in a linear transformation. So the theta scores to scaled scores relation is fixed, while the raw scores to scaled scores relation may change from one test form to another depending on the difficulty level of a particular test form.

Table 5 – Raw score to scaled score conversion table, March 2005 OGT administration

RAW SCORE	READING		MATHEMATICS		WRITING		SCIENCE		SOCIAL STUDIES	
	Status	Scaled Score	Status	Scaled Score	Status	Scaled Score	Status	Scaled Score	Status	Scaled Score
0	Limited	268	Limited	260	Limited	258	Limited	211	Limited	231
0.5	Limited	297	Limited	291	Limited	282	Limited	248	Limited	266
1	Limited	314	Limited	309	Limited	296	Limited	270	Limited	287
1.5	Limited	324	Limited	320	Limited	305	Limited	284	Limited	299
2	Limited	331	Limited	327	Limited	311	Limited	293	Limited	308
2.5	Limited	337	Limited	334	Limited	316	Limited	301	Limited	315
3	Limited	342	Limited	339	Limited	321	Limited	307	Limited	320
3.5	Limited	346	Limited	343	Limited	324	Limited	313	Limited	326
4	Limited	349	Limited	347	Limited	327	Limited	317	Limited	330
4.5	Limited	353	Limited	350	Limited	330	Limited	322	Limited	334
5	Limited	356	Limited	354	Limited	333	Limited	326	Limited	338
5.5	Limited	359	Limited	356	Limited	336	Limited	329	Limited	341
6	Limited	361	Limited	359	Limited	338	Limited	333	Limited	344
6.5	Limited	364	Limited	362	Limited	340	Limited	336	Limited	347
7	Limited	366	Limited	364	Limited	342	Limited	339	Limited	350
7.5	Limited	368	Limited	366	Limited	344	Limited	342	Limited	352
8	Limited	370	Limited	368	Limited	346	Limited	344	Limited	355
8.5	Limited	372	Limited	371	Limited	348	Limited	347	Limited	357
9	Limited	374	Limited	372	Limited	350	Limited	349	Limited	359
9.5	Limited	376	Limited	374	Limited	352	Limited	352	Limited	362
10	Limited	377	Limited	376	Limited	354	Limited	354	Limited	364
10.5	Limited	379	Limited	378	Limited	355	Limited	356	Limited	366
11	Limited	381	Limited	380	Limited	357	Limited	358	Limited	368

Table 5 – Raw score to scaled score conversion table, March 2005 OGT administration (continued)

RAW SCORE	READING		MATHEMATICS		WRITING		SCIENCE		SOCIAL STUDIES	
	Status	Scaled Score	Status	Scaled Score	Status	Scaled Score	Status	Scaled Score	Status	Scaled Score
11.5	Limited	382	Limited	381	Limited	358	Limited	360	Limited	370
12	Basic	384	Limited	383	Limited	360	Limited	362	Limited	371
12.5	Basic	385	Basic	384	Limited	362	Limited	364	Limited	373
13	Basic	387	Basic	386	Limited	363	Limited	366	Limited	375
13.5	Basic	388	Basic	388	Limited	365	Limited	368	Limited	377
14	Basic	390	Basic	389	Limited	366	Limited	370	Limited	378
14.5	Basic	391	Basic	390	Limited	368	Basic	372	Limited	380
15	Basic	392	Basic	392	Limited	369	Basic	374	Basic	382
15.5	Basic	394	Basic	393	Limited	371	Basic	375	Basic	383
16	Basic	395	Basic	395	Limited	372	Basic	377	Basic	385
16.5	Basic	396	Basic	396	Limited	374	Basic	379	Basic	386
17	Basic	398	Basic	397	Limited	375	Basic	380	Basic	388
17.5	Basic	399	Basic	399	Limited	376	Basic	382	Basic	389
18	Proficient	400	Proficient	400	Basic	378	Basic	384	Basic	391
18.5	Proficient	401	Proficient	401	Basic	379	Basic	385	Basic	392
19	Proficient	402	Proficient	403	Basic	381	Basic	387	Basic	393
19.5	Proficient	404	Proficient	404	Basic	382	Basic	388	Basic	395
20	Proficient	405	Proficient	405	Basic	384	Basic	390	Basic	396
20.5	Proficient	406	Proficient	407	Basic	385	Basic	391	Basic	398
21	Proficient	407	Proficient	408	Basic	387	Basic	393	Basic	399
21.5	Proficient	408	Proficient	409	Basic	388	Basic	394	Proficient	400
22	Proficient	409	Proficient	410	Basic	390	Basic	396	Proficient	402
22.5	Proficient	410	Proficient	412	Basic	391	Basic	397	Proficient	403

Table 5 – Raw score to scaled score conversion table, March 2005 OGT administration (continued)

RAW SCORE	READING		MATHEMATICS		WRITING		SCIENCE		SOCIAL STUDIES	
	Status	Scaled Score	Status	Scaled Score	Status	Scaled Score	Status	Scaled Score	Status	Scaled Score
23	Proficient	411	Proficient	413	Basic	393	Basic	399	Proficient	404
23.5	Proficient	412	Proficient	414	Basic	394	Proficient	400	Proficient	405
24	Proficient	413	Proficient	416	Basic	395	Proficient	402	Proficient	407
24.5	Proficient	414	Proficient	417	Basic	397	Proficient	403	Proficient	408
25	Proficient	415	Proficient	418	Basic	398	Proficient	405	Proficient	409
25.5	Proficient	416	Proficient	419	Proficient	400	Proficient	406	Proficient	411
26	Proficient	417	Proficient	421	Proficient	402	Proficient	408	Proficient	412
26.5	Proficient	418	Proficient	422	Proficient	403	Proficient	409	Proficient	413
27	Proficient	419	Proficient	423	Proficient	405	Proficient	411	Proficient	414
27.5	Proficient	420	Accelerated	425	Proficient	406	Proficient	412	Proficient	415
28	Proficient	421	Accelerated	426	Proficient	408	Proficient	414	Proficient	417
28.5	Proficient	422	Accelerated	427	Proficient	409	Proficient	415	Proficient	418
29	Proficient	423	Accelerated	429	Proficient	411	Proficient	416	Proficient	419
29.5	Proficient	424	Accelerated	430	Proficient	413	Proficient	418	Proficient	420
30	Proficient	425	Accelerated	431	Proficient	414	Proficient	419	Proficient	422
30.5	Proficient	426	Accelerated	433	Proficient	416	Proficient	421	Proficient	423
31	Proficient	427	Accelerated	434	Proficient	418	Proficient	422	Proficient	424
31.5	Proficient	428	Accelerated	436	Proficient	420	Proficient	424	Proficient	425
32	Accelerated	429	Accelerated	437	Proficient	422	Accelerated	425	Proficient	426
32.5	Accelerated	430	Accelerated	438	Proficient	424	Accelerated	427	Proficient	428
33	Accelerated	431	Accelerated	440	Proficient	426	Accelerated	429	Accelerated	429
33.5	Accelerated	432	Accelerated	442	Proficient	428	Accelerated	430	Accelerated	430
34	Accelerated	433	Accelerated	443	Accelerated	430	Accelerated	432	Accelerated	431

Table 5 – Raw score to scaled score conversion table, March 2005 OGT administration (continued)

RAW SCORE	READING		MATHEMATICS		WRITING		SCIENCE		SOCIAL STUDIES	
	Status	Scaled Score	Status	Scaled Score	Status	Scaled Score	Status	Scaled Score	Status	Scaled Score
34.5	Accelerated	434	Advanced	445	Accelerated	432	Accelerated	434	Accelerated	433
35	Accelerated	435	Advanced	446	Accelerated	434	Accelerated	435	Accelerated	434
35.5	Accelerated	436	Advanced	448	Accelerated	437	Accelerated	437	Accelerated	435
36	Accelerated	437	Advanced	450	Accelerated	439	Accelerated	439	Accelerated	437
36.5	Accelerated	438	Advanced	452	Accelerated	442	Accelerated	441	Accelerated	438
37	Accelerated	439	Advanced	453	Accelerated	445	Accelerated	443	Accelerated	440
37.5	Accelerated	440	Advanced	455	Accelerated	448	Advanced	445	Accelerated	441
38	Accelerated	442	Advanced	457	Accelerated	451	Advanced	447	Accelerated	443
38.5	Accelerated	443	Advanced	459	Accelerated	455	Advanced	449	Accelerated	444
39	Accelerated	445	Advanced	462	Accelerated	459	Advanced	451	Advanced	446
39.5	Accelerated	446	Advanced	464	Accelerated	463	Advanced	453	Advanced	448
40	Advanced	448	Advanced	467	Accelerated	467	Advanced	456	Advanced	450
40.5	Advanced	449	Advanced	469	Accelerated	472	Advanced	458	Advanced	452
41	Advanced	451	Advanced	472	Advanced	476	Advanced	461	Advanced	454
41.5	Advanced	453	Advanced	476	Advanced	482	Advanced	464	Advanced	456
42	Advanced	455	Advanced	479	Advanced	487	Advanced	467	Advanced	458
42.5	Advanced	458	Advanced	483	Advanced	492	Advanced	470	Advanced	461
43	Advanced	460	Advanced	488	Advanced	498	Advanced	474	Advanced	464
43.5	Advanced	463	Advanced	493	Advanced	505	Advanced	478	Advanced	467
44	Advanced	466	Advanced	499	Advanced	511	Advanced	482	Advanced	470
44.5	Advanced	469	Advanced	508	Advanced	519	Advanced	487	Advanced	474
45	Advanced	473	Advanced	519	Advanced	526	Advanced	493	Advanced	479
45.5	Advanced	478	Advanced	537	Advanced	535	Advanced	499	Advanced	484

Table 5 – Raw score to scaled score conversion table, March 2005 OGT administration (continued)

46	Advanced	484	Advanced	568	Advanced	544	Advanced	507	Advanced	491
46.5	Advanced	491			Advanced	555	Advanced	517	Advanced	499
47	Advanced	500			Advanced	567	Advanced	530	Advanced	511
47.5	Advanced	517			Advanced	585	Advanced	553	Advanced	531
48	Advanced	545			Advanced	611	Advanced	591	Advanced	565