## The State of Connecticut Public Education



## Forman for Connecticut Public Schools <br> The State of Connecticut Public Education

Preface by Alex Johnston, Ph.D.
Introduction by Tori Truscheit
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Cover: Young scholars at Bridgeport's Multicultural Magnet School, which secured six spots on ConnCAN's 2008 Top 10 Schools lists, more than any other public school in Connecticut.

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# Preface 

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FOR THE LAST THREE YEARS, ConnCAN has published an annual State of Connecticut Public Education report, taking a closer look at our state's latest achievement data. After three years, many trends we highlighted in 2006 are still present, and our state's most pressing economic and social issue remains: Connecticut has the largest achievement gap of any state in the country. But we've also seen progress in these three years, and there are encouraging signs in our largest cities that the hard work of many is beginning to show results.

The purpose of this report is to shed light on both the successes and challenges in our state's public schools and to examine the underlying patterns in student achievement. Whether you're a parent searching for the best public school for your child, an educator who wants to know how your district or school measures up, or a community leader looking for practical analysis, we hope this report is a useful starting point for discussion of how to increase student achievement in our state.

In a challenging economic period, we're reminded that providing all of Connecticut's students with a great education is the best way to maintain our state's competitive edge in the $21^{\text {st }}$ century. That's why this year, the
report also provides national and international context for our achievement data. Holding all public schools and districts to high benchmarks of success is the first step in ensuring that all children get the education they de-serve-and that all of us get the highest possible return on the public investment in our schools.

In addition to this research report, ConnCAN has published our 2008 School and District Report Cards (www.ctreportcards.org), which give letter grades to more than 1,000 schools and 160 districts in the state. New this year is "Mapping the Gap," a compilation of maps that visually documents many of the issues in this report, also found on our website.

ConnCAN's mission is to close the state's achievement gap, and this report builds a foundation of research to further the efforts of so many who are working hard every day to achieve that goal. I hope that this report helps further your understanding of Connecticut public education as a whole, and I invite you to contact me directly with your comments on this report and your thoughts on how to reach the common goal of "Great Schools for All."

# Introduction 

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WHERE DO CONNECTICUT STUDENTS stand? How much progress has Connecticut made towards closing the largest achievement gap in the nation? ConnCAN's third annual State of Connecticut Public Education report draws upon state, national and international tests to examine how well our public education system is serving its students.

## WHERE DOES CONNECTICUT STAND?

A comparison of the results from the 2007 and 2008 Connecticut Mastery Test (CMT) and Connecticut Academic Performance Test (CAPT) reveals that high schools posted solid improvement, middle schools had smaller gains, and elementary scores remained flat. In elementary school, on average, 0.1 percent fewer students met the state goal across the subjects tested than in 2007. In middle school, the percent of students meeting goal increased by 1.3 points. High school scores increased this year, improving 4.1 points ( 51.2 percent of students met the state goal, up from 47.1 percent in 2007).

Fifth and eighth graders took state science tests for the first time this year, and they performed worse in science than in reading, writing, and math. In science, 55.2 percent of fifth graders met the state goal, while an average of 64.3 percent met goal in other subjects. Poor, Af-rican-American and Hispanic fifth graders struggled with the test in particular, averaging 12.9 points lower on the science test than on the reading, writing, and math tests.

Internationally, Connecticut's achievement ranks far below world leaders. In a matchup of Connecticut's 2007 National Assessment of Education Progress and the 2003 Trends in International Mathematics and Science Study, half as many Connecticut students were proficient in math as Singaporean students. Our poor and Hispanic students score below Moldova, and our African-American students tie with Jordan and score less than half as high as Bulgaria.

Connecticut's achievement gap between poor and non-poor students, already the largest achievement gap of any state, increased from last year across all grade levels. The gap between white students and both Afri-can-American and Hispanic students also increased-in elementary, middle, and high school. The achievement gap is most acute in high school. The gap between our African-American and white high school sophomores increased to 44.1 points.

Consistent with research findings from around the country, this year's achievement data shows that poverty
is one dimension of Connecticut's ethnic and racial achievement gaps, but it does not describe the entire gap. Poor white students score significantly higher than poor African-American and Hispanic students. In fact, poor white students score higher than non-poor African-American students in elementary, middle, and high school.

## WHERE DO CONNECTICUT DISTRICTS STAND?

State achievement as a whole was largely unchanged in elementary and middle school, but several urban districts improved at a higher rate than the state average. Of Connecticut's five largest districts, Hartford and New Haven beat the state average for performance gains in elementary and middle school ( 3.5 points and 2.6 points to the state's 1.9 points, respectively). Hartford turned around a ten-year downtrend this year, improving at a faster rate than the state. Despite these gains, science emerged as a key area for improvement in Connecticut's largest cities.

## WHERE DO CONNECTICUT SCHOOLS STAND?

Just as large districts made gains over the past year, many individual schools are leading the way in closing the achievement gap. ConnCAN recognizes the top 10 elementary and middle schools in the categories of Performance Gains, Improvement, African-American Achievement, Hispanic Achievement, and Low-Income Achievement. Sixteen schools reached at least one of these lists for the second year in a row. While Connecticut's public charter schools failed to post the large performance gains seen in the previous two years, Connecticut's technical high school system showed strong improvement for the second year in a row, with six appearances on the top 10 schools lists for improvement, African-American achievement, Hispanic achievement, and low-income achievement.

# Are Connecticut Schools Making the Grade? 

HOW WELL ARE CONNECTICUT students doing in terms of achievement? Overall, students performed largely the same on state tests compared to last year. But there are gains to celebrate, particularly in urban districts.

Across the state, elementary and middle school scores remained flat or improved slightly, but Connecticut's high schools posted larger gains. In elementary school, the percent of third-graders who met the state goal increased by 1.1 points. Fourth grade scores dropped, with 1.7 percent fewer fourth-graders meeting goal. The percent of fifth graders who met goal stayed essentially flat, increasing by 0.3 points. In middle school, seventh grade scores jumped, with 3.3 percent more students meeting goal, while eighth grade scores dropped by 0.7 percent and sixth graders improved by 1.2 percent. In fifth and eighth grade, improvement numbers reflect only reading, writing, and math scores because no science test was given in 2007. In high school, this year's tenth-graders scored an average of 4.1 points higher than last year's tenth-graders, with 51.2 percent of students meeting the state goal to last year's 47.1 percent average. For more on ConnCAN's methodology, please see the Appendix.

Connecticut's elementary and middle school students posted slightly smaller performance gains in the 2007-08 school year than in the 2006-07 school year. Performance gains are a measure of how much growth one cohort of students showed from year to year. For example, how much did this year's fourth graders improve in the year since third grade? ${ }^{i}$ In elementary school, students gained an average of 2.6 percentage points during their year in school, compared to an average of 4.2 points last year. In middle school, performance gains averaged 1.2 points, a slight decline from 1.6 points during the $2006-07$ school year.

## THE ACHIEVEMENT GAP

Connecticut faces the largest achievement gap in the country, according to the 2007 National Assessment of Educational Progress, also known as the Nation's Report Card. ${ }^{i i}$ On the 2008 CAPT and CMT, the gap widened between African-American and white students, Hispanic and white students, and poor and non-poor students, across all grade levels. While an average of 74.0 percent of white elementary school students met the state goal on the CMT across the subjects tested, an average of 33.9 percent of African-American students reached goal—producing a 40.1 point achievement gap
between white and African-American students. The gap between Hispanic elementary student performance and white student performance was slightly narrower, at 39.0 points. The gap between Connecticut's poor and nonpoor students also widened, increasing from 37.5 points in 2007 to 40.2 points in 2008. iii

In middle school, African-American, Hispanic, and low-income student scores decreased slightly. The achievement gap increased in middle school as well. In 2007, the gap between middle school white students meeting goal and African-American students meeting goal stood at 41.5 points; in 2008 , it increased to 43.4 points. The Hispanic-white achievement gap increased from 41.8 points in 2007 to 43.0 points in 2008. Low-income students scored 43.3 points below their wealthier peers, a gap increase of 3.5 points from 2007.

Between middle school and high school, the achievement gap shrank for some groups but increased for others. The gap between poor and non-poor students, while significant, was slightly smaller in high school than in middle school, at 40.8 points. Similarly, the difference in Hispanic and white achievement decreased from middle school to high school, from 43.0 points to 41.9 points. The gap between African-American and white students increased from middle school to high school, however, leading to a four-point increase in the Afri-can-American/white achievement gap from elementary school to high school. On average, African-American high school students in Connecticut score 44.1 points below their white peers.

## SCIENCE: A CLOSER LOOK

Connecticut tested its fifth and eighth grade students in science for the first time this year, as required under No Child Left Behind-and results show that everyone has work to do. ${ }^{\text {iv }}$ Students in both grades performed worse in science than in reading, writing, and math. In fifth grade, 55.2 percent of students met goal statewide, compared to an average of 64.3 percent in the other three subjects, a 9.1 point gap. Eighth graders performed slightly better than fifth graders in science but worse than in other subjects. In eighth grade, 58.9 percent of students met the state science goal, compared to an average of 63.1 percent who met the state goal in reading, writing, and math, a 4.2 point gap.

Among low-income, African-American, and Hispanic students, the gap was even larger. Poor, African-American, and Hispanic students performed worse on the

science test than they did in other subjects, especially in fifth grade. In science, the percent of fifth-grade Af-rican-American students meeting goal was a full 14.0 points lower than the percent meeting goal in other subjects. Fifth grade low-income students averaged 12.0 points lower in science than in other subjects, and 12.6 percent fewer Hispanic fifth graders met goal in science than in all other subjects. In eighth grade, the science gap was slightly smaller: 8.0 percent fewer African-American eighth graders met the state goal in science than in other subjects, with a 7.5 percent gap for Hispanic eighth graders and a 7.0 point gap for low-income eighth graders.

## INSIDE THE ACHIEVEMENT GAP

Poverty is often cited as a primary factor in the achievement gap, but it does not describe the gap entirely. Nonpoor black and Hispanic students score higher than their poor counterparts, but they still perform significantly below non-poor white students. In fact, across all grade levels, poor white students actually score higher than non-poor African-American students-and the gap
increases the longer students are in school. Poor white students score 1.2 points higher than non-poor AfricanAmerican students in elementary school, 2.6 points higher in middle school, and 6.8 points higher in high school.

It is also clear that poverty correlates with achievement in Connecticut, regardless of race or ethnicity. Poor students do score lower than non-poor students within all racial and ethnic groups. In both middle school and elementary school, higher-income African-American and Hispanic students score higher than their low-income counterparts.

Low-income African-American elementary students score 21.3 points lower than higher-income AfricanAmerican students. Low-income Hispanic elementary students score 28.2 points lower than their higher-income Hispanic peers. Poor white elementary students score 27.2 points lower than their higher-income peers.

The same holds true for middle school. Poor AfricanAmerican middle school students score 20.2 points lower than non-poor African-American students in middle school. The gap between poor and non-poor Hispanic students is even larger, at 27.1 points. Poor white students score 30.9 points lower than non-poor white students.



In high school, the gaps within racial and ethnic groups along income levels are pronounced as well. The gap between poor and non-poor African-American high school students is 13.3 points, rising to 17.5 percentage points for Hispanic high school students. The gap is even more striking between poor and non-poor white students: 65 percent of white non-poor students meet the state goal, while only 32.7 percent of white poor students meet the state goal.

At the same time, achievement gaps still exist between students of color and white students in the same income group. Poor African-American and Hispanic students score lower than poor white students, and non-poor African-American and Hispanic students score lower than non-poor white students. In elementary school, non-poor white students score 20.8 points higher than non-poor Hispanic students and 28.4 points higher than non-poor African-American students. In middle school, non-poor white students score 26.7 points higher than Hispanic non-poor students and 33.5 points higher than non-poor African-American students. In high school, the gaps expand. Non-poor white high school students score 33.5 points higher than non-poor Hispanic students and
39.1 points higher than non-poor African-American students. These trends are consistent with an array of national research. ${ }^{v}$

After attending Connecticut public schools for ten years, high school sophomores achieve at vastly different levels: the gap between non-poor white students and poor black students has expanded to 52.4 percentage points, as seen in the chart above. These gaps exist in elementary school, increase in middle school, and grow even bigger in high school.

## NATIONAL AND <br> INTERNATIONAL CONTEXT

The CMT and CAPT tests illustrate how Connecticut student performance changes from year to year, but how does Connecticut stack up against the rest of the United States? We can use the National Assessment of Educational Progress (NAEP), given in 2007, to examine the national landscape.

ConnCAN's 2007 State of Connecticut Public Education report showed that Connecticut's achievement gap between poor and non-poor students was the largest in


the nation in every category. Some might think that this is because Connecticut's wealthier students are doing well, but in reality the state's non-poor students rank only in the middle of the pack by the time they reach eighth grade. Rather, Connecticut's worst-in-the-nation achievement gap is driven by the extremely low performance of the state's low-income students. Our poor students score on par with poor students in Mississippi, in fourth and eighth grade reading and math, which places us near the bottom of the nation. ${ }^{\text {vii }}$

We know now how Connecticut compares to the other 49 states-but what about other countries? The Trends in International Mathematics and Science Study (TIMSS) tests fourth and eighth graders in 45 countries. Using a 2007 study from the American Institutes of Research that links TIMSS 2003 scores with 2007 NAEP scores, it's possible to analyze how Connecticut's students match up to their international peers in math. ${ }^{\text {vii }}$

While we perceive ourselves as a high-performing state, the results show we are far from a world leader. Connecticut eighth graders score just below Hungary and above the Slovak Republic in math. Half as many students in Connecticut are proficient in math as in Singa-
pore, a country with less than half the per-capita income of Connecticut. ${ }^{\text {ix }}$ Even our highest achieving cohorts of white and non-poor students score 13 points below Japan and 29 points below Singapore.

What's even more troubling about this comparison is where Connecticut's poor, Hispanic, and African-American students place. Poor and Hispanic students score below Moldova-a country with a per-capita income that is approximately five percent of Connecticut's ( $\$ 2,900$ to $\$ 54,117$ ). ${ }^{x}$ African-American students in Connecticut score even lower, tying with Jordan and scoring just above Egypt and Palestine. ${ }^{\text {xi }}$

As Connecticut becomes increasingly diverse, with our Hispanic population growing to 20.3 percent of the state by 2030, xi every Connecticut resident has a stake in ensuring that all Connecticut students are performing at high levels of achievement. The growing gaps between Connecticut students and the rest of the world are unsustainable in an increasingly global economy.

## Table 1

## 2008 State Report Card

|  | GROUP | \% | GRADE |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Performance Gains | Connecticut | 2.6 | C+ |
| Students Within Goal Range | Connecticut | 62.1 | C+ |
| Subgroups Within Goal Range | African-American | 33.9 | D- |
|  | Hispanic | 35.1 | D |
|  | Low-Income | 34.7 | D- |
| Gap Between Subgroups | African-American/White Gap | 40.2 | F |
|  | Hispanic/White Gap | 39.0 | F |
|  | Low-Income/Non-Low Income Gap | 40.2 | F |


|  | $J T N M I D O L$ | $\bigcirc$ |  |
| :---: | :---: | :---: | :---: |
| Performance Gains | Connecticut | 1.2 | C |
| Students Within Goal Range | Connecticut | 62.1 | C+ |
| Subgroups Within Goal Range | African-American | 31.1 | D- |
|  | Hispanic | 31.6 | D- |
|  | Low-Income | 31.3 | D- |
| Gap Between Subgroups | African-American/White Gap | 43.4 | F |
|  | Hispanic/White Gap | 43.0 | F |
|  | Low-Income/Non-Low Income Gap | 43.3 | F |


|  | $\checkmark$ 团 |  |  |
| :---: | :---: | :---: | :---: |
| Students Within Goal Range | Connecticut | 51.2 | C- |
| Subgroups Within Goal Range | African-American | 17.9 | F |
|  | Hispanic | 20.1 | F |
|  | Low-Income | 19.3 | F |
| Gap Between Subgroups | African-American/White Gap | 44.1 | F |
|  | Hispanic/White Gap | 41.9 | F |
|  | Low-Income/Non-Low Income Gap | 40.8 | F |

# Are Districts Closing the Gap? 

IN 2007, DISTRICT PERFORMANCE on the CAPT and CMT followed a pattern: large urban district growth was flat or declining, while suburban and rural districts made larger gains. In 2008, however, the big cities reversed the trend, with several large urban districts improving at a faster rate than the state. With a 30 to 40 point achievement gap between our cities and the statewide average, the big cities must improve three to four points faster each year than suburban districts to close the achievement gap within 10 years. For example, from 1993 to 2007, Bridgeport, Hartford, and New Haven consistently made smaller gains in fourth grade reading than the rest of the state, as shown in ConnCAN's 2007 report. This means that the gap was actually larger in 2007 than it was in 1993, when students started taking the CMT.

Some individual urban schools bucked this trend, narrowing the achievement gap with a combination of strong leadership, parent engagement, data-driven instruction, great teachers, and a culture of achievement, as chronicled in ConnCAN's school success stories project, for instance. ${ }^{\text {xiv }}$ Individual successes were not enough to close the gap, however. Success stories on the district level were few and far between in 2007, especially among districts with many low-income students, where students dramatically underperformed compared to the state average.

In 2008, all of Connecticut's largest districts posted positive performance gains, and while one year of growth is not enough to close the gap, it is an encouraging start. In elementary schools, Hartford, New Haven, and Stamford beat the state average for performance gains. In middle school, Bridgeport, Hartford, and New Haven-Connecticut's three largest cities-also beat the state average for performance gains. In particular, Hartford's 3.5 -point middle school and elementary school performance gains average puts the district nearly on pace to close the achievement gap over the next decade if it can keep these gains going in years to come.

In terms of improvement, Hartford and New Haven exceeded the state average in elementary and middle schools. Hartford far outpaced the state in elementary improvement, with 2.4 percent more elementary students meeting goal in 2008 than in 2007, compared to the state's 0.1 percent decline, and New Haven's elementary students improved by 1.8 points. In middle school, New Haven and Hartford improved at a faster rate than the state, with 2.3 percent gains and 2.2 percent gains to the state's 1.3 percent, respectively. On the high school level,
however, the cities lagged. The state average for high school improvement was 4.1 percent, but New Haven's high school students improved by only 1.5 percent and Hartford's by only 0.3 percent.

## MAPPING THE GAP

Maps 1 and 2 provide a snapshot of the urban-suburban achievement gap in Connecticut and two different ways to understand this divide.

Map 1 shows overall levels of student achievement in middle school. Hartford, New Britain and New London are shades of yellow, representing less than 25 percent of students meeting goal. A number of districts posting the highest percentage of students at goal (75 percent and higher) are wealthy suburbs like Avon, Branford and Weston.

Map 2, showing performance gains, tells a different story. Students in Hartford, for example, made positive gains, while students in surrounding suburbs actually lost ground. Other districts, such as North Canaan and East Windsor, are in the middle of the pack on the achievement map but lead the way with performance gains of eight percent or higher. Finally, some districts with high levels of student achievement, such as Greenwich, Farmington and Simsbury, are revealed to be near the bottom of the state in terms of the gains made with students.

## SCIENCE IN THE SPOTLIGHT

Cities struggled the most on science tests in 2008. In Connecticut's five largest school districts, both fifth and eighth grade science scores were much lower than the state average. The gap between science scores and other subject scores was larger in those big districts as well. Only 25.1 percent of fifth graders met the state goal in science in the five largest districts, an average that is 12.9 points lower than their average in other subjects and 30.1 points below the state average. In eighth grade, results were similar: 25.4 percent of students met the state goal, with an 8.9 point gap between science and other subjects. Eighth graders in the five largest districts scored 33.5 points below the state average at goal in science. Low science scores greatly affected these districts' overall averages. At the very least, the first year of science scores are a starting point for a conversation about science and how to prepare Connecticut students for a $21^{\text {st }}$ century world.


## Map 01

Middle School, Overall Student Achievement, 2008


PERCENTAGE AT/ABOVE GOAL
Above 75\%
50\%-75\%
25\%-50\%
Below 25\%
No data $\ddagger$

## Map 02

Middle School, Performance Gains, 2007-08


PERFORMANCE GAIN
Above 8\%
4\%-8\%
0\%-4\%
Under 0\%
No data $\ddagger$
$\ddagger$ Note: "No Data" means the district does not meet the minimum number of students required by the Connecticut State Department of Education to release data.


| Chart 4 |
| :--- |
| Performance |
| Gains in |
| Connecticut's |
| Five Largest |
| Districts |
|  |



## Chart 5

Improvement in
Connecticut's Five Largest Districts


## CONNECTICUT'S CAPITAL: A CLOSER LOOK

In Connecticut's capital city, 2008 marked a turnaround from a longstanding negative trend in student achievement. From 1993 to 2007, the average achievement gap between Hartford and the state average measurably widened-by 5.2 points, for instance, between Hartford fourth graders and their peers statewide.

If we are to close the achievement gap in Connecticut, cities like Hartford must make gains with their students a faster pace than the rest of the state-and in 2008, Hartford did. With an average 3.5 point performance gain in elementary and middle school, Hartford's gains were almost twice as high as the state's and three times larger than its own gains in 2007 (1.1 points). In one year, Hartford almost made up for the increase in the gap between its average and the state average over the previous 15 years.

Hartford's elementary and middle school students improved in every grade except eighth. In sixth grade and seventh grade, the percent of students meeting the
state goal increased by more than four points. Cohort groups improved in every grade except eighth, as well. The percent of fifth graders who met the state goal this year was almost six points higher than the percent of that same group of students who met the state goal last year, in fourth grade. This year's sixth graders did even better, posting 10.9 point performance gains, one of the largest gains of any district in the state.

On the school level, a larger number of Hartford schools are making big improvements. This year, Hartford's traditional and magnet public schools made 11 appearances on ConnCAN's Top 10 lists, compared to only three appearances last year.

# Which Schools Are Closing the Gap? 

FOR THE THIRD CONSECUTIVE year, ConnCAN has highlighted individual Connecticut public schools that are improving achievement, especially with traditionally underserved students. This is the first year that ConnCAN has also included top 10 lists on the high school level in its annual report. These rankings consist of the top 10 schools in the state for Performance Gains, Improvement, African-American Achievement, Hispanic Achievement and Low-Income Achievement. Several schools reached more than one list, and others reached both elementary and middle school lists.

## SCHOOLS THAT APPEARED ON TOP 10 LISTS THREE OR MORE TIMES IN 2008:

- Amistad Academy, New Haven
- Elm City College Preparatory School, New Haven
- Greater Hartford Classical Magnet, Hartford
- High Horizons School, Bridgeport
- Hooker School, Hartford
- Hopeville School, Waterbury
- King/Robinson Magnet, New Haven
- Multicultural Magnet, Bridgeport
- Platt Technical High School, Milford
- Trumbull High School, Trumbull

While many schools made great improvements in 2008, four Connecticut schools accomplished an even more impressive task: they reached the top 10 performance gains or improvement lists two years in a row. Sustaining improvement over several years can be difficult. Leadership changes, teachers leave, and each group of students poses different challenges, but students at these schools continued to grow academically at significant rates.

## REPEAT PERFORMERS IN PERFORMANCE GAINS

AND IMPROVEMENT, 2007-08:

- Cromwell High School, Cromwell
- Greater Hartford Classical Magnet, Hartford
- Lewis S. Mills High School, Region 10
- Norwich Technical High School, Norwich

Connecticut's achievement gap, the worst in the nation, exists because so many schools are not meeting the needs of African-American, Hispanic, and low-income students. The following elementary and middle schools are bright spots in a dim statewide picture, reaching ConnCAN's top 10 lists for African-American, Hispanic, or low-income achievement in 2006, 2007, and 2008.

## REPEAT PERFORMERS IN AFRICAN-AMERICAN

ACHIEVEMENT, HISPANIC ACHIEVEMENT, AND LOW-
INCOME ACHIEVEMENT, 2006-08:

- Amistad Academy, New Haven
- Elm City College Preparatory School, New Haven
- High Horizons School, Bridgeport
- Julia A. Stark School, Stamford
- Kendall Elementary School, Norwalk
- Laurel School, Bloomfield
- Multicultural Magnet School, Bridgeport
- Roger Ludlowe Middle School, Fairfield
- Rotella Interdistrict Magnet School, Waterbury


## THE HIGH SCHOOL CHALLENGE

The 2008 CAPT scores show that Connecticut high schools are simply not meeting the needs of far too many low-income students and students of color. Yet there are some hopeful signs in our technical high school system.

On the CMT, several elementary and middle schools with at least 75 percent combined minority and low-income students were among the top three in the state for performance gains, improvement, or subgroup achievement. But on the high school level, only one school achieved this feat on the CAPT: Amistad High School in New Haven. High schools that do have a high percentage of low-income and minority students-particularly in our cities-did not fare well on the CAPT in those subgroups. And these schools are not improving, either; the vast majority of schools on the high school improvement list are suburban and rural.

The yawning achievement gaps in Connecticut high schools are also much larger than in middle and elementary schools. At New Haven's Wilbur Cross High School, for example, there is a 62 point gap between the percent of white and Hispanic students meeting the state goal, along with a 56 point gap between white students and African-American students.

On a positive note, Connecticut's technical high school system performed well this year. Connecticut's 17 technical high schools, located all over the state, occupy at least one spot on all four high school top 10 lists. Platt Technical High School in Milford reached the top 10 in African-American achievement, Hispanic achievement, and low-income student achievement, making it the only school on any grade level to hold this distinction.

In the 2007-08 school year technical high schools beat the state average for improvement ( 5.8 percentage points to the state's 4.1).. ${ }^{\mathrm{xv}}$ Compared to traditional high

schools, technical school improvement was 3.4 points higher. Low-income students at technical high schools also scored higher ( 24.3 percent met the state goal) than low-income students in the state of Connecticut (19.3 percent met the state goal) for the second year in a row.

## SCHOOL TYPES

How did other types of schools perform this year? Public charter schools, which significantly outperformed traditional public schools in 2006 and 2007, fared less well in 2008. Public charter schools had 1.2 percent performance gains in middle school and a drop of 0.9 percent in elementary school. While traditional schools improved by 1.2 points in 2008, charter schools posted negative improvement, at -0.7 percent in middle school and -2.3 percent in elementary school.

On ConnCAN's elementary and middle school top 10 lists, traditional schools occupied 65 percent of the slots, with magnet schools occupying 26 percent and public charter schools 9 percent. In middle school, magnet schools posted higher performance gains than did traditional schools ( 3.4 points to 1.7 points) but lower per-
formance gains in elementary school (1.8 points to traditional schools' 2.8 points).

Magnet schools and public charter schools are overrepresented in the elementary and middle school Top 10 lists, making up only 12 percent of Connecticut elementary and middle schools and 36 percent of the spots on the lists. Yet the number of spots occupied by these schools of choice is down from 2006 and 2007. In high school, Amistad High School, a public charter school, took the top spot for low-income student performance but was the only charter school on the list. Low-income students in magnet high schools performed slightly worse than low-income students in technical high schools and traditional high schools.

Low-income and minority public charter school and magnet school students scored higher than their counterparts in traditional schools in 2008. In middle school, 37.5 percent of African-American public charter school students met goal, compared to 28.4 percent of their peers in traditional schools. The same percentage of African-American students in magnet schools met the state goal. The numbers are similar for Hispanic middle school students (40.1 percent met goal in charter and

## Tables 2 \& 3

Performance by School Types

|  | PERFORMANCE GAINS | IMPROVEMENT |
| :--- | :---: | :---: |


| БLБהMENITARYS@HOOSS |  |  |
| :---: | :---: | :---: |
| Traditional | 2.8 | 0.0 |
| Charter | -0.9 | -2.3 |
| Intradistrict Magnets | 1.4 | -0.5 |
| Interdistrict Magnets | 1.8 | 0.7 |
|  |  |  |
| Traditional | 1.7 | 1.2 |
| Charter | 1.2 | -0.7 |
| Intradistrict Magnets | 5.5 | 2.3 |
| Interdistrict Magnets | 2.5 | 2.5 |

magnet schools, compared to 31.5 percent in traditional middle schools). In elementary school, the numbers are even higher in public charter and magnet schools: 46.9 percent of African-American students in public charter schools met goal, while 36.0 percent of African-American students in magnet schools and only 28.4 percent of African-American students in traditional schools met goal. Low-income elementary students fared better in public charter and magnet schools than in traditional schools: 43.3 percent of low-income public charter school students met goal, 37.3 percent of low-income magnet school students met goal, and 32.6 percent of low-income elementary students in traditional schools met goal.

One notable trend in 2008 was the prevalence of $K$ through 8 and pre-K through 8 schools on the middle school improvement and performance gains top 10 lists. Of the 20 spots on these two lists, K-8 and PK-8 schools occupied 13 , including the top six spots on the middle school improvement list. Of the 258 middle schools with available data, 28 percent are $\mathrm{K}-8$ or PK-8, though they comprise 65 percent of the top 10 lists. On average, performance gains are higher in PK-8 and K-8 schools than
in traditional middle or junior high schools ( 2.6 points to 1.6 points). As might be expected, K-8 school gains appear on the middle school level but not on the elementary level, perhaps because of a smoother elementary-to-middle transition. Statewide, performance gains tend to decrease in middle school, as ConnCAN's 2007 report illustrated, making the sixth, seventh and eighth grades key in closing the achievement gap. Research on the impact of $\mathrm{K}-8$ schools on student achievement is mixed, xvi but the strong showing of these schools in Connecticut suggests that they are worthy of additional discussion as part of a larger reform plan.

## Top 10 Lists: <br> Elementary Schools



| $\\| M P \Gamma \curvearrowright / E M E N V$ |  |  |  |
| :---: | :---: | :---: | :---: |
| 1 | King/Robinson Magnet School | New Haven | 19.0 |
| 2 | Lawrence School | Middletown | 18.0 |
| 3 | Franklin Elementary School | Franklin | 16.2 |
| 4 | MacDonough School | Middletown | 14.6 |
| 5 | Hopeville School | Waterbury | 14.3 |
| 6 | M. L. King School | Harfford | 13.5 |
| 7 | Hampton Elementary School | Hampton | 12.8 |
| 8 | Chaplin Elementary School | Chaplin | 12.6 |
| 9 | Webster School | Bridgeport | 12.4 |
| 10 | Hooker School | Hartford | 12.2 |



# Top 10 Lists: Middle Schools 

| RANK | SCHOOL | DISTRICT |  |
| :---: | :---: | :---: | :---: |
| PFRF〇RMMANGEGAINS |  |  |  |
| 1 | Hooker School | Hartford | 21.7 |
| 2 | Multicultural Magnet School | Bridgeport | 17.2 |
| 3 | Odyssey Community School | Manchester | 14.4 |
| 4 | Eastford Elementary School | Eastford | 11.7 |
| 5 | Amistad Academy | New Haven | 11.5 |
| 6 | North Canaan Elementary School | North Canaan | 11.4 |
| 7 | King/Robinson Magnet School | New Haven | 11.1 |
| 8 | Kinsella School | Hartford | 10.9 |
| 9 | East Windsor Middle School | East Windsor | 10.1 |
| 10 | Park City Magnet School | Bridgeport | 10.0 |
| $\\| M P \Gamma \curvearrowright / E N E N$ |  |  |  |
| 1 | King/Robinson Magnet School | New Haven | 22.6 |
| 2 | Hooker School | Hartford | 20.6 |
| 3 | North Canaan Elementary School | North Canaan | 12.5 |
| 4 | Cross School | Bridgeport | 12.0 |
| 5 | Fields Memorial School | Bozrah | 9.1 |
| 6 | Greater Hartford Classical Magnet | Hartiord | 8.8 |
| 7 | Amity Regional Junior High School: Orange | Regional 05 | 8.7 |
| 8 | Sherman School | Sherman | 8.4 |
| 9 | Multicultural Magnet School | Bridgeport | 8.2 |
| 10 | Horace W. Porter School | Columbia | 7.9 |



# Top 10 Lists: High Schools 



| MPPROVENMENT |  |  |  |
| :---: | :---: | :---: | :---: |
| 1 | Cromwell High School | Cromwell | 21.4 |
| 2 | Bristol Central High School | Bristol | 19.0 |
| 3 | Canton High School | Canton | 14.7 |
| 4 | Windham Technical High School | CT Technical HS | 14.4 |
| 5 | Norwich Technical High School | CT Technical HS | 13.9 |
| 6 | Lewis S. Mills High School | Region 10 | 13.2 |
| 7 | Nonnewaug High School | Region 14 | 13.2 |
| 8 | Greater Hartford Classical Magnet School | Hartford | 13.2 |
| 9 | Simsbury High School | Simsbury | 12.7 |
| 10 | Trumbull High School | Trumbull | 12.4 |

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# Appendix: Methodology of ConnCAN's School \& District Report Cards 

## DATA SOURCES

Student performance data is based on the 2008 Connecticut Mastery Test for grades three through eight and the 2008 Connecticut Academic Performance Test for grade ten. Each student's achievement is compared to a set of established standards for their grade in each subject area.

The CMT is a statewide exam designed by the State Department of Education. It is administered each spring to all public school students in grades three through eight. The CMT measures student achievement in mathematics, reading and writing compared to the expectations for their grade level. The test takes approximately seven hours over a one- to four-week period. In 2008, for the first time, fifth and eighth grade students took a science test as part of the CMT.

The CMT reading section is based on the Degrees of Reading Power test and the Reading Comprehension test. It assesses students' understanding of what they have read through multiple-choice questions and open-ended questions that require written responses. The writing section tests students through multiple-choice questions on composition, revision, and editing of passages as well as a writing sample in response to a specific topic. The mathematics section uses multiple-choice and openended questions to assess students' mastery of basic skills, understanding of key concepts, and ability to solve problems. The science section tests factual knowledge, conceptual understanding, and skill application. It uses multiple choice and short answer questions on either scientific content, in the case of grade five, or the scientific inquiry process, in the case of grade eight.

The CAPT assesses competency in mathematics, reading, writing and science in grade ten. The mathematics test assesses algebraic reasoning, numerical and proportional reasoning, geometry and measurement, and statistics. It uses both multiple choice and openended questions. The Reading Across the Disciplines section is split into a Response to Literature section and a Reading for Information section, which use open-ended written responses and multiple choice questions to assess reading comprehension. The Writing Across the Disciplines section includes an Interdisciplinary Writing section, in which students are asked to write a persuasive essay, and an Editing and Revising section, which includes multiple-choice questions about editing, composing, and revising skills. The science test assesses both content knowledge of science and scientific inquiry, lit-
eracy and numeracy, along with five scientific performance tasks.

While there is no passing grade on the CMT or the CAPT, the State of Department of Education does set state goals for each subject area in each grade tested. The department defines state goals as the knowledge, skills and critical thinking abilities that are "reasonable to expect of students" within their grade level.

On both the CMT and the CAPT, students' raw scores (the total number of correct responses) are translated into scale scores from 100 to 400 points. Cut-off points are assigned to each test for state goal. The department reports the percentage of students scoring above "goal," using the term "advanced." The department also reports the percentage of students scoring below goal using the terms "proficient,""basic," and "below basic." ConnCAN, however, uses the goal standard to rate schools at the level of performance "reasonable to expect of students" within their grade level.

## DATA ANALYSIS

The performance data provided in this report is based on the percentage of students within each school or district who scored at or above goal on the CMT and CAPT. The State Department of Education makes this percentage score publicly available for schools or districts with at least 20 students in a given grade who completed the CMT or CAPT. The percentage scores are reported for each content area: math, reading, writing, and science.

To compare schools and districts, ConnCAN calculated a single student achievement score for each school. The score takes the average percentage of students scoring at or above goal across the four tests on the CMT and CAPT. Elementary schools are assessed using the results from the fifth-grade test. Fourth-grade results are used when an elementary school does not have a fifth grade. ConnCAN assessed middle schools and districts using the results from the eighth-grade test (with the seventh-grade results used when a middle school does not have an eighth grade). We assessed high schools using the results from the CAPT, which tests only tenthgrade students. This score provides a straightforward, easy-to-use yardstick to measure how well the school, on average, is meeting the needs of its students in these key subject areas.

To better understand how well a school is meeting the needs of those students traditionally underserved in Connecticut, ConnCAN also calculates a student achieve-

| Grading Tables | SCORE | SCORE |
| :--- | :--- | :--- |

ment score for African-Americans, Hispanics and low-income students.

To measure the overall change in student performance within a school or district, the change in the average percentage of students scoring at or above goal in all subjects between 2007 and 2008 is calculated. For example, the change in the average percentage of $3^{\text {rd }}$ graders scoring at or above goal in 2007 is compared to the average percentage of $3^{\text {rd }}$ graders scoring at or above goal in 2008. Improvement is measured as the average change in all grade levels.

Finally, to determine the relative effectiveness of schools in increasing the percentage of students scoring at or above goal, the change in the average percentage of a student cohort scoring at or above goal is calculated for elementary and middle schools. Because the CAPT tests students in only one grade, performance gains cannot be calculated in high school.

For elementary schools, the performance gains score is the average change between the 2007 third grade and the 2008 fourth grade, and the 2007 fourth grade and the 2008 fifth grade. For middle schools, the performance gains score is the average change between the 2007 fifth grade and the 2008 sixth grade, the 2007 sixth grade and the 2008 seventh grade, and the 2007 seventh grade and the 2008 eighth grade. A positive score means that the average percentage of students scoring at or above goal increased during their year in school. A negative score means the average percentage of students scoring at or above goal decreased. Performance gains were calculated for more than 95 percent of schools and districts.

It is important to note that this indicator's ability to represent a school or district's impact on student achievement is determined in part by the stability of the student body. Changes in the composition of the student body within a school lessen its efficacy. Similarly, while the goal standard is designed to measure the level of performance "reasonable to expect of students" within their grade level, small differences in the way the cut-off score is determined between years may affect increases and decreases in the percentage of students that cross the threshold.

## GRADING

While the scores across the four major sections of the report card-Performance Gains, Students within Goal Range, Subgroups within Goal Range, and Gaps between Subgroups-are presented with district and state averages to provide a comparison point, it is also helpful for parents to have an absolute benchmark for how their child's school is performing. To meet this need, each elementary and middle school is also assigned a letter grade from A to F in each section for which data is available.

Schools with an average percentage of students within goal range in 2008 of 85 or greater receive an N/A since the grade scale begins to approach the ceiling of 100 above this level, which diminishes its meaningfulness as a measure of improvement.

[^0]${ }^{\text {i }}$ Performance gains are an imperfect yardstick for measuring improvement, but they are a strong indicator of student progress. Instead of comparing the progress of this year's fourth graders to last year's fourth graders -two separate groups of students-we can use 2007 scores to compare how this year's fourth graders improved on their own record from third grade last year (notwithstanding the fact that due to student turnover from one year to the next, these cohorts are not perfectly matched). While ConnCAN recognizes achievements in the "Improvement" category in Top 10 lists, it is less useful to measure growth using two different cohorts of students, so we weigh performance gains more heavily in our analysis. Please see the Methodology section for more information.
${ }^{\text {ii }}$ NAEP tests are given every two years. The next will be administered in 2009. For more information on the NAEP, please visit http://nces.ed.gov/nationsreportcard/.
${ }^{\text {iii }}$ This report uses the designations "poor" and "low-income" to represent students who qualify for the federal free and reduced-price lunch program.
${ }^{\text {iv }}$ Schools must test students in science in fifth and eighth grades as of the 2007-08 school year. For more information, visit the federal Department of Education website's frequently asked questions page at http://www.ed.gov/ nclb/accountability/ayp/testing-faq.html.
v The existence of national racial and ethnic achievement gaps independent of income-level achievement has been well documented in educational and sociological research, dating back to the Coleman Report in 1966. In 2006, for example, researchers found extensive racial and ethnic academic achievement gaps in grades 3-8 among students in North Carolina above and beyond those gaps caused by income inequality. Several recent studies have examined the role of teacher and school quality in the racial and ethnic achievement gap. In a 2006 report, Heather Peske and Kati Haycock found that students in high-minority secondary schools are disproportionately assigned to new teachers. Erik Hanushek and Steven Rivkin found that identifiable school factors, including student turnover rates and lack of teacher experience, explain the increase in the racial achievement gap from grades 3 to 8. Papers are available online at http://www. agi.harvard.edu/Search/SearchAllPapers.php.

Coleman, James S., Ernest Q. Campbell, Carol J. Hobson, James McPartland, Alexander M. Mood, Frederic D. Weinfeld, and Robert L. York. 1966. Equality of educational opportunity. Washington, D.C.: U.S. Government Printing Office.

Clotfelter, Charles T., Helen F. Ladd, and Jacob L. Vigdor. "The Academic Achievement Gap in Grades 3 to 8," 2006.

Peske, Heather G., and Kati Haycock. "Teaching Inequality: How Poor and Minority Students Are Shortchanged on Teacher Quality," Education Trust, 2006.

Hanushek, Eric A. and Steven G. Rivkin. "School Quality and the Black-White Achievement Gap," 2006.
${ }^{\text {vi }}$ Please see ConnCAN's 2007 State of Connecticut Education Report at http://conncan.org/matriarch/documents/ ConnCAN_State_Of_CT_Public_Ed_2007.pdf.
vii The National Center for Education Statistics makes all NAEP subgroup data available online at http://nces. ed.gov/nationsreportcard/naepdata/.
viii Phillips, Gary W. "Linking NAEP Achievement Levels to TIMSS," American Institutes for Research, 2007. Available at http://www.air.org/news/documents/naep-timss. $p d f$.
ix CIA World Factbook 2008. Available at https://www. cia.gov/library/publications/the-world-factbook/geos/ sn.html.
${ }^{x}$ Per-capita income information comes from the CIA World Factbook and the U.S. Bureau of Economic Analysis. For more information, see https://www.cia.gov/ library/publications/the-world-factbook/geos/md.html and http://www.bea.gov/newsreleases/regional/spi/2008 /spi0308.htm.
${ }^{\text {xi }}$ Phillips 2007.
xii This projection comes from UConn's Connecticut State Data Center, available at http://ctsdc.uconn.edu/State-Pro jection. html under the heading "State-Wide."
xiii Some countries' data has been omitted from this chart for clarity.
xiv Short videos of the 2007 Success Stories are accessible on the web at http://conncan.org/matriarch/ MultiPiecePage.asp_Q_PageID_E_15_A_PageName_E_ GreatSchoolsSucess.
${ }^{\text {xv }}$ Improvement and performance gains for types of schools, such as technical schools and public charter schools, was calculated by averaging each school's improvement.
xvi For a review of research on K-8 schools, see Jennifer Klump's "What the Research Says (Or Doesn't Say) about K-8 versus middle school grade configurations," Northwest Education, Volume 11, Number 3, Spring 2006. Available at http://www.nwrel.org/nwedu/11-03/research/.

ConnCAN for Connecticut Public Schools

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[^0]:    $\dagger$ If a school's score increased, the difference between these scores is divided by the percentage of students not at goal in 2007. Then the following grade scale is applied.
    $\ddagger$ If a school's score decreased, the difference between these scores is divided by the percentage of students at goal in 2007 . Then the following grade scale is applied.

