

California Comprehensive Center (CA CC) High-Performing, High-Need School Profile

Prepared by CA CC partner, the American Institutes for Research

Hawthorne Math and Science Academy Hawthorne School District

Overview

Hawthorne Math and Science Academy (HMSA) is a small charter high school with just over 500 students located in Hawthorne School District (see Exhibit 3). In 2003, this K-8 district chartered its own high school to provide students a locally based college preparatory school. To this end, the school's vision is to prepare and send all students to a four-year university of their choice.

Since HMSA opened in 2003, the school has won numerous academic awards, scored above the state Academic Performance Index (API) target of 800 (see Exhibit 4), and received the highest possible ranking on both statewide and Similar Schools rankings (see Exhibit 1). As HMSA's academic reputation grows, so does the number of applicants. In 2008 the school received approximately 400 applications for 190 openings. HMSA's student population is 70 percent Hispanic and 13 percent African American. Additionally, 87 percent of students are eligible for free or reduced-price lunch (see Exhibit 2).



Exhibit 1. School API Rankings* 2004-05 Through 2007-08

	2004-05	2005-06	2006-07	2007-08
Statewide ranking	10	10	10	10
Similar Schools ranking	10	10	10	10

*Statewide rankings range from 1 to 10, with 1 being the lowest and 10 being the highest. Similar Schools rankings compare an individual school's API to 100 schools in its comparison group. Schools are divided into 10 equal groups from the lowest (1) to the highest (10).

Source: Academic Performance Index, 2004-05 through 2007-08

Exhibit 2. Student Characteristics, 2007-08

	School	District	Statewide HS Average
African American	13%	23%	9%
American Indian	0%	0%	2%
Asian	6%	3%	8%
Filipino	5%	2%	3%
Hispanic	70%	66%	42%
Pacific Islander	1%	1%	1%
White	3%	2%	36%
Other race/ethnicity	2%	2%	3%
Eligible for free or reduced-price lunch	87%	90%	45%
English learners (ELs)	4%	38%	16%
Special education	1%	8%	8%

Sources: California Basic Educational Data Systems (CBEDS); Standardized Testing and Reporting (STAR) Program; and Free/Reduced Meals Program & CalWORKS Data Files, 2007-08.

Overview (continued)

The student-teacher ratio at HMSA (23:1) is slightly higher than the statewide high school average (22:1). HMSA has more administrators than the average high school but fewer paraprofessionals and clerical staff (see Exhibit 5).

Based on interviews with the principal, teachers, and students during a visit to HMSA, this profile details the following three strategies identified as being key factors in HMSA's success:

- High academic expectations
- Strict enforcement of rules
- Buy-in from and communication among students, teachers, and parents

Exhibit 3. School and District Facts, 2007-08

	School	District
Location	Hawthorne, Los Angeles County, CA	
Grade span	9-12	K-8
Number of schools	N/A	12
Enrollment	518	9,176

Source: California Basic Educational Data Systems (CBEDS), 2007-08

Why Hawthorne Was Selected

To identify high-performing schools across the state, we examined student and school performance data from 2004-05 through 2007-08. An overview of our methodology is posted on the SchoolsMovingUp website: http://www.schoolsmovingup.net/pdf/CA_CC_High_Perf_Schools_Criteria2009.pdf. Additionally, we selected schools to highlight based on the following criteria:

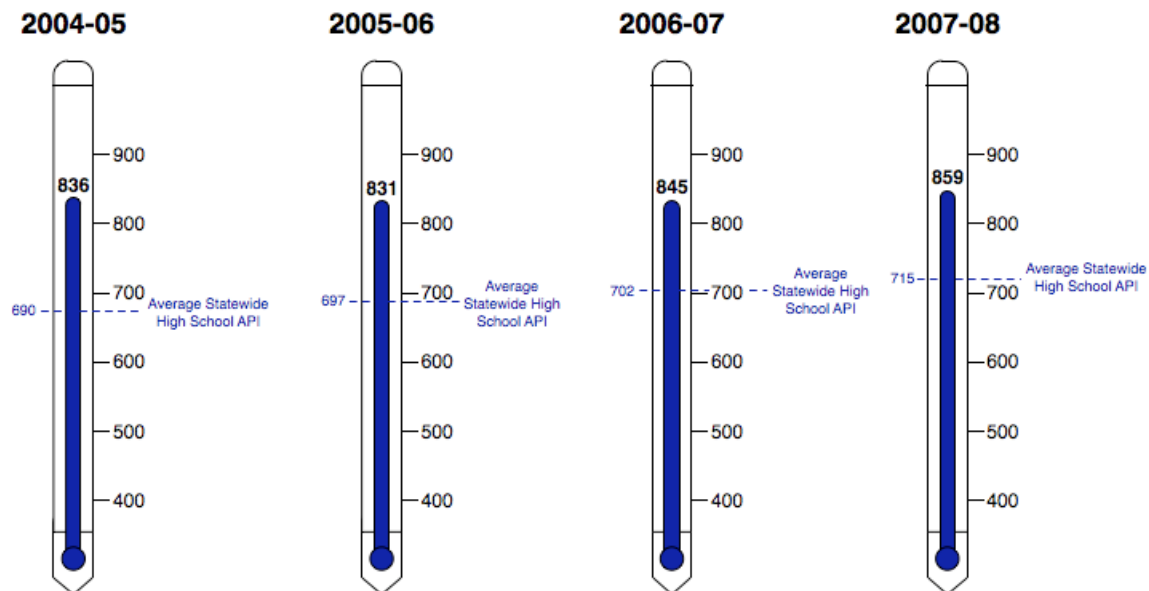
- **Substantially higher performance than predicted**
As indicated by a Similar Schools rank of 10 in 2007-08 (see Exhibit 1), HMSA students are performing better than their peers in similar schools.
- **Meeting or exceeding subgroup performance standards**
HMSA students in all numerically significant subgroups¹ are meeting or exceeding Adequate Yearly Progress (AYP) goals in both English language arts and mathematics (see Exhibits 6 and 7).
- **Sustained performance over time**
HMSA met all AYP requirements and was not identified for program improvement in 2004-05 through 2007-08. HMSA also met all Academic Performance Index (API) targets in 2004-05 through 2007-08 (see Exhibit 4).
- **High need student population**
The percentage of students at HMSA eligible for free or reduced-price lunch (87 percent) is higher than the state average for high schools (see Exhibit 2).
- **No selectivity in admissions**
Although students are required to complete a 20-page application to enroll at HMSA, the admission process is not based on academic merit. First priority is given to students with siblings currently attending in good academic standing, second priority is for those students living within the district boundaries, and the remaining students are selected by lottery. Thus, there is no selectivity in admissions for the school. (It is important to note, however, that the percentages of English learners and special education students at HMSA are lower than in the district on average, as shown in Exhibit 2. Thus, there may be some self-selection of students taking place.)

Recent School Awards

- California Distinguished School, 2009
- Title I Academic Achievement Award, 2007, 2008, 2009
- California Business for Education Excellence Honor Roll, 2007, 2008
- Ranked 70th of the top 100 high schools in the United States by US News and World Report, 2009
- Ranked 57th best high school in the nation by Newsweek, 2009
- Ranked one of the top 10 best high schools in Los Angeles by LA Magazine, 2008

¹ A subgroup is defined as numerically significant for percent proficient if it has 100 or more students with valid scores or 50 or more students with valid scores who make up at least 15 percent of the total valid scores.

Exhibit 4. Schoolwide API Scores for HMSA Compared to the Average Statewide High School API, 2004-05 through 2007-08



Source: Academic Performance Index, 2005-06 through 2007-08

Factor 1: High Academic Expectations

Rigorous Academic Coursework

Students are expected to complete a large amount of high-quality academic work throughout their time at HMSA. Students have, on average, four hours of homework per day, and assignments are not accepted if incomplete or late. Staff members use strict grading rubrics for this homework. For instance, for their summer reading journal assignments, students receive a chart indicating what the teachers will be grading on, including the quotations and plot details, interpretation, questions/connections, coverage of text, presentation, and grammar/language conventions. Each of these areas is then graded on a scale of 1 (lowest) to 4 (highest). The rubric details what constitutes a "1" versus a "4." For example, in the area of questions/connections, a "few connections, no questions" would receive a 1, whereas "insightful, personal connections, thought-provoking questions" would merit a 4. According to teachers, the grading rubric not only sets high standards for grading but also creates clear expectations for students.

Additional Course and Academic Requirements

Students at HMSA are required to take two additional years of mathematics, science, and foreign language, as well as one additional year of English beyond what the state requires for a high school diploma. To graduate, students must also take at least two AP classes, two performance or visual arts courses, and a technology/computer science course, and must apply to one California State University plus one other college. In addition to their academic courses, all students have a weekly college-prep advisory period in which they receive additional supports, depending on their grade level, such as mathematics tutoring, writing assistance, assistance with test preparation for high school exit exams, SAT and ACT preparation, and/or assistance in preparing their college applications.

"I do think they perform well, but I think you can always do better. Until every kid gets into an Ivy League of their choice, I think they can do better."

Joyce Anne Mackenzie,
Mathematics Teacher

High Expectation for Subgroups

While all students are mainstreamed into the core curriculum, additional support is provided to special education and English learner (EL) students. Also, special education students can receive testing accommodations, have a counselor who checks in with them at least three times a week, and (like all other students) attend after-school tutoring. In their college-prep course, ELs are also provided additional English language instruction.

Use of Data to Ensure Achievement

Teachers at HMSA continually review student testing data. Before the school year starts, teachers examine CST data and other test scores to readjust their lesson plans based on testing data on incoming students. Core subject teachers create pie charts in the beginning of the school year illustrating student proficiency levels, which they consult and update throughout the year using end-of-chapter tests and other ongoing formative assessments. Teachers study data independently, within departments, and across the school. In many classes, students scan their own quizzes and get printouts of the results that identify their individual weaknesses and strengths, which they then use to focus their efforts. Every teacher has access to DataDirector, a computer program that produces descriptive statistics and graphs of test data and specifies through detailed reports which standards students missed. Reviewing these reports allows teachers to look at whole-class data and individual student data, enabling teachers to track student and class-wide progress throughout the year. Teachers use this feedback to guide their decisions about whether to re-teach material or move onto a new topic.

Exhibit 5. Staff Characteristics, 2007-08

	School	Statewide High School Average
Teacher Characteristics:		
Number of students per full time teacher	23 : 1	22 : 1
Average years in education	12 years	12 years
Percentage with greater than BA degree	87%	81%
Percentage with full credential	96%	90%
Full Time Staff per 500 Students:		
Administrators	3 : 500	2 : 500
Pupil services	2 : 500	2 : 500
Paraprofessionals	0 : 500	3 : 500
Clerical	1 : 500	4 : 500

Source: California Basic Educational Data Systems (CBEDS), 2007-08

Factor 2: Strict Enforcement of Rules

Students Sign Rule Contract

Students are required to sign a contract at the beginning of each school year stating that they understand and will adhere to the rules of the school as outlined in a 30-page handbook. Staff members believe that strict and consistently enforced rules are necessary to provide the structure for students to be successful both in the rigorous environment at HMSA and into the future.

Rules Regarding Homework and Academic Standards

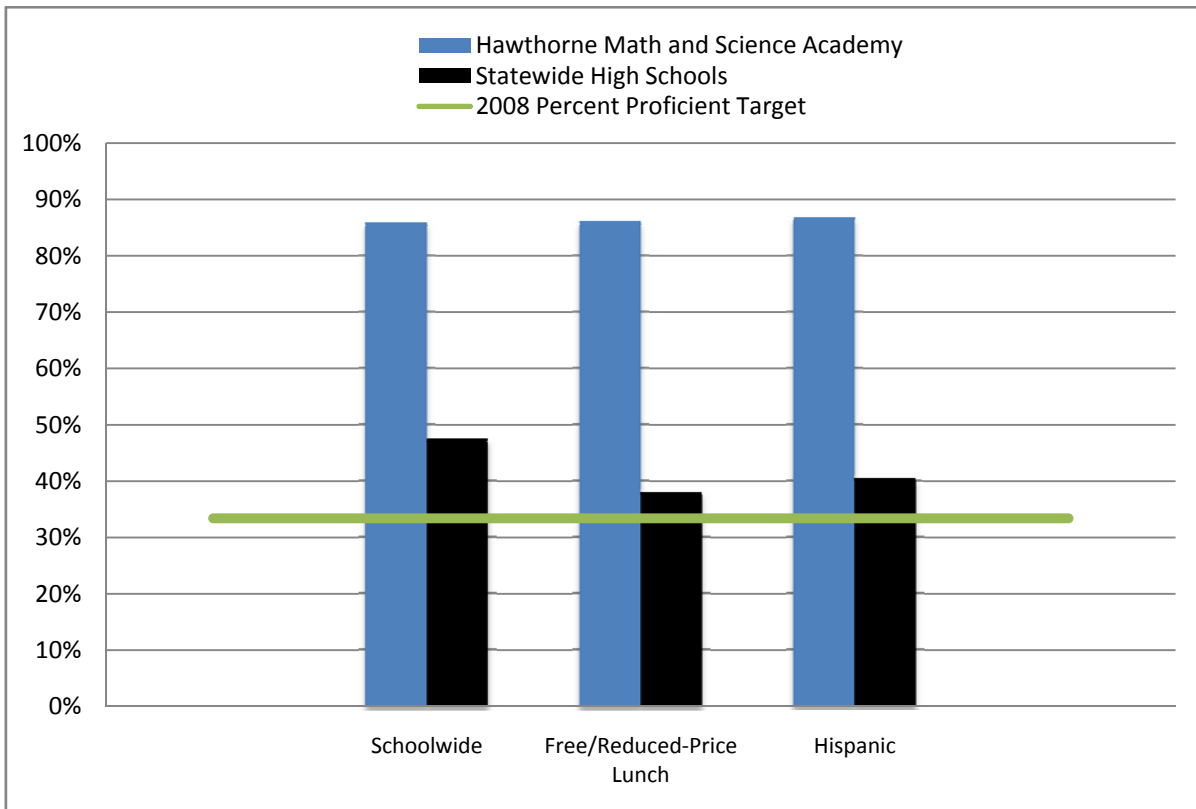
The rules regarding homework and academic standards are in place to foster a high level of personal accountability that will help students after graduation. For instance, students who fail to complete homework receive lunch detention and are required to call their parents. Low academic performance obligates a student to stay after school at least four hours every week for tutoring, and the parents are called.

Rules Regarding Behavior and Conduct

HMSA has numerous rules regulating student behavior and conduct, including a uniform dress code, restrictions on the use of electronic devices (e.g., iPods and cell phones during school hours are prohibited), and a ban on public displays of affection. The structured environment provided by the strict rules is believed to cultivate the school’s safe environment. Since the school’s inception in 2003, according to the principal, HMSA has only experienced two fights among students.

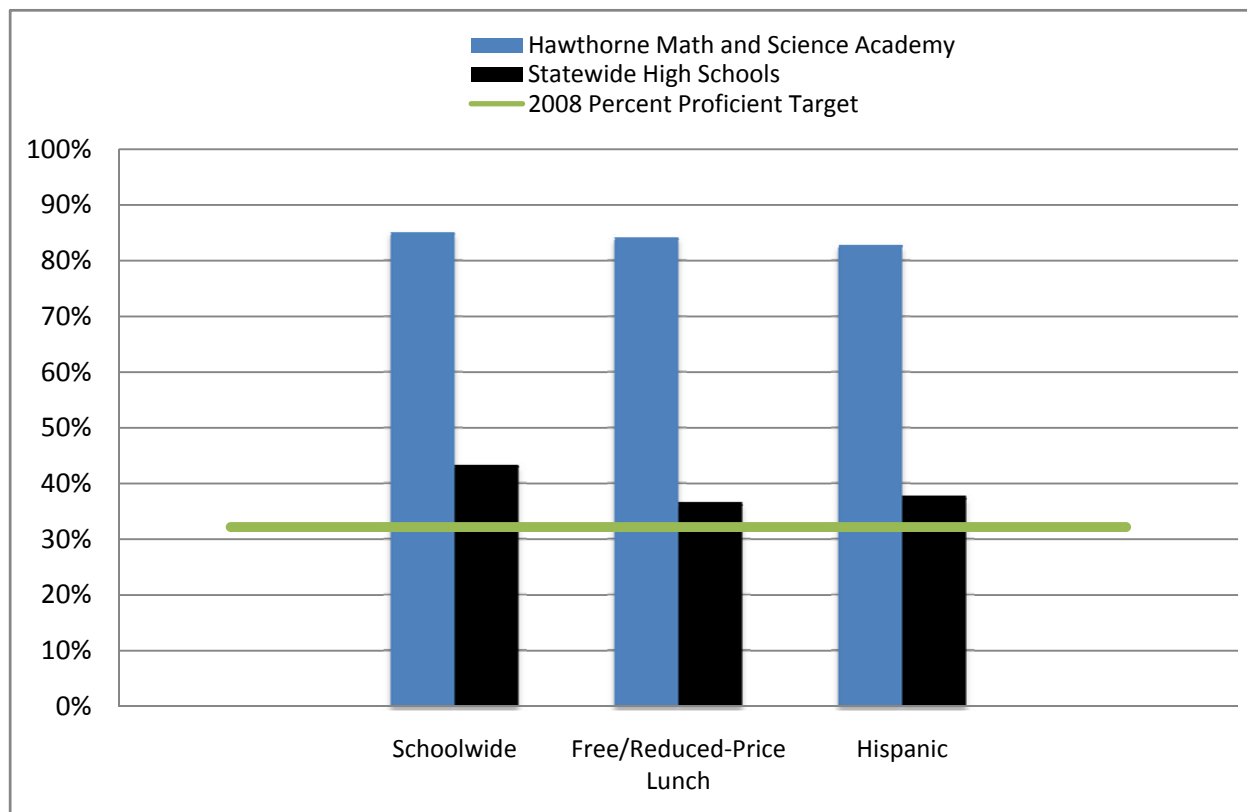
“If you get sent to the principal’s office, he doesn’t just punish you but asks you why. Everyone cares about each individual student. They want you to succeed.”
 11th Grade Student

Exhibit 6. Schoolwide and Subgroup* English Language Arts AYP Proficiency Targets and Scores for HMSA Compared to Average Statewide High School Scores, 2007-08



*Subgroups are ordered proportional to size.
 Source: California Adequate Yearly Progress (AYP), 2007-08

Exhibit 7. Schoolwide and Subgroup* Mathematics AYP Proficiency Targets and Scores for HMSA Compared to Average Statewide High School Scores, 2007-08



*Subgroups are ordered proportional to size.

Source: California Adequate Yearly Progress (AYP), 2007-08

Factor 3: Buy-In From and Communication Among Students, Teachers, and Parents

Student Buy-In and Interactions

Students at HMSA are provided with an understanding of the school's academic expectations beginning with the application process and continuing throughout their time at the school. The initial 20-page application includes several writing assignments, such as preparing a letter in business format and an essay based on researching a specified quote. One purpose of the application is to demonstrate the quantity and quality of work that will be required of students at HMSA. After students are accepted, they are required to attend an entrance interview in which they review the academic expectations and rules of the school and sign a contract. Students are also required to take an algebra assessment exam; if they do not score high enough, they are encouraged to take an Algebra I course provided by HMSA the summer before ninth grade.

Most students attend a summer bridge program to prepare them for attending HMSA. In this program they learn how to organize their binders, take notes, and understand HMSA's rigorous expectations for them for the next four years. Upperclassmen also describe the HMSA experience and answer incoming students' questions. Students assert that upperclassmen at HMSA interact and talk more with underclassmen than they would at other high schools. Students

"It's like a family of teachers looking after a family of students."

Joaquin Hernandez,
Principal

are encouraged to network with their peers from the first day of every class; each student is required to write down the contact information of three students whom he or she will call with questions about homework. Classes tend to be interactive, and group work is encouraged. Students share ideas, help each other understand concepts, work on problems, and brainstorm together. Successful seniors often tutor younger students after school.

Teacher Buy-In and Collaboration

Teachers share in the school's high expectations for students. First, during the hiring process, teachers must express a clear interest in and willingness to participate in the school's culture of high expectations. Second, teachers spend time outside of school with students by staying after school to provide additional help and tutoring. Every teacher is required to stay on campus after school at least once a week, but teachers said they spend approximately 10 extra hours at school on an average week. Some teachers also sponsor game nights, coach students in academic decathlons, provide extra help on AP classes at their own home on weekends, and coach school sport teams—all of which is unpaid. Finally, every teacher is required to engage in professional development (PD) each year. Due to extensive PD provided by the district, most teachers at HMSA are now AP-trained, and many are certified Gifted and Talented Education (GATE) teachers.

Teachers in the same department are assigned the same prep period and meet regularly during that time to collaborate on data, develop strategies to address topics students are struggling with, and discuss how to best incorporate standards. They compete amongst each other by comparing student performance, and collaborate on methods to improve instruction and enhance learning. Teachers work across departments to link subjects and curriculum. For example, the 10th grade English teacher assigns novels that connect with what the students are learning in their history class. According to teachers, the HMSA teachers' lounge is different from many other schools in that teachers do not complain about the students but rather support each other with "contagious passion."

Parent Buy-In and Involvement

Parents are also required to sign a contract. They must commit to 40 hours of volunteer work at the school per year as well as to providing the space and time at home for their children to do their school work. During the summer, school staff members meet with every family of a newly accepted student to thoroughly review the school contract, and to discuss their high expectations of each HMSA student. In this way, the staff gets to know each student and their family before they come to the school.

During the school year, teachers discuss results of assessment exams with parents, and post grades every week on PowerGrade—an online grading program. Parents are expected to track their child's progress and attendance. Additionally, school staff members develop programs to educate parents about the importance of sending their child to college, provide resources to help fund college attendance, and show students how to fill out the necessary forms. Parents participate in a booster club that raises money for the school by organizing car washes and garage sales. Whether in the form of preparing community gatherings, helping with fundraisers, or helping teachers, the commitment from parents to provide community service to the school represents an important part of HMSA's success.

More Information:

- For more information about this school please go to the school's website: www.hawthornemsa.org or contact Joaquin Hernandez, Principal, Hawthorne Math and Science Academy, Hawthorne, California: jhernandez@hawthorne.k12.ca.us or (310) 973-8184.
- For more information about other high-performing high-need schools, please see other school profiles on the SchoolsMovingUp website: <http://www.schoolsmovingup.net/cs/smu/print/htdocs/smu/ideas/schools.htm>.
- For more information about this study, please contact Mette Huberman, Senior Research Analyst, American Institutes for Research, Palo Alto, California: mhuberman@air.org or (650) 843-8174.