



FLORIDA

Sciences & Life Sciences Achievement

STUDENT ACHIEVEMENT

NAEP Grade 8	FL	U.S. Avg.	State Rank
Science Average, 2005	140.9	147.1	36
Science, 2005 (% at or above "proficient")	21.5%	27.3%	36
Life Sciences Average, 2005	141.9	148.2	36

ACT	FL	U.S. Avg.	State Rank
Science Average, 2008	19.3	20.8	49
Biology, 2008 (% of students ready for college level)	19%	28%	49

AP	FL	U.S. Avg.	State Rank
Science Scores, 2008 (% with a score of 3 or higher)	38.3%	55.4%	47
Science Exams, 2008 (Exams as % of all H.S. grads)	12.3%	10.5%	12
Biology Scores, 2008 (% with a score of 3 or higher)	32.3%	49.8%	45
Biology Exams, 2008 (Exams as % of all H.S. grads)	5.8%	4.6%	9

SCIENCE TEACHER QUALITY and PROFESSIONAL DEVELOPMENT

	FL	U.S. Avg.	State Rank
Science Teachers with Major in Assigned Field, 2003–04 (% , Grades 7–12)	83%	77%	11
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

BioFlorida maintains an education and workforce committee among its five main committees.

FL STATE SCIENCE STANDARDS & REQUIREMENTS

STANDARDS PROFILE

- Most recent update of K-12 Science Standards: **2008**
- Next scheduled update: **2012**
- Research scientists provided input in development of standards
- Science standards specifically mention applied laboratory or other tools for biotechnology or bioscience. The standards require that:
 - Current science standards reference impact of biotechnology as early as 7th grade and include a high school standard on "heredity and reproduction" that references applications of DNA to biotechnology and biotechnology's role and impact in society.

Florida's Student Performance Science Standards, adopted by the State Board of Education February 19, 2008

BIOSCIENCE-RELATED GRADUATION REQUIREMENTS:

There is no requirement; but, 88% of recent high school graduates have taken a course in biology or life science

40% of 8th graders and 38% of 11th graders met the "proficient" level under NCLB Adequate Yearly Progress test



Examples of Bioscience Education Activities

Teacher Preparation and Professional Development

Scripps Florida offers a **Summer Research Internship for Teachers**.

Torrey Pines Institute in Florida offers similar internship programs for teachers.

The **Florida Center for Research in Science, Technology, Engineering and Mathematics (FCR-STEM)** at Florida State University serves the Department of Education by testing innovative in-service teacher programs.

The **FSU-Teach** program allows science majors to take tuition-free education courses and provides a double major, together with intensive mentoring and classroom teaching experiences.

University of Florida's Interdisciplinary **Center for Ongoing Research/Education (ICORE)** introduces middle-school and high-school teachers to cutting-edge bioscience research methods at UF and its Emerging Pathogens Institute.

In areas with critical teacher shortages, Florida offers forgivable loans, tuition reimbursement, and assistance in repayment of student loans.

A **Teacher Quest Scholarship** program administered by the state Department of Education and the Florida Technological Research and Development Authority provides opportunities for teachers to work at selected science and technology-based businesses to gain knowledge that can be infused in the curriculum.

Experiential Learning and Outreach

Scripps Florida offers traveling lectures, "**Science Saturday**" courses, career panels that connect students to Scripps grad students and postdocs, and a high school summer internship program.

Torrey Pines Institute in Florida offers similar **Exploration Days**, internships, and Career Days.

Bioscience-focused Schools and Programs

The Ponte Vedra High School in St. Augustine offers an **Academy of Biotechnology and Medical Research**, in partnership with the Mayo Clinic.



Basic Skills Achievement and Other Summary Metrics

STUDENT ACHIEVEMENT

NAEP Grade 8	FL	U.S. Avg.	State Rank
Math Average, 2007	277.4	280.2	35
Math, 2007 (% at or above “proficient”)	27.4%	31.0%	36
Reading Average, 2007	259.8	261.0	33
Reading, 2007 (% at or above “proficient”)	28.0%	29.2%	31
Writing Average, 2007	158	154.3	11
Writing, 2007 (% at or above “proficient”)	35.9%	30.6%	10

ACT	FL	U.S. Avg.	State Rank
Percentage of Graduates Tested	52%	43%	26
Math Average, 2008	20.0	21.0	42
Reading Average, 2008	20.3	21.4	46
English Average, 2008	19.0	20.6	49

SAT	FL	U.S. Avg.	State Rank
Percentage of Graduates Tested	65%	48%	16
Math Average, 2008	497	515	47
Critical Reading Average, 2008	496	502	39
Writing Average, 2008	481	494	43

AP	FL	U.S. Avg.	State Rank
Math Scores, 2008 (% with a score of 3 or higher)	58.2%	65.2%	41
Math Exams, 2008 (Exams as % of all H.S. grads)	8.6%	8.7%	20
English Scores, 2008 (% with a score of 3 or higher)	50.9%	59.2%	43
English Exams, 2008 (Exams as % of all H.S. grads)	30.8%	18.9%	3

SUMMARY STATE EDUCATION METRICS

Selected Indicators	FL	U.S. Avg.	State Rank
High School Graduation Rate, 2005–06	63.6%	73.4%	46
Student/Teacher Ratio, 2006–07	16.4	15.5	39*
Low-income Students, 2006–07 (% of all students)	45.2%	41.6%	–
Expenditure per Student (\$), 2005–06	\$7,812	\$9,154	39

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).

