

**OCTOBER 2012 ADMINISTRATION OF THE OHIO ACHIEVEMENT ASSESSMENT
GRADE 3 READING TEST STATISTICAL SUMMARY**

These statistics describe the entire population of Ohio grade 3 public school students (including community schools) tested during the October 2012 administration.

Table 1 – Summary of Parameters from the October 2012 Administration of the Ohio Achievement Assessment for Grade 3 Reading.

N-count	126,301
Max Raw Score	49
Raw Score Mean	31.77
Raw Score Standard Deviation	8.78
Raw Score SEM	3.23
Max Scaled Score	507
Scaled Score Mean	406.56
Scaled Score Standard Deviation	25.67
Scaled Score SEM	9.46
Reliability	0.86

Table 2 – Cut Score Points for Basic, Proficient, Accelerated, and Advanced Standards and Percentage of Students by Performance Levels

Standard	Raw Score	Scaled Score	Percent
Limited	Below 24	Below 385	18.6
Basic	24	385	16.8
Proficient	30	400	25.4
Accelerated	36	415	23.2
Advanced	41	432	16.0

Table 3 – Subscale (Raw Score) Bands for the Minimally Proficient Student in Grade 3, October 2012 Administration.

	Content Standard	Below	At or Near Proficient	Above	Possible Score
Grade 3 Reading	Vocabulary	0 – 7	8 – 9	10	10
	Reading process	0 – 9	10 – 13	14 – 18	18
	Informational text	0 – 4	5 – 7	8 – 11	11
	Literary text	0 – 5	6 – 8	9 – 10	10

Equating and Scaling: How Raw Scores Are Converted Into Scaled Scores

Test Form Construction

All items in the October 2012 Ohio Grade 3 Reading Achievement Test were previously field-tested, and item difficulty estimates from the field test administrations were used to pre-equate operational test forms during form construction. Pre-equating based on field-test item parameters aids in the development of nearly equivalent Ohio Achievement Assessment (OAA) forms across test administrations.

Common Item Equating

Following administration of the October 2012 Grade 3 Reading Achievement Test, item difficulty values were re-estimated using an early return sample. The early return sample was selected to be statistically representative of all Ohio grade 3 public school students. Because bank item difficulty estimates for all test items were available from the previous field test administrations, all the operational items could potentially serve as anchor items in the equating process.

After calibrating items based on the early return sample data, all available linking items were used to calculate the linking constant needed to bring the set of operational items back to the appropriate OAA “bank,” or reference, scale values. First, the October 2012 difficulty values (from the early return sample) were computed and compared with the bank difficulty values. The mean difference between the current and the bank difficulties of the anchor items is called the equating constant. The equating constant was added to each difficulty value for the current test administration item parameters so that the mean item difficulties were equal, yielding linked parameter estimates for each item. When the equating process is complete, item difficulties from the current administration are directly comparable with those from the bank. This calibrates the test to the same scale as used in prior testing for the same content area and grade level.

Scaling

Because the meaning of raw scores changes across test forms and test administrations, scaled scores are usually used in place of raw scores.

As previously noted, after administering the October 2012 operational test, test items were calibrated and equated on the basis of the early return sample, and Rasch ability estimates were computed for each possible raw score. The Rasch ability estimates were then transformed to the Ohio Grade 3 Reading Achievement Test scale, which is scaled so that the Proficient standard is equal to 400.

Ohio Rounding Rule

When transforming raw scores to scaled scores, if the scaled score nearest to a performance standard cut score is below the cut score, then the scaled score is rounded up to equal the cut score. Otherwise, no special rounding is done. For example, if a raw score is associated with an observed scaled score of 398.94, and 398.94 is the closest observed scaled score to the Proficient level cut score, then this value is rounded up to 400, corresponding to the Proficient level performance standard. Conversely, if the closest scaled score value to the Proficient level cut score is 401.12, no special rounding rules are invoked, because the value is greater than the cut score.

Table 4 – Raw Score to Scaled Score Conversion Table
(cut scores indicated in **bold**)

Raw Score	Scaled Score	Raw Score	Scaled Score
0	257	25	388
1	276	26	390
2	294	27	393
3	306	28	395
4	315	29	397
5	321	30	400
6	327	31	402
7	332	32	405
8	337	33	408
9	341	34	410
10	345	35	413
11	349	36	416
12	352	37	419
13	355	38	422
14	359	39	425
15	362	40	429
16	364	41	433
17	367	42	437
18	370	43	441
19	373	44	446
20	375	45	453
21	378	46	460
22	380	47	471
23	383	48	489
24	385	49	507