



MONTANA

Sciences & Life Sciences Achievement

STUDENT ACHIEVEMENT

NAEP Grade 8	MT	U.S. Avg.	State Rank
Science Average, 2005	161.8	147.1	2
Science, 2005 (% at or above "proficient")	41.6%	27.3%	2
Life Sciences Average, 2005	162.2	148.2	4

ACT	MT	U.S. Avg.	State Rank
Science Average, 2008	21.8	20.8	14
Biology, 2008 (% of students ready for college level)	33%	28%	17

AP	MT	U.S. Avg.	State Rank
Science Scores, 2008 (% with a score of 3 or higher)	48.6%	55.4%	36
Science Exams, 2008 (Exams as % of all H.S. grads)	4.5%	10.5%	46
Biology Scores, 2008 (% with a score of 3 or higher)	42.5%	49.8%	40
Biology Exams, 2008 (Exams as % of all H.S. grads)	3.4%	4.6%	32

SCIENCE TEACHER QUALITY and PROFESSIONAL DEVELOPMENT

	MT	U.S. Avg.	State Rank
Science Teachers with Major in Assigned Field, 2003–04 (% , Grades 7–12)	82%	77%	13
Science Teachers Certified, 2006 (% , Grades 7–8)	N/A%	N/A%	–
Biology Teachers Certified, 2006 (% , Grades 9–12)	N/A%	88%	–

Note: NAEP = National Assessment of Educational Progress, AP = Advanced Placement
N/A = Data not available.

Key Organization(s) Promoting Bioscience Education

The mission of the [Montana Bioscience Alliance](#) includes educating the public and students about life science career opportunities and extending education, training, and business development outreach to the disadvantaged places and people throughout Montana.

MT STATE SCIENCE STANDARDS & REQUIREMENTS

STANDARDS PROFILE

- Most recent update of K-12 Science Standards: **2006**
- Next scheduled update: **Beyond 2012**
- Research scientists provided input in development of standards
- Science standards specifically mention applied laboratory or other tools for biotechnology or biosciences

BIOSCIENCE-RELATED GRADUATION REQUIREMENTS:

Biology is not required for graduation



Examples of Bioscience Education Activities

Teacher Preparation and Professional Development

MSU in Bozeman and the UM in Missoula offer professional development programs for existing middle- and high-school science teachers to expose them to the biosciences.

The **Northern Plains Transition to Teaching Program** at MSU provides a compact system of preparation to move seasoned professionals with established records of excellence into careers as public school teachers.

Experiential Learning and Outreach

The **Big Sky Science Partnership** is aimed at increasing science achievement of American Indian students in grades 3 to 8.

The **Governor and First Lady's Math and Science Initiative** supports multiple activities aimed at promoting education and careers in math and science.

Chicks in Science, an MSU-Billings program, holds events to interest girls in grades 4 to 8 in science.



Basic Skills Achievement and Other Summary Metrics

STUDENT ACHIEVEMENT

NAEP Grade 8	MT	U.S. Avg.	State Rank
Math Average, 2007	287.1	280.2	10
Math, 2007 (% at or above "proficient")	37.6%	31.0%	10
Reading Average, 2007	270.9	261.0	3
Reading, 2007 (% at or above "proficient")	38.9%	29.2%	4
Writing Average, 2007	156.6	154.3	16
Writing, 2007 (% at or above "proficient")	32.8%	30.6%	16

ACT	MT	U.S. Avg.	State Rank
Percentage of Graduates Tested	56%	43%	25
Math Average, 2008	21.8	21.0	21
Reading Average, 2008	22.7	21.4	12
English Average, 2008	21.3	20.6	23

SAT	MT	U.S. Avg.	State Rank
Percentage of Graduates Tested	28%	48%	27
Math Average, 2008	548	515	21
Critical Reading Average, 2008	541	502	22
Writing Average, 2008	523	494	22

AP	MT	U.S. Avg.	State Rank
Math Scores, 2008 (% with a score of 3 or higher)	59.8%	65.2%	37
Math Exams, 2008 (Exams as % of all H.S. grads)	3.7%	8.7%	47
English Scores, 2008 (% with a score of 3 or higher)	68.8%	59.2%	9
English Exams, 2008 (Exams as % of all H.S. grads)	12.4%	18.9%	38

SUMMARY STATE EDUCATION METRICS

Selected Indicators	MT	U.S. Avg.	State Rank
High School Graduation Rate, 2005–06	81.9%	73.4%	10
Student/Teacher Ratio, 2006–07	13.9	15.5	20*
Low-income Students, 2006–07 (% of all students)	35.6%	41.6%	–
Expenditure per Student (\$), 2005–06	\$8,626	\$9,154	28

Note: NAEP = National Assessment of Educational Progress, AP = Advanced Placement
 N/A = Data not available. * Lowest value receives highest ranking.

TABLE SOURCE NOTES:

NAEP Assessments, grade 8: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (NCES), National Assessment of Educational Progress (NAEP), 2005; **ACT Exam:** ACT, Inc., 2008; **SAT Reasoning Test:** The College Board, 2008.

Advanced Placement (AP): Battelle analysis of data from the College Board, 2008; AP test takers as a share of high school graduates includes graduate data from U.S. Department of Education, NCES for both public (Common Core of Data) and private high schools (Private School Survey).

Science Teacher Indicators: Council of Chief State School Officers (CCSSO) analysis of State Departments of Education data on public schools, 2007; U.S. Department of Education, NCES Schools and Staffing Survey, 2003–04 as reported by CCSSO, 2007.

Summary State Education Metrics: U.S. Department of Education, National Center for Education Statistics (NCES), Common Core of Data (CCD) on public elementary and secondary education.

Note: High school graduation rates are averaged freshman graduation rates—the rate is the number of graduates divided by the estimated count of freshmen 4 years earlier. U.S. figure for share of students eligible for free or reduced-price school lunch ("low-income" students) is available for 2005–06 only (state data are for 2006–07).

