

Table 123.—Percent of students at or above selected mathematics proficiency levels, by sex, race/ethnicity, control of school, and age: 1978 to 1999

Sex, race/ethnicity, control, and year	9-year-olds ¹				13-year-olds ²				17-year-olds ²			
	Simple arithmetic facts ³	Beginning skills and understanding ⁴	Numerical operations and beginning problem solving ⁵	Moderately complex procedures and reasoning ⁶	Beginning skills and understanding ⁴	Numerical operations and beginning problem solving ⁵	Moderately complex procedures and reasoning ⁶	Multi-step problem solving and algebra ⁷	Beginning skills and understanding ⁴	Numerical operations and beginning problem solving ⁵	Moderately complex procedures and reasoning ⁶	Multi-step problem solving and algebra ⁷
1	2	3	4	5	6	7	8	9	10	11	12	13
Total												
1978	96.7 (0.3)	70.4 (0.9)	19.6 (0.7)	0.8 (0.1)	94.6 (0.5)	64.9 (1.2)	18.0 (0.7)	1.0 (0.2)	99.8 (0.1)	92.0 (0.5)	51.5 (1.1)	7.3 (0.4)
1982	97.1 (0.3)	71.4 (1.2)	18.8 (1.0)	0.6 (0.1)	97.7 (0.4)	71.4 (1.2)	17.4 (0.9)	0.5 (0.1)	99.9 (0.0)	93.0 (0.5)	48.5 (1.3)	5.5 (0.4)
1986	97.9 (0.3)	74.1 (1.2)	20.7 (0.9)	0.6 (0.2)	98.6 (0.2)	73.3 (1.6)	15.8 (1.0)	0.4 (0.1)	99.9 —	95.6 (0.5)	51.7 (1.4)	6.5 (0.5)
1990	99.1 (0.2)	81.5 (1.0)	27.7 (0.9)	1.2 (0.3)	98.5 (0.2)	74.7 (1.0)	17.3 (1.0)	0.4 (0.1)	100.0 —	96.0 (0.5)	56.1 (1.4)	7.2 (0.6)
1992	99.0 (0.2)	81.4 (0.8)	27.8 (0.9)	1.2 (0.3)	98.7 (0.3)	77.9 (1.1)	18.9 (1.0)	0.4 (0.2)	100.0 —	96.6 (0.5)	59.1 (1.3)	7.2 (0.6)
1994	99.0 (0.2)	82.0 (0.7)	29.9 (1.1)	1.3 (0.4)	98.5 (0.3)	78.1 (1.1)	21.3 (1.4)	0.6 (0.2)	100.0 —	96.5 (0.5)	58.6 (1.4)	7.4 (0.8)
1996	99.1 (0.2)	81.5 (0.8)	29.7 (1.0)	1.6 (0.3)	98.8 (0.2)	78.6 (0.9)	20.6 (1.2)	0.6 (0.1)	100.0 —	96.8 (0.4)	60.1 (1.7)	7.4 (0.8)
1999	98.9 (0.2)	82.5 (0.8)	30.9 (1.1)	1.7 (0.3)	98.7 (0.2)	78.8 (1.0)	23.2 (1.0)	0.9 (0.2)	100.0 —	96.8 (0.5)	60.7 (1.6)	8.4 (0.8)
Male												
1978	96.2 (0.5)	68.9 (1.0)	19.2 (0.6)	0.7 (0.2)	93.9 (0.5)	63.9 (1.3)	18.4 (0.9)	1.1 (0.2)	99.9 (0.1)	93.0 (0.5)	55.1 (1.2)	9.5 (0.6)
1982	96.5 (0.5)	68.8 (1.3)	18.1 (1.1)	0.6 (0.1)	97.5 (0.6)	71.3 (1.4)	18.9 (1.2)	0.7 (0.2)	100.0 —	93.9 (0.6)	51.9 (1.5)	6.9 (0.7)
1986	98.0 (0.5)	74.0 (1.4)	20.9 (1.1)	0.7 (0.3)	98.5 (0.3)	73.8 (1.8)	17.6 (1.1)	0.5 (0.2)	99.9 —	96.1 (0.6)	54.6 (1.8)	8.4 (0.9)
1990	99.0 (0.3)	80.6 (1.0)	27.5 (1.0)	1.3 (0.4)	98.2 (0.3)	75.1 (1.8)	19.0 (1.2)	0.5 (0.2)	99.9 —	95.8 (0.8)	57.6 (1.4)	8.8 (0.8)
1992	99.0 (0.3)	81.9 (1.0)	29.4 (1.2)	1.4 (0.3)	98.8 (0.4)	78.1 (1.6)	20.7 (1.1)	0.5 (0.2)	100.0 —	96.9 (0.6)	60.5 (1.8)	9.1 (0.7)
1994	99.1 (0.3)	82.3 (0.9)	31.5 (1.6)	1.4 (0.4)	98.3 (0.4)	78.9 (1.5)	23.9 (1.6)	0.8 (0.3)	100.0 —	97.3 (0.6)	60.2 (2.1)	9.3 (1.0)
1996	99.1 (0.2)	82.5 (1.1)	32.7 (1.7)	2.0 (0.5)	98.7 (0.3)	79.8 (1.4)	23.0 (1.6)	0.8 (0.2)	100.0 —	97.0 (0.7)	62.7 (1.8)	9.5 (1.3)
1999	99.0 (0.3)	83.0 (0.9)	32.0 (1.3)	2.0 (0.4)	99.0 (0.3)	79.0 (1.1)	25.0 (1.2)	1.0 (0.2)	100.0 —	96.0 (0.8)	63.0 (2.1)	10.0 (1.1)
Female												
1978	97.2 (0.3)	72.0 (1.1)	19.9 (1.0)	0.8 (0.2)	95.2 (0.5)	65.9 (1.2)	17.5 (0.7)	0.9 (0.2)	99.7 (0.1)	91.0 (0.6)	48.2 (1.3)	5.2 (0.7)
1982	97.6 (0.3)	74.0 (1.3)	19.6 (1.1)	0.5 (0.1)	98.0 (0.3)	71.4 (1.3)	15.9 (1.0)	0.4 (0.2)	99.9 (0.0)	92.1 (0.6)	45.3 (1.4)	4.1 (0.4)
1986	97.8 (0.4)	74.3 (1.3)	20.6 (1.3)	0.6 (0.3)	98.6 (0.3)	72.7 (1.9)	14.1 (1.3)	0.3 (0.1)	100.0 —	95.1 (0.7)	48.9 (1.7)	4.7 (0.6)
1990	99.1 (0.3)	82.3 (1.3)	27.9 (1.3)	1.0 (0.3)	98.9 (0.2)	74.4 (1.3)	15.7 (1.0)	0.2 (0.1)	100.0 —	96.2 (0.8)	54.7 (1.8)	5.6 (0.8)
1992	99.0 (0.3)	80.9 (1.1)	26.3 (1.5)	1.0 (0.4)	98.6 (0.2)	77.7 (1.1)	17.2 (1.4)	0.3 —	100.0 —	96.3 (0.8)	57.7 (1.6)	5.2 (0.8)
1994	98.9 (0.3)	81.7 (0.9)	28.3 (1.3)	1.1 (0.4)	98.7 (0.3)	77.3 (1.0)	18.7 (1.4)	0.5 (0.3)	100.0 —	96.0 (0.6)	57.2 (1.4)	5.5 (0.9)
1996	99.1 (0.4)	80.7 (0.9)	26.7 (1.1)	1.2 (0.4)	98.8 (0.3)	77.4 (1.1)	18.4 (1.5)	0.5 (0.2)	100.0 —	96.7 (0.6)	57.6 (2.2)	5.3 (0.8)
1999	99.0 (0.2)	82.0 (1.2)	29.0 (1.4)	2.0 (0.4)	99.0 (0.4)	78.0 (1.2)	21.0 (1.4)	1.0 (0.3)	100.0 —	97.0 (0.4)	58.0 (1.9)	7.0 (1.1)
White, non-Hispanic												
1978	98.3 (0.2)	76.3 (1.0)	22.9 (0.9)	0.9 (0.2)	97.6 (0.3)	72.9 (0.9)	21.4 (0.7)	1.2 (0.2)	100.0 —	95.6 (0.3)	57.6 (1.1)	8.5 (0.5)
1982	98.5 (0.3)	76.8 (1.2)	21.8 (1.1)	0.6 (0.1)	99.1 (0.1)	78.3 (0.9)	20.5 (1.0)	0.6 (0.1)	100.0 —	96.2 (0.3)	54.7 (1.4)	6.4 (0.5)
1986	98.8 (0.2)	79.6 (1.3)	24.6 (1.0)	0.8 (0.3)	99.3 (0.3)	78.9 (1.7)	18.6 (1.2)	0.4 (0.1)	100.0 —	98.0 (0.4)	59.1 (1.7)	7.9 (0.7)
1990	99.6 (0.2)	86.9 (0.9)	32.7 (1.0)	1.5 (0.4)	99.4 (0.1)	82.0 (1.0)	21.0 (1.2)	0.4 (0.2)	100.0 —	97.6 (0.3)	63.2 (1.6)	8.3 (0.7)
1992	99.6 (0.1)	86.9 (0.7)	32.4 (1.0)	1.4 (0.3)	99.6 (0.2)	84.9 (1.1)	22.8 (1.3)	0.4 (0.2)	100.0 —	98.3 (0.4)	66.4 (1.4)	8.7 (0.9)
1994	99.6 (0.2)	87.0 (0.8)	35.3 (1.3)	1.5 (0.4)	99.3 (0.2)	85.5 (0.9)	25.6 (1.6)	0.7 (0.3)	100.0 —	98.4 (0.4)	67.0 (1.4)	9.4 (1.1)
1996	99.6 (0.1)	86.6 (0.8)	35.7 (1.4)	2.0 (0.4)	99.6 (0.2)	86.4 (1.0)	25.4 (1.5)	0.8 (0.2)	100.0 —	98.7 (0.4)	68.7 (2.2)	9.2 (1.0)
1999	100.0 (0.1)	89.0 (0.8)	37.0 (1.4)	2.0 (0.4)	99.0 (0.3)	87.0 (0.9)	29.0 (1.3)	1.0 (0.3)	100.0 —	99.0 (0.4)	70.0 (2.0)	10.0 (1.1)
Black, non-Hispanic												
1978	88.4 (1.0)	42.0 (1.4)	4.1 (0.6)	0.0 —	79.7 (1.5)	28.7 (2.1)	2.3 (0.5)	0.0 —	98.8 (0.3)	70.7 (1.7)	16.8 (1.6)	0.5 (0.2)
1982	90.2 (1.0)	46.1 (2.4)	4.4 (0.8)	0.0 —	90.2 (1.6)	37.9 (2.5)	2.9 (1.0)	0.0 —	99.7 (0.2)	76.4 (1.5)	17.1 (1.5)	0.5 (0.3)
1986	93.9 (1.4)	53.4 (2.5)	5.6 (0.9)	0.1 —	95.4 (0.9)	49.0 (3.7)	4.0 (1.4)	0.1 —	100.0 —	85.6 (2.5)	20.8 (2.8)	0.2 —
1990	96.9 (0.9)	60.0 (2.8)	9.4 (1.7)	0.1 —	95.4 (1.1)	48.7 (3.6)	3.9 (1.6)	0.1 —	99.9 —	92.4 (2.2)	32.8 (4.5)	2.0 (1.0)
1992	96.6 (1.1)	59.8 (2.8)	9.6 (1.4)	0.1 —	95.0 (1.4)	51.0 (2.7)	4.0 (0.7)	0.1 —	100.0 —	89.6 (2.5)	29.8 (3.9)	0.9 —
1994	97.4 (1.0)	65.9 (2.6)	11.1 (1.7)	0.0 —	95.6 (1.6)	51.0 (3.9)	6.4 (2.4)	0.3 —	100.0 —	90.6 (1.8)	29.8 (3.4)	0.4 —
1996	97.3 (0.8)	65.3 (2.4)	10.0 (1.2)	0.1 —	96.2 (1.3)	53.7 (2.6)	4.8 (1.1)	0.1 —	100.0 —	90.6 (1.3)	31.2 (2.5)	0.9 —
1999	96.0 (0.6)	63.0 (2.1)	12.0 (1.5)	0.0 —	97.0 (1.1)	51.0 (4.0)	4.0 (1.4)	0.0 —	100.0 —	89.0 (2.0)	27.0 (2.7)	1.0 —
Hispanic												
1978	93.0 (1.2)	54.2 (2.8)	9.2 (2.5)	0.2 —	86.4 (0.9)	36.0 (2.9)	4.0 (1.0)	0.1 —	99.3 (0.4)	78.3 (2.3)	23.4 (2.7)	1.4 (0.6)
1982	94.3 (1.2)	55.7 (2.3)	7.8 (1.7)	0.0 —	95.9 (0.9)	52.2 (2.5)	6.3 (1.0)	0.0 —	99.8 —	81.4 (1.9)	21.6 (2.2)	0.7 (0.4)
1986	96.4 (1.3)	57.6 (2.9)	7.3 (2.8)	0.1 —	96.9 (1.4)	56.0 (5.0)	5.5 (1.1)	0.2 —	99.4 —	89.3 (2.5)	26.5 (4.5)	1.1 —
1990	98.0 (0.8)	68.4 (3.0)	11.3 (3.5)	0.2 —	96.8 (1.1)	56.7 (3.3)	6.4 (1.7)	0.1 —	99.6 —	85.8 (4.2)	30.1 (3.1)	1.9 (0.8)
1992	97.2 (1.3)	65.0 (2.9)	11.7 (2.5)	0.1 —	98.1 (0.7)	63.3 (2.7)	7.0 (1.2)	0.0 —	100.0 —	94.1 (2.2)	39.2 (4.9)	1.2 —
1994	97.2 (1.2)	63.5 (3.1)	9.7 (1.8)	0.0 —	97.1 (1.3)	59.2 (2.2)	6.4 (1.8)	0.0 —	100.0 —	91.8 (3.6)	38.3 (5.5)	1.4 —
1996	98.1 (0.7)	67.1 (2.1)	13.8 (2.3)	0.2 —	96.2 (0.8)	58.3 (2.3)	6.7 (1.2)	0.0 —	99.9 —	92.2 (2.2)	40.1 (3.5)	1.8 —
1999	98.0 (0.7)	68.0 (2.5)	11.0 (1.6)	0.0 —	97.0 (0.6)	63.0 (2.5)	8.0 (1.4)	0.0 —	100.0 —	94.0 (2.2)	38.0 (4.1)	3.0 (1.1)
Public												
1978	96.4 (0.3)	68.8 (0.9)	18.5 (0.7)	0.7 (0.2)	94.1 (0.5)	63.3 (1.2)	17.0 (0.8)	0.9 (0.2)	99.8 (0.1)	91.7 (0.5)	50.6 (1.2)	7.0 (0.4)
1982	96.8 (0.4)	69.4 (1.2)	17.3 (0.9)	0.5 (0.1)	97.5 (0.4)	69.7 (1.3)	16.4 (1.0)	0.5 (0.1)	99.9 (0.0)	92.5 (0.6)	46.9 (1.3)	5.2 (0.4)
1986	97.7 (0.3)	72.7 (1.4)	19.1 (1.1)	0.6 (0.2)	98.5 (0.3)	72.9 (1.7)	15.6 (1.0)	0.4 (0.1)	99.9 —	95.5 (0.5)	50.7 (1.6)	6.1 (0.5)
1990	99.0 (0.2)	80.5 (1.1)	26.8 (1.0)	1.1 (0.3)	98.4 (0.2)	73.3 (1.2)	16.7 (1.1)	0.3 (0.1)	100.0 —	95.8 (0.6)	55.0 (1.3)	6.5 (0.5)
1992	98.8 (0.3)	79.7 (0.9)	26.1 (0.9)	1.1 (0.3)	98.5 (0.3)	76.3 (1.2)	18.0 (1.0)	0.3 (0.2)	100.0 —	96.3 (0.6)	56.9 (1.2)	6.7 (0.7)
1994	98.9 (0.3)	80.6 (0.8)	27.9 (1.2)	1.1 (0.4)	98.5 (0.3)	76.7 (1.2)	20.0 (1.4)	0.6 (0.2)	100.0 —	96.2 (0.5)	56.2 (1.3)	6.4 (0.7)
1996	99.0 (0.2)	80.7 (0.8)	28.3 (1.1)	1.5 (0.3)	98.6 (0.2)	77.2 (0.9)	19.2 (1.3)	0.6 (0.1)	100.0 —	96.7 (0.5)	59.0 (1.8)	7.1 (0.7)
1999	99.0 (0.2)	81.0 (1.0)	29.0 (1.2)	2.0 (0.3)	99.0 (0.2)	77.0 (1.3)	22.0 (1.3)	1.0 (0.2)	100.0 —	96.0 (0.5)	59.0 (1.6)	8.0 (0.7)
Private												
1978	99.0 —	83.3 (1.9)	28.4 (2.0)	1.2 (0.4)	99.0 (0.4)	80.8 (1.7)	26.9 (1.8)	1.4 (0.4)	100.0 —	97.1 (0.6)	67.7 (3.3)	12.9 (2.7)
1982	99.0 (0.4)	84.3 (2.1)	28.6 (2.6)	1.0 (0.6)	99.5 (0.3)	85.1 (1.6)	26.3 (3.1)	1.0 (0.3)	100.0 —	98.1 (0.5)	68.3 (2.4)	8.2 (1.4)
1986	98.7 (0.8)	81.8 (2.3)	28.9 (2.7)	1.1 (0.6)	98.9 (0.6)	81.9 (3.3)	22.0 (6.8)	0.1 —	100.0 —	99.4 —	75.1 (10.6)	16.3 (9.1)
1990	99.7 —	89.3 (1.8)	35.2 (3.3)	1.8 (1.2)	99.7 —	87.0 (2.0)	23.2 (2.5)	0.7 (0.4)	100.0 —	98.2 (1.2)	71.0 (7.9)	15.7 (5.3)
1992	99.8 (0.1)	92.2 (1.2)	38.6 (2.7)	1.9 (0.7)	99.9 —	89.7 (2.1)	25.9 (3.7)	0.7 (0.4)	100.0 —	99.5 —	79.5 (3.7)	12.2 (2.7)
1994	99.8 —	92.3 (1.3)	44.4 (4.0)	2.2 (0.8)	98.7 —	88.5 (2.6)	30.7 (3.7)	1.0 —	100.0 —	98.8 (0.6)	75.7 (4.3)	14.5 (3.5)
1996	99.6 —	87.1 (1.5)	38.7 (3.0)	2.1 (1.1)	99.6 —	89.3 (3.5)	31.6 (4.8)	1.0 (0.6)	100.0 —	98.5 (0.8)	71.5 (6.4)	10.4 (4.0)
1999	100.0 —	90.0 (1.6)	41.0 (2.9)	3.0 (0.9)	99.0 —	90.0 (2.6)	35.0 (3.1)	2.0 (0.8)	100.0 —	100.0 —	78.0 (6.1)	13.0 (4.6)

—Not available.

¹Virtually no students were able to perform multi-step problems and algebra.

²Virtually all students knew simple arithmetic facts. Data are only for students enrolled in school.

³Scale score of 150 or above.

⁴Scale score of 200 or above.