



Arkansas Comprehensive Testing, Assessment, and Accountability Program

*Biology End-of-Course Examination*  
**Raw To Scale Score Conversion Tables**  
**April 2008 Administration**

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## **Introduction**

The *Raw to Scale Score Conversion Tables* provide information on raw scores attained by students for the *Biology End-of-Course Examination*, and how those scores correspond with student scale scores.

**The attached *Raw to Scale Score Conversion Tables* are specific to the April 2008 administration of the *Biology End-of-Course Examination* and do NOT apply to any other administration.**

## **What are Scale Scores?**

Scale Scores are transformed raw scores. For every possible raw score on a test form, there is a corresponding scale score, although a scale score may represent more than one raw score depending on the distribution of the results. When multiple forms of a test are used, or when results are compared from year to year, scale scores are needed to adjust for possible differences in test form length or difficulty. For example, it would not be possible to interpret a raw score of 50 items correct or points earned without knowing how many items are on the test and how difficult those items are.

## **Why Use Scale Scores?**

Scale scores provide a useful measurement tool for many assessment programs. They are used in numerous national testing programs, including the ACT and SAT examinations, which are typically part of the admissions process for colleges and universities. Scale scores are also routinely used in many other statewide testing programs, providing the basis for long-term, meaningful comparisons of student results across different test administrations.

Educators have always adjusted for differences in test length by changing from “number correct” scores to “percent correct” scores. The next step is to remove differences in item difficulty by moving to “scale scores.” To illustrate the value of this step, consider an examination with just two forms: Form A and Form B. If the items on Form A happen to be slightly more difficult than the items on Form B, one would expect a student to answer a higher percentage of items correctly if Form B were administered rather than Form A. However, a student should receive the same scale score for either form.

Scale scores are intended to make scores more meaningful by defining a scale of measurement that is not tied to a particular form of a test. However, to be meaningful, the scale must be tied to a benchmark that is meaningful to the user. The *Biology End-of-Course Examination* was constructed so that a specific score for Biology corresponds to the Advanced, Proficient, Basic, and Below Basic performance levels. In the future, these values may correspond to different raw scores, but they will have the same meaning in terms of student performance.

## April 2008 Scale Scores

The attached *Raw to Scale Score Conversion Tables* list the total number of raw score points available for Biology as well as the associated scale scores. It is important to understand that the scale scores for Biology are not connected and should not be considered equivalent in any sense to the scale scores in Algebra I or Geometry. These scores differ due to the uniqueness of the content areas and the student results relative to Biology, Algebra I and Geometry. The overall distribution of student performance results for Biology differ from the results for Algebra I or Geometry, and this difference in the distribution of results, relative to the unique content areas, accounts for the differences in the scale scores. Given the differences between the three content areas and the differences in student performance results, it is not appropriate to compare the three sets of scale scores.

The table below lists the performance levels and associated scale scores ranges for the April 2008 *Biology End-of-Course Examination*. **Again, the scale score information listed in these tables is specific to the April 2008 administration of the *Biology End-of-Course Examination* and does NOT apply to any other administration.**

### **2008 *Biology End-of-Course Examination* Scale Score Ranges**

<b>Performance Levels</b>	<b>EOC Algebra I Scale Scores</b>
Below Basic	0–145
Basic	146–199
Proficient	200–249
Advanced	250–507

The *Biology End-of-Course Examination Report Interpretation Guide* contains more information on the development of the performance levels. For additional information about the results and information on student performance, please contact:

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## 2008 April Biology End-of-Course Examination Raw to Scale Score Conversion Tables

BELOW BASIC	
Raw Score	Scale Score
0	0
1	4
2	8
3	12
4	16
5	21
6	31
7	40
8	48
9	55
10	61
11	67
12	72
13	78
14	82
15	87
16	91
17	96
18	100
19	104
20	107
21	111
22	115
23	118
24	121
25	125
26	128
27	131
28	134
29	137
30	140
31	143

BASIC	
Raw Score	Scale Score
32	146
33	149
34	152
35	155
36	158
37	161
38	163
39	166
40	169
41	171
42	174
43	177
44	179
45	182
46	185
47	187
48	190
49	192
50	195
51	197

PROFICIENT	
Raw Score	Scale Score
52	200
53	203
54	205
55	208
56	210
57	213
58	215
59	218
60	220
61	223
62	226
63	228
64	231
65	234
66	236
67	239
68	242
69	244
70	247

ADVANCED	
Raw Score	Scale Score
71	250
72	253
73	256
74	259
75	262
76	265
77	268
78	271
79	275
80	278
81	282
82	286
83	289
84	294
85	298
86	302
87	307
88	312
89	317
90	323
91	329
92	336
93	344
94	352
95	362
96	374
97	389
98	410
99	446
100	507