



# ALABAMA

## Sciences & Life Sciences Achievement

### STUDENT ACHIEVEMENT

NAEP Grade 8	AL	U.S. Avg.	State Rank
Science Average, 2005	137.7	147.1	41
Science, 2005 (% at or above "proficient")	19.4%	27.3%	38
Life Sciences Average, 2005	141.6	148.2	37

ACT	AL	U.S. Avg.	State Rank
Science Average, 2008	20.1	20.8	45
Biology, 2008 (% of students ready for college level)	21%	28%	46

AP	AL	U.S. Avg.	State Rank
Science Scores, 2008 (% with a score of 3 or higher)	52.8%	55.4%	32
Science Exams, 2008 (Exams as % of all H.S. grads)	5.9%	10.5%	40
Biology Scores, 2008 (% with a score of 3 or higher)	50.4%	49.8%	24
Biology Exams, 2008 (Exams as % of all H.S. grads)	2.7%	4.6%	38

SCIENCE TEACHER QUALITY and PROFESSIONAL DEVELOPMENT	AL	U.S. Avg.	State Rank
Science Teachers with Major in Assigned Field, 2003–04 (% , Grades 7–12)	85%	77%	6
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

**Alabama Math, Science, and Technology Initiative (AMSTI)** is the state's initiative to improve math and science teaching by providing teachers with ongoing professional development, equipment, and materials for hands-on, activity-based instruction. Teachers of science, technology, engineering, and mathematics

## AL STATE SCIENCE STANDARDS & REQUIREMENTS

### STANDARDS PROFILE

- Adoption of K-12 Science Standards (Course of Study): **2005**

### BIOSCIENCE-RELATED GRADUATION REQUIREMENTS:

One unit of biology is required



(STEM) subjects in AMSTI schools agree to attend 2-week summer institutes for two consecutive summers, participate in additional development during the year, and designate “lead teachers.” Supplies are kept refreshed after the training is complete.

The state has developed the **Alabama Science in Motion (ASIM)** program with sites at public colleges and universities around the state. Each provides high-tech laboratory experiences for students and professional development for teachers. The program provides a variety of teacher resources, including modules on middle school science, biology, and “ActionBioScience” (sponsored by the National Science Foundation and the American Institute of Biological Sciences).

The HudsonAlpha Institute for Biotechnology, a state-supported program situated in the developing

biotechnology district in the Cummings Research Park at Huntsville, sponsors a **Biotechnology Educator in Residence**, allowing a high school science teacher to take a leave of absence and spend a year-long residency at HudsonAlpha.

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

HudsonAlpha has developed a middle-school biotechnology module in collaboration with AMSTI and high school activities for ASIM, as well as summer day camps for middle school students.

#### **Bioscience-focused Schools and Programs**

HudsonAlpha is partnering with the Department of Education to develop a series of biotechnology courses for career and technical education.



## Basic Skills Achievement and Other Summary Metrics

### STUDENT ACHIEVEMENT

NAEP Grade 8	AL	U.S. Avg.	State Rank
Math Average, 2007	266.0	280.2	49
Math, 2007 (% at or above "proficient")	18.2%	31.0%	48
Reading Average, 2007	251.9	261.0	46
Reading, 2007 (% at or above "proficient")	21.2%	29.2%	46
Writing Average, 2007	147.6	154.3	39
Writing, 2007 (% at or above "proficient")	23.9%	30.6%	37

  

ACT	AL	U.S. Avg.	State Rank
Percentage of Graduates Tested	77%	43%	9
Math Average, 2008	19.5	21.0	48
Reading Average, 2008	20.8	21.4	43
English Average, 2008	20.6	20.6	34

  

SAT	AL	U.S. Avg.	State Rank
Percentage of Graduates Tested	9%	48%	35
Math Average, 2008	557	515	18
Critical Reading Average, 2008	565	502	17
Writing Average, 2008	554	494	16

  

AP	AL	U.S. Avg.	State Rank
Math Scores, 2008 (% with a score of 3 or higher)	54.6%	65.2%	43
Math Exams, 2008 (Exams as % of all H.S. grads)	4.5%	8.7%	42
English Scores, 2008 (% with a score of 3 or higher)	53.9%	59.2%	40
English Exams, 2008 (Exams as % of all H.S. grads)	11.1%	18.9%	41

### SUMMARY STATE EDUCATION METRICS

Selected Indicators	AL	U.S. Avg.	State Rank
High School Graduation Rate, 2005–06	66.2%	73.4%	44
Student/Teacher Ratio, 2006–07	13.2	15.5	9*
Low-income Students, 2006–07 (% of all students)	51.0%	41.6%	–
Expenditure per Student (\$), 2005–06	\$7,683	\$9,154	41

**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).

