

MISSOURI STATE BOARD OF EDUCATION AGENDA ITEM:**October 2009**

**REPORT ON NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP) 2009
MATHEMATICS STATE RESULTS FOR GRADES 4 AND 8**

STATUTORY AUTHORITY:

Section 161.092

Consent
ItemAction
ItemReport
Item**COMMISSIONER'S GOAL NO. 1:**

Missouri students will perform in the top quartile of all states as measured by the National Assessment of Educational Progress (NAEP).

SUMMARY:

The National Assessment of Educational Progress (NAEP) is the largest nationally representative assessment of what America's students know and can do. NAEP provides a common yardstick for measuring students' education across the country.

The results of NAEP are released as The Nation's Report Card and reports information on student performance for the nation and states, as well as for different student groups. There are no results for individual students, classrooms or schools.

The NAEP 2009 assessments included reading, mathematics and science in grades 4, 8 and 12. The NAEP assessments were conducted by NAEP field staff from January to March 2009. Because the reading and science assessments are based on new NAEP Frameworks, these results will not be reported until 2010.

Since 1990, NAEP has assessed mathematics in eight different years at the state level (in grade 8 in 1990, and at both grades 4 and 8 in 1992, 1996, 2000, 2003, 2005 and 2007). Missouri participated in all of these assessments since 1992 and met the criteria for reporting public school results.

The NAEP mathematics assessments require students to demonstrate what they know and can do in various content strands (e.g. number sense, measurement, geometry, data analysis, algebra) by responding to multiple-choice and short and extended constructed response items.

The National Center for Education Statistics (NCES) reports NAEP results according to two metrics: 1) average scale score, and 2) percentage of students at or above each achievement level (basic, proficient, advanced).

NCES released Missouri's NAEP math data (grades 4 and 8) on October 14, 2009. A summary is included, and more detailed information will be shared at the State Board Meeting.

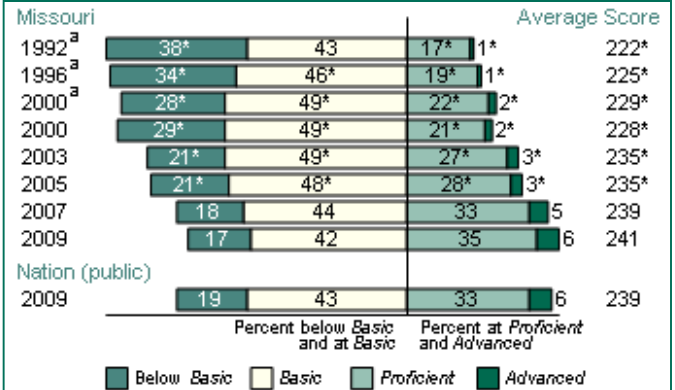
PRESENTER(S):

Michael Muenks, Coordinator, Curriculum and Assessment, will assist with the presentation and discussion of this agenda item.

Overall Results

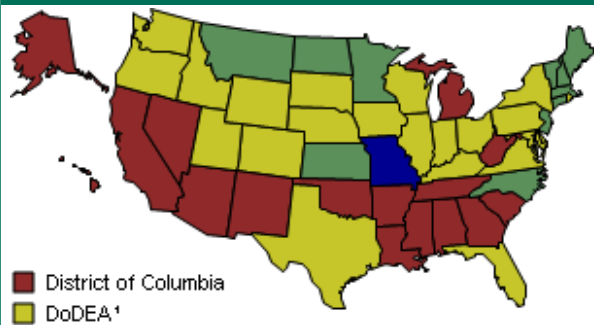
- In 2009, the average score of fourth-grade students in Missouri was 241. This was not significantly different from the average score of 239 for public school students in the nation.
- The average score for students in Missouri in 2009 (241) was not significantly different from their average score in 2007 (239) and was higher than their average score in 1992 (222).
- In 2009, the score gap between students in Missouri at the 75th percentile and students at the 25th percentile was 38 points. This performance gap was not significantly different from that of 1992 (40 points).
- The percentage of students in Missouri who performed at or above the NAEP *Proficient* level was 41 percent in 2009. This percentage was not significantly different from that in 2007 (38 percent) and was greater than that in 1992 (19 percent).
- The percentage of students in Missouri who performed at or above the NAEP *Basic* level was 83 percent in 2009. This percentage was not significantly different from that in 2007 (82 percent) and was greater than that in 1992 (62 percent).

Achievement-Level Percentages and Average Score Results



* Significantly different ($p < .05$) from state's results in 2009.
^a Accommodations not permitted.
 NOTE: Detail may not sum to totals because of rounding.

Compare the Average Score in 2009 to Other States/Jurisdictions

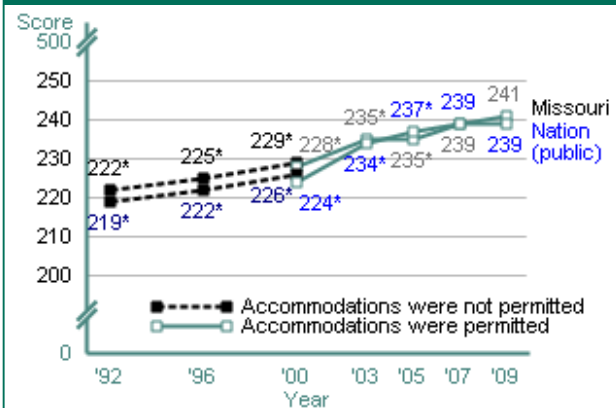


¹ Department of Defense Education Activity schools (domestic and overseas).

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

- lower than those in 11 states/jurisdictions
- higher than those in 17 states/jurisdictions
- not significantly different from those in 23 states/jurisdictions

Compare the Average Score to Nation (public)



* Significantly different ($p < .05$) from 2009.

Results for Student Groups in 2009

Reporting Groups	Percent of students	Avg. score	Percentages at or above		Percent at Advanced
			Basic	Proficient	
Gender					
Male	52	241	83	43	7
Female	48	240	83	39	5
Race/Ethnicity					
White	76	245	88	46	7
Black	17	221	60	17	1
Hispanic	4	237	78	37	4
Asian/Pacific Islander	2	255	89	62	22
American Indian/Alaska Native	#	‡	‡	‡	‡
National School Lunch Program					
Eligible	44	229	71	24	2
Not eligible	55	250	91	54	9

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.

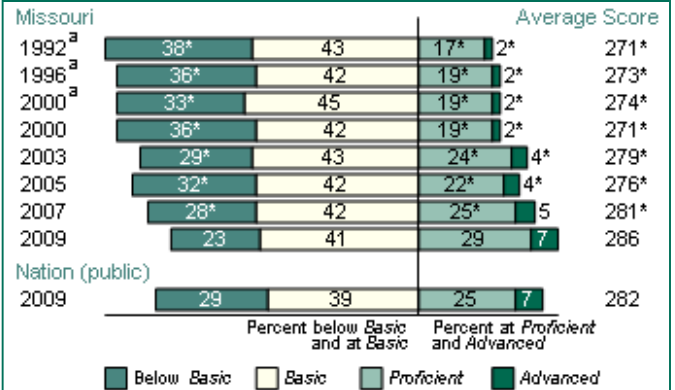
Score Gaps for Student Groups

- In 2009, male students in Missouri had an average score that was not significantly different from that of female students. This performance gap was not significantly different from that in 1992 (1 point).
- In 2009, Black students had an average score that was 24 points lower than that of White students. This performance gap was not significantly different from that in 1992 (32 points).
- In 2009, Hispanic students had an average score that was 8 points not significantly different from that of White students. Data are not reported for Hispanic students in 1992, because reporting standards were not met.
- In 2009, students who were eligible for free/reduced-price school lunch, an indicator of poverty, had an average score that was 21 points lower than that of students who were not eligible for free/reduced-price school lunch. This performance gap was not significantly different from that in 1996 (23 points).

Overall Results

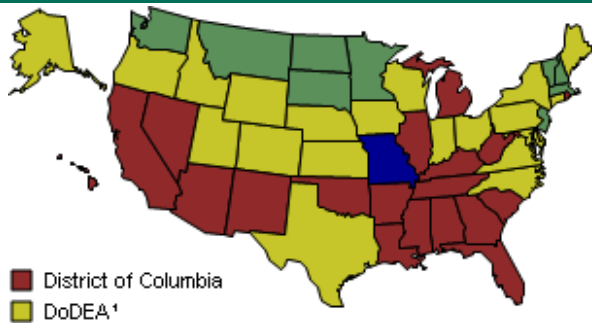
- In 2009, the average score of eighth-grade students in Missouri was 286. This was higher than the average score of 282 for public school students in the nation.
- The average score for students in Missouri in 2009 (286) was higher than their average score in 2007 (281) and was higher than their average score in 1992 (271).
- In 2009, the score gap between students in Missouri at the 75th percentile and students at the 25th percentile was 45 points. This performance gap was not significantly different from that of 1992 (44 points).
- The percentage of students in Missouri who performed at or above the NAEP *Proficient* level was 35 percent in 2009. This percentage was greater than that in 2007 (30 percent) and was greater than that in 1992 (20 percent).
- The percentage of students in Missouri who performed at or above the NAEP *Basic* level was 77 percent in 2009. This percentage was greater than that in 2007 (72 percent) and was greater than that in 1992 (62 percent).

Achievement-Level Percentages and Average Score Results



* Significantly different ($p < .05$) from state's results in 2009.
^a Accommodations not permitted.
 NOTE: Detail may not sum to totals because of rounding.

Compare the Average Score in 2009 to Other States/Jurisdictions

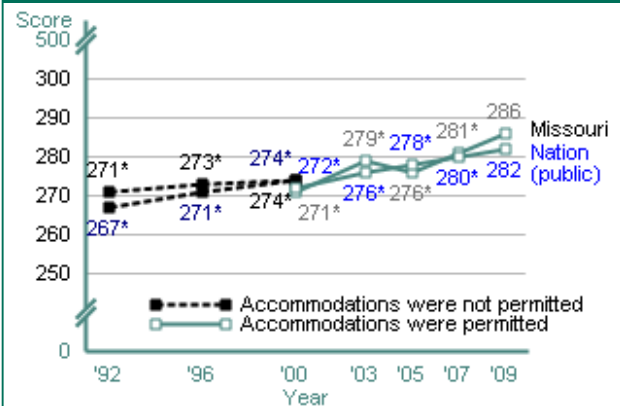


¹ Department of Defense Education Activity schools (domestic and overseas).

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

- lower than those in 9 states/jurisdictions
- higher than those in 20 states/jurisdictions
- not significantly different from those in 22 states/jurisdictions

Compare the Average Score to Nation (public)



* Significantly different ($p < .05$) from 2009.

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	287	77	37	8
Female	49	285	77	34	5
Race/Ethnicity					
White	80	290	82	39	7
Black	14	260	46	11	2
Hispanic	3	284	76	37	4
Asian/Pacific Islander	2	‡	‡	‡	‡
American Indian/Alaska Native	1	‡	‡	‡	‡
National School Lunch Program					
Eligible	36	272	63	19	2
Not eligible	64	294	85	45	9

‡ 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

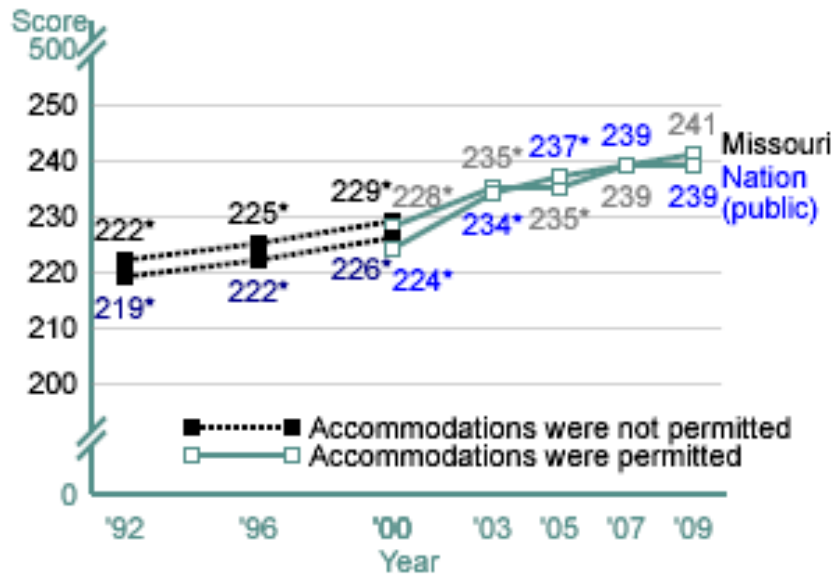
- In 2009, male students in Missouri had an average score that was not significantly different from that of female students. This performance gap was not significantly different from that in 1992 (2 points).
- In 2009, Black students had an average score that was 30 points lower than that of White students. This performance gap was not significantly different from that in 1992 (34 points).
- In 2009, Hispanic students had an average score that was 6 points not significantly different from that of White students. Data are not reported for Hispanic students in 1992, because reporting standards were not met.
- In 2009, students who were eligible for free/reduced-price school lunch, an indicator of poverty, had an average score that was 22 points lower than that of students who were not eligible for free/reduced-price school lunch. This performance gap was not significantly different from that in 1996 (21 points).

NAEP 2009 Mathematics Results

- **Administered January – March 2009**
 - Grade 4 - 163,000 students in Nation (2,600 in Missouri)
 - Grade 8 – 156,200 students in Nation (2,700 in Missouri)
- **Assessed in five mathematical areas**
 - Number properties and operations
 - Measurement
 - Geometry
 - Data analysis, statistics, and probability
 - Algebra
- **Results reported as**
 - Average scale scores (0-500 scale)
 - Achievement levels (*Basic, Proficient, Advanced*)
- **Results available for grades 4 and 8 for**
 - Nation
 - 50 states, District of Columbia, Department of Defense school system

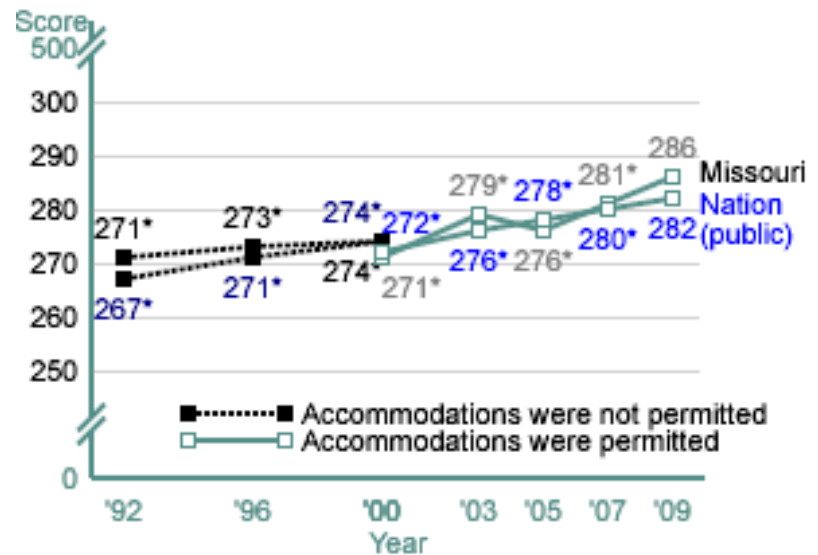
Results Over Time

Grade 4



- Fourth grade mathematics score holds steady since 2007; significantly higher than all other assessment years (1992 – 2005) and similar to that of the Nation

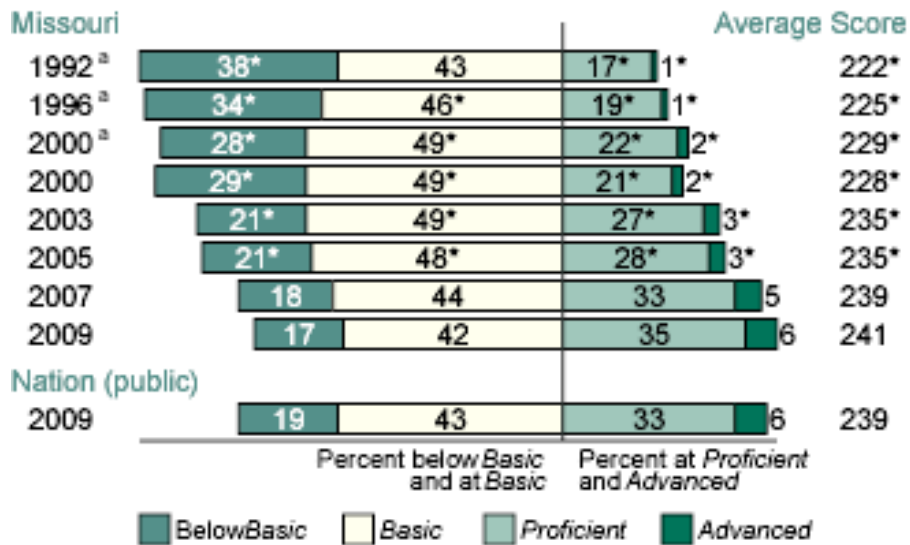
Grade 8



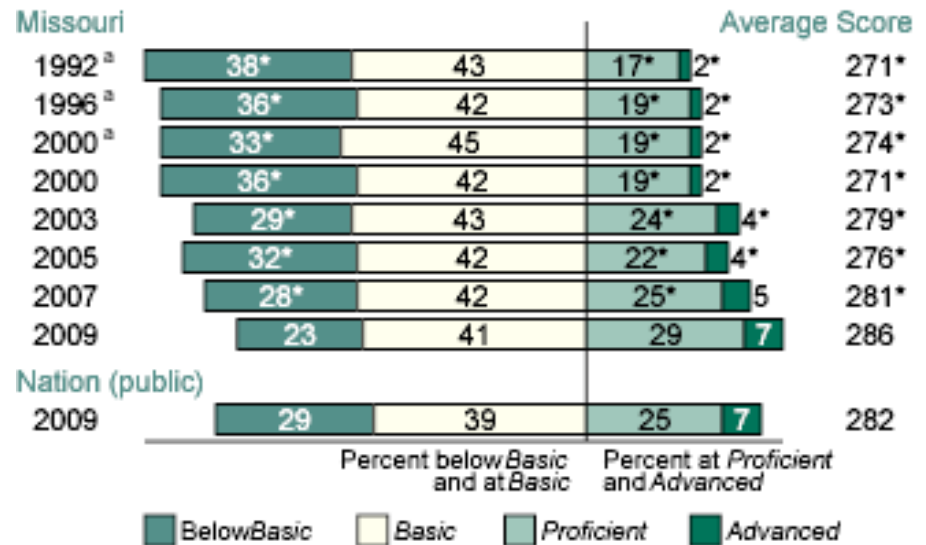
- One of only 15 states that showed significant increase since 2007
- Scored significantly higher than any previous assessment year and significantly higher than the Nation

Achievement Level Results

Grade 4



Grade 8

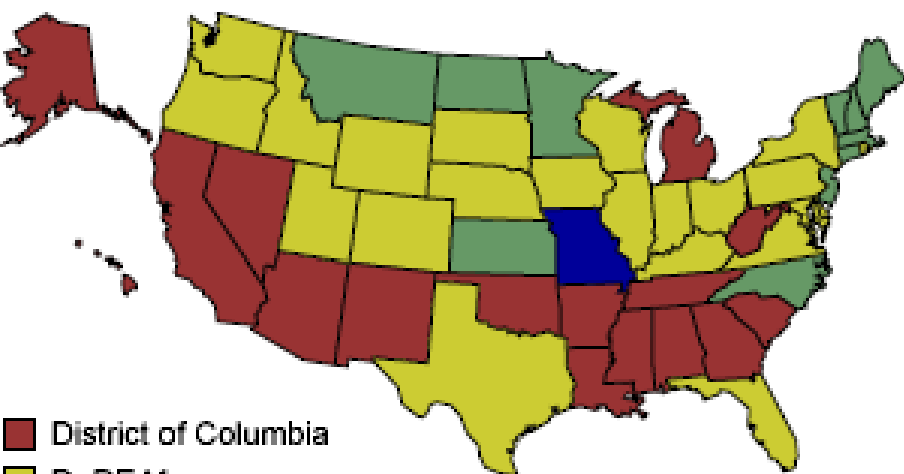


Trends for both grades 4 and 8 show significant movement –percentage of students scoring in **Below Basic** achievement level is decreasing; percentage scoring in **Proficient and above** is increasing

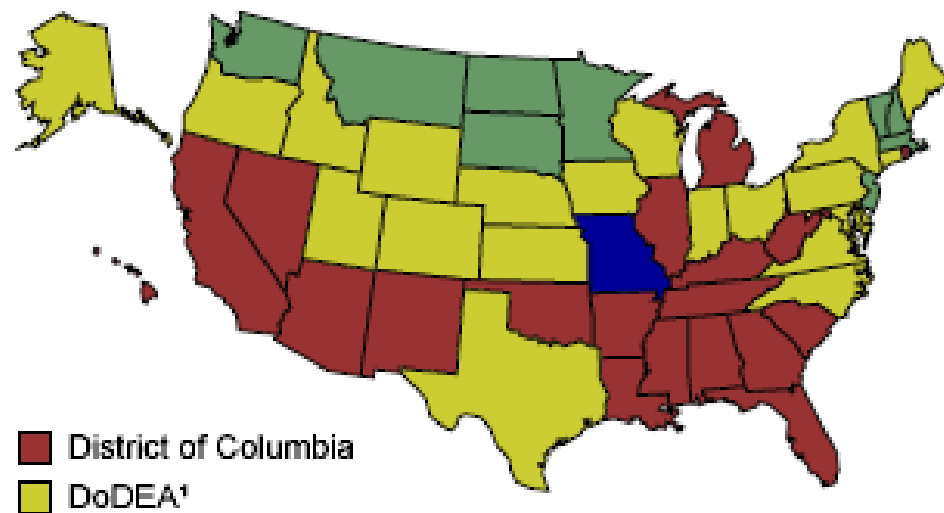
Percentage of students scoring **Proficient and above** in Grade 4 is similar to that of the Nation while percentage in Grade 8 is significantly higher than the Nation

Results Compared to the Nation

Grade 4



Grade 8



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Subgroup Progress – Average Scale Score

Grade 4

Subgroup	Compared to 2007	Compared to Nation
Males	↔	↔
Females	↔	↔
White	↔	↓
Black	↔	↔
Hispanic	↔	↑
Asian	⚠	↔
NSLP Eligible	↔	↔
SD	↔	↑

Grade 8

Subgroup	Compared to 2007	Compared to Nation
Males	↑	↑
Females	↑	↑
White	↔	↓
Black	↔	↔
Hispanic	↑	↑
Asian	⚠	⚠
NSLP Eligible	↑	↑
SD	↔	↑

⚠ – Reporting standards not met
↑ – Significantly higher

↔ – No significant difference
↓ – Significantly lower

Subgroup Gaps – Average Scale Score

Grade 4

Subgroup	Compared to 2007	Compared to Nation
Male/ Female	↔	↔
White/ Black	↔	↔
White/ Hispanic	↔	↓
Eligible/ Not Eligible	↔	↔
SD/ Not SD	↔	↔

Grade 8

Subgroup	Compared to 2007	Compared to Nation
Male/ Female	↔	↔
White/ Black	↔	↔
White/ Hispanic	↓	↓
Eligible/ Not Eligible	↔	↓
SD/ Not SD	↔	↔

↔ - No significant difference

↓ - Significantly lower