

the condition of education 2007



INDICATOR 16

Reading and Mathematics Achievement at 5th Grade

The indicator and corresponding tables are taken directly from *The Condition of Education 2007*. Therefore, the page numbers may not be sequential.

Additional information about the survey data and supplementary notes can be found in the full report. For a copy of *The Condition of Education 2007*, visit the NCES website (<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2007064>) or contact ED PUBs at 1-877-4ED-PUBS.

Suggested Citation:

U.S. Department of Education, National Center for Education Statistics. (2007). *The Condition of Education 2007* (NCES 2007-064). Washington, DC: U.S. Government Printing Office.



Academic Outcomes

Reading and Mathematics Achievement at 5th Grade

Fifth-grade children living below the poverty threshold were less likely to demonstrate proficiency in specific reading and mathematics knowledge and skills than children living at or above the poverty threshold.

The Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K) has followed a nationally representative cohort of children from kindergarten into the later grades. This indicator presents findings on children’s achievement in reading and mathematics from the spring 2004 data collection, when most of the children were in 5th grade,¹ by child, family, and school characteristics.

In the spring of 5th grade, the percentage of children demonstrating proficiency in specific skills varied. In reading, 97 percent of children were proficient in understanding words in context, 87 percent in making literal inferences, 70 percent in deriving meaning from text, 44 percent in making interpretations beyond the text, and 7 percent in evaluating nonfiction (see supplemental table 16-1). In mathematics, 92 percent of children demonstrated proficiency in multiplication and division, 74 percent in place value, 43 percent in rate and measurement, 13 percent in fractions, and 2 percent in area and volume (see supplemental table 16-2).

The percentage of children with proficiency in certain reading and mathematics skills varied by child, family, and school characteristics. Students who

lived in households below the poverty threshold for all rounds of the survey were less likely to demonstrate proficiency in reading and mathematics skills than students who lived in households at or above the poverty threshold for all survey rounds. For example, in mathematics, 84 percent of students who lived at or above the poverty threshold for all survey rounds demonstrated proficiency in place value compared with 45 percent of students who lived in poverty for all survey rounds. Generally, students whose mothers had higher levels of education were more likely to master each reading and mathematics skill than students whose mothers had less education.

Female students were more likely than male students to show mastery in four of the five reading skills (no measurable difference was found for evaluating nonfiction); however, male students were more likely than female students to demonstrate mastery in each of the mathematics skills. Children who attended private schools for all rounds of the survey were more likely than students who attended public schools for all rounds of the survey to be proficient in nearly all of the reading and mathematics skills.

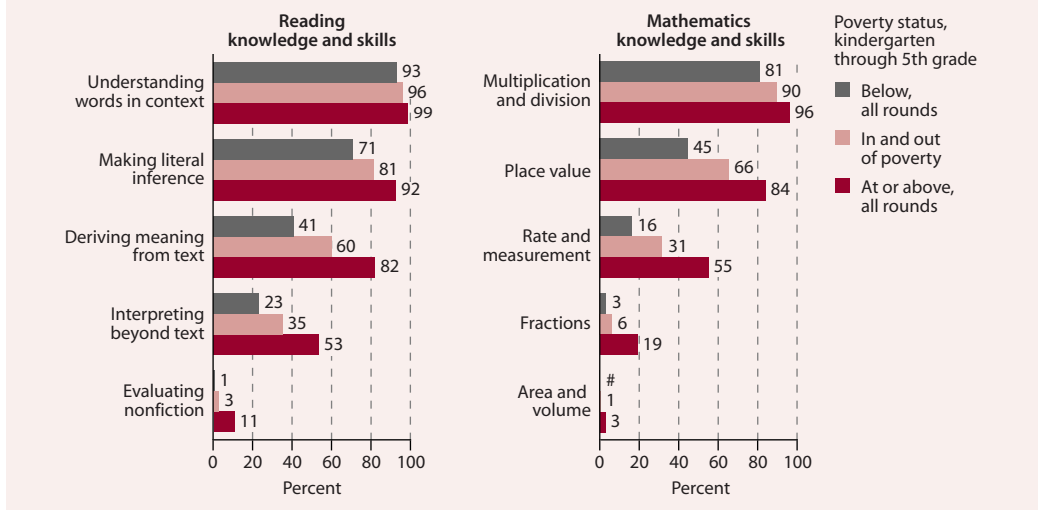
Rounds to zero.

¹ Findings are based on all students who participated in the ECLS-K, not just those at grade level. Although most of the children in the sample were in 5th grade in spring 2004, some 14 percent were in a lower grade, and 1 percent were in a higher grade. Findings are representative of the 3.8 million students in school in spring 2004 who were in kindergarten in fall 1998.

NOTE: The federal poverty-level status composite variable is derived from household income and the total number of household members at each administration of the survey and is used to define households below the poverty level. For instance, in 1998, if a household contained four members and the annual household income was lower than \$16,655, then the household was considered to be below poverty. Poverty status, kindergarten through spring 2004, and school type, kindergarten through spring 2004 are composite variables that are derived from five rounds of the survey (fall 1998, spring 1999, spring 2000, spring 2002, and spring 2004).

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K), Longitudinal Kindergarten–Third Grade Public-Use Data File, and Fifth-Grade Restricted-Use Data File.

READING AND MATHEMATICS SKILLS: Percentage of children who demonstrate specific reading and mathematics skills, by poverty status from kindergarten through 5th grade: Spring 2004



FOR MORE INFORMATION:
 Supplemental Notes 1, 3
 Supplemental Tables 16-1,
 16-2
 NCES 2006-038

Reading and Mathematics Achievement at 5th Grade

Table 16-1. Percentage of children who demonstrate specific reading knowledge and skills, by child, family, and school characteristics: Spring 5th grade, 2004

Characteristic	Understanding words in context	Making literal inference	Deriving meaning from text	Interpreting beyond text	Evaluating nonfiction
Total	97.1	86.5	70.5	44.4	7.3
Child's sex					
Male	96.6	85.1	68.3	42.9	7.1
Female	97.6	88.1	72.8	46.0	7.5
Child's race/ethnicity ¹					
White	98.0	90.6	78.8	51.0	9.9
Black	95.0	78.1	53.5	31.1	2.2
Hispanic	96.1	81.7	59.8	35.5	3.6
Asian	97.7	89.7	77.1	49.1	8.2
Other	95.8	82.0	64.4	40.2	6.4
Mother's highest level of education, spring 2004					
Less than high school	92.7	70.7	42.5	24.0	0.7
High school diploma or equivalent	96.4	83.3	63.8	38.7	4.8
Some college or vocational technical degree	97.6	88.3	72.6	44.4	5.6
Bachelor's degree or higher	99.2	95.4	89.1	61.4	15.9
Primary home language at kindergarten entry					
English	97.3	87.7	73.0	46.4	8.0
Not English	95.4	79.4	55.1	32.3	3.2
School type, spring 2004					
Public	96.9	85.8	69.0	43.0	6.6
Private	98.5	93.0	83.8	56.5	13.5
Poverty status, ² kindergarten through spring 2004					
Below, all rounds	93.1	70.9	40.8	23.3	0.7
In and out of poverty	95.9	81.4	59.8	35.1	3.4
At or above, all rounds	98.6	92.4	81.8	53.3	10.6
Family type, kindergarten through spring 2004					
Two parents, all rounds	98.1	90.9	79.5	52.2	10.6
Single parent, all rounds	96.8	84.5	63.4	36.6	4.4
Other, all rounds ³	92.9	75.4	56.5	33.6	1.2!
Change in family type	97.1	85.6	67.4	40.7	4.6

See notes at end of table.

Reading and Mathematics Achievement at 5th Grade

Table 16-1. Percentage of children who demonstrate specific reading knowledge and skills, by child, family, and school characteristics: Spring 5th grade, 2004—Continued

Characteristic	Understanding words in context	Making literal inference	Deriving meaning from text	Interpreting beyond text	Evaluating nonfiction
School type, kindergarten through spring 2004					
Public school, all rounds	96.7	85.1	67.6	42.1	6.4
Private school, all rounds	99.1	95.1	87.6	58.3	11.8
Change in school type	98.0	90.8	79.1	50.7	10.0
Grade level of child, spring 2004					
Below grade level	91.1	65.3	34.5	20.2	0.9!
Fifth grade	98.0	89.9	76.2	48.2	8.2
Above grade level	99.8	98.7	96.9	79.8	38.5!

! Interpret with caution (estimates are unstable).

¹ Race categories exclude persons of Hispanic ethnicity. Other includes Native Hawaiian, Pacific Islander, American Indian, Alaska Native, and non-Hispanic children of more than one race.

² The federal poverty-level status composite variable is derived from household income and the total number of household members at each administration of the survey and is used to define households below the poverty level. For instance, in 1998, if a household contained four members and the annual household income was lower than \$16,600, then the household was considered to be below poverty.

³ Other refers to related and unrelated guardian(s).

NOTE: The reading skills presented are those which are associated with 5th grade. Findings are based on all students who participated in the ECLS-K, not just those at grade level. Although most of the children in the sample were in 5th grade in spring 2004, some 14 percent were in a lower grade, and 1 percent were in a higher grade. Findings are representative of the 3.8 million students in school in spring 2004 who were in kindergarten in fall 1998. Poverty status, kindergarten through spring 2004; family type, kindergarten through spring 2004; and school type, kindergarten through spring 2004, are composite variables that are derived from each round of the survey (fall 1998, spring 1999, spring 2000, spring 2002, and spring 2004). Estimates were weighted by C1_6FCO.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K), Longitudinal Kindergarten—Third Grade Public-Use Data File, and Fifth-Grade Restricted-Use Data File.

Reading and Mathematics Achievement at 5th Grade

Table 16-2. Percentage of children who demonstrate specific mathematics knowledge and skills, by child, family, and school characteristics: Spring 5th grade, 2004

Characteristic	Multiplication and division	Place value	Rate and measurement	Fractions	Area and volume
Total	92.4	73.5	42.9	13.2	1.8
Child's sex					
Male	93.3	76.6	46.7	16.1	2.4
Female	91.5	70.3	39.0	10.2	1.2
Child's race/ethnicity ¹					
White	95.3	81.6	52.4	17.7	2.5
Black	84.2	52.1	19.3	2.7	0.3!
Hispanic	91.1	67.6	33.7	7.3	0.8
Asian	95.2	83.4	57.5	23.8	3.7
Other	87.6	64.0	35.4	11.9	1.3
Mother's highest level of education, spring 2004					
Less than high school	80.2	47.0	18.5	3.5	0.5
High school diploma or equivalent	90.3	67.5	33.9	7.2	0.8
Some college or vocational technical degree	94.4	76.2	42.9	10.8	1.3
Bachelor's degree or higher	98.3	90.4	65.8	28.4	4.0
Primary home language at kindergarten entry					
English	92.9	75.0	44.7	14.1	1.9
Not English	89.2	64.8	33.0	8.6	1.2
School type, spring 2004					
Public	92.0	72.5	41.7	12.6	1.7
Private	96.1	83.3	54.3	18.2	2.4
Poverty status, ² kindergarten through spring 2004					
Below, all rounds	81.1	44.8	16.1	3.0!	0.2
In and out of poverty	89.6	65.6	31.3	6.2	0.6
At or above, all rounds	96.2	84.0	55.1	19.2	2.7
Family type, kindergarten through spring 2004					
Two parents, all rounds	95.5	82.8	54.4	19.3	2.6
Single parent, all rounds	90.5	64.8	30.1	6.0	1.0!
Other, all rounds ³	76.7	56.9	24.5	2.7!	0.2!
Change in family type	91.8	70.4	37.3	9.8	1.2

See notes at end of table.

Reading and Mathematics Achievement at 5th Grade

Table 16-2. Percentage of children who demonstrate specific mathematics knowledge and skills, by child, family, and school characteristics: Spring 5th grade, 2004—Continued

Characteristic	Multiplication and division	Place value	Rate and measurement	Fractions	Area and volume
School type, kindergarten through spring 2004					
Public school, all rounds	91.5	71.3	40.7	11.9	1.6
Private school, all rounds	97.9	87.4	57.0	15.4	2.0
Change in school type	95.0	79.8	48.9	19.3	2.6
Grade level of child, spring 2004					
Below grade level	78.1	41.4	14.0	3.4!	0.3!
Fifth grade	94.7	78.6	47.5	14.7	2.0
Above grade level	99.7	96.5	79.9	60.0!	10.2!

! Interpret with caution (estimates are unstable).

¹ Race categories exclude persons of Hispanic ethnicity. Other includes Native Hawaiian, Pacific Islander, American Indian, Alaska Native, and non-Hispanic children of more than one race.

² The federal poverty-level status composite variable is derived from household income and the total number of household members at each administration of the survey and is used to define households below the poverty level. For instance, in 1998, if a household contained four members and the annual household income was lower than \$16,600, then the household was considered to be below poverty.

³ Other refers to related and unrelated guardian(s).

NOTE: The mathematics skills presented are those that students are expected to develop between the spring of 3rd grade and the spring of 5th grade. Findings are based on all students who participated in the ECLS-K, not just those at grade level. Although most of the children in the sample were in 5th grade in spring 2004, some 14 percent were in a lower grade, and 1 percent were in a higher grade. Findings are representative of the 3.8 million students in school in spring 2004 who were in kindergarten in fall 1998. Poverty status, kindergarten through spring 2004; family type, kindergarten through spring 2004; and school type, kindergarten through spring 2004, are composite variables that are derived from each round of the survey (fall 1998, spring 1999, spring 2000, spring 2002, and spring 2004). Estimates were weighted by C1_6FCO.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K), Longitudinal Kindergarten—Third Grade Public-Use Data File, and Fifth-Grade Restricted-Use Data File.

Reading and Mathematics Achievement at 5th Grade

Table S16-1. Standard errors for the percentage of children who demonstrate specific reading knowledge and skills, by child, family, and school characteristics: Spring 5th grade, 2004

Characteristic	Understanding words in context	Making literal inference	Deriving meaning from text	Interpreting beyond text	Evaluating nonfiction
Total	0.16	0.47	0.82	0.61	0.36
Child's sex					
Male	0.24	0.67	1.06	0.81	0.51
Female	0.20	0.60	1.15	0.92	0.53
Child's race/ethnicity					
White	0.18	0.51	0.93	0.82	0.59
Black	0.38	1.14	1.77	1.25	0.55
Hispanic	0.26	0.76	1.28	0.84	0.55
Asian	0.51	1.25	2.09	1.85	1.16
Other	1.22	4.10	6.84	4.39	1.61
Mother's highest level of education, spring 2004					
Less than high school	0.64	1.48	1.90	1.11	0.18
High school diploma or equivalent	0.33	0.96	1.55	1.10	0.78
Some college or vocational technical degree	0.20	0.63	1.18	0.89	0.41
Bachelor's degree or higher	0.11	0.33	0.75	0.97	1.01
Primary home language at kindergarten entry					
English	0.17	0.49	0.84	0.66	0.42
Not English	0.41	1.02	1.79	1.16	0.44
School type, spring 2004					
Public	0.17	0.52	0.92	0.69	0.38
Private	0.30	0.90	1.76	1.72	1.51
Poverty status, kindergarten through spring 2004					
Below, all rounds	0.61	1.84	2.38	1.22	0.23
In and out of poverty	0.43	1.19	1.85	1.33	0.83
At or above, all rounds	0.10	0.35	0.71	0.70	0.54
Family type, kindergarten through spring 2004					
Two parents, all rounds	0.15	0.40	0.78	0.78	0.63
Single parent, all rounds	0.42	1.37	2.50	1.90	1.17
Other, all rounds	2.71	7.07	9.24	6.39	0.47
Change in family type	0.25	1.04	1.93	1.43	0.67

See notes at end of table.

Reading and Mathematics Achievement at 5th Grade

Table S16-1. Standard errors for the percentage of children who demonstrate specific reading knowledge and skills, by child, family, and school characteristics: Spring 5th grade, 2004—Continued

Characteristic	Understanding words in context	Making literal inference	Deriving meaning from text	Interpreting beyond text	Evaluating nonfiction
School type, kindergarten through spring 2004					
Public school, all rounds	0.18	0.54	0.97	0.73	0.39
Private school, all rounds	0.11	0.36	0.86	1.18	1.06
Change in school type	0.38	1.11	2.06	1.97	1.60
Grade level of child, spring 2004					
Below grade level	0.62	1.87	2.60	1.41	0.37
Fifth grade	0.12	0.41	0.84	0.66	0.41
Above grade level	0.12	0.74	2.34	5.19	13.55

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K), Longitudinal Kindergarten–Third Grade Public-Use Data File, and Fifth-Grade Restricted-Use Data File.

Reading and Mathematics Achievement at 5th Grade

Table S16-2. Standard errors for the percentage of children who demonstrate specific mathematics knowledge and skills, by child, family, and school characteristics: Spring 5th grade, 2004

Characteristic	Multiplication and division	Place value	Rate and measurement	Fractions	Area and volume
Total	0.47	0.96	1.04	0.63	0.14
Child's sex					
Male	0.58	1.12	1.29	0.92	0.22
Female	0.66	1.32	1.40	0.80	0.14
Child's race/ethnicity					
White	0.49	1.18	1.48	1.09	0.24
Black	1.54	1.92	1.50	0.69	0.16
Hispanic	0.63	1.22	1.53	0.79	0.10
Asian	1.06	1.97	2.52	1.98	0.56
Other	3.22	5.78	4.76	2.68	0.32
Mother's highest level of education, spring 2004					
Less than high school	1.78	2.52	1.56	0.57	0.15
High school diploma or equivalent	0.85	1.41	1.50	0.78	0.15
Some college or vocational technical degree	0.59	1.37	1.51	0.90	0.18
Bachelor's degree or higher	0.28	0.91	1.69	1.92	0.45
Primary home language at kindergarten entry					
English	0.52	1.07	1.17	0.75	0.16
Not English	1.01	1.66	1.74	1.02	0.18
School type, spring 2004					
Public	0.51	1.06	1.12	0.66	0.15
Private	0.97	2.12	2.64	1.99	0.36
Poverty status, kindergarten through spring 2004					
Below, all rounds	1.82	2.35	1.70	1.06	0.08
In and out of poverty	1.06	1.91	1.77	0.71	0.08
At or above, all rounds	0.43	0.97	1.33	1.00	0.24
Family type, kindergarten through spring 2004					
Two parents, all rounds	0.43	0.99	1.39	0.98	0.23
Single parent, all rounds	1.56	2.64	2.47	1.43	0.37
Other, all rounds	8.13	9.08	5.36	1.35	0.06
Change in family type	1.07	1.94	1.85	1.06	0.25

See notes at end of table.

Reading and Mathematics Achievement at 5th Grade

Table S16-2. Standard errors for the percentage of children who demonstrate specific mathematics knowledge and skills, by child, family, and school characteristics: Spring 5th grade, 2004—Continued

Characteristic	Multiplication and division	Place value	Rate and measurement	Fractions	Area and volume
School type, kindergarten through spring 2004					
Public school, all rounds	0.53	1.10	1.23	0.70	0.14
Private school, all rounds	0.27	1.35	1.99	1.57	0.34
Change in school type	1.02	2.28	2.95	2.85	0.42
Grade level of child, spring 2004					
Below grade level	1.78	3.05	2.34	1.34	0.13
Fifth grade	0.44	1.05	1.23	0.74	0.16
Above grade level	0.20	2.11	12.97	20.60	4.84

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K), Longitudinal Kindergarten–Third Grade Public-Use Data File, and Fifth-Grade Restricted-Use Data File.