

2009 Science Assessment Content

Guided by a new framework, the NAEP science assessment was updated in 2009 to keep the content current with key developments in science, curriculum standards, assessments, and research. The 2009 framework organizes science content into three broad content areas.

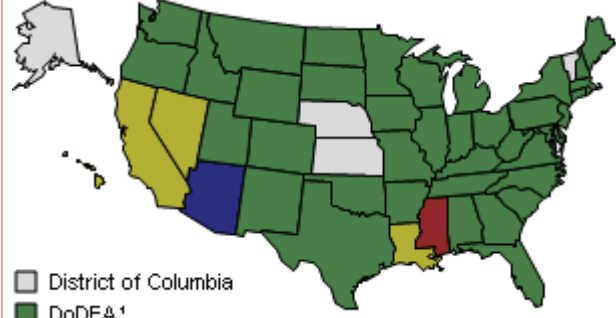
Physical science includes concepts related to properties and changes of matter, forms of energy, energy transfer and conservation, position and motion of objects, and forces affecting motion.

Life science includes concepts related to organization and development, matter and energy transformations, interdependence, heredity and reproduction, and evolution and diversity.

Earth and space sciences includes concepts related to objects in the universe, the history of the Earth, properties of Earth materials, tectonics, energy in Earth systems, climate and weather, and biogeochemical cycles.

The 2009 science assessment was composed of 143 questions at grade 4, 162 at grade 8, and 179 at grade 12. Students responded to only a portion of the questions, which included both multiple-choice questions and questions that required a written response.

Compare the Average Score in 2009 to Other States/Jurisdictions



□ District of Columbia
■ DoDEA¹

¹ Department of Defense Education Activity (overseas and domestic schools).

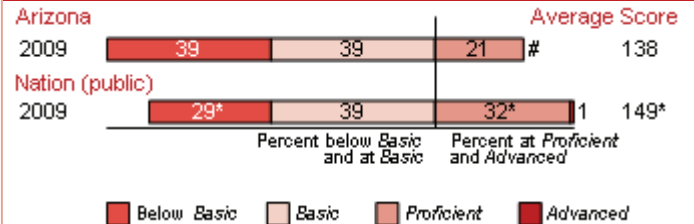
In 2009, the average score in **Arizona** was

- lower than those in 41 states/jurisdictions
- higher than that in 1 state/jurisdiction
- not significantly different from those in 4 states/jurisdictions
- 5 states/jurisdictions did not participate

Overall Results

- In 2009, the average score of fourth-grade students in Arizona was 138. This was lower than the average score of 149 for public school students in the nation.
- The percentage of students in Arizona who performed at or above the NAEP *Proficient* level was 22 percent in 2009. This percentage was smaller than the nation (32 percent).
- The percentage of students in Arizona who performed at or above the NAEP *Basic* level was 61 percent in 2009. This percentage was smaller than the nation (71 percent).

Achievement-Level Percentages and Average Score Results



* Significantly different ($p < .05$) from Arizona. Significance tests were performed using unrounded numbers.
Rounds to zero.

NOTE: Detail may not sum to totals because of rounding.

Results for Student Groups in 2009

| Reporting Groups | Percent of students | Avg. score | Percentages at or above | | Percent at Advanced |
|-------------------------------|---------------------|------------|-------------------------|------------|---------------------|
| | | | Basic | Proficient | |
| Gender | | | | | |
| Male | 51 | 137 | 60 | 23 | # |
| Female | 49 | 138 | 61 | 21 | # |
| Race/Ethnicity | | | | | |
| White | 40 | 155 | 81 | 37 | 1 |
| Black | 6 | 129 | 52 | 13 | # |
| Hispanic | 45 | 124 | 45 | 9 | # |
| Asian/Pacific Islander | 3 | 156 | 78 | 43 | # |
| American Indian/Alaska Native | 6 | 123 | 43 | 9 | # |
| National School Lunch Program | | | | | |
| Eligible | 54 | 125 | 47 | 11 | # |
| Not eligible | 45 | 153 | 78 | 35 | # |

Rounds to zero.

NOTE: Detail may not sum to totals because of rounding, and because the "Information not available" category for the National School Lunch Program, which provides free/reduced-price lunches, and the "Unclassified" category for race/ethnicity are not displayed.

Score Gaps for Student Groups

- In 2009, female students in Arizona had an average score that was not significantly different from male students.
- In 2009, Black students had an average score that was 26 points lower than White students. This performance gap was narrower than the nation (35 points).
- In 2009, Hispanic students had an average score that was 31 points lower than White students. This performance gap was not significantly different from the nation (32 points).
- In 2009, students who were eligible for free/reduced-price school lunch, an indicator of low family income, had an average score that was 27 points lower than students who were not eligible for free/reduced-price school lunch. This performance gap was not significantly different from the nation (29 points).