



Linking DIBELS® 6th Edition Oral Reading Fluency with The Lexile® Framework for Reading





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What is The Lexile® Framework for Reading?

The Lexile Framework for Reading is a psychometric system for matching readers with texts of appropriate difficulty. With the Lexile Framework, both the reader and the text can be placed on the same measurement scale. A Lexile® measure is the numeric representation of an individual's reading ability or a text's readability (or difficulty), followed by an "L" (Lexile). The Lexile scale is a developmental scale for reading that ranges from below 0L for emerging readers and beginning texts to above 1700L for advanced readers and texts. Values at or below 0L are reported as Beginning Reader (BR).

A Lexile text measure is obtained through analyzing the readability of a piece of text. The Lexile® Analyzer, a software program specially designed to evaluate the reading demand of text, analyzes the text's semantic and syntactic characteristics and assigns it a Lexile measure. A multi-step process is required to prepare the text before it is submitted to the Lexile Analyzer for a measure. Noting the Lexile measure of a text can assist in choosing reading materials that present an appropriate level of challenge for a reader.

A Lexile reader measure is typically obtained by administering a test of reading comprehension to a reader. When a test has been linked with The Lexile Framework for Reading through a field study, a Lexile measure for the reader can be reported.

Developed by the psychometric research company MetaMetrics®, Inc., the early work that led to The Lexile Framework for Reading was funded, in part, by a series of grants from the National Institutes of Child Health and Human Development. The Lexile Framework reporting scale is not bounded by grade level, although typical Lexile measure ranges have been identified for students in specific grades. Because the Lexile Framework reporting scale is not bounded by grade level, it makes provisions for students who read below or beyond their grade level.

Extensive information about the development of The Lexile Framework for Reading can be found in the "Researchers" section of the Lexile Web site at www.Lexile.com. A white paper (Lennon & Burdick, 2004) entitled, "The Lexile Framework as an Approach

for Reading Measurement and Success," (www.lexile.com/PDF/Lexile-Reading-Measurement-and-Success-0504.pdf) provides detailed descriptions of each component of The Lexile Framework for Reading.

Study to Link DIBELS 6th Edition Oral Reading Fluency with The Lexile Framework for Reading

The study to link the Dynamic Indicators of Basic Early Literacy Skills (DIBELS®) with the Lexile Framework began with initial discussions in 2004–2006 between MetaMetrics, Roland Good of Dynamic Measurement Group, Inc., and Wireless Generation. In fall 2006, a study was designed to link The Lexile Framework for Reading with the DIBELS 6th Edition Oral Reading Fluency (ORF) measure. Data was collected between January and May 2007 and analyses were completed in October 2007.

Assessments. Each student in the study was administered the DIBELS 6th Edition ORF measure and a Lexile linking test.

The DIBELS 6th Edition ORF measure is collected from mid-Grade 1– Grade 3. ORF is a standardized set of passages and administration procedures designed to a) identify children who may need additional instructional support, and b) monitor progress toward instructional goals. The passages are calibrated for the goal level of reading for each grade level. The DIBELS 6th Edition ORF passages were generated as a set of 26 passages for first grade, and 29 passages for each of second and third grades. Twenty passages are for progress monitoring. Three passages are used for each benchmark assessment, with two benchmark assessments in first grade and three benchmark assessments in second and third grade. The DIBELS 6th Edition ORF passages were developed and refined as a group to obtain approximate equivalence across the benchmark assessments and with the progress monitoring assessments. The results from the administration of the middle passage of the benchmark assessment were used in this study.

The Lexile linking test consisted of four levels. Using items from the Lexile item bank, Lexile linking tests were developed for administration at kindergarten and grades 1–3. Using response-illustrated items, the

Lexile Framework measures reading comprehension by focusing on skills readers use when studying written materials sampled from various content areas. These skills include referring to details in the passage, drawing conclusions, and making comparisons and generalizations. Lexile items do not require prior knowledge of ideas outside of the passage, vocabulary taken out of context or formal logic. The Kindergarten-level test consisted of 12 items presented as pictures where the student was asked to identify the word that best matched the picture and 11 items where the student was asked to choose the best word to complete the sentence. The Grade 1 test consisted of ten of the 12 picture items and 25 single-sentence reading comprehension items. The Grade 2 test consisted of 35 reading comprehension items (single sentences to paragraphs) and the Grade 3 test consisted of 40 reading comprehension items (single sentences to paragraphs). Test specifications were as follows: Kindergarten (-263L); Grade 1 (85L); Grade 2 (418L); and Grade 3 (474L).

Sample. The sample for this study consisted of students in kindergarten and grades 1-3 in Seminole County (Fla.) Schools (three schools) and Cabell County (W.V.) Schools (five schools). A total of 2,300 students participated in the study by taking the DIBELS ORF and the Lexile linking test.

Table 1. Sample of students administered the Lexile linking test

Sample	Kindergarten	Grade 1	Grade 2	Grade 3
Florida	394	383	361	350
West Virginia	230	210	205	167
Total	624	593	566	517

Analyses. The data for the Lexile linking tests was analyzed using the Winsteps item-response theory model (Rasch model). There was a high degree of agreement between the combined grades analysis and the individual grades analyses with respect to the relative item difficulties. It was concluded that one construct was being measured across all four grade levels.

Table 2. Initial sample statistics for Lexile linking test, by grade

Grade	N	Lexile measure Mean (SD)	Minimum Lexile measure	Maximum Lexile measure
K	601	-307.95 (354.51)	-1163	467
1	443	73.00 (371.58)	-1136	822
2	533	426.72 (291.37)	-882	1180
3	528	601.61 (315.07)	-740	1270

The samples were examined and students were removed from further analysis for the following reasons:

- correctly answered all of the items (105 students) or incorrectly answered all of the items (32 students), and
- exhibited infit coefficients greater than 1.5 or outfit coefficients greater than 2.0 (126 students).

The final Lexile linking test sample consisted of 1,842 students.

Table 3. Final sample statistics for Lexile linking test, by grade

Grade	N	Lexile measure Mean (SD)	Minimum Lexile measure	Maximum Lexile measure
K	531	-475.31 (251.89)	-1058	133
1	372	45.62 (300.08)	-871	613
2	473	477.24 (233.89)	-194	964
3	466	598.77 (235.18)	-73	1042

The Lexile linking test results were then matched with the DIBELS ORF results. A total of 1,719 (93.3%) of the students had complete data (Kindergarten, N = 511 [96.2%]; Grade 1, N = 363 [97.6%]; Grade 2, N = 438 [92.6%]; and Grade 3, N = 407 [87.3%]). Since DIBELS 6th Edition ORF is not administered to kindergarten students, only grades 1-3 results were used in the final linking analyses.

Table 4. Final matched sample statistics for Lexile linking test and DIBELS 6th Edition ORF, by grade

Grade	N	Lexile measure Mean (SD)	DIBELS ORF Mean (SD)	r
1	363	49.87 (297.94)	52.92 (34.73)	.795
2	438	481.79 (233.88)	91.18 (31.96)	.687
3	407	608.65 (229.04)	106.74 (31.39)	.664

Using the results in Table 4 and linear equating methodology, the following linking functions were developed to express DIBELS 6th Edition ORF scores in the Lexile metric:

- Grade 1: Lexile measure = $8.57880480946367 * \text{ORF} + -404.116126386124$
- Grade 2: Lexile measure = $7.31829214450681 * \text{ORF} + -185.479047114992$
- Grade 3: Lexile measure = $7.29760592369798 * \text{ORF} + -170.258972906792$

Interpretations and Uses of Lexile Measures

The Lexile Framework for Reading provides teachers and educators with tools to help them link assessment results with subsequent instruction. When a reader takes an assessment that is linked with the Lexile Framework, his or her results are reported as a Lexile measure. This means, for example, that a student whose reading ability has been measured at 500L is expected to read with 75-percent comprehension a book that also is measured at 500L. When the reader and text are matched (same Lexile measures), the reader is “targeted.” A targeted reader reports confidence, competence and control over the text.

When reading a book within his or her Lexile range (50L above his or her Lexile measure to 100L below), the reader should comprehend enough of the text to make sense of it, while still being challenged enough to maintain interest and learning. When a text measure is 250L above the reader’s measure, comprehension is predicted to drop to 50 percent and the reader will likely experience frustration and inadequacy. Conversely, when a text measure is 250L below the reader’s measure, comprehension is predicted to go up to 90 percent and the reader is expected to experience control and fluency. When reading a book within his or her Lexile range (50L above his or her Lexile measure to 100L below), the reader is forecasted to comprehend enough of the text to make sense of it, while still being challenged enough to maintain interest and learning

Using The Lexile Framework for Reading to Select Books

Teachers, parents and students can use the tools powered by the Lexile Framework to plan instruction (go to www.Lexile.com to access the Lexile Book Database). When teachers provide parents and students with lists of titles that match the students' Lexile measures, they can then work together to choose appropriate titles that also match the students' interest and background knowledge. *The Lexile Framework does not prescribe a reading program, but it gives educators more control over the variables involved when they design reading instruction.* The Lexile Framework yields multiple opportunities for use in a variety of instructional activities. After becoming familiar with the Lexile Framework, teachers are likely to think of a variety of additional creative ways to use this tool to match students with books that students find challenging, but not frustrating.

Remember, there are many factors that affect the relationship between a reader and a book. These factors include text content, age of the reader, interests of the reader, suitability of the text, and text difficulty. The Lexile measure of a text, a measure of text difficulty, is a good starting point in the selection process, but other factors also must be considered. The Lexile measure should never be the only piece of information used when selecting a text for a reader.

Communicate with Parents Meaningfully to Include Them in the Educational Process.

Teachers can make statements to parents such as, "Your child will be able to read with at least 75-percent comprehension these kinds of materials which are at the next grade level." Or, "Your child will need to be able to increase his/her Lexile measure by 400L–500L (Lexile) in the next few years to be prepared for college reading demands. Here is a list of appropriate titles your child can choose from for reading this summer."

Improve Students' Reading Fluency.

Educational researchers have found that students who spend a minimum of three hours a week reading at their own level for their own purposes develop reading fluency that leads to improved mastery. Not surprisingly, researchers also have found that students who read age-appropriate materials with a high level of comprehension also learn to enjoy reading.

Apply Lexile Measures Across the Curriculum.

Over 150 publishers have Lexile measures for their trade books and textbooks, enabling educators to link all of the different components of the curriculum to more effectively target instruction. With a student's Lexile measure, teachers can connect him or her with tens of thousands of books (www.Lexile.com) and tens of thousands of newspaper and magazine articles (through periodical databases) that also have Lexile measures.

MetaMetrics, Inc., a privately held educational measurement company, develops scientifically based measures of student achievement that link assessment with instruction, foster better educational practices and improve learning by matching students with materials that meet and challenge their abilities. Initially funded with grants from the National Institutes of Health, the company developed the widely adopted Lexile® Framework for Reading; El Sistema Lexile® para Leer, the Spanish-language version of the Lexile Framework; The Quantile® Framework for Mathematics; and The Lexile® Framework for Writing. In addition to licensing Lexile and Quantile® measures to state departments of education, testing and instructional companies, and publishers, MetaMetrics delivers professional development, resource measurement and customized consulting services.





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Grade 1 Conversion Table

ORF Reading Count	Reported Lexile	ORF Reading Count	Reported Lexile	ORF Reading Count	Reported Lexile
0	BR	54	55L	108	515L
1	BR	55	65L	109	525L
2	BR	56	75L	110	535L
3	BR	57	85L	111	545L
4	BR	58	90L	112	550L
5	BR	59	100L	113	550L
6	BR	60	110L	114	550L
7	BR	61	115L	115	550L
8	BR	62	125L	116	550L
9	BR	63	135L	117	550L
10	BR	64	140L	118	550L
11	BR	65	150L	119	550L
12	BR	66	160L	120	550L
13	BR	67	170L	121	550L
14	BR	68	175L	122	550L
15	BR	69	185L	123	550L
16	BR	70	195L	124	550L
17	BR	71	200L	125	550L
18	BR	72	210L	126	550L
19	BR	73	220L	127	550L
20	BR	74	225L	128	550L
21	BR	75	235L	129	550L
22	BR	76	245L	130	550L
23	BR	77	255L	131	550L
24	BR	78	260L	132	550L
25	BR	79	270L	133	550L
26	BR	80	280L	134	550L
27	BR	81	285L	135	550L
28	BR	82	295L	136	550L
29	BR	83	305L	137	550L
30	BR	84	315L	138	550L
31	BR	85	320L	139	550L
32	BR	86	330L	140	550L
33	BR	87	340L	141	550L
34	BR	88	345L	142	550L
35	BR	89	355L	143	550L
36	BR	90	365L	144	550L
37	BR	91	370L	145	550L
38	BR	92	380L	146	550L
39	BR	93	390L	147	550L
40	BR	94	400L	148	550L
41	BR	95	405L	149	550L
42	BR	96	415L	150	550L
43	BR	97	425L	151	550L
44	BR	98	430L	152	550L
45	BR	99	440L	153	550L
46	BR	100	450L	154	550L
47	BR	101	455L	155	550L
48	5L	102	465L	156	550L
49	15L	103	475L	157	550L
50	25L	104	485L	158	550L
51	30L	105	490L	159	550L
52	40L	106	500L	160	550L
53	50L	107	510L		



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Grade 2 Conversion Table

ORF Reading Count	Reported Lexile	ORF Reading Count	Reported Lexile	ORF Reading Count	Reported Lexile
0	BR	67	305L	134	780L
1	BR	68	310L	135	780L
2	BR	69	320L	136	780L
3	BR	70	325L	137	780L
4	BR	71	335L	138	780L
5	BR	72	340L	139	780L
6	BR	73	350L	140	780L
7	BR	74	355L	141	780L
8	BR	75	365L	142	780L
9	BR	76	370L	143	780L
10	BR	77	380L	144	780L
11	BR	78	385L	145	780L
12	BR	79	390L	146	780L
13	BR	80	400L	147	780L
14	BR	81	405L	148	780L
15	BR	82	415L	149	780L
16	BR	83	420L	150	780L
17	BR	84	430L	151	780L
18	BR	85	435L	152	780L
19	BR	86	445L	153	780L
20	BR	87	450L	154	780L
21	BR	88	460L	155	780L
22	BR	89	465L	156	780L
23	BR	90	475L	157	780L
24	BR	91	480L	158	780L
25	BR	92	485L	159	780L
26	5L	93	495L	160	780L
27	10L	94	500L	161	780L
28	20L	95	510L	162	780L
29	25L	96	515L	163	780L
30	35L	97	525L	164	780L
31	40L	98	530L	165	780L
32	50L	99	540L	166	780L
33	55L	100	545L	167	780L
34	65L	101	555L	168	780L
35	70L	102	560L	169	780L
36	75L	103	570L	170	780L
37	85L	104	575L	171	780L
38	90L	105	585L	172	780L
39	100L	106	590L	173	780L
40	105L	107	595L	174	780L
41	115L	108	605L	175	780L
42	120L	109	610L	176	780L
43	130L	110	620L	177	780L
44	135L	111	625L	178	780L
45	145L	112	635L	179	780L
46	150L	113	640L	180	780L
47	160L	114	650L	181	780L
48	165L	115	655L	182	780L
49	175L	116	665L	183	780L
50	180L	117	670L	184	780L
51	185L	118	680L	185	780L
52	195L	119	685L	186	780L
53	200L	120	690L	187	780L
54	210L	121	700L	188	780L
55	215L	122	705L	189	780L
56	225L	123	715L	190	780L
57	230L	124	720L	191	780L
58	240L	125	730L	192	780L
59	245L	126	735L	193	780L
60	255L	127	745L	194	780L
61	260L	128	750L	195	780L
62	270L	129	760L	196	780L
63	275L	130	765L	197	780L
64	280L	131	775L	198	780L
65	290L	132	780L	199	780L
66	295L	133	780L	200	780L



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Grade 3 Conversion Table

ORF Reading Count	Reported Lexile	ORF Reading Count	Reported Lexile	ORF Reading Count	Reported Lexile
0	BR	67	315L	134	810L
1	BR	68	325L	135	815L
2	BR	69	330L	136	820L
3	BR	70	340L	137	830L
4	BR	71	345L	138	835L
5	BR	72	355L	139	845L
6	BR	73	360L	140	850L
7	BR	74	370L	141	860L
8	BR	75	375L	142	865L
9	BR	76	385L	143	875L
10	BR	77	390L	144	880L
11	BR	78	400L	145	890L
12	BR	79	405L	146	890L
13	BR	80	410L	147	890L
14	BR	81	420L	148	890L
15	BR	82	425L	149	890L
16	BR	83	435L	150	890L
17	BR	84	440L	151	890L
18	BR	85	450L	152	890L
19	BR	86	455L	153	890L
20	BR	87	465L	154	890L
21	BR	88	470L	155	890L
22	BR	89	480L	156	890L
23	BR	90	485L	157	890L
24	5L	91	495L	158	890L
25	10L	92	500L	159	890L
26	15L	93	510L	160	890L
27	25L	94	515L	161	890L
28	30L	95	520L	162	890L
29	40L	96	530L	163	890L
30	45L	97	535L	164	890L
31	55L	98	545L	165	890L
32	60L	99	550L	166	890L
33	70L	100	560L	167	890L
34	75L	101	565L	168	890L
35	85L	102	575L	169	890L
36	90L	103	580L	170	890L
37	100L	104	590L	171	890L
38	105L	105	595L	172	890L
39	110L	106	605L	173	890L
40	120L	107	610L	174	890L
41	125L	108	615L	175	890L
42	135L	109	625L	176	890L
43	140L	110	630L	177	890L
44	150L	111	640L	178	890L
45	155L	112	645L	179	890L
46	165L	113	655L	180	890L
47	170L	114	660L	181	890L
48	180L	115	670L	182	890L
49	185L	116	675L	183	890L
50	195L	117	685L	184	890L
51	200L	118	690L	185	890L
52	205L	119	700L	186	890L
53	215L	120	705L	187	890L
54	220L	121	710L	188	890L
55	230L	122	720L	189	890L
56	235L	123	725L	190	890L
57	245L	124	735L	191	890L
58	250L	125	740L	192	890L
59	260L	126	750L	193	890L
60	265L	127	755L	194	890L
61	275L	128	765L	195	890L
62	280L	129	770L	196	890L
63	290L	130	780L	197	890L
64	295L	131	785L	198	890L
65	305L	132	795L	199	890L
66	310L	133	800L	200	890L