

**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**

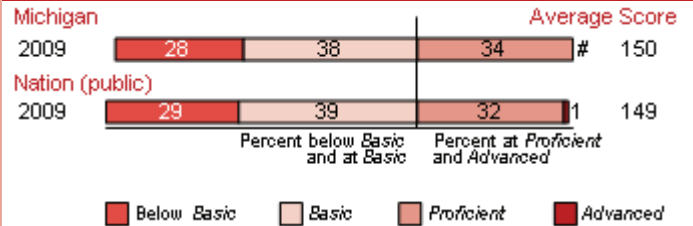


<sup>1</sup> Department of Defense Education Activity (overseas and domestic schools).  
In 2009, the average score in **Michigan** was  
■ lower than those in 20 states/jurisdictions  
■ higher than those in 10 states/jurisdictions  
■ not significantly different from those in 16 states/jurisdictions  
■ 5 states/jurisdictions did not participate

**Overall Results**

- In 2009, the average score of fourth-grade students in Michigan was 150. This was not significantly different from the average score of 149 for public school students in the nation.
- The percentage of students in Michigan who performed at or above the NAEP *Proficient* level was 34 percent in 2009. This percentage was not significantly different from the nation (32 percent).
- The percentage of students in Michigan who performed at or above the NAEP *Basic* level was 72 percent in 2009. This percentage was not significantly different from the nation (71 percent).

**Achievement-Level Percentages and Average Score Results**



# 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	
<b>Gender</b>					
Male	50	151	73	37	#
Female	50	149	72	32	1
<b>Race/Ethnicity</b>					
White	71	160	83	43	1
Black	20	118	34	6	#
Hispanic	5	138	60	20	#
Asian/Pacific Islander	3	162	79	49	2
American Indian/Alaska Native	#	‡	‡	‡	‡
<b>National School Lunch Program</b>					
Eligible	43	134	55	18	#
Not eligible	56	163	86	47	1

# Rounds to zero. ‡ Reporting standards not met.

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, male students in Michigan had an average score that was not significantly different from female students.
- In 2009, Black students had an average score that was 42 points lower than White students. This performance gap was wider than the nation (35 points).
- In 2009, Hispanic students had an average score that was 22 points lower than White students. This performance gap was narrower than 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 29 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).