



# NEBRASKA

## NE STATE SCIENCE STANDARDS & REQUIREMENTS

### Sciences & Life Sciences Achievement

#### STUDENT ACHIEVEMENT

NAEP Grade 8	NE	U.S. Avg.	State Rank
Science Average, 2005	N/A	147.1	–
Science, 2005 (% at or above “proficient”)	N/A%	27.3%	–
Life Sciences Average, 2005	N/A	148.2	–

ACT	NE	U.S. Avg.	State Rank
Science Average, 2008	21.9	20.8	13
Biology, 2008 (% of students ready for college level)	35%	28%	12

AP	NE	U.S. Avg.	State Rank
Science Scores, 2008 (% with a score of 3 or higher)	43.3%	55.4%	42
Science Exams, 2008 (Exams as % of all H.S. grads)	3.9%	10.5%	48
Biology Scores, 2008 (% with a score of 3 or higher)	34.6%	49.8%	44
Biology Exams, 2008 (Exams as % of all H.S. grads)	1.8%	4.6%	49

SCIENCE TEACHER QUALITY and PROFESSIONAL DEVELOPMENT	NE	U.S. Avg.	State Rank
Science Teachers with Major in Assigned Field, 2003–04 (% , Grades 7–12)	77%	77%	21
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.

#### STANDARDS PROFILE

- Most recent update of K-12 Science Standards: **Prior to 2005**
- Next scheduled update: **2010**
- 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:

Each district determines its own graduation requirements; however, the state requires that they offer biology

86% of Nebraska’s students in grades 5–8 achieved a score of proficient or better on the state’s Science Adequate Yearly Progress test in 2007–2008; 83% of students in grades 10–12 achieved a proficient score

### Examples of Bioscience Education Activities

#### Teacher Preparation and Professional Development

**KICKS (Keep Improving Content Knowledge and Skills)** is a year-long project designed to increase the teaching skills of Nebraska’s elementary and secondary science teachers. Participating teachers attend a 2-week summer institute with 4 days of follow-up throughout the school year. Participants in the Inquiry or



Elementary Earth Science Institutes will attend a 1-week summer institute with 6 days of follow-up throughout the school year. Ten KICKS Institutes will be offered in 2009.

Nebraska has an **alternative teacher certification program** that is designed for individuals who hold a bachelor's degree but do not have enough education credits to obtain a teacher's degree.

#### **Experiential Learning and Outreach**

The University of Nebraska at Lincoln (UNL) has a program to introduce high-end science to high school students. The **UNL's Center for Biotechnology Outreach** has adapted three labs so that they fit in a 50-minute class period. A van is used to shuttle the experiments and kits between UNL and individual school sites.

**UNL's Young Nebraska Scientists program** offers summer camps for middle and high school students, including a 2-day DNA Science camp.

The **University of Nebraska Medical Center (UNMC)** has a **Science Literacy Initiative** that includes holding "Science Cafes," informal science discussions held at local coffeehouses or bars that feature health care experts. Undertaken in partnership with the Bio Nebraska Life Sciences Association (Bio Nebraska), they are designed to provide an opportunity for the general public to better understand the role of science and medicine in their lives.

Under **UNMC's Students ROCK (Reaching Out to Community K-12 Schools) program**, medical and dental students carry out "Hands-on Science" or similar science-based classroom activities to spark interest in science and math.

The **Rural Health Education Network** encourages students from rural communities to pursue careers in health care.

## Basic Skills Achievement and Other Summary Metrics

### STUDENT ACHIEVEMENT

NAEP Grade 8	NE	U.S. Avg.	State Rank
Math Average, 2007	283.7	280.2	24
Math, 2007 (% at or above “proficient”)	34.6%	31.0%	23
Reading Average, 2007	267.0	261.0	15
Reading, 2007 (% at or above “proficient”)	35.0%	29.2%	14
Writing Average, 2007	N/A	154.3	–
Writing, 2007 (% at or above “proficient”)	N/A%	30.6%	–

  

ACT	NE	U.S. Avg.	State Rank
Percentage of Graduates Tested	72%	43%	13
Math Average, 2008	21.8	21.0	21
Reading Average, 2008	22.5	21.4	15
English Average, 2008	21.8	20.6	12

  

SAT	NE	U.S. Avg.	State Rank
Percentage of Graduates Tested	6%	48%	42
Math Average, 2008	585	515	10
Critical Reading Average, 2008	581	502	8
Writing Average, 2008	567	494	9

  

AP	NE	U.S. Avg.	State Rank
Math Scores, 2008 (% with a score of 3 or higher)	52.9%	65.2%	45
Math Exams, 2008 (Exams as % of all H.S. grads)	3.7%	8.7%	46
English Scores, 2008 (% with a score of 3 or higher)	67.6%	59.2%	10
English Exams, 2008 (Exams as % of all H.S. grads)	7.5%	18.9%	49

### SUMMARY STATE EDUCATION METRICS

Selected Indicators	NE	U.S. Avg.	State Rank
High School Graduation Rate, 2005–06	87.0%	73.4%	2
Student/Teacher Ratio, 2006–07	13.4	15.5	13*
Low-income Students, 2006–07 (% of all students)	36.5%	41.6%	–
Expenditure per Student (\$), 2005–06	\$9,324	\$9,154	21

**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).