3/5/2024 (After initial offers, but before waitlist offers for 2024-25)

How Did Ingenuity Determine Which Applicants Received High School Placement Offers?

The Ingenuity Project received 258 applications and produced 83 initial offers for the incoming 9th-grade class of 2024-25. This document describes in detail how those 83 applicants receiving initial offers were selected from the applicant pool.

1. **Applicants who did not take the MAP Algebra I test are removed from the applicant pool.**

   48 applicants did not complete the required MAP Algebra I test. An additional applicant was removed from the pool because of an incomplete application. Therefore, 209 applicants were able to be considered.

2. **Ingenuity Admission Scores are Calculated.**

   The Ingenuity admission score is a measurement of how well an applicant did *relative to all of the other applicants to Ingenuity this year* on required testing[1] and on their recent report cards[2]. A complete mathematical description of how admission scores are calculated can be found at the end of this document. *The Ingenuity admission score is different from the City Schools composite score*.

3. **ZIP Quartiles are Determined.**

   All the ZIP codes in Baltimore City were divided into 4 categories based on their median household income (MHI) as determined in the 2020 census. A table showing which ZIP codes are in each quartile can be found here. Based on the ZIP code they reside in, each applicant was assigned to ZIP quartile 1 (lowest MHI), 2, 3, or 4 (highest MHI).

4. **School Groups are Determined.**

   Each applicant was placed in a school group depending on which school they are currently attending. The six school groups were Roland Park, Mount Royal, Hamilton, James McHenry, Other City Schools, and non-City Schools.

[1] For 2024-25 admissions, these were the MCAP Math and Reading assessments administered by City Schools in the spring of 2023 and the Ingenuity-administered NWEA MAP Algebra 1 testing that occurred during the winter.
[2] An unweighted average of 7th grade final grades and 8th grade first term grades in math, ELA, social studies, and science. A minimum of 6 non-zero reported grades was required, and zeros were not included in the average.

5. **Applicants are Ranked by Admission Score Within their School Groups and ZIP Quartiles.**

   Each applicant was ranked by admission score separately within their ZIP code quartile group and within their school group.

6. **Applicants not achieving minimum math scores are identified.**

   For 2024-25, applicants needed to score a minimum of 748 on the MCAP Math assessment and 248 on the NWEA MAP Algebra I test administered by Ingenuity. Applicants scoring below these minimums did not receive offers (or join the waitlist) even if they scored highly enough in their ZIP quartile or school group to qualify.

7. **Applicants Near the Top of Their ZIP Quartile AND/OR School Group are Assigned Offers.**

   Applicants who ranked "near the top" in EITHER their ZIP quartile group OR their school group (or both) AND achieved at least the minimum assessment scores described in step 4 above, received placement offers to Poly. For 2024-25 applicants, "near the top" included the highest-scoring 30% in each ZIP quartile, the city-schools school group, and the out-of-district school group. For each of the four Ingenuity Project middle schools, the top 49% of each group were eligible for an initial offer. These numbers were adjusted to produce an incoming 9th-grade class of approximately 85 students.

8. **Waitlist Management.**

   Applicants not scoring highly enough within their school group or ZIP quartile group to be given an offer of placement initially are maintained on a waitlist. The waitlist will be used to fill placements that may become available. *Offers to applicants on the waitlist are given by admission score rank only, without regard to school group or ZIP quartile*. The minimum math assessment scores required to receive an offer to Ingenuity at Poly described above were also required to join the waitlist. Applicants who did not complete the required testing and/or failed to gain admission to Poly (a separate process conducted by City Schools' Office of School Choice) were removed from the waitlist[3].

[3] Because of the difficulties experienced by City Schools Office of Choice and Transfers this application season, some students still working to resolve issues with that office were retained on the waitlist.

High School Application Outcome Examples from 2024-25

The illustration below demonstrates how this process played out for four actual applicants to Ingenuity's 9th grade cohort of 2024-25. Only their identities have been changed.

				
	Minie	Mickey	Donald	Daisy
Ingenuity Admission Score	89.6	64.5	65.3	60.8
School Group	City Schools	City Schools	Roland Park	City Schools
ZIP Quartile	2	4	4	3
Top X% of School Group?	Yes	Yes	Yes	No
Top X% of ZIP Quartile Group?	Yes	No	No	Yes
MCAP Math >= 748 and NWEA MAP Algebra 1 >=248?	Yes	No	Yes	Yes
Initial Offer	Ingenuity @ Poly	Decline	Ingenuity @ Poly	Ingenuity @ Poly

Minie is an example of a student for whom the admission decision was an easy "accept." Minie's admission score was within the top 30% in both her school group and her ZIP code quartile. She is one of the top 61 applicants by admission score, all of whom earned placement offers[4]. For these high-scoring applicants (73% of initial offers in 2024-25), school group and ZIP quartile group didn't have any impact on admission decisions because they would have received offers no matter what groups they were a part of.

Mickey has the unfortunate distinction of being the highest-scoring applicant who was not initially given a placement offer. Although Mickey ranked highly enough in his school group (City Schools) to receive an initial offer, his NWEA MAP score was below the minimum of 248.

Donald did not qualify for an offer in his ZIP quartile group (4), but he did qualify for one from within his school group – Roland Park. Therefore, Donald is an example of how the "either/or" method of offer distribution helps to ensure that a geographically and economically diverse set of applicants are given placement offers. If offers were given only by ZIP quartile rank, Donald would not be with Ingenuity for 2024-25, but instead, he can be!

Daisy is the opposite of Donald, in that she received an offer because she scored highly enough among her ZIP quartile peers to earn an offer, even though she did not qualify for one within her school group. Daisy is an example of how this admissions model allows for highly qualified students applying from very competitive school groups to earn a placement offer at Poly, even if they are not among the top applicants from their school group.

CALCULATION OF ADMISSION SCORE

[4] Excepting those placed on the waitlist while issues with City Schools Office of Choice and Transfers are resolved.

1. **Components**: For applications to 2024-25, Ingenuity HS admission scores used four major components: MCAP math, MCAP reading, a report card grade average, and the Ingenuity-administered NWEA MAP Algebra 1 assessment. The report card grade average is a simple average of an applicant's 7th grade final grades and 8th grade 1st marking period grades in math, ELA, social studies, and science. At least 6 of these grades were required for the calculation, and zeros were not included.

2. **Conversion to Percent of Range**: Each of the components was converted into a percentage of the range of the distribution of scores in the applicant pool. These calculations use the upper bound (highest) and lower bound (lowest) score in the set of all applicants to determine the range of scores. Each applicant's score is then converted into a percentage of that range. The formula for this process is the same for all four components of the admission score. This conversion is applied to ensure that sets of score components with relatively larger standard deviations do not have an inappropriately larger effect on admission score as compared to those components with less variation.

   $S_{\%} = [(S - S_{LB})/(S_{UB} - S_{LB})]*100\%$

   Where S = applicant's score, $S_{\%}$ = score percent of range, S_{LB} = applicant pool lower bound, and S_{UB} = applicant pool upper bound

HS Applicant Pool Data for 2024-25 Placement:

Ingenuity Admission Score Component	Lower Bound (Lowest Score in Pool)	Upper Bound (Highest Score in Pool)	Average Score of Students Who Received Initial Offers
MAP Algebra 1	191	298	262.5 (95th percentile)
MCAP Reading	726	796	770.0 (96th percentile)
MCAP Math	703	793	767.0 (98th percentile)
Report Card Average	69.9	100.0	94.3

3. **Component Weights**: Each of the score component percent of ranges are then multiplied by a cofactor ("weight") to produce a weighted percent of range. For

2024-25, these cofactors were 0.2 for MAP math, 0.3 for MAP reading, 0.4 for NWEA MAP Algebra 1, and 0.1 for report card grade average.

4. **Combined Formula**: To produce a combined formula, each of the score component percent of ranges is multiplied by its cofactor and then summed:

   Admission Score = $[0.2(mMCAP - mMCAP_{LB})/(mMCAP_{UB} - mMCAP_{LB}) + 0.3(rMCAP - rMCAP_{LB})/(rMCAP_{UB} - rMCAP_{LB}) + 0.4(mMAP - mMAP_{LB})/(mMAP_{UB} - mMAP_{LB}) + 0.1(RCA - RCA_{LB})/(RCA_{UB} - RCA_{LB})]*100$

   Where mMCAP = MCAP math scaled score, rMCAP = MCAP reading scaled score, mMAP = NWEA MAP Algebra I scaled score, and RCA = report card grade average.

5. **Example Calculation**

   Minnie: MCAP math = 793, MCAP reading = 793, MAP Algebra I = 274, RCA = 99.5

   Admission Score = [0.2(793-703)/(793-703) + 0.3(793-726)/(796-726) + 0.4(274-191)/(298-191) + 0.1(99.5-69.9)/(100-69.9)]*100

   = (0.2000 + 0.2871 + 0.3103 + 0.0983)*100

   = 89.6