



Fairfax County Association for the Gifted

Diversity with Excellence at TJ

Approved by FCAG Board of Directors, November 2020

As a Governor's School, TJHSST was designed to meet the needs of gifted students. TJHSST is highly competitive for admission. In recent years, it has rejected hundreds of students with a 4.0 GPA, including some who took Algebra 2 in middle school. TJHSST also faces persistent demographic challenges.

FCAG strongly supports continued access to TJHSST for exceptionally gifted children, coupled with efforts to increase diversity through strategic admissions processes and more effective programs to maximize the potential of young, gifted students. In response to FOIA requests, FCAG received data on FCPS student eligibility for the proposed "merit lottery," plus data on recent TJ admissions. We analyze below current trends in TJHSST admissions, likely consequences of the proposed lottery for students meeting "merit criteria" (GPA of 3.5 in 7th grade, and Algebra I in higher in 8th grade), and make recommendations for maintaining excellence while increasing diversity.

Executive Summary and FCAG Recommendations

- *Evaluate and admit students to TJHSST according to earned achievements and assessments much like many colleges, rather than through a lottery.* A lottery would have a profoundly negative impact on the highest achieving students and on academic opportunities at TJ. Instead, FCPS should:
 - *Continue using the problem-solving essay, the Student Information Sheet (SIS), and teacher recommendations.* Teacher letters of recommendation and student essays (problem-solving and SIS essays) play an important role in distinguishing among qualified students.
 - *Assess logical and deductive reasoning and/or algebraic reasoning to inform the process rather than as a barrier for admissions.* Regulation 3355 requires admissions to recognize exceptional quantitative skills. Test data used contextually may identify gifted students with less opportunity and students with extreme knowledge gaps despite high grades.
 - *Measure the impact of removing the entrance exam and application fee, to inform future decisions.* Multiple simultaneous changes make it impossible to determine the impact of each change. Ask teachers who know TJ students and are familiar with the high ceiling at TJ to establish institutional goals for excellence.



Fairfax County Association for the Gifted

- *Use geographic contextual information to evaluate students for admission, while addressing regional differences across the county.* Participation in accelerated mathematics varies across the county. Exceptional academic achievement or aptitude may be identified relative to a student's local peer group, such as other students in his or her middle school.
- *Continue to address the needs of unusually advanced students.* Students taking advanced coursework flourish at TJ and populate a wide array of post-AP courses that meet their instructional needs.
- *If a regional or school-based admissions process is implemented, allocate a minimum number of seats per school, and allow the remaining seats to be "at-large" positions.* Regional diversity can be addressed through an allocation of a minimum number of seats for students zoned for each base school, while at-large seats address the needs of gifted and advanced students across the county.
- *Address diversity through outreach, transportation, elementary and middle school achievement, and TJ culture. Compared to students who qualify to apply under the proposed "merit" criteria, White and Hispanic – but not Black – students are underrepresented in their applications to TJ. In addition, Black and Hispanic students are underrepresented in the pool of students who meet merit criteria.*

Increased diversity and academic excellence can be achieved through coordinated and focused efforts. They will not happen through a lottery, or without careful consideration of how the process itself determines the outcome. We believe the data tell a compelling story.



Fairfax County Association for the Gifted

The Case Against the Proposed FCPS Lottery

A lottery inevitably oversamples from the great middle on every metric. The proposed lottery will not maintain the academic excellence that created TJ's national reputation. It also may fail to obtain the desired diversity.

TJHSST admits fewer than 2.5% of FCPS residents in 8th grade, but almost 45% of all FCPS 8th graders are eligible for the proposed lottery. A lottery among a large segment of students ensures that TJ will no longer serve mostly gifted students with exceptional quantitative skills, contrary to the school's mandate.

Currently, under 5% of TJ 9th grade students take Algebra I in 8th grade, while about one third of TJ's current students took Algebra II/Trig or higher math in eighth grade (see *Figure 1*). Advanced math students are populating many post-AP courses in math and physics.

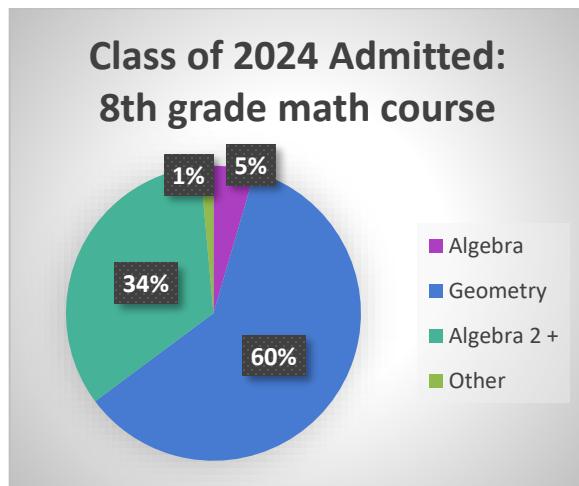


Figure 1. Math background for Class of 2024 admitted students at TJHSST

Students who take geometry in 9th grade will take AP Calculus AB or BC as seniors. They cannot take AP Physics C as juniors and might struggle with the required TJ honors physics class in 11th grade. They would not take post-AP math or post-AP physics classes and would have fewer total elective slots due to the need to take calculus as seniors.

A lottery will result in admissions reflecting the applicant pool (*Figure 2*). If outreach is unsuccessful and the Class of 2025 applicants to TJ are substantially similar to the Class of 2024 applicant pool (*Left Panel*), almost 1/3 of students at TJHSST will have taken Algebra I in 8th grade. Among applicants for Class of 2024 meeting the "merit criteria," 32% took Algebra I in 8th grade. If outreach is successful and the Class of 2025 applicant pool is similar to the current "merit criteria" pool (*Right Panel*), a lottery will result in

more than 2/3 of students at TJHSST having taken Algebra I in 8th grade. Among students meeting the "merit criteria," 72% are taking Algebra I as 8th graders. In contrast, 2.8% of students eligible to apply under the "merit pool" are taking Algebra II/Trig or higher math.

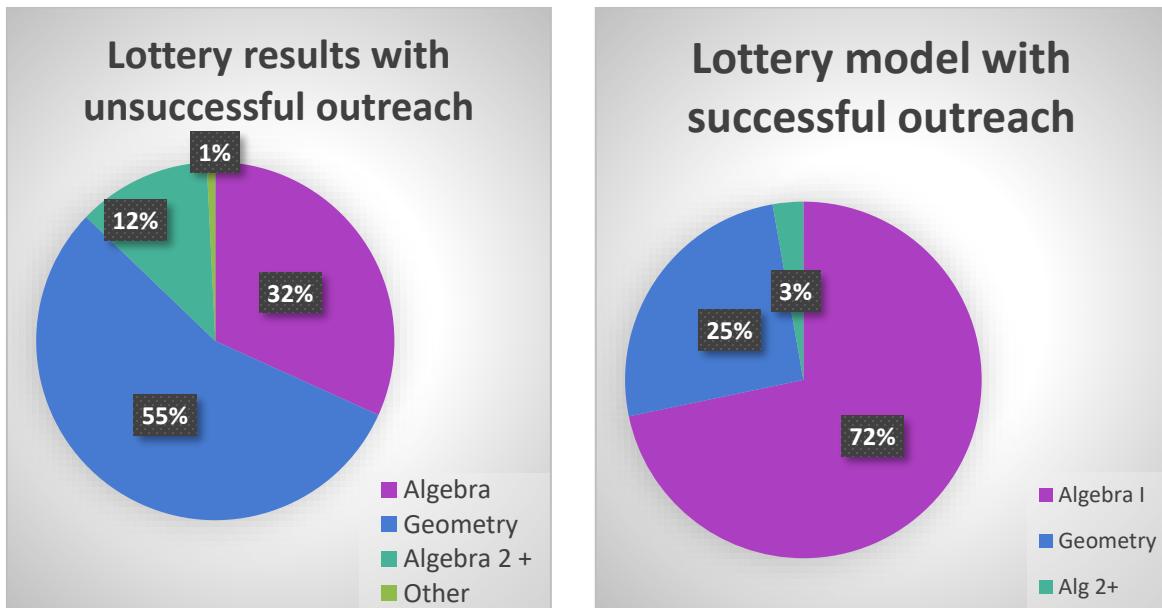


Figure 2. A model for 8th grade math background for Class of 2025 admissions assuming unsuccessful outreach [Left Panel] and successful outreach [Right Panel]. The model projects 32% of Class of 2025 students at TJHSST will have taken Algebra I in 8th grade if outreach is unsuccessful (applicants are substantially similar to Class of 2024). The model projects 72% of Class of 2025 students at TJHSST will have taken Algebra I in 8th grade if outreach is successful (applicants are substantially similar to current students meeting "merit criteria").

There are currently 175 students taking Algebra II or Higher in FCPS schools. Under the "merit lottery" with successful outreach, about 10-11 of these exceptionally advanced students would be admitted, which is about six percent. Almost 95% of these students would not have access to the unusually advanced and rigorous TJ STEM courses and co-curricular academic teams. Similar figures are likely for students for other jurisdictions and from private/home schools.¹

Under a lottery with successful outreach, fewer than 3% of admitted students will have taken Algebra II or higher math, significantly impacting the availability of advanced courses in math and physics in 2-3 years. The concurrent reduction in elective opportunities for students as a whole will result in reductions in electives in other subjects as well. FCAG can provide, upon request, additional information about these impacts on TJ's master schedule.

¹ FCAG received data on the students meeting "merit criteria" for FCPS students only.



Fairfax County Association for the Gifted

Who applies to TJHSST?

The racial composition of recent FCPS applicants to TJ has consistently differed from the racial composition of students who are eligible to apply to TJ under the "merit lottery" proposal: (1) eligible White students were much less likely and eligible Hispanic students were somewhat less likely to apply to TJ; and (2) eligible Asian students were more likely to apply to TJ. See *Table 1*.

Table 1. Racial demographics of applicants in Classes of 2023 and 2024, compared to eligible FCPS under "merit lottery"

	<i>Class of 2025 FCPS Students Meeting "Merit Criteria"</i>	<i>% of Eligible Pool</i>	<i>Class of 2024 Applicants</i>	<i>Class of 2024 % of Applications</i>	<i>Class of 2023 Applicants</i>	<i>Class of 2023 % of Applications</i>
Asian	1821	28.8%	1423	56%	1488	53.7%
Black	422	6.7%	160	6.3%	193	7%
Hispanic	788	12.5%	208	8.2%	230	8.3%
White	2841	45%	595	23.4%	692	25%
Multi-Racial/ Other	444	7%	153	6%	163	5.9%
Total	6,316		2539		2766	

Notably, Black students have applied to TJ in similar proportions to their overall representation in the pool of students who could apply under the proposed "merit lottery."

Among students who meet merit criteria, applicant levels are different by race. *Table 2* indicates the estimated proportion of students of each race meeting the "merit criteria" who actually applied in 2024. Eligible Asian students were far more likely than eligible White, Hispanic, Black, Multi-Racial or Black applicants to apply to TJ last year. Overall, 21% of the population that would be eligible to apply under the "merit lottery" typically applied to TJHSST, with Asians being twice as likely to apply as any other group for Class of 2024, and more than twice as likely any other race for Class of 2023.²

² In the Class of 2024, 89.5% of applicants were public school students, 86.5% of all applicants met the merit criteria, and 67.8% of applicants to TJ were Fairfax residents. Our model assumes that FCPS applicants meeting merit criteria were similar demographically to all applicants, and considered the proportional number from the total who applied, to estimate the proportion of students meeting merit criteria in the Class of 2025 who are likely to apply. For example, 1423 Asian students applied to TJ in the 2020 Winter Round, and we estimated that $1423 \times .895 \sim 1,274$ Asian students were public school students. Of these, we estimated that $1,274 \times .678 \sim 864$ applicants were FCPS students, and $864 \times .865 \sim 747$ of them met the merit criteria with a GPA of 3.5 or higher. Under the further assumption that the students meeting merit criteria were similar in 2019 as in 2020, we consider these students as a proportion of the 1,821 Asian students who meet the merit criteria for Class of 2025, constituting 41% of all merit-criteria meeting students in FCPS. We carry out a similar calculation for each racial category.



Fairfax County Association for the Gifted

Table 2. Proportion of applicants by race.

	<i>Class of 2025 FCPS Students Meeting "Merit Criteria"</i>	<i>Class of 2024 Applicants</i>	<i>Class of 2024 Estimated Public School Applicants</i>	<i>Class of 2024 Estimated FCPS Applicants</i>	<i>Class of 2024 Estimated FCPS Applicants Meeting "Merit Criteria"</i>	<i>Estimated %Applied Among of Class of 2024 Students Eligible</i>
Asian	1821	1423	1274	864	747	41%
Black	422	160	143	97	84	20%
Hispanic	788	208	186	126	109	14%
White	2841	595	533	361	313	11%
Multi- Racial/ Other	444	153	137	93	80	18%
<i>Total</i>	<i>6,316</i>	<i>2539</i>	<i>2272</i>	<i>1541</i>	<i>1334</i>	<i>21%</i>

The racial mix of TJ applicants under the proposed system will be affected by outreach efforts and by the elimination of the application fee and initial tests. However, the net impact of these three factors cannot be accurately predicted. For example, outreach to Black and Hispanic students may be countered by higher application rates by White students who qualify for the lottery.

Nobody knows whether different application rates among lottery-eligible students result from a lack of STEM interest among specific groups of students, failure by students/families to see TJ as good fit, or practical considerations like having siblings at a base school. Anecdotally, reasons are not restricted to perceived difficulty in gaining admission but also include the desire to avoid an intense academic environment, transportation challenges, and concerns about making new friends or leaving old ones.

Two Key Differences Among Eligible Applicants in Five FCPS Regions

The five FCPS regions differ in the percentage of eligible applicants by race and the percentage of eligible applicants taking different levels of math courses in 8th grade.

The racial differences within the "merit criteria" pool are related to the racial composition of all students in each FCPS region. For example, 15% of Region 3 eligible applicants and 3% of Region 1 lottery-eligible applicants are Black. The percentage of Black students in Region 3 schools also is higher than in Region 1 schools overall.



Fairfax County Association for the Gifted

Table 3. Lottery-Eligible Black Students by FCPS Region

	<i>Number of Eligible Black Students</i>	<i>Number of Eligible Students of All Races</i>	<i>Proportion of Eligible Black Students</i>
<i>Region 1</i>	42	1391	3%
<i>Region 2</i>	82	1214	6.8%
<i>Region 3</i>	128	850	15%
<i>Region 4</i>	111	1432	7.8%
<i>Region 5</i>	59	1429	4%

Table 4 shows that the percentage of eligible applicants taking each level of math course also varies substantially by FCPS Region. For example, among the 175 FCPS 8th graders with a 3.5 GPA currently taking Algebra II or higher, 76 students have a base school in Region 1, while one (1) student has a base school in Region 3.

Table 4. Distribution of 8th grade math course among students meeting merit criteria in each region

	<i>Algebra 1</i>	<i>Geometry</i>	<i>Algebra 2/Trig or Higher</i>
<i>Region 1</i>	905	410	76
<i>Region 2</i>	841	344	29
<i>Region 3</i>	687	162	1
<i>Region 4</i>	1087	319	26
<i>Region 5</i>	1010	376	43

FCPS should explore math acceleration variations as a pipeline issue. Why do few Region 3 students take Algebra 1 in 7th grade? Why do so many Region 1 students take Algebra I in 6th grade? Are students in some FCPS Regions more likely to take a math course in summer school? Are individual requests for students for math acceleration more likely to be granted in some regions than others?

Some disparities reflect parental education and other factors FCPS cannot control. However, FCPS can seek to mitigate these factors by offering gifted elementary school students in every FCPS region access to the most challenging and rigorous math instruction they are able and willing to handle. This is not an AAP issue but rather an issue of the availability of advanced math beginning at 3rd grade being implemented with fidelity county-wide, along with the means to foster advanced math that exceeds the norm of the AAP curriculum. That should include individualized math instruction during the school day



Fairfax County Association for the Gifted

and STEM-based co-curricular activities, even if that requires an elementary school to offer one-on-one instruction to exceptional math students.

Student Demographic: Math Background

In recent years, TJ has had a growing number of students who are high achieving and very accelerated in mathematics. TJ has also had varying numbers of students who struggled with TJ's math classes, even if they had an A in their middle school Algebra 1 and Geometry classes. TJ's math program is substantially accelerated, deeper, and more demanding than similar coursework across the county.

Over the last three years, about one third of admitted students took Algebra 2/Trig or higher in 8th grade, almost two-thirds took Geometry, and fewer than 5% took Algebra 1 even though just over 1 in 3 of TJ applicants each year are enrolled in Algebra I in eighth grade (*Figure 3*).

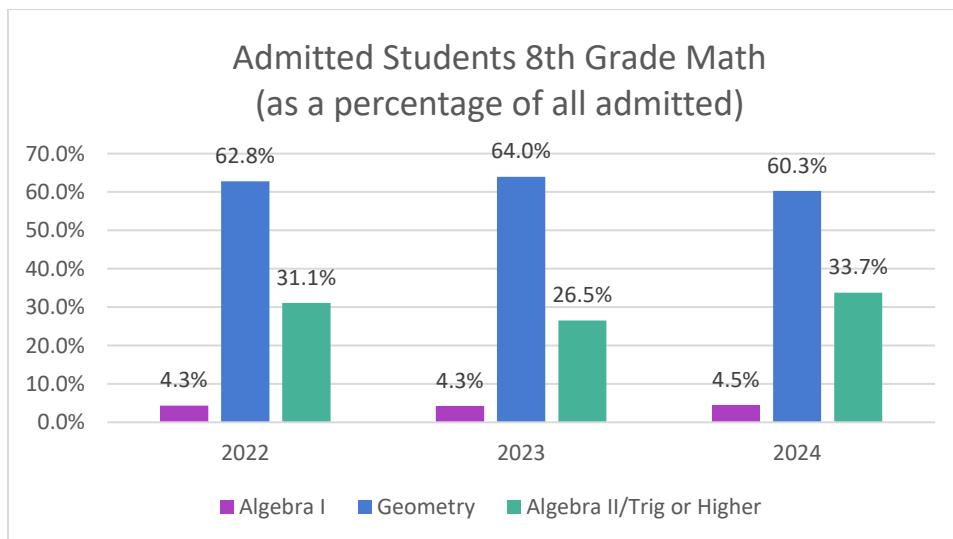


Figure 3. Distribution of math courses among admitted students to TJHSST in Class of 2022, 2023, and 2024.

The resulting student body allows TJ to offer third and fourth-year college-level math courses, such as Complex Analysis, Numerical Analysis, Differential Equations, and Probability Theory in addition to first and second-year college math courses like single variable calculus (AP Calculus BC), Multivariable Calculus and Matrix Algebra (or Linear Algebra). These mathematically advanced students also fill TJ's unique version of calculus-based AP Physics C and its post-AP physics elective courses.

Currently, about 72% of 8th grade students eligible to apply to TJ under the merit lottery proposal will have taken Algebra I as eighth graders. In theory, these students are already eligible to apply to TJ, but



Fairfax County Association for the Gifted

generally have not applied. With the elimination of the TJ admissions test and outreach efforts, many more of these Algebra 1 students are likely to apply. *Figure 4* compares math levels of recent applicants, to those of students meeting the “merit criteria”. With a lottery, TJ’s future student population would shift from having less than 5% of its students to over 70% of its students who took Algebra 1 in 8th grade. Even if outreach is completely unsuccessful and exactly the same mix of students apply this year, a lottery would result in 31.8% of students in Class of 2025 who took Algebra I as eighth graders (compare also *Figure 1* *Figure 2*).

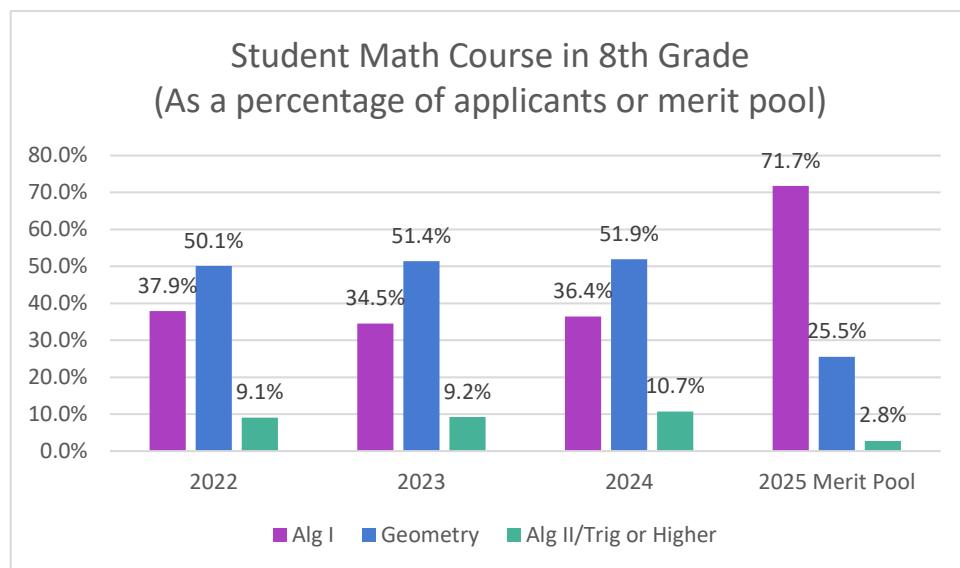


Figure 4. Comparison of applicant 8th grade math course for Class of 2022, 2023 and 2024 and eligible student population under Merit Lottery criteria (GPA 3.5 or above and Algebra I or higher in 8th grade).

Finally, raising the minimum GPA from 3.0 to 3.5 would not increase admitted students’ middle school GPAs. While it may sound like the GPA has been raised, the change in minimum GPA to apply will have very little impact on the applicant pool. Fewer than 15% of last year’s applicants had GPAs under 3.5, and only three (3) were admitted.

Choosing Appropriate Tests and Using Test Scores in Context

As a Governor’s school, TJHSST addresses the needs of gifted students. Under state law, the designation of “gifted” requires standardized exams as part of an assessment.

It is practically impossible for the TJ Admissions Office to distinguish “good” from “exceptional” students without a standardized test. A lottery will admit average “good students” of every race, rather than finding

the strongest Asian, Black, White, Hispanic and Mixed Race/Other students. A holistic admissions process that only uses grades, math level, and essays will find better students than the proposed “merit lottery,” but is unlikely to accurately identify exceptional students or students who are unlikely to succeed at TJ.

Selecting the right test or tests requires careful analysis of their current – not just their past – validity. Although the Quant-Q appears to have been a valid and useful test in 2018-19, that is no longer true, for reasons discussed in Appendix A. Accordingly, we strongly discourage the further use of the Quant-Q.

In previous years, semifinalists had to maintain their GPA into the first quarter of 8th grade, while meeting specific percentiles on the science, math, and reading tests. Students had to receive a minimum score on the Quant-Q, ACT Aspire Reading, and ACT Aspire Science exams, as well as have one higher score: either 75th percentile in math or 90th percentile in science.

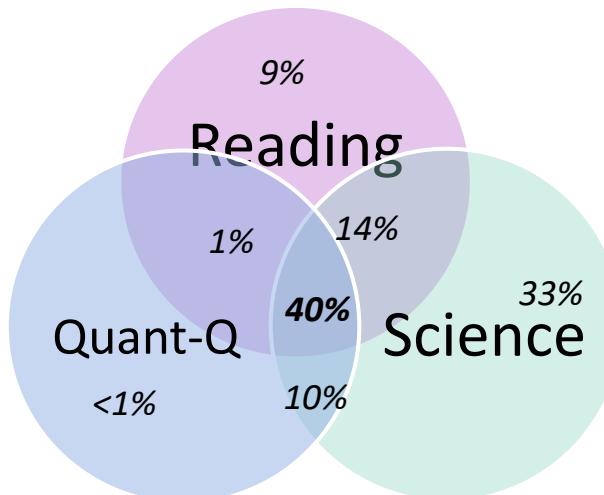


Figure 5. Minimal passing rates for Reading (75th percentile), Science (75th percentile), and Quant-Q (50th percentile) among students taking the entrance TJ exam. Intersections not drawn to scale.

Of the three admissions tests used in the past three years, the ACT Reading test and Quant-Q have had more impact than the ACT Science test in determining which applicants become semifinalists. All semifinalists achieved a score of at least 75th percentile on Reading, at least 75th percentile on Science, and at least 50th percentile on the Quant-Q exam. *Figure 5* shows a Venn diagram with the percentage of students receiving minimal passing scores, aggregated for Classes 2023-2024. Approximately 40% of applicants achieved minimum passing scores on all three entrance exams. Approximately 2.6% of applicants received minimal passing scores on all three exams, but were not semifinalists.



Fairfax County Association for the Gifted

Unlike the Quant Q, the ACT exams do not purport to measure cognitive ability. The purpose of the ACT Reading exam is to measure “reading comprehension” and the ACT Science exam “measures the interpretation, analysis, evaluation, reasoning, and problem-solving skills required in the natural sciences.” The ACT has readily available practice resources for these exams. Studying effectively for these exams likely requires acquiring a specific skill set, which would itself validate the tests’ results.

We recognize that, with the pandemic and the urgency of 2021 Winter Round admissions, this year may be different than subsequent years. We also recognize the desire to minimize testing, and therefore recommend only a test in general cognitive reasoning or in mathematics, at least for the current year.

Consistent with questions posed by school board members, FCAG also recommends that FCPS administer an opt-out math test to all seventh and eighth grade students, with an explicit invitation to high-scoring students to consider applying to TJ in 8th grade, and advice on academic courses and co-curricular activities that the student may want to consider if they are interested in attending TJ. This invitation should send a message that a student really belongs at TJ and should consider applying.

The best test would be a teacher-created cognitive skills test. Vern Williams, a nationally-recognized math teacher who taught hundreds of TJ alumni, offered to work with other math teachers in creating such a test, which could require students to be creative and use algebraic and proportional reasoning in unexpected ways. Such a test would best target the specific mathematical reasoning expectations at TJ.

Alternatively, FCPS could use a commercially available test, such as the ACT Aspire Early High School Mathematics test. The results of this test should be considered contextually, in light of the fact that some students will not have seen certain math topics.

If FCPS uses the Quant-Q, it should compare each student’s Quant Q scores with their scores on other math tests. For example, FCPS could create a test with questions from old AMC 8, AMC 10, or other math competitions, which are unlikely to have been seen by current middle school students.

Teacher Letters of Recommendation

Whether or not FCPS uses an admissions test this year, it should require at least one teacher recommendation, preferably from a math or science teacher. These teachers have seen the students on a regular basis over time. They can comment directly on their students’ abilities to reason logically, methodically, and scientifically. They also can provide additional context, which in turn may help the TJ Admissions Office evaluate whether any given student is likely to thrive at TJ.



Fairfax County Association for the Gifted

The rationale that has been given for eliminating teacher recommendations is based on the AAP Equity Study. However, this study did not recommend eliminating teacher input but instead identified that the current measure of teacher input, the Gifted Behaviors Rating Scale (GBRS), was overweighted in the AAP selection process relative to other criteria. In fact, the report points out that the current prohibition against individual FCPS teachers writing a recommendation letter for a student is problematic, stating "This prohibition again disadvantages students for whom the classroom teacher is a primary advocate. The teacher of a student whose primary or sole opportunity to demonstrate potential is the K-12 classroom is prohibited from including additional materials (e.g., a letter of recommendation) even though that professional is in the best position to observe the student's potential." (Plucker, et al, p 30)

As Dr. Plucker's team Indicates, recommendation letters serve a valuable source of identifying students who deserve a further look. Teacher recommendations are an important part of a holistic review process.

How to Aim for Diversity AND Preserve Excellence

TJ should admit highly gifted students who love STEM. FCAG also recognizes that giftedness can be under-identified and highly gifted students can be under-served in some communities. The challenge is to identify and maximize the potential of highly gifted students in all communities, to adapt the TJ admissions process to achieve more diversity while maintaining TJ's excellence, and to develop "bridge" and other programs to ensure that those goals do not conflict.

A well-designed holistic TJ admissions process can consider test scores, grades, and other material information in the context of an applicant's background. The proposed alternatives that eliminate all admissions tests and/or use lotteries favor **average good students over students with demonstrably exceptional cognitive abilities, independent of race or other diversity considerations. Inevitably, those approaches will unnecessarily sacrifice excellence.**

Claiming that a lottery among students in the top 45% of students will not compromise excellence is disingenuous. By its nature, a lottery chooses the "average" student among those who apply. Diversity though a lottery will result in the average Asian student, the average White Students, the average Black student, the average student on free and reduced meals, and the average student with disability, among the pool of applicants. Instead, we need to find and properly educate the best students in all subgroups, so they all are fully capable of succeeding at TJ.

For at least two decades, FCPS has initiated and expanded programs that were touted as ways to make TJ's students more racially and geographically diverse. FCPS needs to take a hard look at why these programs have not achieved that goal.



Fairfax County Association for the Gifted

FCAG believes FCPS could do a better job of identifying young students (elementary school-aged) who have the potential to succeed at TJ in regions that send historically few students to TJ. FCAG also is convinced that FCPS could do a much better job of nurturing the potential in young students. For example, FCPS could:

- Revise FCPS regulations to require principals to prioritize the effective delivery of mathematics and science instruction, even if that requires more ability grouping and the use of different curricular materials.
- Revise HR policies and regulations to encourage elementary and middle school principals to hire math instructors for these students who have a strong grasp of high school math topics, even if that requires hiring people part-time or with provisional licenses.
- Organize pyramid-wide elementary school math teams for these students, pay math instructors on these teams extra-duty salary supplemental payments (such as are used for high school football coaches) and give the math team instructors professional and other incentives to maximize the performance of their math teams.
- Stembassadors from TJ's current student body could focus on outreach into underrepresented areas, providing support to STEM/STEAM Nights or science fairs, supporting after school programs, or having a day when TJ students visit classrooms to work with students.

FCPS also can make it easier for middle school students from under-represented areas or subgroups to succeed at TJ. FCPS could:

- Provide the most gifted students in every middle school with math instruction designed to ensure that they will be well-prepared for TJ's required math and science classes. To ensure that teachers in every middle school understand what students need to learn for this purpose, FCPS should require every middle school to send a handful of its math teachers every year to observe TJ's 9th and 10th grade math, plus its 11th grade honors physics classes, and also schedule an annual professional development session at each middle school with TJ math faculty.
- Connect middle school teachers from underrepresented schools with professional opportunities to understand better what students need to be successful at TJ. FCPS could require that every middle school send a few math teachers to observe TJ's 9th and 10th grade math classes.
- Solicit feedback from teachers, parents, and schools in underrepresented communities about how to make impactful changes at the middle schools, or at TJ itself.
- Develop a summer program for intense learning between seventh and eighth grade, only available to students who are interested in TJ, have met other criteria, and have specific circumstances that may risk their admissions based on historical admissions patterns.



Fairfax County Association for the Gifted

- Provide increased commitment to transportation or other limiting factors for students who live further away from TJ, at least within Fairfax County, and especially toward regions in which parents may have conflicts with driving their children to bus depots.
- Create a “bridge” program with a focus on math and study skills for newly-admitted TJ students whose math test scores place them in the bottom quintile of the incoming TJ class. Similarly, FCPS should create a program for students who could succeed at TJ with another year of intensive high-level math instruction, offer them an opportunity to take more challenging math and science classes in 9th grade, and encourage them to apply to enter TJ in 10th grade as “froshmores.”
- Pair TJ students as mentors to Young Scholar students or interested students at underrepresented schools, serve as coaches for math or science teams, or facilitate field trips to TJHSST.

FCPS should publicly acknowledge that TJ’s honors and AP classes incorporate more content and generally are more intellectually challenging than the “same” classes in base high schools.³ This level of academic achievement is a measure of excellence. Let’s be sure that all students who apply to TJ are ready for this rigor, rather than changing the school to meet the needs of under-prepared students.

Authentic and successful outreach requires all TJ students to have the skills needed to thrive at TJ. Encouraging students to apply to TJ and admitting them without those skills is counter-productive, especially if that admissions approach increases student attrition from TJ, and entire areas of the county begin to feel like TJ is simply not a good option. It is also emotionally and academically damaging to the individual students themselves. While FCPS has suggested that other strong schools manage to maintain excellence using a model lottery, we show in Appendix B that these schools weed out students by excessive attrition and fail to reflect the demographics of their communities.

³ Freshmen biology at TJ compares to AP Biology elsewhere, and the one-semester freshman Statistics course covers 2/3 the material of AP statistics. Math 3 at TJ (taken by most freshmen) covers in one semester most of the material in Algebra II Honors across the county, a full year course.

Appendix A. Test Score Trends Among Top Scoring TJ Applicants

The entrance exams to TJ changed in 2018-19, when students applied for admissions to the TJ Class of 2022. *Figure 7* shows extreme growth in the percentage of applicants scoring in the 90th percentile on the Quant-Q, with modest decreases on the other two tests, which raises doubt about the Quant Q's validity.

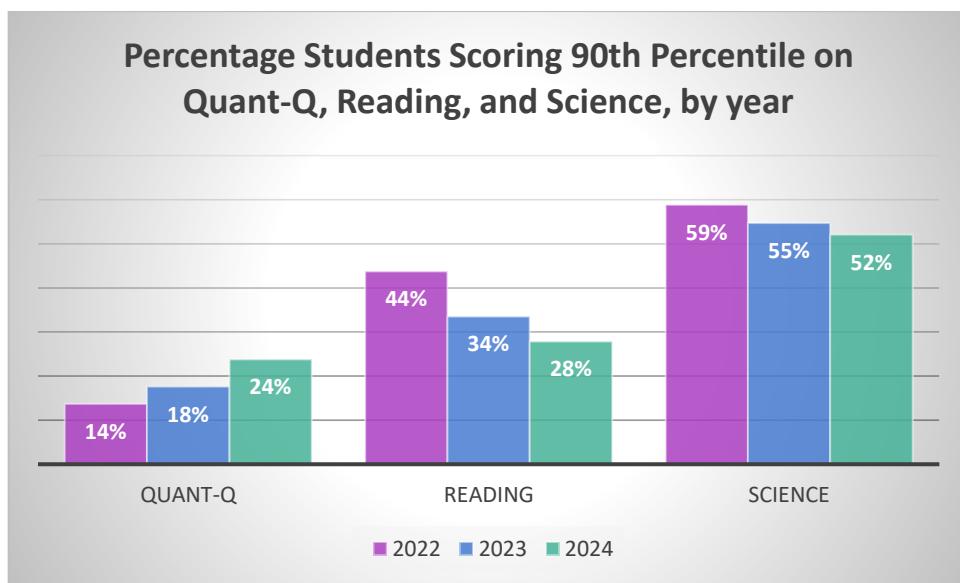


Figure 6. Percentage of TJ applicants scoring in 90th percentile or higher

Figure 7. High scorers on the Quant-Q, Reading and Science by percentage of applicants each year.

These differences persist at the extremes. In the Class of 2022, 3 percent of students scored in the 99th percentile on the Quant-Q. Two years later, the percentage of students with 99%ile scores on the Quant Q had more than tripled, while the percentage of applicants with 99%ile scores in Reading and Science saw modest declines.

Given this data, FCAG recommends that FCPS cease using the Quant Q as a TJ admissions test. According to Insight Assessment, the Quant-Q measures cognitive ability. However, the Quant Q results are invalid if test-takers have had direct exposure to Quant-Q questions or very similar questions, as the critical reasoning skills intended to be assessed have been explicitly taught. Anecdotal evidence suggests that Insight Assessment is reusing questions or using similar questions, and that some students may have seen these questions before they took the TJ entrance exam. Unlike three years ago, there are now preparatory books and programs available for sale, specifically targeting the Quant-Q exam.



Fairfax County Association for the Gifted

Appendix B. Attrition and Demographics of High Achieving Lottery and Open-Enrollment Schools

FCPS released a list of high performing public and public charter schools that conduct admissions through open-enrollment. An investigation of the top schools as designated by U.S. News and World Report indicates that these schools have high attrition rates, and do not reflect the demographics of their surrounding communities.

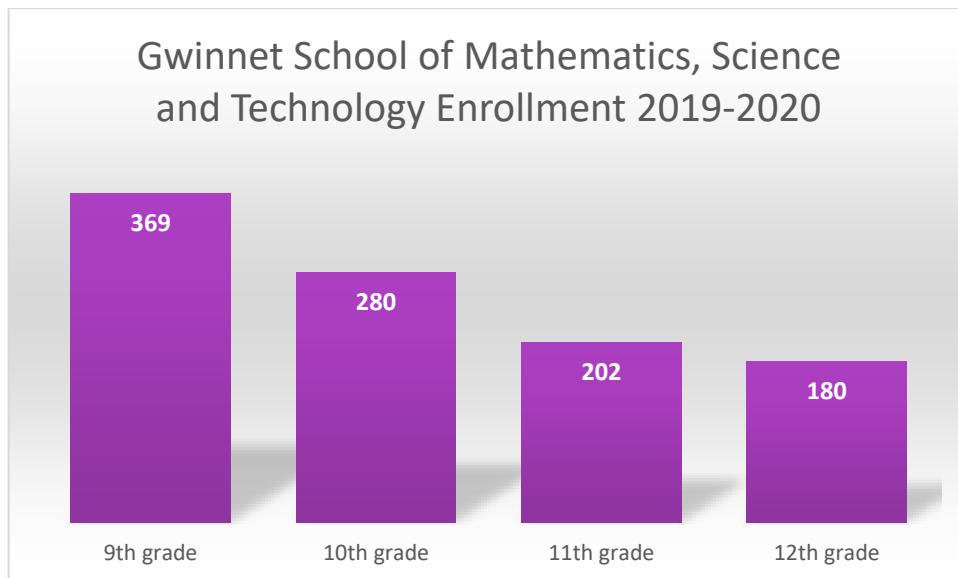


Figure 8. Gwinnett School of Mathematics, Science, and Technology enrollment

Gwinnet School (#12 USNWR) uses a lottery for admission. While it accepted over 350 students in 9th grade, its enrollment has fallen below 200 students by 12th grade, an attrition rate of more than 50% (data from U.S. News & World Report).

BASIS Chandler (#7 USNWR) uses a lottery/open-enrollment. Its student population does not reflect likely diversity goals, with 2% Black students, 4% Hispanic students, 77% Asian students, and 15% White students (data from U.S. News & World Report). See *Figure 9*.

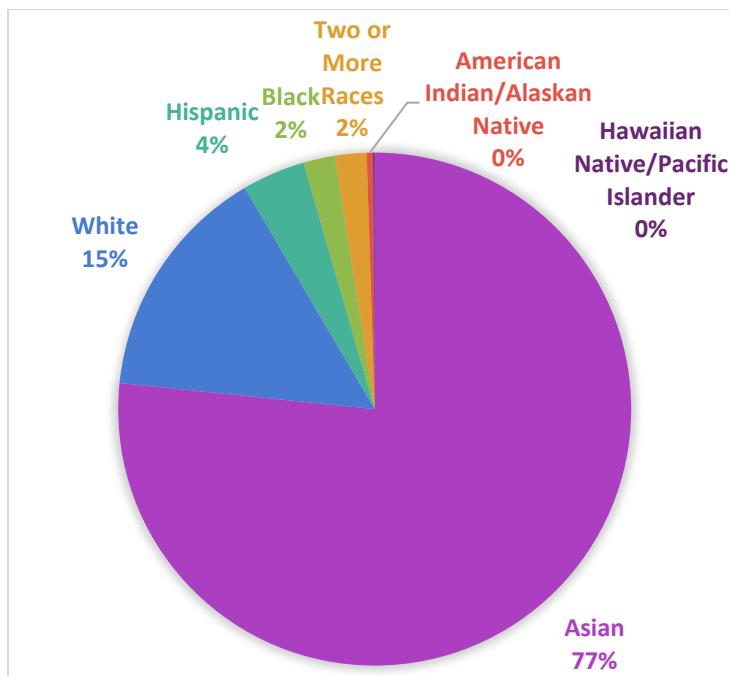


Figure 9. BASIS Chandler racial demographics

BASIS Tucson had a poor record with attrition (*Figure 10*) and enrollment figures suggest the attrition was mitigated by increased concurrent enrollment.

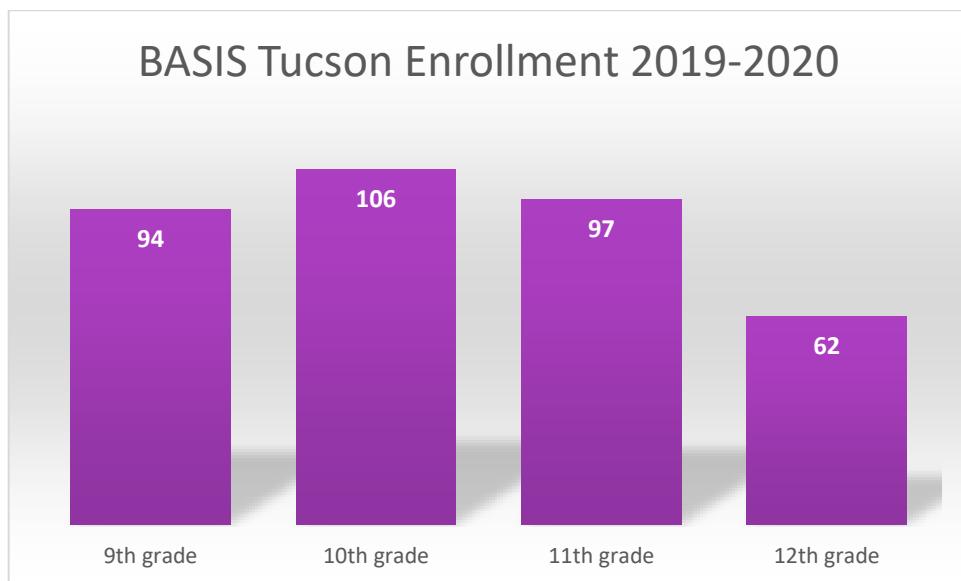


Figure 10. BASIS Tucson enrollment