



HAWAII

Sciences & Life Sciences Achievement

STUDENT ACHIEVEMENT

NAEP Grade 8	HI	U.S. Avg.	State Rank
Science Average, 2005	136.2	147.1	42
Science, 2005 (% at or above "proficient")	15.2%	27.3%	43
Life Sciences Average, 2005	137.1	148.2	42

ACT	HI	U.S. Avg.	State Rank
Science Average, 2008	21.2	20.8	28
Biology, 2008 (% of students ready for college level)	31%	28%	24

AP	HI	U.S. Avg.	State Rank
Science Scores, 2008 (% with a score of 3 or higher)	56.2%	55.4%	24
Science Exams, 2008 (Exams as % of all H.S. grads)	12.2%	10.5%	13
Biology Scores, 2008 (% with a score of 3 or higher)	46.3%	49.8%	31
Biology Exams, 2008 (Exams as % of all H.S. grads)	5.4%	4.6%	12

SCIENCE TEACHER QUALITY and PROFESSIONAL DEVELOPMENT	HI	U.S. Avg.	State Rank
Science Teachers with Major in Assigned Field, 2003–04 (% , Grades 7–12)	N/A%	77%	–
Science Teachers Certified, 2006 (% , Grades 7–8)	21%	N/A%	26
Biology Teachers Certified, 2006 (% , Grades 9–12)	50%	88%	28

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

The University of Hawaii's College of Education offers a series of professional development courses, **Teaching Science as Inquiry**, for elementary and secondary school teachers.

In 2007, the Hawaii legislature expanded loan forgiveness eligibility under the **Hawaii Educator Loan Program (HELP)** to include

HI STATE SCIENCE STANDARDS & REQUIREMENTS

STANDARDS PROFILE

- Most recent update of K-12 Science Standards: N/A
- Science standards specifically mention applied laboratory or other tools for biotechnology or biosciences. The standards require that students:
 - Analyze and evaluate the benefits, drawbacks, and trade-offs raised by the application of biotechnology in the health field
 - Assess the benefits and drawbacks of biotechnology on the environment and society

BIOSCIENCE-RELATED GRADUATION REQUIREMENTS:

Three credits of science are required; biology is not required



students who are enrolled in a state-approved teacher education program at the University of Hawaii and who agree to teach in a subject area shortage in the Hawaii public school system. Loans are forgiven on the basis of 1 year of a student loan for 1 year of service as a teacher. Math and science have been areas of shortage.

The University of Hawaii offers a **Post-Baccalaureate Certificate in Secondary Education (PBCSE)** that is designed for students who have a bachelor of arts or bachelor of science degree and wish to obtain initial basic teacher certification. The PBCSE program consists of nine interrelated courses totaling 36

credits. The program is offered at the University of Hawaii at Manoa and online.

Experiential Learning and Outreach

The University of Hawaii's Biotechnology and Agriculture Education Program operates a **Biotechnology Outreach Program** that seeks to make biotechnology understandable to individuals of all ages. University field trips and classroom programs interest students in science and give them background knowledge in genetics. Community presentations focus on providing background scientific knowledge as well as information about current issues related to genetic engineering.



Basic Skills Achievement and Other Summary Metrics

STUDENT ACHIEVEMENT

NAEP Grade 8	HI	U.S. Avg.	State Rank
Math Average, 2007	268.8	280.2	47
Math, 2007 (% at or above "proficient")	21.2%	31.0%	45
Reading Average, 2007	251.3	261.0	47
Reading, 2007 (% at or above "proficient")	20.3%	29.2%	47
Writing Average, 2007	143.6	154.3	42
Writing, 2007 (% at or above "proficient")	19.9%	30.6%	42

ACT	HI	U.S. Avg.	State Rank
Percentage of Graduates Tested	23%	43%	35
Math Average, 2008	22.3	21.0	12
Reading Average, 2008	21.6	21.4	34
English Average, 2008	20.8	20.6	27

SAT	HI	U.S. Avg.	State Rank
Percentage of Graduates Tested	61%	48%	19
Math Average, 2008	502	515	41
Critical Reading Average, 2008	481	502	49
Writing Average, 2008	470	494	49

AP	HI	U.S. Avg.	State Rank
Math Scores, 2008 (% with a score of 3 or higher)	62.6%	65.2%	34
Math Exams, 2008 (Exams as % of all H.S. grads)	9.0%	8.7%	19
English Scores, 2008 (% with a score of 3 or higher)	52.4%	59.2%	41
English Exams, 2008 (Exams as % of all H.S. grads)	18.9%	18.9%	16

SUMMARY STATE EDUCATION METRICS

Selected Indicators	HI	U.S. Avg.	State Rank
High School Graduation Rate, 2005–06	75.5%	73.4%	29
Student/Teacher Ratio, 2006–07	16.0	15.5	37*
Low-income Students, 2006–07 (% of all students)	41.0%	41.6%	–
Expenditure per Student (\$), 2005–06	\$9,876	\$9,154	16

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).

