The Nation's Report Card Science 2009

State Snapshot Report

Wyoming
Grade 8
Public Schools

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.

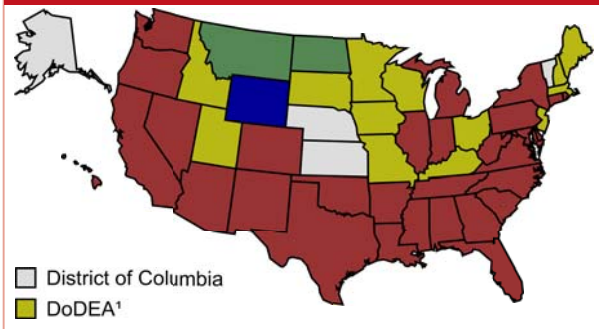
Physical science includes concepts related to properties and changes of matter, forms of energy, energy transfer and conservation, position and motion of objects, and forces affecting motion.

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 at or above *Basic* to Other States/Jurisdictions



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

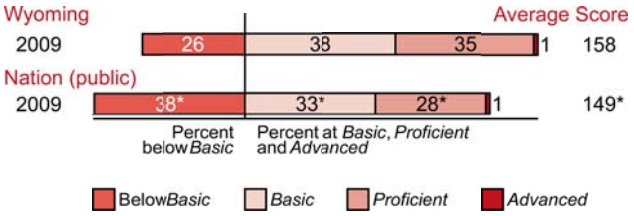
In 2009, the percentage at or above *Basic* in **Wyoming** was

- lower than those in 2 states/jurisdictions
- higher than those in 30 states/jurisdictions
- not significantly different from those in 14 states/jurisdictions
- 5 states/jurisdictions did not participate

Overall Results

- In 2009, the average score of eighth-grade students in Wyoming was 158. This was higher than the average score of 149 for public school students in the nation.
- The percentage of students in Wyoming who performed at or above the NAEP *Proficient* level was 36 percent in 2009. This percentage was greater than the nation (29 percent).
- The percentage of students in Wyoming who performed at or above the NAEP *Basic* level was 74 percent in 2009. This percentage was greater than the nation (62 percent).

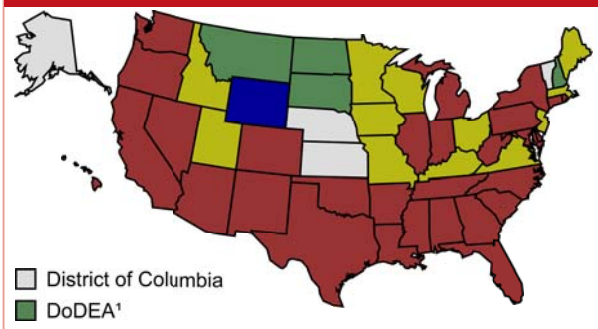
Achievement-Level Percentages and Average Score Results



* Significantly different ($p < .05$) from Wyoming. Significance tests were performed using unrounded numbers.

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

Compare the Average Score in 2009 to Other States/Jurisdictions



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

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

- lower than those in 5 states/jurisdictions
- higher than those in 29 states/jurisdictions
- not significantly different from those in 12 states/jurisdictions
- 5 states/jurisdictions did not participate

Score Gaps for Student Groups

- In 2009, male students in Wyoming had an average score that was higher than female students. This performance gap was wider than the nation (4 points).
- Data are not reported for Black students in Wyoming, because reporting standards were not met.
- In 2009, Hispanic students had an average score that was 24 points lower than White students. This performance gap was narrower than the nation (30 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 15 points lower than students who were not eligible for free/reduced-price school lunch. This performance gap was narrower than the nation (28 points).

NOTE: Statistical comparisons are calculated on the basis of unrounded scale scores or percentages.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Science Assessment.

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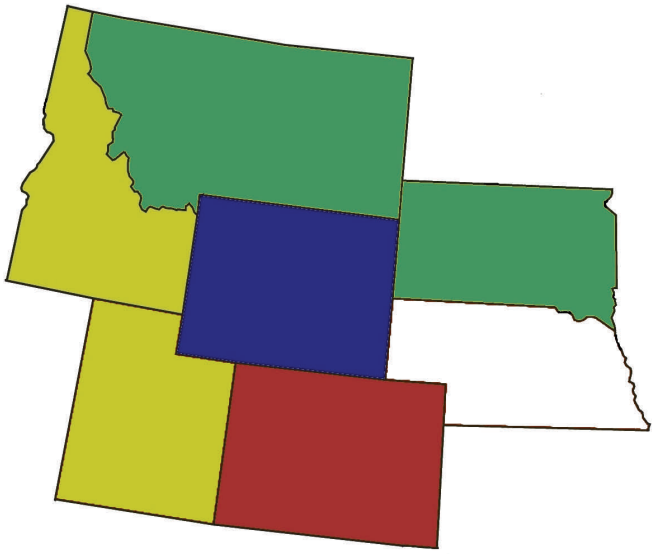
Regional Snapshot

The National Assessment of Educational Progress (NAEP) uses both multiple choice and constructed-response test items to assess eighth graders' skills in three science areas: Physical Science, Life Science, Earth and Space Science. Scale scores range from 0 to 300, wherein a 141 denotes NAEP's *Basic* achievement benchmark (i.e., approximately a "grade level" performance); 170 reflects *Proficient* results which means competency on challenging material, and 215 is considered to be *Advanced*.

Scale Scores

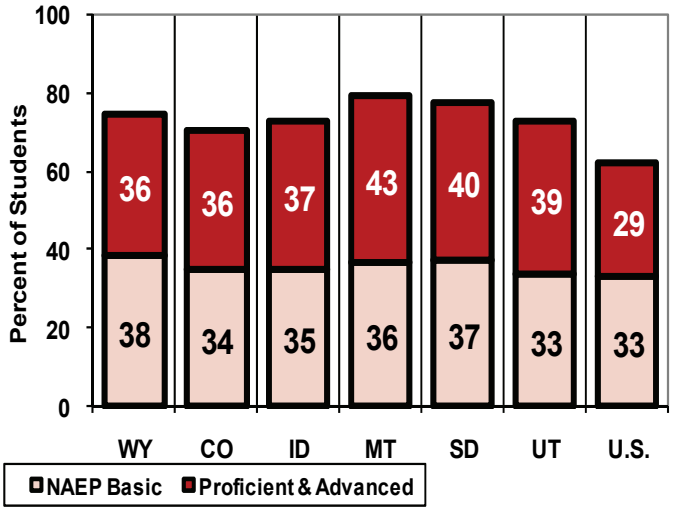


Legend: Wyoming (blue) is the focal state. States in green scored reliably higher than Wyoming. States in yellow were not statistically different from Wyoming. States in red scored reliably lower than Wyoming.

- In 2009, the average science scale score for 8th grade students in Wyoming was 158; this was reliably higher than the national average (149).
- Wyoming 8th graders also had a higher average science scale score in 2009 than students in Colorado.
- Wyoming 8th grade average science scale score in 2009 that was not statistically different from Idaho or Utah.
- The average science scale score for 8th grade students in Wyoming was lower than scores in Montana and South Dakota.
- Nebraska did not participate in the 2009 NAEP science assessment.

Achievement Levels

- Eighty-one (74) percent of Wyoming's 8th graders scored at or above *Basic* on the 2009 science assessment. This was reliably higher than the nation's 62 percent.
- Wyoming also had a higher percentage of 8th graders scoring at or above *Basic* on the 2009 science assessment than Colorado.
- The percentage of Wyoming's 8th graders scoring at or above *Basic* on science in 2009 was not reliably different from Idaho, South Dakota, and Utah.
- Wyoming at or above *Basic* results in 8th grade science were lower than Montana's.



Results are based on statistical tests which account for standard errors related to NAEP's sampling procedures.
For additional results and more information about Wyoming NAEP, please visit:
http://edu.wyoming.gov/Programs/statewide_assessment_system/naep.aspx.

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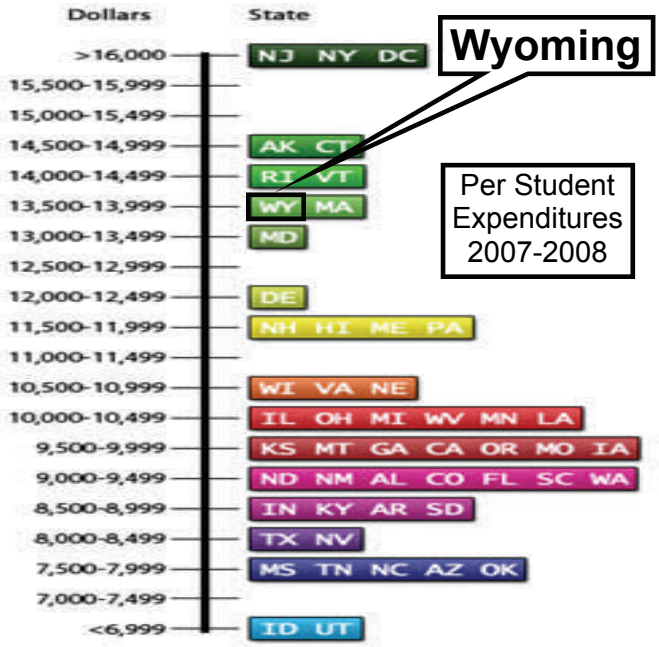
Funding Snapshot

The National Assessment of Educational Progress (NAEP) uses both multiple choice and constructed-response test items to assess eighth graders' skills in three science areas: Physical Science, Life Science, Earth and Space Science. Scale scores range from 0 to 300, wherein a 141 denotes NAEP's *Basic* achievement benchmark (i.e., approximately a "grade level" performance); 170 reflects *Proficient* results which means competency on challenging material, and 215 is considered to be *Advanced*.

Per Capita Student Expenditures During 2007-2008



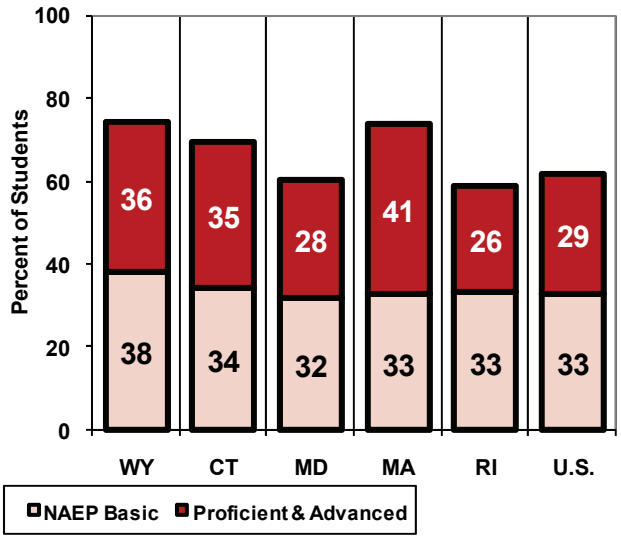
- Wyoming was among seven states reporting per student expenditures between $13,000 and $14,500 during school year 2007-2008 (most recent data available). The other states were Alaska, Connecticut, Massachusetts, Maryland, Rhode Island, and Vermont.

NOTE: The prekindergarten student membership was imputed for some states, affecting the total student count and per pupil expenditures calculation. Some values were affected by redistribution of reported expenditure values to correct for missing data items, and/or to distribute state direct support expenditures.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "National Public Education Financial Survey (NPEFS)," fiscal year 2008, Version 1a.

Achievement Levels

- Seventy-four (74) percent of Wyoming 8th graders scored at or above *Basic* on the 2009 science assessment. This was higher than the nation's 62 percent.
- Wyoming also had a higher percentage of 8th graders scoring at or above *Basic* than Connecticut, Maryland, and Rhode Island—states with similar per-student expenditures.
- The percentage of Wyoming 8th graders scoring at or above *Basic* was not reliably different from Massachusetts, another a peer expenditure state.
- Alaska and Vermont did not participate in the 2009 NAEP science assessment.



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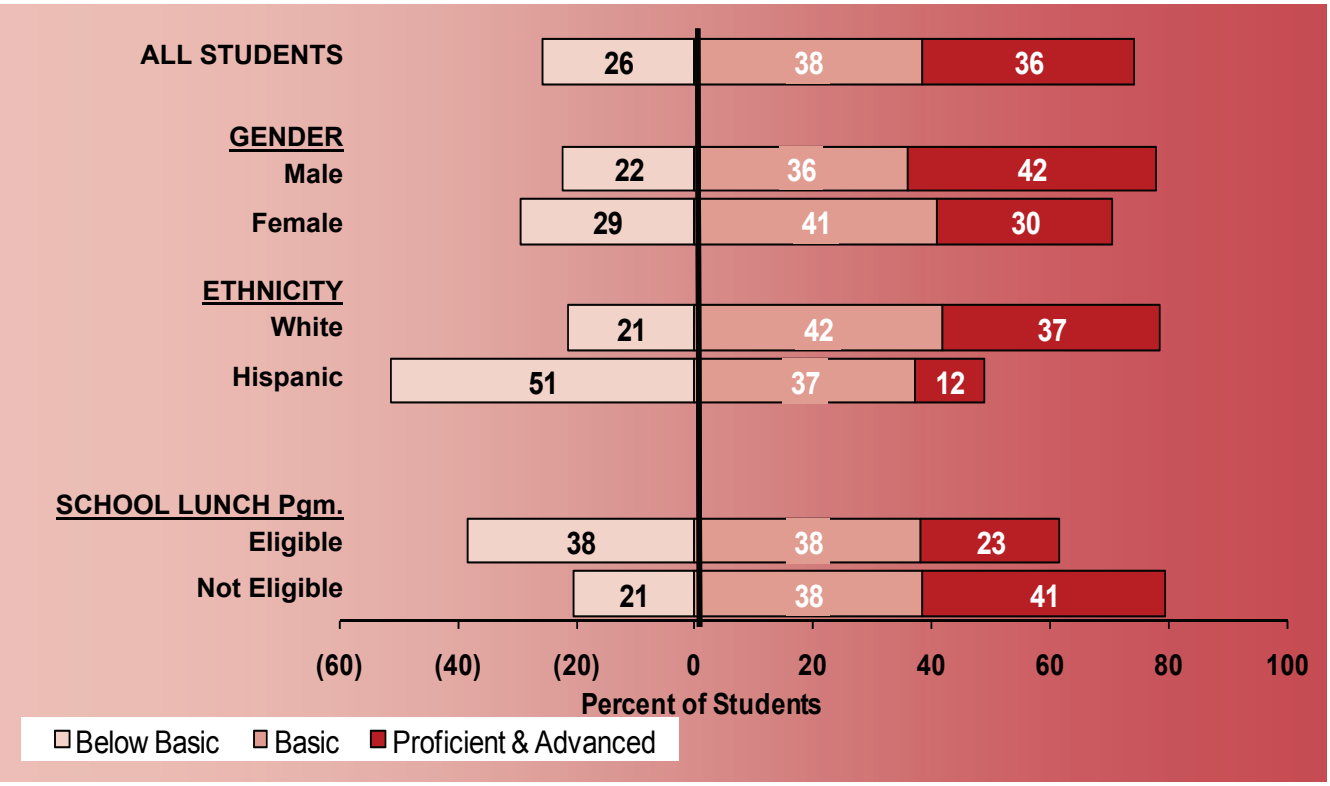
Student Groups Snapshot

The National Assessment of Educational Progress (NAEP) uses both multiple choice and constructed-response test items to assess eighth graders' skills in three science areas: Physical Science, Life Science, Earth and Space Science. Scale scores range from 0 to 300, wherein a 141 denotes NAEP's *Basic* achievement benchmark (i.e., approximately a "grade level" performance); 170 reflects *Proficient* results which means competency on challenging material, and 215 is considered to be *Advanced*.

Student Groups in Wyoming



- On the NAEP 2009 science assessment, the proportion of eighth grade male students in Wyoming who scored at or above *Basic* (78 percent) was higher than female students (71 percent).
- The proportion of eighth grade White students in Wyoming scoring at or above *Basic* (79 percent) was higher than Hispanic students (49 percent). Student sampling in Wyoming was not sufficient to permit reporting of science performance for eighth grade American Indian, Black and Asian students.
- Wyoming eighth graders qualifying for free or reduced price meals in the National School Lunch Program and scoring at or above *Basic* (62 percent) was lower than students who were not eligible for the program (79 percent).

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WY-US Student Gaps Snapshot

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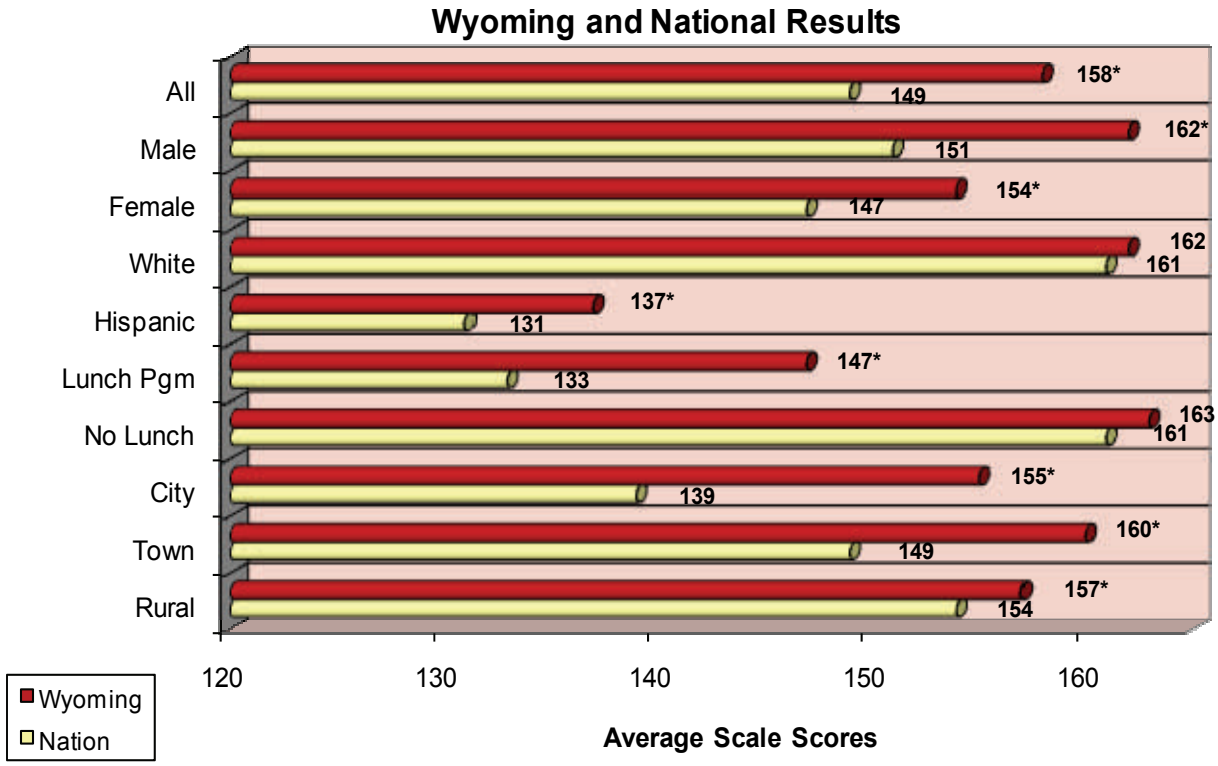
Student Group Comparisons



- In 2009, Wyoming eighth graders' scale scores in science were above the average nationally.

  Wyoming also had higher results in seven student groups: male and female students, Hispanic students, students from low income families (i.e., students qualifying for free or reduced price meals from the National School Lunch Program), and students in city, town and rural schools (as defined by the Census Bureau).

- However, as in Wyoming's 2009 NAEP fourth grade science results, eighth grade average science scale scores were not reliably in Wyoming than the rest of the nation in two of the state's largest students groups:

  White students (84% of Wyoming's 8th graders), and students from more affluent home (i.e., those students *Not* qualifying for free or reduced price meals from the National School Lunch Program—71% of Wyoming's 8th graders).

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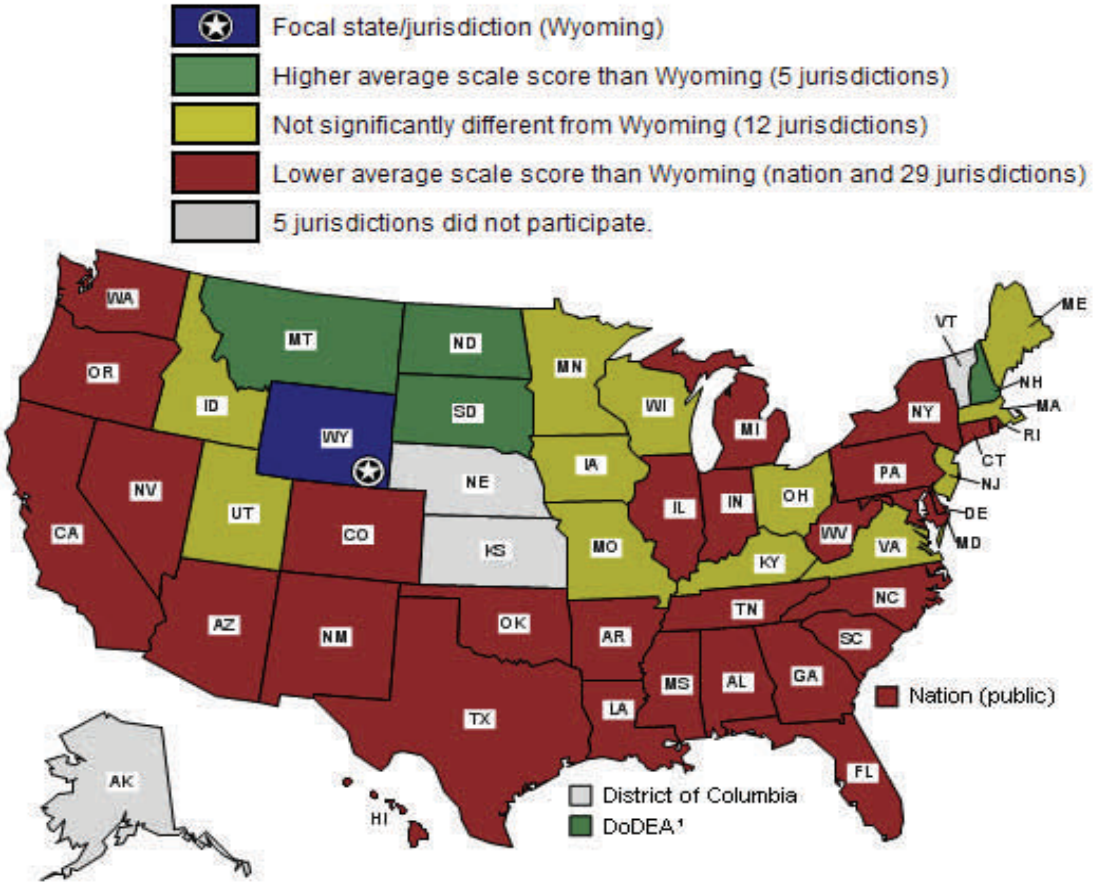
National Snapshot

The National Assessment of Educational Progress (NAEP) uses both multiple choice and constructed-response test items to assess eighth graders' skills in three science areas: Physical Science, Life Science, Earth and Space Science. Scale scores range from 0 to 300, wherein a 141 denotes NAEP's *Basic* achievement benchmark (i.e., approximately a "grade level" performance); 170 reflects *Proficient* results which means competency on challenging material, and 215 is considered to be *Advanced*.

Wyoming and the Nation — Grade 8 Science Scale Scores



- On the 2009 science assessment, Wyoming 8th graders had an average scale score that was reliably higher than students in Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Louisiana, Maryland, Michigan, Mississippi, Nevada, New Mexico, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Washington, and West Virginia. They also scored higher than the national average.

- Wyoming 8th graders had an average scale score that was not statistically different from students in Idaho, Iowa, Kentucky, Maine, Massachusetts, Minnesota, Missouri, New Jersey, Ohio, Virginia, Utah, and Wisconsin.

- Wyoming 8th graders had an average scale score that was reliably lower only to students in Department of Defense Schools, Montana, New Hampshire, North and South Dakota, .

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