MAY 2007 OHIO ACHIEVEMENT TESTS ADMINISTRATION

STATISTICAL SUMMARY

This document provides a summary of data from the May 2007 administration of the Ohio Achievement Tests to students in grades 3-8. The statistics shown are computed from the entire population of Ohio public school students (including community school students) for each subject and grade tested. Tables 1-3 summarize parameters computed from the data. Tables 4-6 show the percent of students at each performance level for each grade and test. Tables 7 and 8 show the raw score cut points computed from test data. Subscale passing bands are shown in Tables 9-11. Tables 12-14 show the conversions of raw scores to scaled scores.

Table 1 - Summary of Parameters from the May 2007 Administration of the Ohio Achievement Tests for Grades 3 and 4.

	Grade 3		Grade 4		
Parameter	**Reading**	**Math**	**Reading**	**Math**	**Writing**
N-count	124,605	129,977	128,040	128,135	128,050
Max Raw Score	49	52	49	52	39
Max Scaled Score	508	523	549	584	518
Min Scaled Score	251	241	269	231	287
Raw Score Mean	35.27	38.61	29.76	31.61	23.65
Raw Score Standard Deviation	8.52	8.16	10.00	8.96	5.79
Raw Score SEM	3.00	3.02	3.35	3.17	3.64
Scaled Score Mean	415.52	424.27	424.61	420.11	419.32
Scaled Score Standard Deviation	26.93	27.48	30.89	32.93	23.68
Scaled Score SEM	9.49	10.18	10.33	11.63	14.88
Reliability	0.88	0.86	0.89	0.88	0.60

The Grade 3 Reading test is administered in both fall and spring. The numbers of examinees (N-counts) in Table 1 include only students who were tested in the spring, so the figures for Grade 3 Reading do not include some students who achieved a Proficient (or above) score on the fall test and did not retake the test during the spring administration.

Table 2 - Summary of Parameters from the May 2007 Administration of the Ohio Achievement Tests for Grades 5 and 6.

	Grade 5				Grade 6	
Parameter	**Reading**	**Math**	**Science**	**Social Studies**	**Reading**	**Math**
N-count	128,776	128,730	128,836	128,862	132,753	132,776
Max Raw Score	49	52	48	48	49	50
Max Scaled Score	536	552	548	561	549	587
Min Scaled Score	246	240	243	222	275	232
Raw Score Mean	31.74	27.65	27.07	26.72	25.70	26.98
Raw Score Standard Deviation	8.66	10.04	8.37	8.31	9.53	10.20
Raw Score SEM	3.14	3.21	3.10	3.36	3.44	3.38
Scaled Score Mean	421.47	409.16	409.91	402.80	419.03	423.11
Scaled Score Standard Deviation	29.37	34.50	29.30	29.92	27.34	38.25
Scaled Score SEM	10.66	11.04	10.83	12.10	9.88	12.67
Reliability	0.87	0.90	0.86	0.84	0.87	0.89

Table 3 – Summary of Parameters from the May 2007 Administration of the Ohio Achievement Tests for Grades 7 and 8.

	Grade 7			Grade 8			
Parameter	**Reading**	**Math**	**Writing**	**Reading**	**Math**	**Science**	**Social Studies**
N-count	136,070	135,991	135,667	139,748	139,826	139,645	139,470
Max Raw Score	47	50	41	48	46	48	48
Max Scaled Score	528	569	530	538	550	561	546
Min Scaled Score	272	273	277	260	278	251	236
Raw Score Mean	27.03	21.46	26.17	29.54	21.39	23.76	22.42
Raw Score Standard Deviation	9.14	9.00	6.45	9.07	8.43	8.95	8.55
Raw Score SEM	3.25	3.43	3.08	3.32	3.21	3.22	3.12
Scaled Score Mean	418.91	414.00	422.48	420.66	412.77	408.27	396.23
Scaled Score Standard Deviation	27.93	27.09	27.81	28.33	25.63	30.53	31.21
Scaled Score SEM	9.93	10.32	13.26	10.37	9.76	11.00	11.39
Reliability	0.87	0.85	0.77	0.87	0.85	0.87	0.87

Table 4 - Percentage of Students at Each Performance Level for Grades 3 and 4.

	Grade 3		Grade 4		
	Reading	Math	Reading	Math	Writing
Standard	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
Advanced	31.8	19.9	7.8	16.7	2.2
Accelerated	27.5	23.7	34.3	20.3	22.0
Proficient	16.8	40.7	37.8	38.7	58.0
Basic	11.1	10.2	10.3	14.9	13.7
Limited	12.9	5.4	9.8	9.3	4.1

Table 5 - Percentage of Students at Each Performance Level for Grades 5 and 6.

	Grade 5				Grade 6	
	Reading	Math	Science	Social Studies	Reading	Math
Standard	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
Advanced	11.1	21.2	9.9	9.8	9.0	26.8
Accelerated	18.4	12.1	33.1	21.5	22.0	19.5
Proficient	50.5	27.5	24.6	26.0	46.6	27.4
Basic	9.6	18.9	26.8	36.0	13.9	14.7
Limited	10.5	20.4	5.6	6.8	8.5	11.6

Table 6 - Percentage of Students at Each Performance Level for Grades 7 and 8.

	Grade 7			Grade 8			
	Reading	Math	Writing	Reading	Math	Science	Social Studies
Standard	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**	**Percent**
Advanced	13.0	6.5	2.2	13.8	3.9	12.9	11.0
Accelerated	23.2	16.2	36.9	28.5	18.6	16.1	10.6
Proficient	41.2	48.2	41.9	37.7	48.7	33.2	27.0
Basic	14.8	21.2	18.0	12.8	22.0	30.4	34.3
Limited	7.8	7.9	1.0	7.2	6.8	7.4	17.1

Equating and Scaling: The Conversion of Raw Scores to Scaled Scores

Ohio uses the Rasch model (a single parameter logistic model) for computing item difficulties and student abilities. The Rasch model is based on the probabilities of examinees answering each item correctly. This model is used because of its widespread acceptance, its ease of use, and commercial availability of software for implementing it. The Rasch model provides estimates of the difficulties of each item on a linear scale in log-odds units, or logits.

Equating and Test Form Construction

Equating is a process where test forms comprised of different items are calibrated to the same performance standards. Because each test form is made up of items that have been field-tested, item difficulty estimates from the field test administration are used to pre-equate operational forms during form construction so that operational test forms are of approximately equal difficulty for each administration.

Common Item Equating

Following administration of the May 2007 achievement tests, item difficulty values were estimated using an early return sample for all grades. The early return sample was selected to be statistically representative of all Ohio public school students. Because item difficulty estimates were available from field tests, all the operational items could potentially serve as anchor items in the equating process.

Calibrating, equating and linking proceeded through four steps. First, the current administration difficulty values (from the early return sample) were computed and compared with the "bank" or reference difficulty values. The mean difference between the current and the bank difficulties of the anchor items is called the equating constant. Second, the equating constant was added to each difficulty value for items on the current test so that the mean item difficulties were equal. In step three, the "linked" current values were compared with the bank values to identify the item with the largest absolute difference between the two values. If the absolute value of the difference is greater than 0.3 logits, the item was eliminated as an anchor item. Fourth, this procedure was repeated until the largest difference between a linked current value and bank value was less than 0.3 logits. This procedure ensured that the items used to anchor the operational test to the reference scale were stable. When the equating process was complete, item difficulties from the current administration were calibrated to the same scale as the items used in setting performance standards.

Scaling

Ohio performance standards are expressed in scaled scores. Scaled scores are invariant while raw scores reflect minor differences in the difficulty of test items in any test administration. A scaled score of 400 for one administration is the same as a scaled score of 400 from another administration of the same test in terms of overall performance, but the number of raw score points corresponding to a 400 may shift slightly from administration to administration.

After the May 2007 operational test administration, test items were calibrated and test forms were equated. Rasch ability estimates (called theta scores) were computed for each

possible raw score. The Rasch ability estimates were then transformed to the appropriate Ohio Achievement Test scale scores, all of which are calibrated so that the proficient standard is equal to a scaled score of 400.

Ohio Rounding Rule

Raw scores are integers that rarely have associated integer scaled scores at the points used to define Ohio performance standards. Therefore Ohio uses a rounding rule to match the raw score with the scaled score nearest the performance standard (e.g. 400 scaled score for Proficient) to establish the raw score cut points (e.g. Proficient). For example, if a raw score of 31 is associated with an observed scaled score of 399.14, and 399.14 is the closest observed scaled score to the proficient performance standard, the scaled score is rounded up to 400. For that test, an examinee must have a raw score of 31 or more to be judged proficient.

If the closest scaled score value for an integer raw score exceeds the standard, then that raw score serves as the raw score cut point. For example, if a raw score of 30 produces a rounded scaled score of 398 and a raw score of 31 produces a rounded scaled score of 401, the raw score cut would be 31.

Table 7 - Cut Score Points for Basic, Proficient, Accelerated, and Advanced Standards, May 2007 Administration

Grade	Subject	Score	Limited	Basic	Proficient	Accelerated	Advanced
3	Reading	Raw	< 25	25	31	36	41
		Scaled	< 385	385	400	415	432
	Math	Raw	< 23	23	31	42	46
		Scaled	< 378	378	400	429	447
4	Reading	Raw	< 15	15	21	34	43
		Scaled	< 384	384	400	435	467
	Math	Raw	< 19	19	26	36	41
		Scaled	< 377	377	400	432	452
	Writing	Raw	< 13	13	19	28	35
		Scaled	< 383	383	400	436	472
5	Reading	Raw	< 20	20	25	38	42
		Scaled	< 384	384	400	441	459
	Math	Raw	< 19	19	25	33	37
		Scaled	< 382	382	400	424	439
	Science	Raw	< 13	13	24	30	38
		Scaled	< 363	363	400	417	448
	Social Studies	Raw	< 14	14	26	32	38
		Scaled	< 360	360	400	418	442

Table 8 - Cut Score Points for Basic, Proficient, Accelerated, and Advanced Standards, May 2007 Administration

Grade	Subject	Score	Limited	Basic	Proficient	Accelerated	Advanced
6	Reading	Raw	< 12	12	18	32	39
		Scaled	< 380	380	400	436	456
	Math	Raw	< 14	14	20	29	35
		Scaled	< 378	378	400	429	448
7	Reading	Raw	< 13	13	20	32	38
		Scaled	< 379	379	400	432	452
	Math	Raw	< 10	10	16	29	37
		Scaled	< 378	378	400	436	458
	Writing	Raw	< 10	10	21	29	38
		Scaled	< 357	357	400	430	485
8	Reading	Raw	< 15	15	22	33	40
		Scaled	< 378	378	400	428	451
	Math	Raw	< 10	10	16	29	37
		Scaled	< 379	379	400	432	459
	Science	Raw	< 11	11	21	30	35
		Scaled	< 365	365	400	427	445
	Social Studies	Raw	< 14	14	23	30	34
		Scaled	< 365	365	400	421	435

Note: The raw score cuts apply to the May 2007 administration only.

Subscale bands
Subscale bands are estimated for all subjects tested. Subscale analysis data are provided for diagnostic purposes.

Table 9 - Subscale Bands for the Minimally Proficient Student in Grades 3 and 4.

		Raw Score Bands			
	Content Standard	**Below**	**At or Near Proficient**	**Above**	**Possible Score**
Grade 3 Reading	Vocabulary	0 - 6	7 - 8	9 - 10	10
	Reading process	0 - 8	9 - 12	13 - 16	16
	Informational text	0 - 4	5 - 7	8 - 12	12
	Literary text	0 - 4	5 - 7	8 - 11	11
Grade 3 Mathematics	Number, Number Sense, and Operations	0 - 6	7 - 10	11 - 15	15
	Measurement	0 - 4	5 - 6	7 - 9	9
	Geometry and Spatial Sense	0 - 4	5 - 7	8 - 9	9
	Patterns, Function, and Algebra	0 - 3	4 - 6	7 - 9	9
	Data Analysis and Probability	0 - 4	5 - 7	8 - 10	10
Grade 4 Reading	Vocabulary	0 - 3	4 - 5	6 - 8	8
	Reading process	0 - 4	5 - 8	9 - 16	16
	Informational text	0 - 2	3 - 5	6 - 13	13
	Literary text	0 - 4	5 - 7	8 - 12	12
Grade 4 Mathematics	Number, Number Sense, and Operations	0 - 7	8 - 10	11 - 15	15
	Measurement	0 - 2	3 - 5	6 - 9	9
	Geometry and Spatial Sense	0 - 2	3 - 4	5 - 9	9
	Patterns, Function, and Algebra	0 - 3	4 - 5	6 - 9	9
	Data Analysis and Probability	0 - 3	4 - 6	7 - 10	10
Grade 4 Writing	Writing Process and Applications	0 - 6	7 - 11	12 - 24	24
	Writing Conventions	0 - 7	8 - 11	12 - 15	15

Table 10 - Subscale Bands for the Minimally Proficient Student in Grades 5 and 6.

		Raw Score Bands			
	Content Standard	**Below**	**At or Near Proficient**	**Above**	**Possible Score**
Grade 5 Reading	Vocabulary	0 - 4	5 - 6	7 – 9	9
	Reading process	0 - 7	8 - 10	11 – 16	16
	Informational text	0 - 3	4 - 6	7 – 11	11
	Literary text	0 - 4	5 - 7	8 – 13	13
Grade 5 Mathematics	Number, Number Sense, and Operations	0 - 6	7 - 9	10 – 14	14
	Measurement	0 - 2	3 - 5	6 – 10	10
	Geometry and Spatial Sense	0 - 3	4 - 5	6 – 9	9
	Patterns, Function, and Algebra	0 - 3	4 - 6	7 – 10	10
	Data Analysis and Probability	0 - 2	3 - 5	6 – 9	9
Grade 5 Science	Earth and Space Sciences	0 - 4	5 - 7	8 – 13	13
	Life Sciences	0 - 5	6 - 8	9 – 10	10
	Physical Sciences	0 - 3	4 - 6	7 – 11	11
	Scientific Processes	0 - 4	5 - 7	8 – 14	14
Grade 5 Social Studies	Economics, Government, and Citizenship	0 - 5	6 - 9	10 – 14	14
	History	0 - 3	4 - 6	7 – 10	10
	Social Studies Skills and Methods	0 - 4	5 - 6	7 – 10	10
	Peoples in Societies and Geography	0 - 5	6 - 9	10 – 14	14
Grade 6 Reading	Vocabulary	0 - 2	3 - 5	6 – 8	8
	Reading process	0 - 2	3 - 4	5 – 11	11
	Informational text	0 - 3	4 - 7	8 – 14	14
	Literary text	0 - 3	4 - 7	8 – 16	16
Grade 6 Mathematics	Number, Number Sense, and Operations	0 - 3	4 - 7	8 – 13	13
	Measurement	0 - 2	3 - 4	5 – 8	8
	Geometry and Spatial Sense	0 - 2	3 - 5	6 – 9	9
	Patterns, Function, and Algebra	0 - 2	3 - 5	6 – 11	11
	Data Analysis and Probability	0 - 2	3 - 4	5 – 9	9

Table 11 - Subscale Bands for the Minimally Proficient Student in Grades 7 and 8.

		Raw Score Bands			
	Content Standard	**Below**	**At or Near Proficient**	**Above**	**Possible Score**
Grade 7 Reading	Vocabulary	0 - 2	3 - 5	6 - 8	8
	Reading process	0 - 3	4 - 6	7 - 12	12
	Informational text	0 - 6	7 - 9	10 - 15	15
	Literary text	0 - 2	3 - 4	5 - 12	12
Grade 7 Mathematics	Number, Number Sense, and Operations	0 - 2	3 - 5	6 - 10	10
	Measurement	0 - 1	2 - 4	5 - 10	10
	Geometry and Spatial Sense	0 - 2	3 - 5	6 - 10	10
	Patterns, Function, and Algebra	0 - 1	2 - 4	5 - 10	10
	Data Analysis and Probability	0 - 1	2 - 3	4 - 10	10
Grade 7 Writing	Writing Applications	0 - 7	8 - 11	12 - 20	20
	Writing Process	0 - 2	3 - 5	6 - 10	10
	Writing Conventions	0 - 5	6 - 7	8 - 11	11
Grade 8 Reading	Vocabulary	0 - 2	3 - 5	6 - 8	8
	Reading process	0 - 3	4 - 6	7 - 10	10
	Informational text	0 - 4	5 - 8	9 - 17	17
	Literary text	0 - 4	5 - 8	9 - 13	13
Grade 8 Mathematics	Number, Number Sense, and Operations	0 - 2	3 - 4	5 - 8	8
	Measurement	0 - 1	2 - 3	4 - 8	8
	Geometry and Spatial Sense	0 - 2	3 - 5	6 - 10	10
	Patterns, Function, and Algebra	0 - 2	3 - 5	6 - 11	11
	Data Analysis and Probability	0 - 1	2 - 4	5 – 9	9
Grade 8 Science	Earth and Space Sciences	0 - 4	5 - 7	8 - 13	13
	Life Sciences	0 - 4	5 - 7	8 - 12	12
	Physical Sciences	0 - 3	4 - 6	7 - 10	10
	Scientific Processes	0 - 2	3 - 5	6 - 13	13
Grade 8 Social Studies	Economics, Government, and Citizenship	0 - 5	6 - 8	9 - 13	13
	History	0 - 3	4 - 6	7 - 13	13
	Social Studies Skills and Methods	0 - 3	4 - 6	7 - 9	9
	Peoples in Societies and Geography	0 - 4	5 - 7	8 - 13	13

Tables of Concordance between Raw Scores and Cut Scores

Tables 8 and 9 provide the concordance between raw scores and scaled scores for all tests in the May 2007 administration of the Ohio Achievement Tests.

Table 12 - Raw Score to Scaled Score Conversion, May 2007 Administration Grades 3 and 4

Scaled Scores Corresponding to Raw Score Points for Each Grade and Subject					
	Grade 3		Grade 4		
Raw Score	Reading	Math	Reading	Math	Writing
0	251	241	269	231	287
1	270	262	289	255	303
2	289	283	310	279	319
3	301	295	323	294	330
4	310	305	332	305	339
5	317	313	340	314	346
6	323	319	346	321	352
7	328	325	352	328	358
8	333	330	357	334	362
9	338	335	361	339	367
10	342	339	365	345	371
11	345	343	369	349	375
12	349	347	373	354	378
13	352	351	377	358	**383**
14	356	354	380	362	385
15	359	357	**384**	365	388
16	362	360	386	369	391
17	364	363	389	372	394
18	367	366	392	375	397
19	370	369	395	**379**	**400**
20	373	372	398	382	404
21	375	374	**400**	385	407
22	378	377	403	388	411
23	380	**379**	405	391	414
24	383	382	408	394	418
25	**385**	384	410	397	422
26	388	387	413	**400**	427
27	390	389	416	403	431
28	393	392	418	406	**436**
29	395	394	421	409	441
30	398	397	423	412	446
31	**400**	**400**	426	415	451
32	403	402	429	418	456
33	406	404	431	421	461
34	408	407	**435**	425	467

Table 12 - Raw Score to Scaled Score Conversion, May 2007 Administration Grades 3 and 4 (continued)

Scaled Scores Corresponding to Raw Score Points for Each Grade and Subject					
	Grade 3		**Grade 4**		
Raw Score	**Reading**	**Math**	**Reading**	**Math**	**Writing**
35	411	409	437	428	**473**
36	**415**	412	440	**432**	480
37	417	415	443	436	489
38	420	418	447	440	504
39	423	421	450	444	518
40	427	424	454	448	
41	**432**	427	458	**453**	
42	435	**431**	463	458	
43	439	435	**468**	463	
44	445	439	475	469	
45	451	443	482	476	
46	459	**448**	492	483	
47	471	454	506	492	
48	489	461	527	502	
49	508	470	549	514	
50		483		531	
51		503		557	
52		523		584	

Table 13 - Raw Score to Scaled Score Conversion, May 2007 Administration Grades 5 and 6

Scaled Scores Corresponding to Raw Score Points for Each Grade and Subject						
	Grade 5				Grade 6	
Raw Score	**Reading**	**Math**	**Science**	**Social Studies**	**Reading**	**Math**
0	246	240	243	222	275	232
1	268	263	267	248	297	259
2	290	287	290	275	319	287
3	304	301	304	291	332	303
4	314	312	314	302	341	316
5	322	320	322	312	349	326
6	329	327	329	320	355	334
7	335	333	335	327	361	342
8	340	339	341	333	366	348
9	345	344	346	338	370	354
10	350	349	351	343	375	360
11	354	353	355	348	378	365
12	358	357	359	352	**382**	369
13	362	361	**363**	356	385	374
14	366	365	367	**360**	388	**378**
15	369	368	370	364	391	382
16	373	372	374	367	394	386
17	376	375	377	371	397	390
18	379	378	380	374	**400**	393
19	382	**382**	383	377	402	397
20	**385**	385	387	380	405	**400**
21	388	388	390	384	407	403
22	391	391	393	387	410	407
23	394	394	396	390	412	410
24	397	397	**400**	393	415	413
25	**400**	**400**	402	396	417	416
26	403	403	405	**400**	419	419
27	405	406	409	402	422	423
28	408	410	412	405	424	426
29	411	413	415	409	427	**429**
30	414	416	**418**	412	429	432
31	417	419	422	415	432	435
32	420	422	425	**419**	**436**	439
33	423	**425**	429	423	437	442
34	426	429	432	426	440	445
35	429	432	436	430	443	**449**
36	433	435	440	434	446	453
37	436	**439**	444	439	450	457
38	**441**	442	**448**	**443**	453	461

Table 13 - Raw Score to Scaled Score Conversion, May 2007 Administration Grades 5 and 6 (continued)

Scaled Scores Corresponding to Raw Score Points for Each Grade and Subject						
	Grade 5				Grade 6	
Raw Score	**Reading**	**Math**	**Science**	**Social Studies**	**Reading**	**Math**
39	444	446	453	448	**457**	465
40	448	450	457	454	461	469
41	452	453	463	460	465	474
42	**459**	457	469	466	469	479
43	463	461	475	474	475	485
44	469	466	483	483	481	492
45	476	470	492	494	488	499
46	485	475	505	510	496	508
47	497	481	527	536	508	519
48	517	488	548	561	529	535
49	536	496			549	561
50		509				587
51		530				
52		552				

Table 14 - Raw Score to Scaled Score Conversion, May 2007 Administration Grades 7 and 8

Scaled Scores Corresponding to Raw Score Points for Each Grade and Subject							
	Grade 7			Grade 8			
Raw Score	**Reading**	**Math**	**Writing**	**Reading**	**Math**	**Science**	**Social Studies**
0	272	273	277	260	278	251	236
1	293	296	293	282	299	274	260
2	313	319	310	304	320	297	285
3	326	333	320	317	333	312	299
4	335	343	328	327	343	322	310
5	342	351	334	335	351	331	319
6	348	358	339	342	357	338	327
7	354	364	344	347	363	345	333
8	359	370	349	353	368	350	339
9	363	375	354	357	373	356	344
10	367	**379**	**358**	361	**379**	360	350
11	371	383	362	365	382	**365**	354
12	375	387	366	369	385	369	359
13	**379**	391	370	373	389	373	363
14	381	394	374	376	393	377	**367**
15	384	397	378	**379**	396	381	371
16	388	**400**	382	382	**400**	384	375
17	390	403	386	385	402	388	378
18	393	406	390	388	405	391	382
19	396	409	394	391	408	395	386
20	**400**	412	397	393	410	398	389
21	402	414	**401**	396	413	**401**	393
22	405	417	405	**400**	415	404	396
23	407	420	408	402	418	407	**400**
24	410	422	412	404	420	410	403
25	413	425	416	407	423	413	406
26	416	427	420	410	425	416	410
27	418	430	424	412	428	419	413
28	421	432	428	415	431	422	416
29	424	**436**	**432**	418	**433**	425	420
30	427	438	436	420	436	**428**	**423**
31	429	440	441	423	439	431	426
32	**432**	443	445	426	442	434	429
33	435	445	450	**429**	445	437	433
34	438	448	456	431	449	440	**436**
35	441	451	462	434	452	**445**	439
36	444	454	468	437	456	447	443
37	448	**458**	475	441	**460**	451	446
38	**452**	460	**485**	444	464	455	450

Table 14 - Raw Score to Scaled Score Conversion, May 2007 Administration Grades 7 and 8 (continued)

Scaled Scores Corresponding to Raw Score Points for Each Grade and Subject							
	Grade 7			Grade 8			
Raw Score	**Reading**	**Math**	**Writing**	**Reading**	**Math**	**Science**	**Social Studies**
39	455	464	495	448	469	459	453
40	459	467	512	**452**	475	464	457
41	464	472	530	456	481	469	462
42	469	476		461	488	475	467
43	475	481		467	497	482	473
44	482	487		474	510	490	480
45	493	493		483	530	500	489
46	510	501		496	550	515	502
47	528	511		517		538	524
48		524		538		561	546
49		547					
50		569					
51							
52							