

OCTOBER 2008 GRADE 3 READING TEST ADMINISTRATION

STATISTICAL SUMMARY

These statistics describe the entire population of Ohio grade 3 public school students (including community schools) tested during the October 2008 administration.

N-count	130,000
Max Raw Score	49
Raw Score Mean	31.76
Raw Score Standard Deviation	9.64
Raw Score SEM	3.06
Max Scaled Score	518
Scaled Score Mean	406.95
Scaled Score Standard Deviation	31.66
Scaled Score SEM	10.06
Reliability	0.90

Cut Score Points for Basic, Proficient, Accelerated, and Advanced Standards

Standard	Raw Score	Scaled Score
Limited	Below 25	Below 385
Basic	25	385
Proficient	31	400
Accelerated	35	415
Advanced	40	432

Percentage of Students by Performance Levels

Standard	Percent
Limited	23.70
Basic	15.72
Proficient	13.71
Accelerated	21.82
Advanced	25.05

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

Test Form Construction

All items in the October 2008 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 OAT forms across test administrations.

Common Item Equating

Following administration of the October 2008 grade 3 reading test, we re-estimated item difficulty values 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, ODE uses a stepwise deletion procedure to calculate the linking constant needed to bring the set of operational items back to the OAT grade 3 reading “bank,” or reference, scale values. First, the October 2008 difficulty values (from the early return sample) are 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 is added to each difficulty value for the current test administration item parameters so that the mean item difficulties are equal. We then compare the “linked” current values with the original 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, the item is eliminated as an anchor item. This procedure is repeated until the largest difference between a linked current value and bank value is less than 0.3. This procedure ensures that the items used to anchor the operational test to the reference scale are stable. When the equating process is complete, item difficulties from the current administration are directly comparable with those from the bank.

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 2008 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.

Raw Score to Scaled Score Conversion Table

Raw Score	Scaled Score	Raw Score	Scaled Score
0	252	25	385
1	271	26	388
2	289	27	390
3	301	28	393
4	309	29	396
5	316	30	398
6	322	31	401
7	327	32	404
8	332	33	407
9	336	34	410
10	340	35	415
11	344	36	416
12	347	37	420
13	350	38	423
14	354	39	427
15	357	40	432
16	360	41	436
17	363	42	441
18	366	43	446
19	369	44	452
20	371	45	459
21	374	46	468
22	377	47	480
23	380	48	499
24	382	49	518