

Table 129.—Percent of students at or above selected science proficiency levels, by sex, race/ethnicity, control of school, and age: 1977 to 1999

Sex, race/ethnicity, control, and year	9-year-olds ¹				13-year-olds ²				17-year-olds ²			
	Know everyday science facts ³	Understand simple scientific principles ⁴	Apply general scientific information ⁵	Analyze scientific procedures and data ⁶	Understand simple scientific principles ⁴	Apply general scientific information ⁵	Analyze scientific procedures and data ⁶	Integrate specialized scientific information ⁷	Understand simple scientific principles ⁴	Apply general scientific information ⁵	Analyze scientific procedures and data ⁶	Integrate specialized scientific information ⁷
1	2	3	4	5	6	7	8	9	10	11	12	13
Total												
1977	93.5 (0.6)	68.0 (1.1)	25.7 (0.7)	3.2 (0.3)	86.0 (0.7)	48.8 (1.1)	11.1 (0.5)	0.7 (0.1)	97.1 (0.2)	81.6 (0.7)	41.7 (0.9)	8.5 (0.4)
1982	95.2 (0.7)	70.7 (1.9)	24.3 (1.8)	2.3 (0.7)	89.8 (0.8)	50.9 (1.6)	9.6 (0.7)	0.4 (0.1)	95.7 (0.5)	76.6 (1.0)	37.3 (0.9)	7.1 (0.4)
1986	96.2 (0.3)	72.0 (1.1)	27.5 (1.4)	3.0 (0.5)	91.6 (1.0)	52.5 (1.6)	9.1 (0.9)	0.2 (0.1)	97.1 (0.5)	80.7 (1.3)	41.3 (1.4)	7.9 (0.7)
1990	97.0 (0.3)	76.4 (0.9)	31.1 (0.8)	3.1 (0.3)	92.3 (0.7)	56.5 (1.0)	11.2 (0.6)	0.4 (0.1)	96.7 (0.3)	81.2 (0.9)	43.3 (1.3)	9.2 (0.5)
1992	97.4 (0.3)	78.0 (1.2)	32.8 (1.0)	3.4 (0.3)	93.1 (0.5)	61.3 (1.1)	12.0 (0.8)	0.2 (0.1)	97.8 (0.5)	83.3 (1.2)	46.6 (1.5)	10.1 (0.7)
1994	97.2 (0.4)	77.4 (1.0)	33.7 (1.2)	3.8 (0.4)	92.4 (0.6)	59.5 (1.1)	11.8 (0.9)	0.2 (0.1)	97.1 (0.7)	83.1 (1.2)	47.5 (1.3)	10.0 (0.8)
1996	96.8 (0.4)	76.1 (1.2)	32.2 (1.3)	4.4 (0.4)	92.0 (0.8)	57.6 (1.1)	12.3 (0.7)	0.4 (0.2)	97.8 (0.3)	83.8 (0.9)	48.4 (1.3)	10.8 (1.0)
1999	97.0 (0.3)	77.4 (0.8)	31.4 (1.0)	3.0 (0.4)	92.7 (0.4)	57.9 (1.0)	10.9 (0.7)	0.2 (0.1)	98.0 (0.3)	85.0 (1.1)	47.4 (1.4)	9.7 (0.7)
Male												
1977	94.3 (0.5)	69.5 (1.2)	27.4 (0.9)	3.7 (0.3)	87.2 (0.8)	52.3 (1.3)	13.1 (0.6)	0.9 (0.2)	97.8 (0.2)	85.2 (0.7)	48.8 (1.1)	11.8 (0.6)
1982	95.0 (1.0)	69.7 (2.0)	25.6 (2.6)	2.5 (1.0)	91.9 (0.8)	56.2 (1.8)	12.6 (1.1)	0.5 (0.2)	96.8 (0.5)	81.2 (1.2)	45.2 (1.2)	10.4 (0.8)
1986	96.8 (0.5)	74.1 (1.4)	29.9 (2.0)	3.8 (0.6)	92.9 (1.0)	57.3 (2.1)	11.9 (1.3)	0.3 (0.2)	97.4 (0.7)	82.4 (1.4)	48.8 (2.1)	11.4 (1.3)
1990	96.8 (0.5)	76.3 (1.2)	33.1 (1.1)	4.2 (0.6)	92.7 (0.8)	59.8 (1.3)	14.0 (0.9)	0.6 (0.2)	96.8 (0.5)	82.5 (1.2)	48.2 (1.6)	13.0 (0.8)
1992	97.7 (0.3)	80.4 (1.4)	37.2 (1.7)	4.6 (0.6)	93.1 (0.8)	62.9 (1.4)	14.2 (1.1)	0.3 (0.1)	98.0 (0.6)	85.0 (1.4)	50.9 (2.0)	13.6 (1.0)
1994	97.1 (0.4)	77.6 (0.9)	35.3 (1.4)	4.5 (0.7)	92.2 (0.8)	62.0 (1.3)	14.8 (1.1)	0.3 (0.2)	97.1 (0.6)	84.9 (1.3)	52.9 (1.8)	13.8 (1.2)
1996	96.9 (0.5)	76.8 (1.8)	33.9 (1.9)	5.2 (0.7)	93.2 (0.9)	61.7 (1.4)	15.5 (0.9)	0.7 (0.2)	97.5 (0.5)	83.8 (1.1)	53.1 (1.5)	14.2 (1.4)
1999	97.0 (0.5)	78.0 (1.3)	33.0 (1.3)	4.0 (0.6)	93.0 (0.6)	61.0 (1.2)	13.0 (1.2)	0.0 —	98.0 (0.5)	86.0 (1.5)	53.0 (1.6)	13.0 (1.2)
Female												
1977	92.8 (0.7)	66.5 (1.1)	24.0 (0.9)	2.6 (0.3)	84.7 (0.8)	45.4 (1.2)	9.0 (0.5)	0.4 (0.1)	96.4 (0.3)	78.0 (1.0)	34.8 (1.0)	5.3 (0.4)
1982	95.5 (1.2)	71.8 (2.2)	23.0 (2.0)	2.1 (0.6)	87.9 (1.0)	46.0 (1.6)	6.9 (0.7)	0.2 (0.1)	94.6 (0.8)	72.2 (1.3)	29.9 (1.2)	3.9 (0.4)
1986	95.6 (0.6)	70.0 (1.3)	25.1 (1.4)	2.2 (0.5)	90.3 (1.2)	47.7 (1.7)	6.3 (1.1)	0.1 (0.1)	96.9 (0.5)	79.1 (1.7)	34.1 (1.5)	4.5 (0.8)
1990	97.1 (0.4)	76.4 (1.1)	29.1 (1.0)	2.0 (0.3)	92.0 (0.8)	53.3 (1.4)	8.5 (0.6)	0.2 —	96.6 (0.6)	79.9 (1.4)	38.7 (1.7)	5.5 (0.5)
1992	97.1 (0.5)	75.7 (1.2)	28.6 (1.1)	2.2 (0.3)	93.1 (0.7)	59.6 (1.4)	9.9 (0.8)	0.2 —	97.5 (0.7)	81.6 (1.4)	42.0 (1.7)	6.6 (1.0)
1994	97.3 (0.5)	77.2 (1.4)	32.2 (1.5)	3.2 (0.4)	92.6 (0.6)	57.1 (1.4)	8.8 (1.0)	0.1 —	97.2 (1.0)	81.6 (1.6)	42.4 (1.8)	6.4 (0.6)
1996	96.6 (0.6)	75.5 (1.0)	30.7 (1.9)	3.6 (0.6)	90.9 (1.2)	53.8 (1.5)	9.2 (0.8)	0.2 —	98.1 (0.4)	83.7 (1.1)	43.9 (1.7)	7.4 (1.0)
1999	97.0 (0.5)	77.0 (1.3)	29.0 (1.3)	2.0 (0.4)	92.0 (0.6)	55.0 (1.7)	9.0 (0.8)	0.0 —	98.0 (0.5)	85.0 (1.4)	42.0 (1.7)	7.0 (0.8)
White, non-Hispanic												
1977	97.7 (0.3)	76.8 (0.7)	30.8 (0.7)	3.9 (0.3)	92.2 (0.5)	56.5 (0.9)	13.4 (0.5)	0.8 (0.1)	99.2 (0.1)	88.2 (0.4)	47.5 (0.7)	10.0 (0.4)
1982	98.3 (0.4)	78.4 (2.0)	29.4 (2.1)	2.9 (0.9)	94.4 (0.6)	58.3 (1.4)	11.5 (0.8)	0.4 (0.1)	98.6 (0.2)	84.9 (0.9)	43.9 (1.1)	8.6 (0.6)
1986	98.2 (0.3)	78.9 (1.0)	32.7 (1.5)	3.8 (0.6)	96.1 (0.8)	61.0 (1.7)	11.3 (1.2)	0.3 (0.1)	98.8 (0.3)	87.8 (1.4)	48.7 (1.7)	9.6 (0.9)
1990	99.2 (0.2)	84.4 (0.7)	37.5 (1.1)	3.9 (0.4)	96.9 (0.4)	66.5 (1.2)	14.2 (0.8)	0.5 (0.1)	99.0 (0.2)	89.6 (0.8)	51.2 (1.5)	11.4 (0.7)
1992	99.2 (0.1)	85.5 (0.9)	39.4 (1.1)	4.3 (0.4)	97.9 (0.4)	71.1 (1.3)	15.0 (1.0)	0.3 (0.1)	99.3 (0.3)	90.5 (1.0)	55.4 (1.7)	12.8 (0.9)
1994	99.1 (0.3)	85.6 (1.0)	40.8 (1.5)	4.9 (0.6)	97.6 (0.4)	70.5 (1.1)	14.8 (1.0)	0.3 (0.1)	99.3 (0.3)	91.5 (0.9)	57.5 (1.6)	13.2 (1.1)
1996	98.6 (0.3)	83.8 (1.2)	39.6 (1.5)	5.9 (0.5)	97.0 (0.5)	68.5 (1.2)	15.9 (0.8)	0.6 (0.2)	99.3 (0.3)	92.2 (0.7)	58.5 (1.6)	13.8 (1.4)
1999	99.0 (0.2)	87.0 (0.7)	39.0 (1.3)	4.0 (0.5)	97.0 (0.3)	69.0 (1.0)	14.0 (1.0)	0.0 —	99.0 (0.2)	93.0 (0.8)	57.0 (2.0)	12.0 (0.7)
Black, non-Hispanic												
1977	72.4 (1.8)	27.2 (1.5)	3.5 (0.6)	0.2 —	57.3 (2.4)	14.9 (1.7)	1.2 (0.4)	0.0 —	83.6 (1.3)	40.5 (1.5)	7.7 (1.0)	0.4 (0.2)
1982	82.1 (3.0)	38.9 (2.7)	3.9 (1.3)	0.1 —	68.6 (2.4)	17.1 (1.9)	0.8 (0.3)	0.0 —	79.7 (1.9)	35.0 (2.1)	6.5 (1.1)	0.2 (0.2)
1986	88.6 (1.4)	46.2 (2.3)	8.3 (1.5)	0.3 —	73.6 (3.0)	19.6 (2.9)	1.1 (0.4)	0.0 —	90.9 (2.1)	52.2 (3.2)	12.5 (2.2)	0.9 (0.6)
1990	88.0 (1.3)	46.4 (3.1)	8.5 (1.1)	0.1 —	77.6 (3.6)	24.3 (3.3)	1.5 (0.5)	0.1 —	88.3 (1.9)	51.4 (3.7)	15.7 (4.0)	1.5 (0.8)
1992	90.7 (1.8)	51.3 (3.5)	9.2 (1.4)	0.3 —	73.8 (2.8)	26.2 (2.8)	1.8 (0.8)	0.0 —	92.1 (1.8)	55.7 (3.7)	14.1 (2.5)	0.8 —
1994	91.0 (1.5)	51.6 (2.3)	11.1 (1.4)	0.2 —	73.5 (3.2)	22.4 (4.3)	2.2 —	0.0 —	91.1 (1.9)	58.1 (3.7)	15.4 (2.3)	0.5 (0.3)
1996	91.0 (1.6)	52.2 (3.4)	10.6 (2.0)	0.3 —	75.9 (2.7)	25.5 (2.2)	1.9 (0.9)	0.0 —	93.0 (1.2)	59.8 (3.2)	17.7 (2.7)	0.8 (0.5)
1999	89.0 (1.6)	49.0 (2.6)	9.0 (1.6)	— —	79.0 (2.4)	25.0 (3.6)	1.0 (0.4)	0.0 —	92.0 (1.7)	55.0 (3.4)	12.0 (2.2)	0.0 —
Hispanic												
1977	84.6 (1.8)	42.0 (3.1)	8.8 (1.7)	0.3 —	62.2 (2.4)	18.1 (1.8)	1.8 (0.8)	0.0 —	93.1 (1.7)	61.5 (1.7)	18.5 (2.1)	1.8 (0.6)
1982	85.1 (3.1)	40.2 (6.1)	4.2 (2.7)	0.0 —	75.5 (3.3)	24.1 (5.1)	2.4 (0.9)	0.0 —	86.9 (2.9)	48.0 (2.7)	11.1 (2.0)	1.4 (0.9)
1986	89.6 (2.4)	50.1 (3.7)	10.7 (2.4)	0.2 —	76.7 (3.2)	24.9 (4.3)	1.5 (0.7)	0.0 —	93.3 (2.4)	60.0 (7.2)	14.8 (2.9)	1.1 (0.7)
1990	93.6 (1.5)	56.3 (3.7)	11.6 (2.1)	0.4 —	80.2 (2.9)	30.0 (2.8)	3.3 (0.8)	0.1 —	91.9 (2.2)	59.9 (5.0)	21.1 (3.3)	2.1 —
1992	92.4 (1.7)	55.5 (4.3)	11.7 (1.8)	0.4 —	86.2 (2.6)	36.5 (2.9)	3.3 (1.3)	0.0 —	94.6 (2.6)	68.3 (6.6)	23.0 (3.8)	2.5 (1.2)
1994	91.1 (2.3)	49.9 (3.1)	10.8 (2.5)	0.7 (0.5)	81.2 (2.5)	31.6 (3.3)	2.4 (0.9)	0.0 —	89.9 (3.3)	58.6 (7.4)	21.7 (4.1)	1.5 (0.7)
1996	92.6 (1.9)	57.8 (3.1)	13.1 (3.1)	0.4 —	81.0 (2.8)	30.9 (3.3)	3.2 (1.0)	0.0 —	94.1 (1.6)	67.6 (4.5)	23.9 (2.5)	3.0 (1.4)
1999	94.0 (1.8)	56.0 (2.5)	12.0 (1.6)	— —	78.0 (2.3)	25.0 (2.2)	2.0 (0.6)	0.0 —	97.0 (2.0)	73.0 (4.2)	27.0 (4.5)	5.0 (1.6)
Public												
1977	93.0 (0.7)	66.4 (1.3)	24.5 (0.9)	2.9 (0.3)	84.9 (0.8)	46.7 (1.2)	10.2 (0.5)	0.6 (0.1)	97.0 (0.2)	80.8 (0.7)	40.5 (0.8)	8.1 (0.4)
1982	94.9 (0.8)	69.5 (2.1)	23.9 (2.1)	2.3 (0.7)	89.2 (0.9)	49.2 (1.8)	8.9 (0.8)	0.3 (0.1)	95.4 (0.6)	75.8 (1.0)	36.6 (0.9)	6.9 (0.4)
1986	95.8 (0.4)	70.5 (1.3)	26.3 (1.5)	2.8 (0.6)	91.3 (1.0)	51.9 (1.7)	8.9 (0.9)	0.2 (0.1)	97.0 (0.5)	80.1 (1.4)	39.9 (1.5)	7.2 (0.7)
1990	96.7 (0.4)	75.5 (1.0)	30.3 (0.8)	3.0 (0.4)	91.6 (0.8)	54.7 (1.2)	10.7 (0.7)	0.4 (0.1)	96.5 (0.4)	80.4 (0.9)	42.0 (1.3)	8.7 (0.5)
1992	97.1 (0.4)	76.7 (1.3)	31.5 (1.0)	3.2 (0.3)	92.7 (0.5)	60.2 (1.2)	11.9 (0.9)	0.3 (0.1)	97.5 (0.5)	82.0 (1.2)	44.8 (1.5)	9.6 (0.8)
1994	96.9 (0.4)	76.1 (1.2)	32.5 (1.4)	3.6 (0.5)	91.9 (0.6)	57.8 (1.2)	11.3 (0.9)	0.2 (0.1)	96.8 (0.7)	81.7 (1.3)	45.3 (1.1)	9.4 (0.5)
1996	96.7 (0.5)	75.3 (1.3)	30.9 (1.4)	4.1 (0.3)	91.5 (0.8)	56.0 (1.3)	11.5 (0.8)	0.4 (0.2)	97.7 (0.4)	83.2 (1.0)	47.7 (1.3)	10.5 (1.0)
1999	97.0 (0.4)	76.0 (1.1)	30.0 (0.9)	3.0 (0.4)	92.0 (0.5)	56.0 (1.3)	10.0 (0.9)	0.0 —	98.0 (0.3)	84.0 (1.1)	46.0 (1.5)	9.0 (0.7)
Private												
1977	98.1 (0.6)	80.3 (1.7)	35.6 (1.9)	5.1 (1.1)	95.7 (1.0)	68.8 (2.6)	19.6 (1.9)	1.6 (0.3)	99.5 (0.2)	92.9 (1.2)	58.9 (2.8)	14.8 (1.9)
1982	98.9 —	82.6 (3.5)	28.2 (5.6)	2.1 (1.2)	95.0 (1.5)	65.8 (4.1)	16.0 (2.4)	0.8 (0.5)	97.9 (0.7)	83.5 (2.8)	44.2 (2.6)	8.5 (2.3)
1986	98.2 (0.7)	79.7 (2.3)	33.8 (2.8)	4.0 (0.7)	97.3 (1.8)	66.8 (8.2)	12.8 (3.6)	0.3 —	99.8 —	96.5 (2.2)	74.6 (10.9)	23.1 (7.7)
1990	98.7 —	83.6 (2.4)	37.2 (3.0)	3.9 (1.0)	98.4 (0.8)	72.0 (2.6)	16.2 (1.5)	0.5 —	99.5 —	90.6 (4.1)	59.8 (6.7)	15.8 (3.2)
1992	99.2 —	86.2 (2.0)	40.6 (3.4)	4.6 (1.3)	96.4 (1.1)	68.9 (3.1)	13.2 (2.0)	0.1 —	100.0 —	95.5 (2.0)	63.1 (5.3)	14.1 (2.7)
1994	99.3 (0.4)	87.1 (2.4)	42.7 (2.8)	5.6 (1.0)	96.5 (1.4)	72.7 (3.2)	15.5 (2.6)	0.1 —	99.3 (0.4)	93.1 (2.3)	62.7 (5.2)	14.8 (4.0)
1996	97.2 (1.2)	81.6 (3.2)	41.1 (3.7)	6.5 (2.2)	96.0 (2.1)	70.6 (5.4)	18.2 (3.0)	1.0 —	99.0 —	90.1 (3.0)	56.3 (7.0)	13.0 (3.1)
1999	99.0 (0.5)	86.0 (3.0)	38.0 (4.2)	5.0 (1.2)	98.0 (1.2)	74.0 (2.8)	17.0 (2.5)	0.0 —	100.0 —	95.0 (3.2)	62.0 (4.2)	14.0 (2.9)

—Not available.

¹ Virtually no students were able to integrate specialized scientific information.