

## CHILDREN AT RISK's Methodology for Ranking High Schools (2008)

When generating our annual list of the best high schools in the Greater Houston area, CHILDREN AT RISK (C@R) assumes certain criteria. Below is a list of the 14 indicators used to evaluate how well high schools perform and the assumptions made for each indicator. C@R references the Texas Education Agency for all quantitative data.

**TSI TAKS (English Language Arts & Math):** the percentage of 11<sup>th</sup> grade students who achieved "Texas Success Initiative" (TSI) standards in *English Language Arts* (ELA) & *Math* Texas Assessment of Knowledge and Skills tests (TAKS) (a score of 2200 on their TAKS mathematics and a score of 2200 on TAKS ELA & a written composition score of 3 or higher on the writing component). According to the Texas Education Agency, this level of proficiency in reading, writing and mathematics skills is necessary prior to enrolling in college. Rather than use the percentage of students that merely pass the ELA & Math TAKS, we value this more stringent criterion in order to measure the percentage of students that show college-level proficiency at a given high school.

Assumption: We assume a top-performing high school will have the majority of its students achieve this TSI standard for ELA & Math.

**TAKS Social Studies & Science:** the percentage of 11<sup>th</sup> grade students who pass the exit-level Social Studies (SS) & Science (SCI) subject tests of the TAKS. Passing refers to "meeting state standard" which is defined by an 11<sup>th</sup> grade student correctly answering 28 items out of 55 (or 51%) on the SS exam, and 29 items out of 55 (or 53%) on the SCI TAKS test to meet state standards.

Assumption: A high school that is performing well will have the majority of its 11<sup>th</sup> grade student population pass the Social Studies & Science subject tests of the TAKS.

**ACT/SAT test-takers:** the percentage of graduates that have taken either the ACT or the SAT test.

Assumption: A well-performing high school will encourage all of its students to take the SAT/ACT test. We assume a school that is encouraging students to fulfill standardized test requirements is also encouraging students to attend college.

**SAT Score:** the mean score for all students taking the SAT (Scholastic Aptitude Test).

Assumption: A top high school will prepare its students to perform well on the SAT test – a score of 1110 or above.

**ACT Score:** the mean score for all students taking the ACT (American College Test).

Assumption: A top high school will prepare its students to perform well on the ACT test – a score of 23 or above.

**AP/IB test-takers:** the percentage of students in grades 11 and 12 taking at least one AP or IB examination.

Assumption: A high school that is performing well will have a greater percentage of its student body taking the AP or IB test. AP/IB exams are an indication of college-readiness and demonstrate if a high school is encouraging students to take challenging higher-level courses that prepare them for college.

**AP/IB students passing:** the percent of students who have taken at least one AP or IB exam that have scored at or above the criterion score (3 on AP or 4 on IB) on at least one exam.

Assumption: A top performing high school will prepare its students in AP/IB or Honors courses to pass the AP/IB tests.

**Advanced Course/Dual Enrollment Completion:** the percentage of students who complete and receive credit for at least one advanced course in grades 9-12. Advanced courses include, but are not limited, to AP, IB, and dual enrollment courses. Dual enrollment courses are those for which a student gets both high school and college credit. These courses will provide advanced academic instruction beyond, or in greater depth than, the essential knowledge and skills for the equivalent high school course.

Assumption: A top high school will provide a challenging course load by offering rigorous upper-level classes that enhance critical thinking skills and in-depth knowledge. A top high school will have a high percentage of students taking these courses.

**Class size:** the average class size. For convenience, C@R chose to use the average class size reported for a high school's English Language Arts class (unless otherwise noted).

Assumption: A top high school will have a low student-to-teacher ratio, i.e. a small class size.

**Economically Disadvantaged:** the percentage of students that are economically disadvantaged, i.e. the percentage of students coded as eligible for free or reduced-price lunch or eligible for other public assistance.

Assumption: The effects of poverty are pervasive and negatively impact how a child is able to learn and perform academically. Research shows that poverty is a good predictor of whether or not a student will graduate from high school in 4 years and will achieve academic success. Thus, C@R assumes a high school that is working with a high percentage of economically disadvantaged students must put forth more effort to retain and support these students. For this reason, we adjust scores to account for economically disadvantaged student population.

**Recommended High School Plan:** the percentage of graduates who were reported as having satisfied the course requirements for the Texas State Board of Education Recommended High School Program. This program (24 credits) is designed to prepare high school graduates with a solid foundation in English, Math, Science, Social Studies. It also includes foreign language, speech, fine arts, economics, technology studies, health education, and physical education.

Assumption: Rather than meeting minimum requirements to graduate, a top performing high school will "require" students to achieve this state standard as their academic goal.

**Graduation Rate:** the 4-year, same-school graduation rate calculated by C@R.  
*See below for full discussion on graduation calculation methods.*

Assumption: A well-performing high school will graduate all incoming freshmen students in four years.

## Weighing Indicators

The greatest weight is given to four-year, same school completion rates (27%), with significant weight also given to low socio-economic status (18%). Many experts, including CHILDREN AT RISK, conclude that schools that are successful with a student population that is historically the least likely to score well on standardized tests and the most likely to drop out deserve recognition.

Due to feedback from last year's rankings, this year CHILDREN AT RISK will include the IB program (along with AP) and the ACT test (along with the SAT) in our ranking indicators. TAKS scores, SAT/ACT and AP/IB success are weighted equally at 10% in each category. Please note that CHILDREN AT RISK has also changed which TAKS scores for Science & Social Studies are used in this analysis. In 2007, C@R used "a sum of all grades tested (9-11)" for SS & SCI TAKS scores. In 2008, CHILDREN AT RISK collected data for exit-level exams only (Grade 11). We have concluded that certain high schools might have an incoming student body with low test scores, but do a good job at supporting them to raise their scores by the 11<sup>th</sup> grade.

Because rigor in high school is an important indicator of whether students are prepared for college-level work, CHILDREN AT RISK has also included the percentage of students enrolled in advanced courses as an indicator (weighted at 5%). Class size and the percentage of students graduating under the Texas Recommended Plan are weighted equally at 10%. Please note that CHILDREN AT RISK has increased the weight given to class size from 5% in 2007 to 10% in 2008. C@R firmly believes that, under most circumstances, having a smaller class size facilitates student engagement and learning.

The exact weight given to each indicator is as follows (refer to the above indicator explanation section for clarification of abbreviations):

Indicator	Most Recent Data Available	Weight (percent)
TAKS - ELA (TSI)	2007	2.5
TAKS - Math (TSI)	2007	2.5
TAKS - SS	2007	2.5
TAKS - Sci	2007	2.5
SAT/ACT test-takers	2006	3.0
SAT score	2006	3.5
ACT score	2006	3.5
AP/IB test-takers	2006	5
AP/IB students passing	2006	5
Advanced Courses	2006	5
Class size	2007	10
Recommended HS Plan	2006	10
Economically Disadvantaged	2007	18
Graduation rate	2006	27
<b>TOTAL</b>		<b>100%</b>

*\*See Appendix A for the breakdown of 1-10 codification method.*

*\*See Appendix B for 2007 and 2008 comparison of indicators.*

## Calculating Four-year Completion Rates

CHILDREN AT RISK calculates graduation rates with a method similar to the Manhattan Institute's graduation calculations. This method compares freshman class enrollment numbers with the number of graduating seniors four years later. CHILDREN AT RISK first determined enrollment rates for incoming freshman classes every year for the past four years. Then we calculated the rate of change in freshman enrollment during each of the four years. These rates were added together, producing an *Average Enrollment Percentage* (AEP). The enrollment number of the current senior class then was multiplied by the AEP, producing an estimate of the senior class number. We divided this estimate by the enrollment number for the freshman class four years before to yield the graduation rate. This formula adjusts for growth to determine simple freshman to senior four-year graduation rates. The adjustments help account for the various growth rates in different areas of Houston and for the population changes between years at schools. Any anomalous graduation rates (e.g. more than 100%) were replaced with the TEA Completion Rate for graduates only. This shows the percentage of students in a cohort that graduate after four years in high school.

## Methodology Limitations

There are numerous variables that affect the success of children. Likewise, there are several methods of measuring how well a school *develops* successful children. Research has shown some of the biggest factors are parental support, social and emotional development, and engaging class work that stimulates critical thinking. However, like extracurricular participation, there is no standard measure for parental involvement, child development, or student engagement. It would be particularly difficult to collect this data efficiently and consistently for ranking more than 100 high schools.

Another restraint is C@R's dependence on data collected by the Texas Education Agency. Thus, the limitations posed by TEA data are valid criticisms for this high school ranking system. For example, raw or average TAKS scores rather than the percent of students who "met standard" would provide us with information on how well students are performing at a particular school. However, this data is not publicized.

## Other Criteria

- High Schools with separate 9<sup>th</sup> grade centers are *not* included in this analysis.
- High Schools must have more than 100 students enrolled.
- Night Schools and Alternative Education programs are *not* included in this analysis.
- High Schools must have had a full freshman class for 4 consecutive years, beginning in fall 2002-2003.

## Suggested Improvements

- Explore the use of "campus group" data provided by TEA. This data compares a target school (or district) to a cohort of 40 schools that are similar demographically (e.g. percent of student population that is African American, Hispanic, White, Economically Disadvantaged, Limited English Proficiency, Mobile). This will evaluate how well a high school performs when compared to other schools, taking into account their similar student populations. In particular, the Texas Growth Index (TGI) is an estimate of a student's academic growth on the TAKS tests over two consecutive years (in consecutive grades). TGI scores are then used to rank a given school into 4 quartiles among their cohort of 40 "like" schools. This data alone would be interesting to use in order to demonstrate how well a school "grows" TAKS achievement, particularly for past TAKS "failers." The caveat with using this data however, is that schools that might

stress TAKS success for accountability reasons *may not be* fostering critical thinking or providing a well-rounded education.

- Consider weighing the percentage of students who are Limited English Proficient and the percentage of students that meet English Language Learner Progress.
- Explore analyzing 3 consecutive years of data for each high school in order to identify schools that are consistently performing well.
- Consider analyzing trends across feeder patterns. For example, if all middle schools in a given feeder pattern are recognized on TAKS, but the high schools that obtain these students are found to be unacceptable, it is likely that the high school is not able to progress students forward. This would offer some insight into the kind of incoming student body. Ideally, this would control for whether a school is merely housing (already) successful students or *developing* them.
- Consider weighing the percentage of students who are recognized for Commended Performance on the TAKS, particularly Science and Social Studies. This measure refers to the highest performance level on the TAKS, as set by the State Board of Education. Students who achieve Commended Performance have shown a thorough understanding of the knowledge and skills at their grade level.

## APPENDIX A: Codification Method

After the raw data has been collected, each of the 10 indicators is codified into a number 0-10. All scores are weighted and added for a total possible score of 100.

*Explanation of Masking* - In TEA data, a (-1) is defined as "indicat[ing] results [that] are masked due to small numbers to protect student confidentiality." This data is coded as a 0. A (-2) is defined as "outside of reasonable range" or statistically improbable. This data is either collected directly from the high school registrar or 2005 data is used in place of 2006 data. A (-3) is defined as "rounds to 0%" and is replaced with a 0. A (-4) is defined as "rounds to 100%" and is replaced with a 100.

Indicator	Definition	Coding Scale
<b>TAKS ELA, Math, SS, SCI Code</b>	% of all students who met standard for each portion of the TAKS tests (weight: 2.5% for each portion)	1 – 1-10% 2 – 11-20 3 – 21-30 4 – 31-40 5 – 41-50 6 – 51-60 7 – 61-70 8 – 71-80 9 – 81-90 10 – 91-100%
<b>SAT/ACT test-takers</b>	The percentage of students taking the SAT test (weight: 3.0%)	0 – N/A or zero 1 – 0.1-10% 2 – 10.1-20 3 – 20.1-30 4 – 30.1-40 5 – 40.1-50 6 – 50.1-60 7 – 60.1-70 8 – 70.1-80 9 – 80.1-90 10 – 90.1-100%
<b>SAT Mean Score Code</b>	Mean student SAT scores (weight: 3.5%)	0 – N/A – 850 1 – 850-880 2 – 881-910 3 – 911-940 4 – 941-970 5 – 971-1000 6 – 1001-1030 7 – 1031-1060 8 – 1061-1090 9 – 1091-1120 10 – >1121
<b>ACT Mean Score Code</b>	Mean student ACT score (weight: 3.5%)	0 – N/A – 14 1 – 14.1-15 2 – 15.1-16 3 – 16.1-17 4 – 17.1-18 5 – 18.1-19 6 – 19.1-20 7 – 20.1-21 8 – 21.1-22 9 – 22.1-23 10 – >23

Indicator	Definition	Coding Scale
<b>AP/IB test-takers</b>	The percentage of students taking at least one AP or IB exam. (weight: 5%)	0 – N/A or 0 1 – 0.1-1% 2 – 1.1-10 3 – 10.1-20 4 – 20.1-30 5 – 30.1-40 6 – 40.1-50 7 – 50.1-60 8 – 60.1-70 9 – 70.1-80 10 – 80.1-100%
<b>AP/IB Pass Code</b>	Average AP/IB Pass Rate (weight: 5%)	0 – N/A or zero 1 – 1-10% 2 – 10.1-20 3 – 20.1-30 4 – 30.1-40 5 – 40.1-50 6 – 50.1-60 7 – 60.1-70 8 – 70.1-80 9 – 80.1-90 10 – 90.1-100%
<b>Advanced Courses Code</b>	The percentage of students that receive credit for at least one advanced class (grades 9-12). (weight: 5%)	0 – N/A or zero 0 – 0.1-0.9% 1 – 1-5 2 – 5.1-10 3 – 10.1-20 4 – 20.1-30 5 – 30.1-40 6 – 40.1-50 7 – 50.1-60 8 – 60.1-70 9 – 70.1-80 10 – 80.1-100%
<b>Class Size Code</b>	Average Class Size (for ELA) (weight: 10%)	1 - >50.1 2 – 45.1-50 3 – 40.1-45 4 – 35.1-40 5 – 30.1-35 6 – 25.1-30 7 – 20.1-25 8 – 15.1-20 9 – 10.1-15 10 – 0.1-10
<b>Recommended HS Plan Code</b>	The percentage of graduating seniors who graduated under the Recommended High School Program (weight: 10%)	0 – 0-4.9% 1 – 5-14.9 2 – 15-24.9 3 – 25-34.9 4 – 35-44.9 5 – 45-54.9 6 – 55-64.9 7 – 65-74.9 8 – 75-84.9 9 – 85-94.9 10 – 95-100%

<b>Indicator</b>	<b>Definition</b>	<b>Coding Scale</b>
<b>Economically Disadvantaged Code</b>	Percent of student eligible for free and reduced lunch (weight: 18%)	0 – 0.0% 1 – 0.1-10 2 – 10.1-20 3 – 20.1-30 4 – 30.1-40 5 – 40.1-50 6 – 50.1-60 7 – 60.1-70 8 – 70.1-80 9 – 80.1-90 10 – 90.1-100%
<b>Graduation Rate Code</b>	Graduation Rate taken from C@R calculated graduation rate (weight: 27%)	0 – 0% 1 – 0.1-10 2 – 10.1-20 3 – 20.1-30 4 – 30.1-40 5 – 40.1-50 6 – 50.1-60 7 – 60.1-70 8 – 70.1-80 9 – 80.1-90 10 – 90.1-100%

**APPENDIX B: Comparison of 2007 and 2008 Indicators**

<b>Indicator</b>	<b>Weight (2007)</b>	<b>Weight (2008)</b>
TAKS - ELA (TSI)	2.5	2.5
TAKS – Math (TSI)	2.5	2.5
TAKS - SS	2.5	2.5
TAKS - Sci	2.5	2.5
SAT/ACT test-takers	2.5	3.0
SAT score	7.5	3.5
ACT score	N/A	3.5
AP/IB test-takers	5 (AP only)	5
AP/IB students passing	10 (AP only)	5
Advanced Courses	N/A	5
Teacher Experience	5	N/A
Class size	5	10
Recommended HS Plan	10	10
Economically Disadvantaged	18	18
Graduation rate	27	27
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>