1. Improvement Over Time

Have Montana’s 4th graders improved in mathematics achievement?

In 1996, 22% of Montana’s public school 4th graders met the Goals Panel’s performance standard in mathematics. The Goals Panel will report whether mathematics performance has improved over time when mathematics is assessed again in 2000.

The Goals Panel has set its performance standard at the two highest levels of achievement — Proficient or Advanced — on the National Assessment of Educational Progress, or NAEP.

2. State Comparisons†

How did Montana compare with other states in 4th grade mathematics achievement in public schools in 1996?

<table>
<thead>
<tr>
<th>States</th>
<th>Percentages of Students at or above Proficient on NAEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 states had significantly higher†</td>
<td></td>
</tr>
<tr>
<td>Connecticut</td>
<td>31%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>29%</td>
</tr>
<tr>
<td>24 states had similar†</td>
<td></td>
</tr>
<tr>
<td>Maine, Wisconsin</td>
<td>27%</td>
</tr>
<tr>
<td>New Jersey, Texas</td>
<td>25%</td>
</tr>
<tr>
<td>Indiana, Massachusetts, Nebraska,</td>
<td>24%</td>
</tr>
<tr>
<td>North Dakota</td>
<td>20%</td>
</tr>
<tr>
<td>Michigan, Utah, Vermont</td>
<td>23%</td>
</tr>
<tr>
<td>18 states had significantly lower†</td>
<td></td>
</tr>
<tr>
<td>Rhode Island, Tennessee</td>
<td>17%</td>
</tr>
<tr>
<td>Delaware, Hawaii, Kentucky</td>
<td>16%</td>
</tr>
<tr>
<td>Arizona, Florida</td>
<td>15%</td>
</tr>
<tr>
<td>Nevada</td>
<td>14%</td>
</tr>
<tr>
<td>Arkansas, Georgia, New Mexico</td>
<td>13%</td>
</tr>
</tbody>
</table>

†The term “state” is used to refer to the 50 states, the District of Columbia, and the territories.

1 See explanation on pp. 3-4.

3. Subgroup Performance

What percentages of public school 4th graders in different subgroups in Montana were at or above Proficient on the 1996 NAEP mathematics assessment?

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Percentages of Students at or above Proficient on NAEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>25%</td>
</tr>
<tr>
<td>Female</td>
<td>19%</td>
</tr>
<tr>
<td>American Indian/Alaskan Native</td>
<td>10%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>10%</td>
</tr>
<tr>
<td>Black</td>
<td>13%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>13%</td>
</tr>
<tr>
<td>White</td>
<td>25%</td>
</tr>
<tr>
<td>Less than high school</td>
<td>9%</td>
</tr>
<tr>
<td>High school graduate</td>
<td>16%</td>
</tr>
<tr>
<td>Some education beyond high school</td>
<td>26%</td>
</tr>
<tr>
<td>College graduate</td>
<td>30%</td>
</tr>
<tr>
<td>Central city</td>
<td>22%</td>
</tr>
<tr>
<td>Urban fringe/large town</td>
<td>22%</td>
</tr>
<tr>
<td>Rural/small town</td>
<td>22%</td>
</tr>
<tr>
<td>Eligible for free/reduced-price lunch</td>
<td>13%</td>
</tr>
<tr>
<td>Not eligible for free/reduced-price lunch</td>
<td>29%</td>
</tr>
</tbody>
</table>

1 Interpret differences between subgroups with caution. See pp. 3-4 and Appendix D.

2 Characteristics of the sample do not permit a reliable estimate.

See Appendix A for definitions, sources, and technical notes.
1. Improvement Over Time

Have Montana's 8th graders improved in mathematics achievement?

Yes. The percentage of Montana's public school 8th graders who met the Goals Panel's performance standard in mathematics increased from 27% in 1990, to 32% in 1996.

The Goals Panel has set its performance standard at the two highest levels of achievement — Proficient or Advanced — on the National Assessment of Educational Progress, or NAEP.

2. State Comparisons†

How did Montana compare with other states in 8th grade mathematics achievement in public schools in 1996?

11 states had similar percentages of students who were at or above Proficient on NAEP:

- Minnesota 34%
- North Dakota 33%
- Montana, Wisconsin 32%
- Connecticut, Iowa, Maine, Nebraska 31%

30 states had significantly lower percentages of students who were at or above Proficient on NAEP:

- Oregon, Washington 26%
- Colorado 25%
- U.S.* 24%
- Missouri, New York, Wyoming 22%
- Texas, Virginia 21%
- North Carolina, Rhode Island 20%
- Delaware 19%
- Arizona 18%
- California, Florida 17%
- Georgia, Hawaii, Kentucky 16%

† The term "state" is used to refer to the 50 states, the District of Columbia, and the territories.

† See explanation on pp. 3-4.

* Figure shown for the U.S. includes both public and nonpublic school data.

3. Subgroup Performance

What percentages of public school 8th graders in different subgroups1 in Montana were at or above Proficient on the 1996 NAEP mathematics assessment?

Sex
- Male 33%
- Female 31%

Race/ethnicity
- American Indian/Alaskan Native 14%
- Asian/Pacific Islander 12%
- Black 9%
- Hispanic 12%
- White 36%

Parents' highest level of education
- Less than high school 9%
- High school graduate 20%
- Some education beyond high school 34%
- College graduate 42%

School location
- Central city 34%
- Urban fringe/large town 34%
- Rural/small town 32%

Poverty measure
- Eligible for free/reduced-price lunch 17%
- Not eligible for free/reduced-price lunch 38%

† Interpret differences between subgroups with caution. See pp. 3-4 and Appendix D.

Characteristics of the sample do not permit a reliable estimate.

See Appendix A for definitions, sources, and technical notes.
1. Improvement Over Time

Have Montana's 8th graders improved in science achievement?

In 1996, 41% of Montana's public school 8th graders met the Goals Panel's performance standard in science. The Goals Panel will report whether science performance has improved over time when science is assessed again in 2000.

The Goals Panel has set its performance standard at the two highest levels of achievement — Proficient or Advanced — on the National Assessment of Educational Progress, or NAEP.

2. State Comparisons†

How did Montana compare with other states in 8th grade science achievement in public schools in 1996?

8 states had similar1 percentages of students who were at or above Proficient on NAEP:

| Montana, Maine, North Dakota | 41% | Connecticut, Iowa | 36% |
| Wisconsin | 39% | Nebraska | 35% |
| Massachusetts, Minnesota | 37% |

33 states had significantly lower1 percentages of students who were at or above Proficient on NAEP:

| Vermont, Wyoming | 34% | Delaware, Florida, Georgia, | 21% |
| Colorado, Michigan, Oregon, Utah | 32% | West Virginia |
| Alaska | 31% | California | 20% |
| Indiana | 30% | New Mexico | 19% |
| U.S.* | 29% | Alabama | 18% |
| Missouri | 28% | South Carolina | 17% |
| New York, Virginia, Washington | 27% | Hawaii | 15% |
| Rhode Island | 26% | Louisiana | 13% |
| Maryland | 25% | Mississippi | 12% |
| North Carolina | 24% | Guam | 7% |
| Arizona, Kentucky, Texas | 23% | District of Columbia | 5% |
| Arkansas, Tennessee | 22% |

† The term "state" is used to refer to the 50 states, the District of Columbia, and the territories.

1 See explanation on pp. 3-4.

* Figure shown for the U.S. includes both public and nonpublic school data.

3. Subgroup Performance

What percentages of public school 8th graders in different subgroups1 in Montana were at or above Proficient on the 1996 NAEP science assessment?

| Sex | Male | 44% |
| Female | 37% |

| Race/ethnicity | American Indian/Alaskan Native | 12% |
| Asian/Pacific Islander2 | |
| Black2 | |
| Hispanic | 19% |
| White | 45% |

| Parents' highest level of education | Less than high school | 15% |
| High school graduate | 30% |
| Some education beyond high school | 41% |
| College graduate | 50% |

| School location | Central city |
| Urban fringe/large town |
| Rural/small town |

| Poverty measure | Eligible for free/reduced-price lunch | 25% |
| Not eligible for free/reduced-price lunch | 46% |

† The term "state" is used to refer to the 50 states, the District of Columbia, and the territories.

1 See explanation on pp. 3-4.

2 Interpret differences between subgroups with caution. See pp. 3-4 and Appendix D.

* Figure shown for the U.S. includes both public and nonpublic school data.

See Appendix A for definitions, sources, and technical notes.
Mathematics Grade 8

Forty-one nations participated in the Third International Mathematics and Science Study (TIMSS) in 8th grade mathematics in 1995. If public school 8th graders in Montana participated in the TIMSS mathematics assessment, how would their average performance compare to that of students who took TIMSS in these nations?

**6 nations would be expected to perform significantly higher:**

- Belgium – Flemish
- Czech Republic
- Hong Kong
- Japan
- Korea
- Singapore

**18 nations would be expected to perform similarly:**

- (Australia)
- (Austria)
- (Belgium – French)
- (Bulgaria)
- Canada
- France
- (Germany)
- Hungary
- Ireland
- (Israel)
- (Netherlands)
- New Zealand
- Russian Federation
- Slovak Republic
- (Slovenia)
- Sweden
- (Switzerland)
- (Thailand)
- Montana

**17 nations would be expected to perform significantly lower:**

- (Colombia)
- Cyprus
- (Denmark)
- (England)
- (Greece)
- Iceland
- Iran, Islamic Republic
- (Kuwait)
- (Latvia – LSS)
- (Lithuania)
- Norway
- Portugal
- (Romania)
- (Scotland)
- (South Africa)
- Spain
- (United States)

Science Grade 8

Forty-one nations participated in the Third International Mathematics and Science Study (TIMSS) in 8th grade science in 1995. If public school 8th graders in Montana participated in the TIMSS science assessment, how would their average performance compare to that of students who took TIMSS in these nations?

**1 nation would be expected to perform significantly higher:**

- Singapore

**10 nations would be expected to perform similarly:**

- (Austria)
- Belgium – Flemish
- Bulgaria
- Czech Republic
- (England)
- Hungary
- Japan
- Korea
- Montana
- (Netherlands)
- (Slovenia)

**30 nations would be expected to perform significantly lower:**

- (Australia)
- (Belgium – French)
- Canada
- (Colombia)
- Cyprus
- (Denmark)
- France
- (Germany)
- (Greece)
- Hong Kong
- Iceland
- Iran, Islamic Republic
- Ireland
- (Israel)
- (Latvia – LSS)
- (Lithuania)
- New Zealand
- Norway
- Portugal
- (Romania)
- Russian Federation
- (Scotland)
- Slovak Republic
- (South Africa)
- Spain
- Sweden
- (Switzerland)
- (Thailand)
- United States

† The term “nation” is used to refer to nations, states, or jurisdictions. Performance for nations is based on public school data only. Nations not meeting international guidelines are shown in parentheses.

1 See explanation on pp. 3-4.
2 The Flemish and French educational systems in Belgium participated separately.
3 Latvia is designated LSS because only Latvian-speaking schools were tested, which represent less than 65% of the population.