



WYOMING

Sciences & Life Sciences Achievement

STUDENT ACHIEVEMENT

NAEP Grade 8	WY	U.S. Avg.	State Rank
Science Average, 2005	159.1	147.1	7
Science, 2005 (% at or above "proficient")	36.6%	27.3%	9
Life Sciences Average, 2005	158.6	148.2	10

ACT	WY	U.S. Avg.	State Rank
Science Average, 2008	21.0	20.8	29
Biology, 2008 (% of students ready for college level)	27%	28%	34

AP	WY	U.S. Avg.	State Rank
Science Scores, 2008 (% with a score of 3 or higher)	37.6%	55.4%	49
Science Exams, 2008 (Exams as % of all H.S. grads)	5.2%	10.5%	42
Biology Scores, 2008 (% with a score of 3 or higher)	30.9%	49.8%	48
Biology Exams, 2008 (Exams as % of all H.S. grads)	2.3%	4.6%	44

SCIENCE TEACHER QUALITY and PROFESSIONAL DEVELOPMENT	WY	U.S. Avg.	State Rank
Science Teachers with Major in Assigned Field, 2003–04 (% , Grades 7–12)	79%	77%	18
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.

Examples of Bioscience Education Activities

Teacher Preparation and Professional Development

University of Wyoming (UW) College of Education offers a degree in science education.

Concurrent majors in science education are offered in biology, chemistry, earth system science, and geology.

The Wyoming Science Teacher Education Program (WySTEP) provides UW secondary

WY STATE SCIENCE STANDARDS & REQUIREMENTS

STANDARDS PROFILE

- Most recent update of K-12 Science Standards: **2008**

BIOSCIENCE-RELATED GRADUATION REQUIREMENTS:

Three units of science are required; but, biology is not specified



science education majors with an opportunity to gain hands-on research experience combined with the opportunity to develop lesson plans based on their research for use in their student teaching residency. The WySTEP Fellowships are awarded to science education majors in the spring semester of their junior year. This three-semester fellowship program carries a stipend of \$3,000 to both the WySTEP Fellow and the mentor graduate student. Additionally, funding is possible to the secondary school for lab equipment with which to carry out the lesson plan.

Wyoming's **Teacher Shortage Loan Repayment Program** targets future teachers in mathematics, science, special education, and foreign language. The loan program is designed to address the unmet financial needs of students who are at least juniors in teacher education programs at UW. Recipients repay their loans by working at least 50% in the targeted areas listed above. The loan obligations must be met in the minimum amount of time necessary to repay plus 2 years. For purposes of repayment, 1 year of full-time employment repays the loan balance for one academic year of enrollment.

Wyoming offers an alternative program for secondary licensure through the **Northern Plains Transition to Teaching (NPTT)** program located at Montana State University at Bozeman. This program is funded by a federal grant and allows individuals to work in a Wyoming school district while they obtain their teaching license. The program requires a

bachelor's in a secondary teaching field and employment in a Wyoming school district.

The **Science Posse** is funded by the UW Graduate School, the National Institutes of Health, and the National Science Foundation. The Posse includes graduate students from a variety of science fields who work to bring current science research, materials, resources, and information to middle-school and high-school science teachers around the state.

Experiential Learning and Outreach

Through a program called **WANTED: Science ALIVE!**, Posse graduate students work with teachers to design demonstrations and workshops on a variety of science topics. They travel to classrooms and present intriguing information from their fields of expertise or inquiry-based curriculum units, challenging students to discover and explore the science around us. The Science Posse also visits schools with Science Day demonstrations that allow students to rotate through tables of science experiments and displays involving ecology, physiology, microbiology, geology, engineering, chemistry, and math.

The Science Posse hosts an **Exploring Science Summer Workshop** that enables students to experience hands-on science lessons in ecology, physiology, microbiology, geology, engineering, and math.



Basic Skills Achievement and Other Summary Metrics

STUDENT ACHIEVEMENT

NAEP Grade 8	WY	U.S. Avg.	State Rank
Math Average, 2007	287.0	280.2	11
Math, 2007 (% at or above "proficient")	36.0%	31.0%	15
Reading Average, 2007	266.2	261.0	18
Reading, 2007 (% at or above "proficient")	33.2%	29.2%	20
Writing Average, 2007	157.9	154.3	12
Writing, 2007 (% at or above "proficient")	34.2%	30.6%	13

ACT	WY	U.S. Avg.	State Rank
Percentage of Graduates Tested	80%	43%	8
Math Average, 2008	20.8	21.0	35
Reading Average, 2008	21.8	21.4	28
English Average, 2008	20.1	20.6	42

SAT	WY	U.S. Avg.	State Rank
Percentage of Graduates Tested	8%	48%	38
Math Average, 2008	574	515	11
Critical Reading Average, 2008	562	502	19
Writing Average, 2008	541	494	20

AP	WY	U.S. Avg.	State Rank
Math Scores, 2008 (% with a score of 3 or higher)	59.0%	65.2%	38
Math Exams, 2008 (Exams as % of all H.S. grads)	4.3%	8.7%	44
English Scores, 2008 (% with a score of 3 or higher)	50.9%	59.2%	44
English Exams, 2008 (Exams as % of all H.S. grads)	7.6%	18.9%	48

SUMMARY STATE EDUCATION METRICS

Selected Indicators	WY	U.S. Avg.	State Rank
High School Graduation Rate, 2005–06	76.1%	73.4%	28
Student/Teacher Ratio, 2006–07	12.6	15.5	6*
Low-income Students, 2006–07 (% of all students)	29.7%	41.6%	–
Expenditure per Student (\$), 2005–06	\$11,437	\$9,154	10

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).

