

## Analysis of Indiana's Mathematics and Reading Scores on the 2007 National Assessment of Educational Progress

VOLUME 1, NUMBER 3, FALL 2007

NCES report published online September 25, 2007, at <http://nces.ed.gov/nationsreportcard> or <http://nationsreportcard.gov>

### INTRODUCTION

Implemented in 1969, the National Assessment of Educational Progress (NAEP) is currently the only uniform, representative, and continuous assessment of American students' performance in a wide range of subjects. NAEP collects data on samples of students from Grades 4, 8, and 12 in public and non-public schools across all 50 states and three U.S. territories in the following subjects: reading, mathematics, science, writing, U.S. history, civics, geography, and the arts.

In Indiana, approximately 3,000 students are randomly chosen from both public and non-public schools to participate in the assessments. Although students from both public and non-public schools participate in NAEP, state-level data only contain the data for the public school students.

There also exist two different NAEP assessments: the main NAEP and the long-term trend NAEP. The long-term trend NAEP allows for the analysis of trends in performance results over a period of 20 years or more by using the same questions from assessment to assessment. The main NAEP, however, is designed to be aligned with current instructional practices, and, therefore, some questions change with each assessment. State-level data are only provided with the main NAEP and are most complete in the Grades 4 and 8 mathematics and reading assessments.

With the release of the 2007 NAEP mathematics and reading results in September, this report provides a summary and analysis of NAEP mathematics and reading performance trends in Indiana. Included in this report are an examination of Indiana's general performance among all participating jurisdictions, an examination of the performance levels achieved by Indiana students broken down by race, gender, and socio-economic status, and an examination of trends in achievement gaps between these groups of students. This infor-

mation provides a timely comparison of Indiana's educational performance to that of other states and the nation.

### DATA ANALYSIS FINDINGS

Overall, Indiana's Grade 4 and 8 students continue to surpass the national average in both reading and mathematics. However, a more complete picture of Indiana's performance can be depicted by a deeper analysis of the data. Therefore, in this Focus on Indiana report, the data from the 2007 NAEP results will be summarized and analyzed for ongoing and developing trends. The data is broken down by subject and by grade level and begins with a look into Indiana's average scale scores compared to the nation and other states. The report then follows with an examination of achievement gaps by subgroups of students based on the percentage of students performing at or above the Basic achievement level as defined by NAEP.

#### Mathematics Grade 4

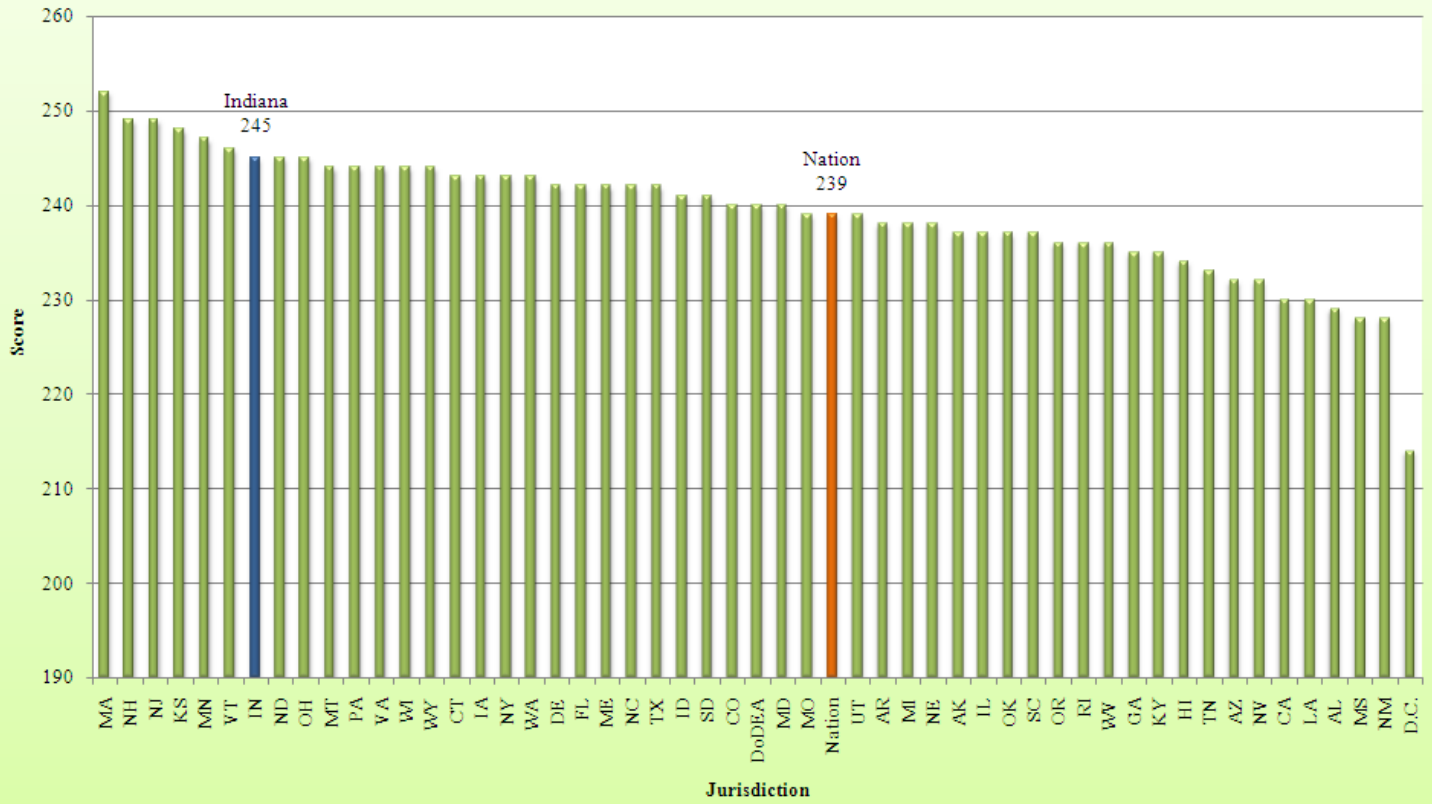
- Indiana students placed 9<sup>th</sup> in Grade 4 mathematics performance with an average scale score of 245, compared to the national average of 239. This represents a five-scale-score point increase over the 2005 assessment, continuing a trend of rising scores. Indiana's performance on the 2007 assessment was comparable to that of 12 other participating jurisdictions and lower than that of only four jurisdictions.
- Achievement gaps between racial/ethnic groups narrowed: 5 percentage points, from 27 to 22 percentage points, between white and black students, and 2 percentage points, from 14 to 12 percentage points, between white and Hispanic students. This continues the trend of narrowing achievement gaps between racial/ethnic groups since 1992.

- There has been virtually no achievement gap in Grade 4 mathematics by gender, with a difference of only one percentage point in this last assessment, with male students performing slightly better.
- The achievement gap, based on student eligibility for the National School Lunch Program, has been narrowing over time; however, the gap remains the same with the 2007 assessment results as it was with the 2005 assessment results at 15 percentage points.

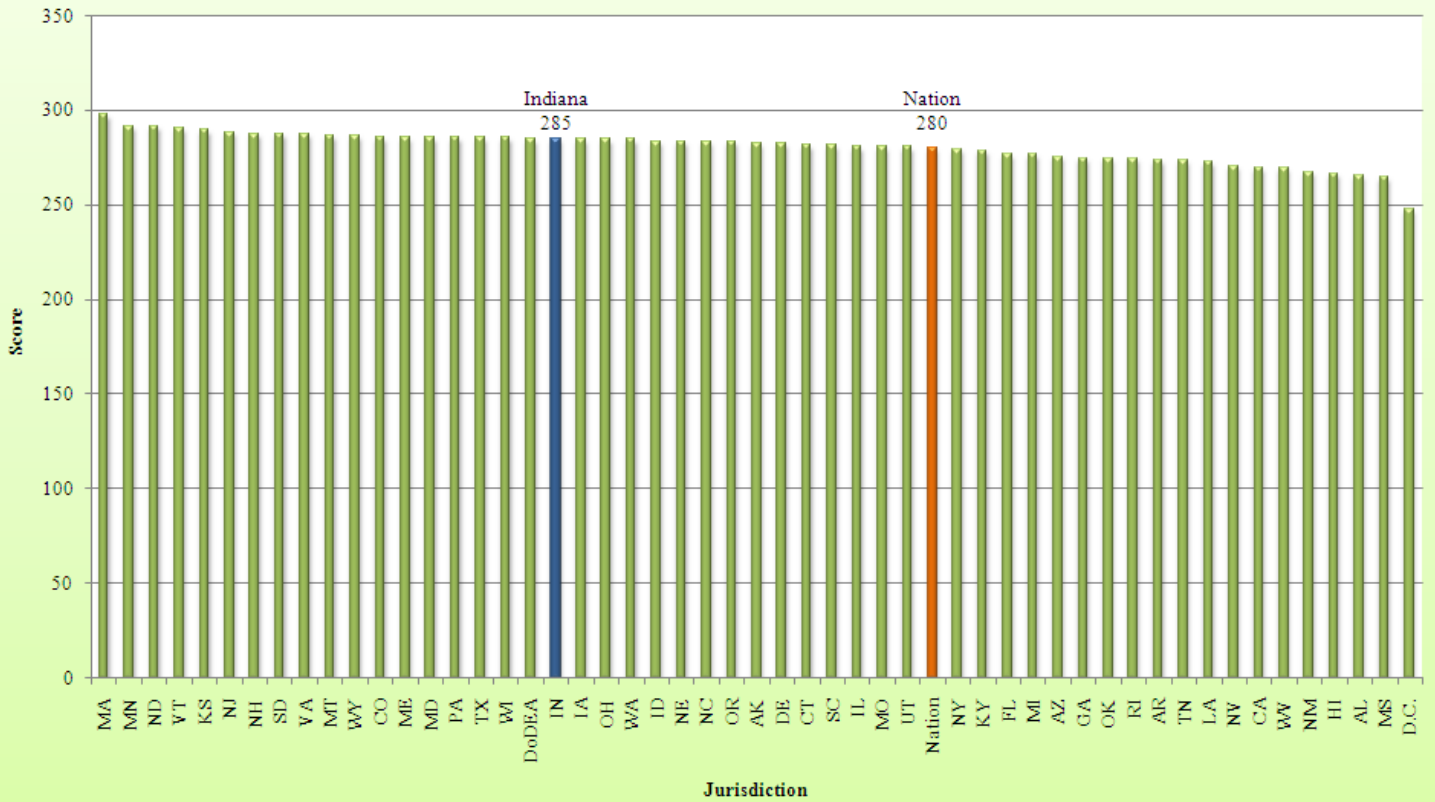
#### Mathematics Grade 8

- Indiana students placed 21<sup>st</sup> in Grade 8 mathematics performance with an average scale score of 285, compared to the national average of 280. This is a three-scale-score point increase over the 2005 assessment and continues the trend of increasing scores with each assessment. Indiana performed similarly to 21 other jurisdictions and performed lower than only seven jurisdictions on the 2007 assessment.
- Achievement gaps between racial/ethnic groups narrowed marginally: 1 percentage point, from 36 to 35 percentage points, between white and black students, and 4 percentage points, from 31 to 27 percentage points, between white and Hispanic students.
- The achievement gap between male and female students narrowed this year from three to one percentage point, with male students performing slightly better.
- The achievement gap based on student eligibility for the National School Lunch Program narrowed 1 percentage point in the 2007 assessment from 24 to 23 percentage points in the percent of students scoring at or above Basic.

2007 Grade 4 NAEP Mathematics Average Scale Score



2007 Grade 8 NAEP Mathematics Average Scale Score



Note: All data obtained from the NAEP Data Explorer on the National Center for Education Statistics (NCES) Web site:  
<http://nces.ed.gov/nationsreportcard/naepdata>

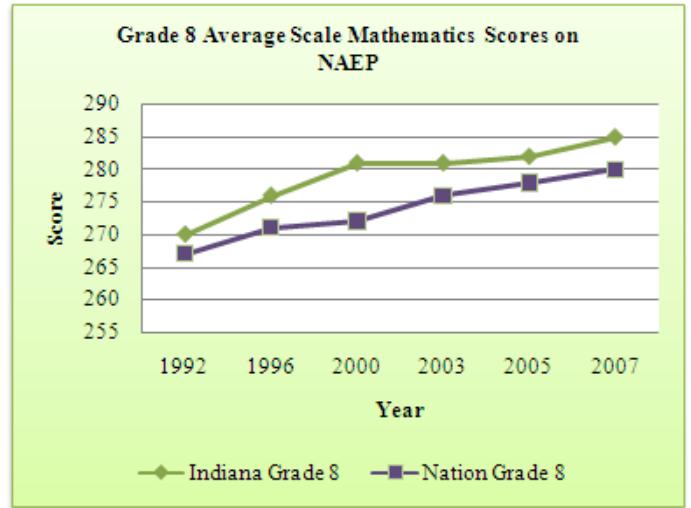
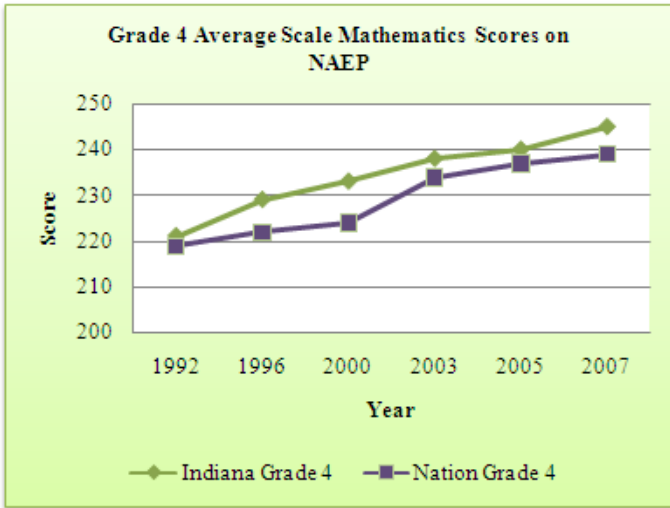
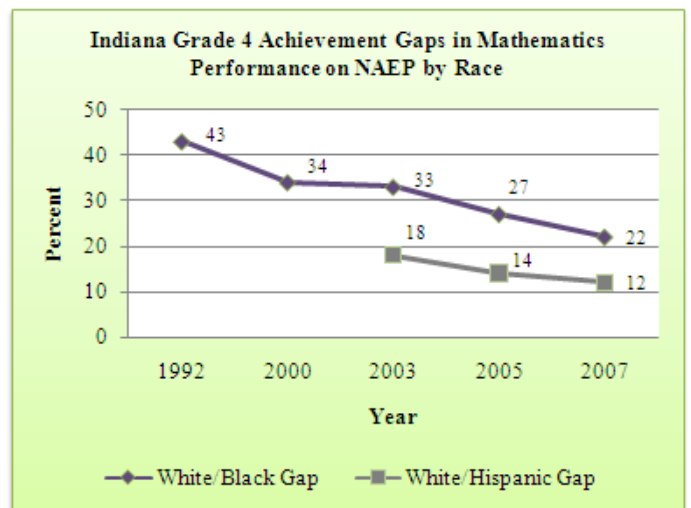
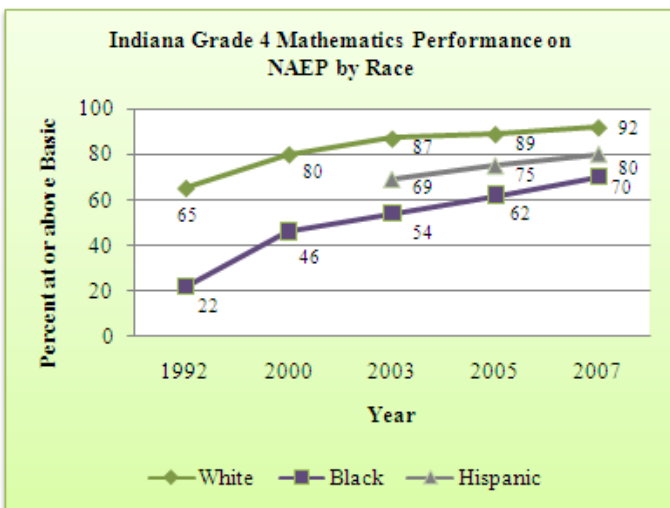


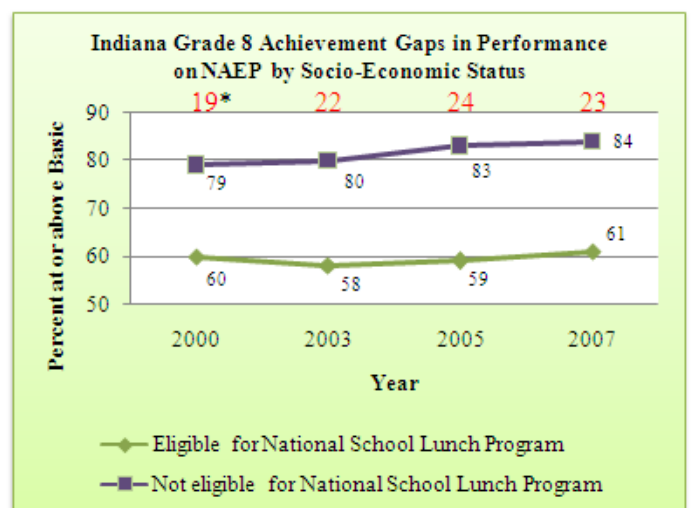
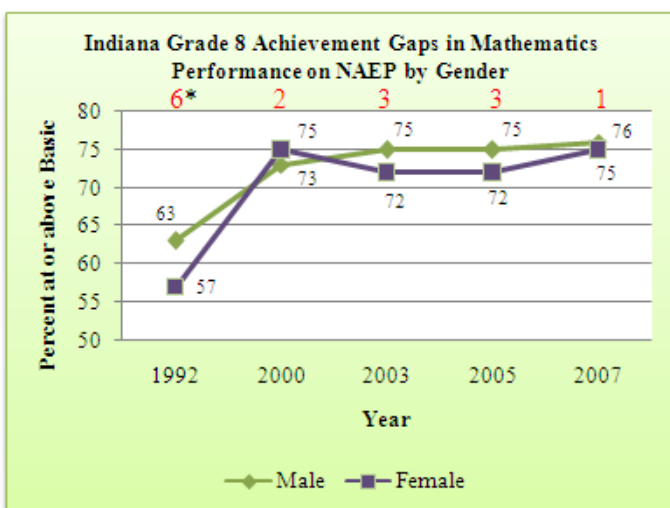
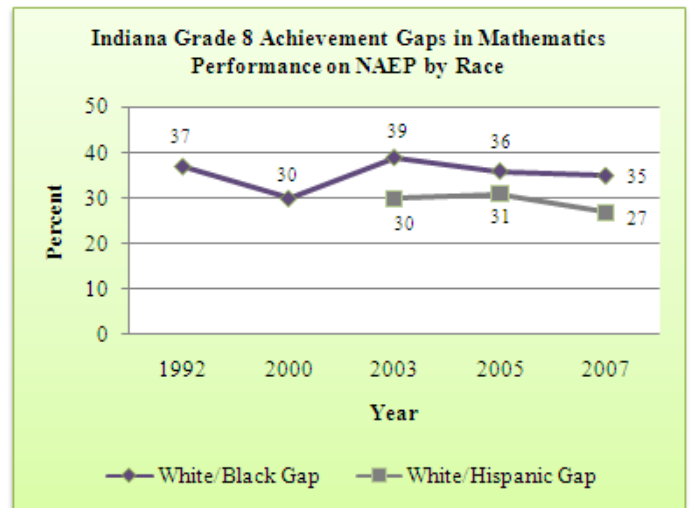
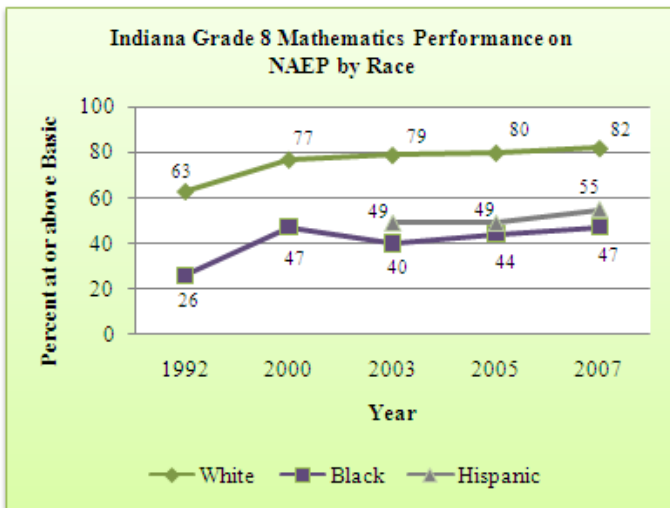
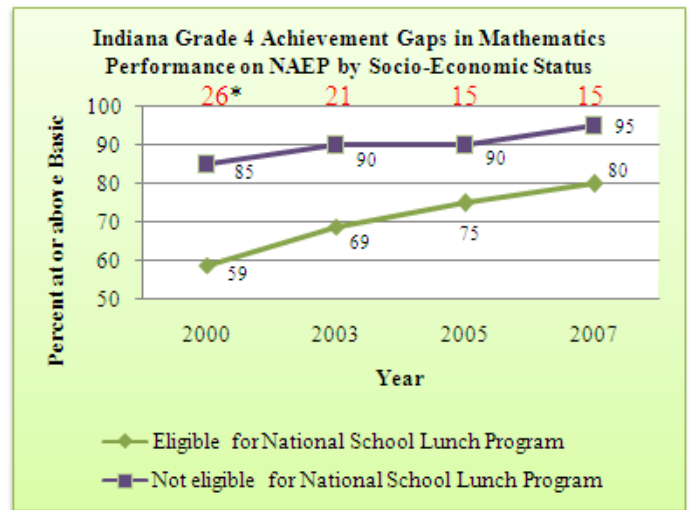
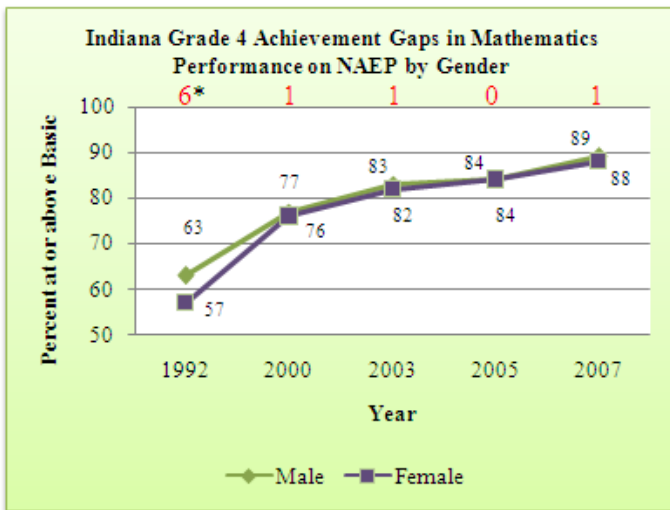
TABLE 1.

Average Scale Mathematics Scores on NAEP						
	1992	1996	2000	2003	2005	2007
Indiana Grade 4	221	229	233	238	240	245
Nation Grade 4	219	222	224	234	237	239
Indiana Grade 8	270	276	281	281	282	285
Nation Grade 8	267	271	272	276	278	280



Note: All data obtained from the NAEP Data Explorer on the National Center for Education Statistics (NCES) Web site: <http://nces.ed.gov/nationsreportcard/naepdata>

\* Numbers in red at the top of some charts represent the achievement gap, in percentage points, between the two data sets shown.



Note: All data obtained from the NAEP Data Explorer on the National Center for Education Statistics (NCES) Web site: <http://nces.ed.gov/nationsreportcard/naepdata>

## Reading Grade 4

- Indiana students placed 28<sup>th</sup> in Grade 4 reading performance with an average scale score of 222, compared to the national average of 220. This represents a three-scale-score point increase over the 2005 scores. Indiana's performance on the 2007 assessment was similar comparable to that of 15 other jurisdictions and lower than that of 17 jurisdictions.
- Achievement gaps between racial/ethnic groups widened with this assessment: 1 percentage point, from 29 to 30 percentage points, between white and black students, and 4 percentage points, from 18 to 22 percentage points, between white and Hispanic students. Despite this, the white/black student achievement gap has narrowed by 6 percentage points since 1994,

from 36 to 30 percentage points; the white/Hispanic student achievement gap has widened by 8 percentage points since 2002, from 14 to 22 percentage points.

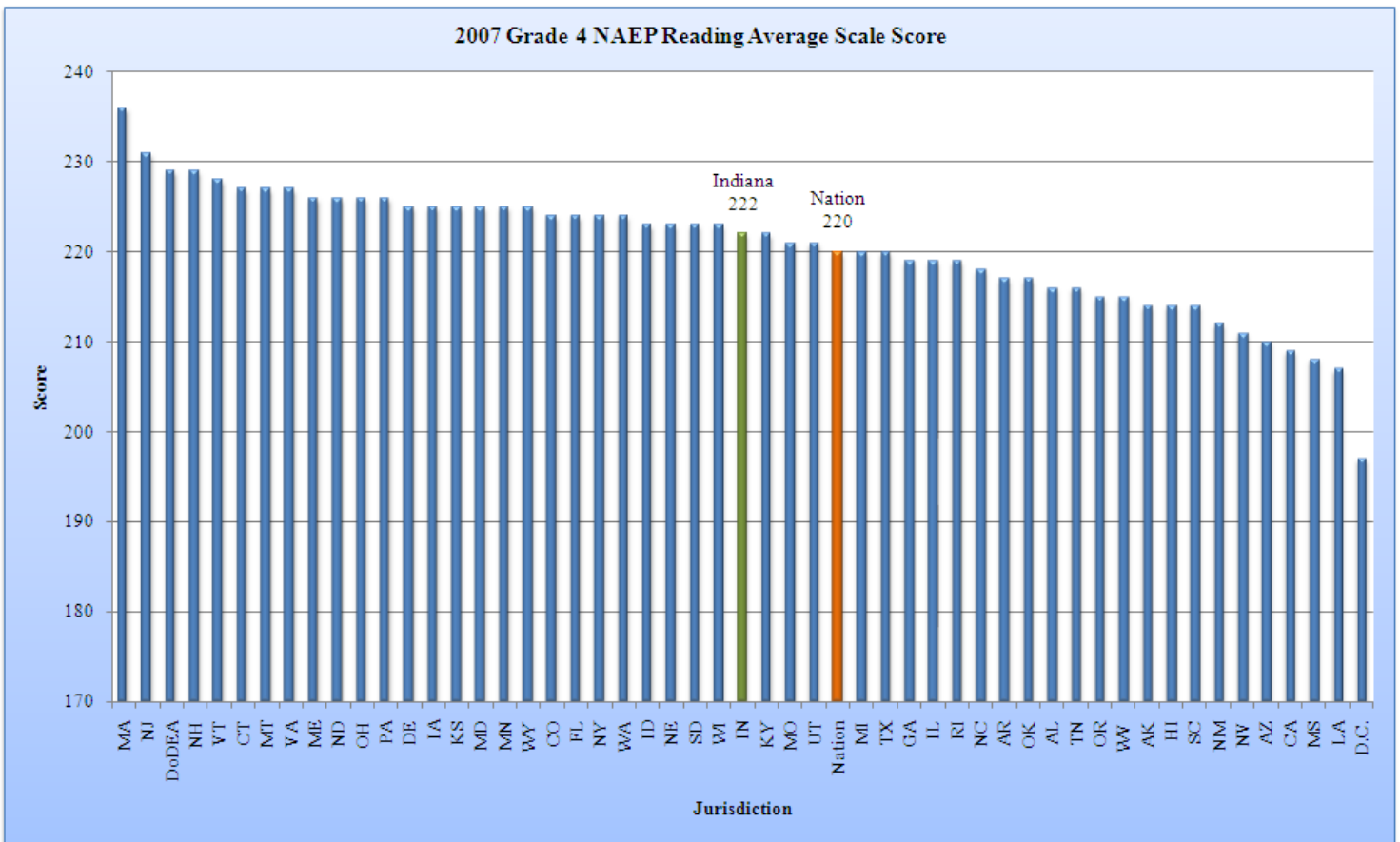
- The gender achievement gap remained the same with the 2007 assessment as it was with the 2005 assessment at six percentage points, with female students performing better.
- The achievement gap based on eligibility for the National School Lunch Program widened 3 percentage points, from 21 to 24 percentage points, with the 2007 assessment.

## Reading Grade 8

- Indiana students placed 27<sup>th</sup> in Grade 8 reading performance with an average scale score of 264, compared to the national average of 261. This marks a

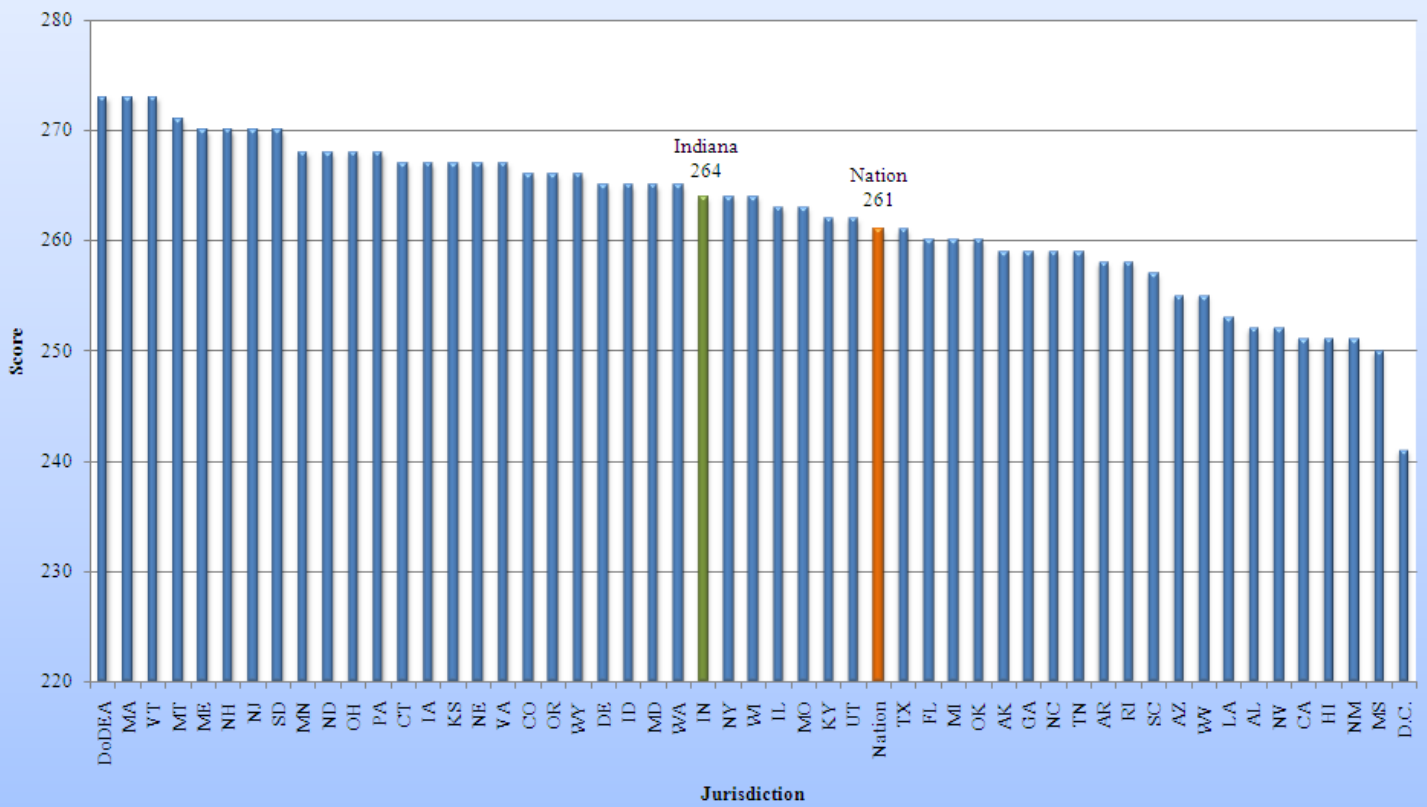
three-scale-score point increase in performance from the 2005 assessment; however, this year's performance is still lower than that of the 2002 and 2003 assessments. With the 2007 assessment, Indiana performed similarly to 16 other jurisdictions and lower than 14 jurisdictions.

- Achievement gaps between racial/ethnic groups narrowed: 1 percentage point between white and black students, from 28 to 27 percentage points, and 9 percentage points between white and Hispanic students, from 21 to 12 percentage points.
- The gender achievement gap narrowed from 12 to 11 percentage points between the 2005 and 2007 assessments, with female students performing better.
- The achievement gap based on student eligibility for the National School Lunch Program widened 3 percentage points, from 21 to 24 percentage points, in 2007.

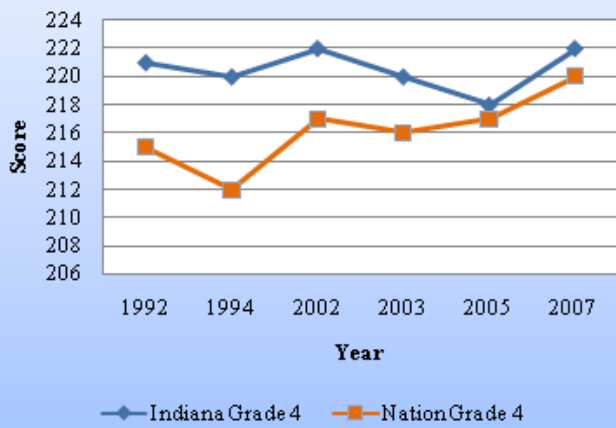


Note: All data obtained from the NAEP Data Explorer on the National Center for Education Statistics (NCES) Web site: <http://nces.ed.gov/nationsreportcard/naepdata>

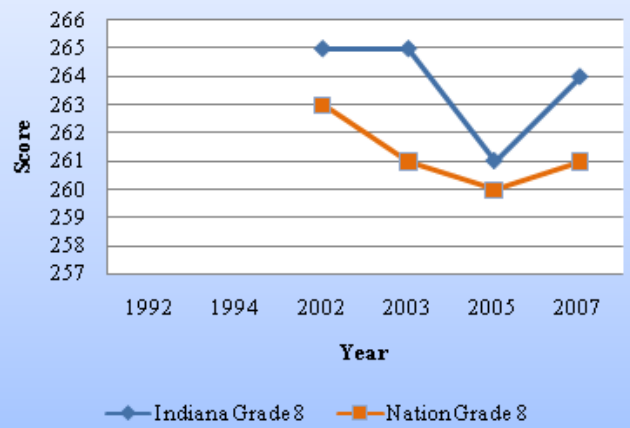
2007 Grade 8 NAEP Reading Average Scale Score



Grade 4 Average Scale Reading Scores on NAEP



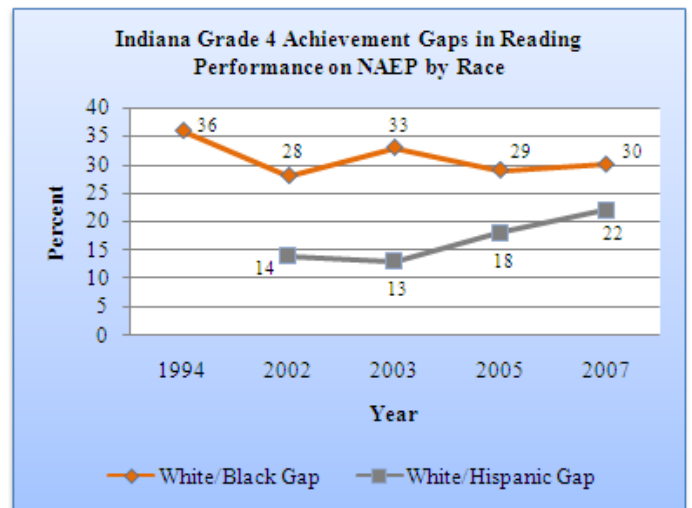
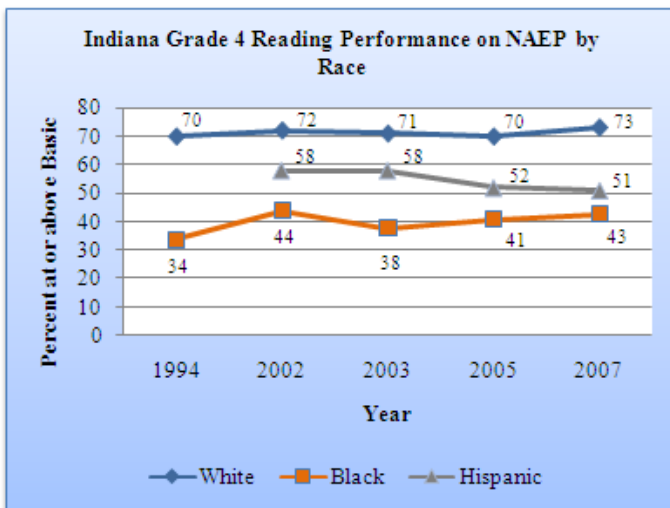
Grade 8 Average Scale Reading Scores on NAEP



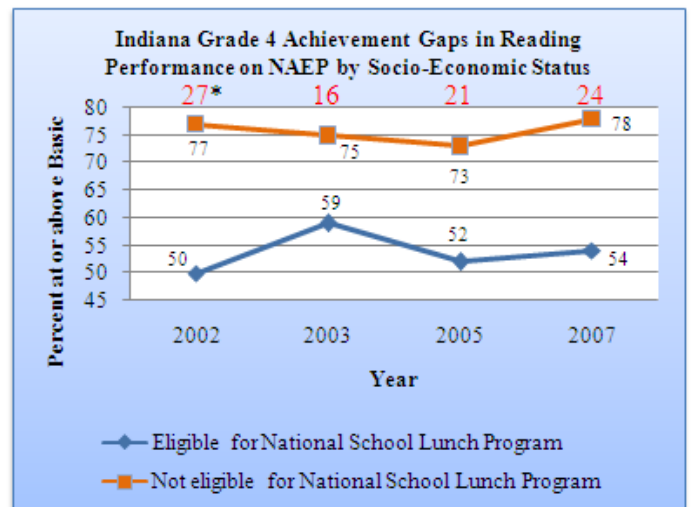
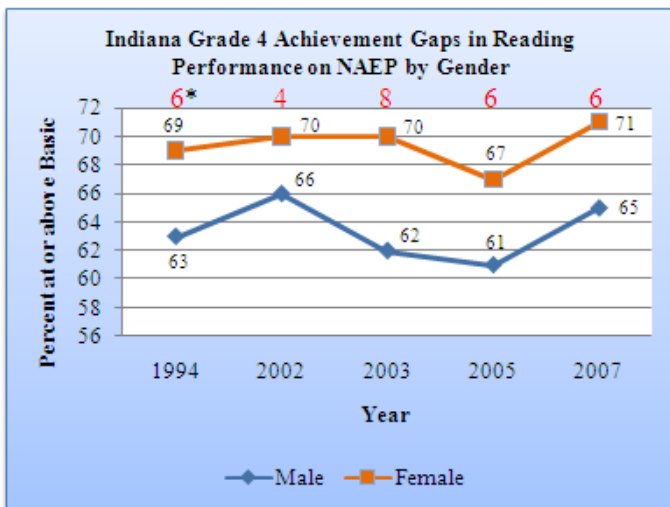
Note: All data obtained from the NAEP Data Explorer on the National Center for Education Statistics (NCES) Web site: <http://nces.ed.gov/nationsreportcard/naepdata>

TABLE 2.

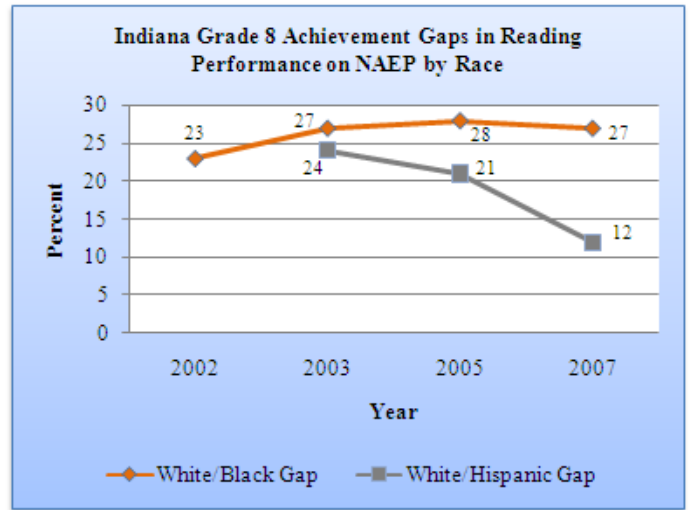
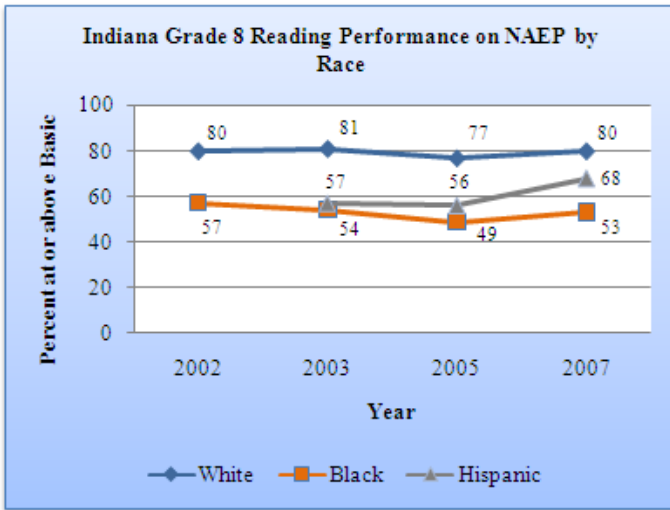
Average Scale Reading Scores on NAEP						
	1992	1994	2002	2003	2005	2007
Indiana Grade 4	221	220	222	220	218	222
Nation Grade 4	215	212	217	216	217	220
Indiana Grade 8			265	265	261	264
Nation Grade 8			263	261	260	261



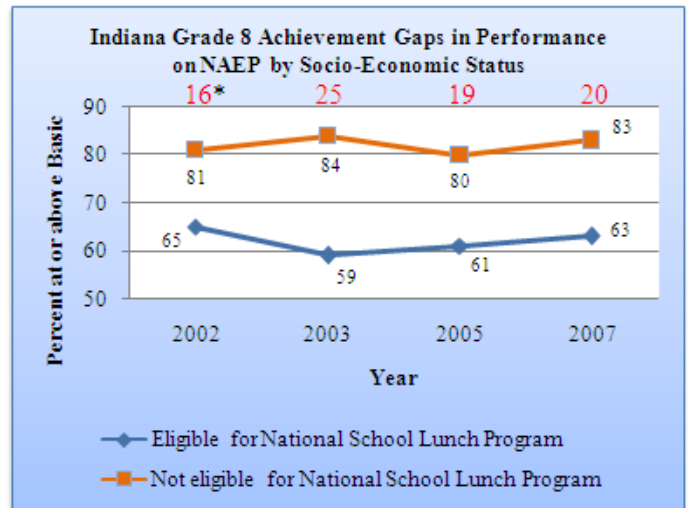
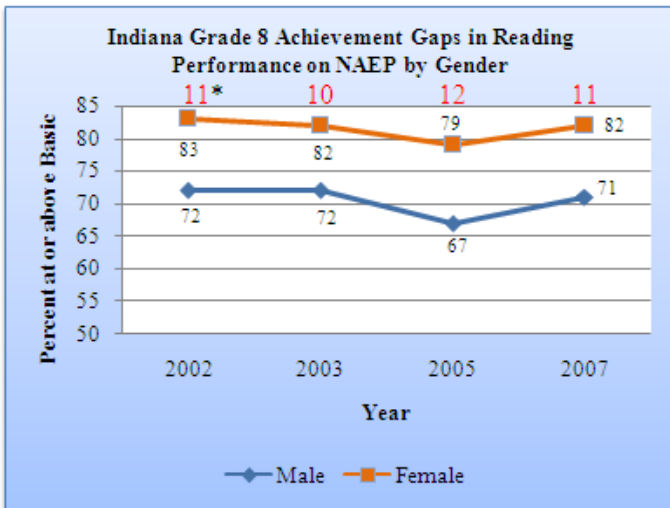
\* Numbers in red at the top of the two charts below represent the achievement gap, in percentage points, between the two data sets shown.



Note: All data obtained from the NAEP Data Explorer on the National Center for Education Statistics (NCES) Web site: <http://nces.ed.gov/nationsreportcard/naepdata>



\* Numbers in red at the top of the two charts below represent the achievement gap, in percentage points, between the two data sets shown.



Note: All data obtained from the NAEP Data Explorer on the National Center for Education Statistics (NCES) Web site: <http://nces.ed.gov/nationsreportcard/naepdata>

Focus on Indiana is published by the  
Center for Evaluation & Education Policy

Indiana University  
509 East Third Street  
Bloomington, IN 47401-3654  
812-855-4438

More about the Center for Evaluation & Education Policy  
and our publications can be found at our Web site:  
<http://ceep.indiana.edu>

