

REPORT FROM STUDENT ASSESSMENT AND RESEARCH

OCTOBER 2015

Using CogAT[®] as a Gifted Screening Tool



2015 2nd Grade Students Meeting Criteria By Racial/Ethnic Group

- The CogAT[®] is administered to all 2nd grade students as a tool to screen for gifted students from under-represented populations. Plan B criteria is specifically geared towards LEP and FRL students.
- A greater percentage of Plan A students were previously identified as gifted (41%) than Plan B students (15%), indicating the CogAT[®] is serving its intended purpose.
- 788 students met criteria for either Plan A or Plan B; 643 of which were not already identified as gifted.

Using CogAT® to Predict Achievement & Detect Imbalances in Cognitive Development

- The CogAT[®] measures general reasoning skills which underlie student achievement. CogAT[®] scores and FCAT 2.0 scores are therefore correlated. Substantial deviations between the two scores can indicate an imbalance in cognitive development.
- Higher than expected FCAT 2.0 scores can indicate students are not learning to transfer information learned to different contexts. Lower than expected FCAT 2.0 scores can indicate a physical or learning disability, low motivation, or insufficient opportunities to learn.
- In 2013-14, between 3% and 6% of students had scores that were either substantially higher or lower than expected on the FCAT 2.0 in reading and math. These students may benefit from an investigation into the cause of the discrepancies.

Using CogAT® Scores to Differentiate Instruction

Scores from the CogAT[®] provide important information about the learning environment that students will thrive in. Each score falls broadly into one of the four categories in this figure. CogAT[®] scores for SY 2016 3rd grade students are posted in the DWH reports folder. Information packets were also sent to principals to share with teachers. More detailed instructional recommendations for each student by profile score can be found at:

http://www.riversidepublishing.com/prod ucts/group/cogat6/input.jsp



Instructional Recommendations by Developmental Group Level

THE SCHOOL BOARD OF BROWARD COUNTY, FLORIDA OFFICE OF THE CHIEF STRATEGY & OPERATIONS OFFICER

Maurice L. Woods Chief Strategy & Operations Officer

October 16, 2015

Signatures on File

To:All PrincipalsFROM:Maurice L. Woods
Chief Strategy & Operations OfficerVIA:Valerie S. Wanza, Ph.D., Designee

: Valerie S. Wanza, Ph.D., Designee School Performance & Accountability

 SUBJECT:
 The Cognitive Abilities Test (CogAT®): Screening for Giftedness, Predicting

 Achievement, and Informing Differentiated Instruction

The Cognitive Abilities Test (CogAT[®]) has been used as a universal screener to identify gifted students from under-represented populations in Broward County since 2011. In 2014-15, 643 second grade students who were not previously identified as gifted met the CogAT[®] score criteria to be further screened for gifted services eligibility. Of these, 84% (540) were from under-represented populations.

The CogAT[®] measures the level and pattern of cognitive development, providing data that can benefit all students. The exam measures general reasoning abilities which underpin academic achievement. CogAT[®] scores are therefore well-correlated with standardized test scores. Dramatic differences between CogAT[®] performance and standardized test performance can indicate a variety of issues including a physical or learning disability, a lack of motivation, insufficient opportunities to learn, or learning in a contextually-bound manner that does not transfer to other situations.

Understanding a child's current level of cognitive development can help teachers to differentiate instruction to meet the learning needs of the child. Children at different levels thrive in different classroom environments. On one end of the spectrum, children benefit from a high level of structure and explicit teaching of strategies with plenty of time to practice in multiple contexts. On the other end, students learn best in a discovery environment and are negatively impacted by direct instruction and repetition. Providing the proper learning environment for students helps them to develop both cognitively and academically. In order to facilitate the immediate use of this data to help inform instruction, CogAT[®] scores for current 3rd grade students are posted in the DWH reports folder.

Please direct any questions or comments concerning this report to Richard Baum, director, Student Assessment & Research, at 754-321-2500.

VSW/MLW/NB/RB/SLS:rs Attachments

cc: School Board Members Senior Leadership Team Directors, School Performance & Accountability The School Board of Broward County, Florida

Research Report

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Number 173 September 2015

The Cognitive Abilities Test[™] (CogAT[®]): Screening for Giftedness, Predicting Achievement, and Informing Differentiated Instruction

The Cognitive Abilities Test[™] (CogAT[®]) appraises the level and pattern of cognitive development, with an emphasis on general reasoning ability. General reasoning ability is closely related to success in all academic areas (Lohman & Hagen, 2003). In addition to serving as a screening tool for gifted students, the CogAT[®] is correlated with subsequent academic performance and thus can be useful in predicting achievement. The CogAT[®] also provides student-level information that is useful in devising a plan for effective instructional programs tailored to a student's specific needs (Lohman & Hagen, 2003). In Broward County Public Schools (BCPS), the test is used to screen for gifted students from under-represented populations. This report examines the three applications of the CogAT[®]; first as a gifted screening tool, next as a predictor of academic achievement, and finally as a tool for informing differentiated instruction.

About the CogAT®

The CogAT[®] is a psychometrically sound and valid instrument used to identify gifted students from all cultural and linguistic backgrounds (Lohman & Hagen, 2003). It was designed to measure general and specific reasoning abilities that enable individuals to learn new tasks and solve problems, especially in the absence of direct instruction.

In the CogAT[®], general reasoning abilities are operationally defined as abstract reasoning skills with special emphasis on inductive reasoning. These abilities are fundamental to acquiring, organizing, and storing knowledge in memory. Measures of general reasoning are correlated with academic success (0.4 to 0.8 depending on the population and particular reasoning ability) (Lohman & Hagen, 2003). Students use their reasoning abilities in a variety of school tasks such as understanding stories, inferring the meaning of an unfamiliar word, detecting patterns in information, and going beyond the information given to form principles. Reasoning is also used to apply mathematical concepts to solve problems (Lohman & Hagen, 2003).

Structure of Test

The CogAT[®] measures abilities in the domains of verbal, quantitative, and nonverbal reasoning. Students are given 60 minutes to complete each battery, resulting in a total test administration time of 3 hours. Batteries consist of 3 subtests, and all questions are multiple-choice with five response options (except for the first quantitative subtest which has three response options).

The **verbal battery** is designed to measure problem solving, verbal comprehension, and inductive reasoning. Inductive reasoning is reasoning from the specific to the general, and is used to draw conclusions about all members of a group after observing only a few (Goswami, 2011; Heit, 2008). A child who sees a black snake and concludes that all snakes are black is using inductive reasoning. Conclusions drawn from inductive reasoning aren't guaranteed to be correct, as in this example (Santrock, 2011). Inductive reasoning ability is a good predictor of academic achievement (Kinshuk & McKnab, 2006). Some specific research shows that the ability to infer the meaning of words from contexts in which they occur is an excellent indicator of the student's ability to learn from general experience (Lohman & Hagen, 2003).

The **quantitative battery** appraises deductive and inductive reasoning skills as well as flexibility and fluency in working with quantitative symbols and concepts. Deductive reasoning is reasoning from the general to the specific, such as learning about a general rule and then understanding how it applies to some situations but not others (Goswami, 2011; Johnson-Laird, 2008). Deductive reasoning is used to solve puzzles and riddles (Santrock, 2011). Computational fluency refers to having effective strategies for solving problems, and being able to demonstrate flexibility in choosing the most efficient option (Thornton, 1990; Isaacs & Carroll, 1999).

The **nonverbal battery** uses geometric shapes and figures that have little direct relationship to formal school instruction. Items require reasoning, not spatial visualization abilities. To be successful, students must have well-developed strategies for dealing with novel materials. They need to be flexible in using these strategies and accurate in implementing them. The nonverbal battery measures general inductive reasoning skills as well as flexibility and fluency in using and adapting cognitive strategies.

I. GIFTEDNESS

A gifted student is defined as "one who has superior intellectual development and is capable of high performance (Florida Department of State, 2015)."¹ **BCPS is committed to meeting the needs of gifted learners.** The District's goals include facilitating opportunities for students to become self-directed, independent learners who achieve at high levels commensurate with their ability and potential (see Appendix A for a complete list). To achieve this, gifted students are offered a differentiated curriculum that replaces, supplements, or modifies existing curriculum. The instructional program is intended to be flexible, consisting of advanced content and appropriately different teaching and learning strategies.

Students who are classified as gifted are given an Educational Plan which specifies goals and curriculum tailored to the individual child's needs. Some schools have special classes for gifted and high-achieving students, and others allocate part of the student's time to working with a gifted-endorsed teacher. Gifted-endorsed teachers are required to take five classes: Curriculum Development for the Gifted, Education of Special Populations, Guidance and Counseling for the Gifted, Nature and Needs of Students Who are Gifted, and Theory and Development of Creativity. These classes are all offered through Broward Virtual University.

Gifted students have a different style of learning, and benefit from both more challenging coursework and a curriculum that tends to be based on independent and discovery learning. Gifted children can easily become bored in a typical classroom, which can lead to both behavioral and academic problems (Baum, Renzulli, & Herbert, 1995). Under-challenging students also leads to a lack of persistence; gifted students come to expect that all work will be easy and when faced with a difficult problem they tend to get frustrated and give up (Lohman & Hagen, 2003). Identification of gifted students is, therefore, critical in order to optimize outcomes for these students.

The Florida Department of Education (FDOE) mandates that all districts have a plan in place to identify gifted students from under-represented student populations. Broward County Public Schools began administering the CogAT[®] for this purpose in 2011. That year, 10,523 second grade and 22,697 third grade students took the exam. Since then the CogAT[®] has been administered to all second grade students who attended school the day the test was administered and who did not have a parental request to skip the assessment². Prior to 2011, the Naglieri Nonverbal Ability Test[®] (NNAT[®]) was used. BCPS switched to the CogAT[®] because the NNAT[®] over-identified students for screening who did not end up meeting the intelligence quotient (IQ) requirements to be considered for gifted services.

¹ Florida Administration Code, Rule 6A-6.03019.

² Notices are sent home to parents prior to the administration of the CogAT[®] giving parents the opportunity to have their children opt-out of testing.

Students who take the CogAT[®] can meet the criteria for gifted screening in two ways³. First, Plan A, includes students with a composite score for the three batteries (verbal, quantitative, and nonverbal) of the CogAT[®] in the 97th percentile or higher⁴. The second, Plan B, is geared towards under-represented populations. Students with limited English proficiency (LEP) and students who receive free or reduced-price lunch (FRL) and score in the 81st percentile or higher on a composite of two of the batteries (quantitative and nonverbal) comprise the Plan B students referred for further testing. The verbal battery is not included for Plan B student identification since success on the verbal battery requires general reading and language skills which LEP and FRL students may not have had the opportunity to develop. Disparities in the development of language processing between low socioeconomic status individuals and the typical population are consistently found. Children growing up in poverty lag behind their peers in the areas of vocabulary, phonological awareness, and syntax (Perkins, Finegood, & Swain, 2013). To compensate, Plan B puts a stronger emphasis on the nonverbal battery since it does not require any outside knowledge, and uses figures and shapes in lieu of words and numbers. Nonverbal battery items contain within them all of the information needed, giving students the opportunity to demonstrate their reasoning skills independent of acquired academic knowledge. Students who score significantly higher on the nonverbal battery than the verbal and quantitative batteries demonstrate the ability to acquire information despite not having had the same opportunities as their peers.

After screening successfully on the CogAT[®], an individually administered standardized test of intelligence such as the Differential Ability Scales[®]-II (DAS[®]-II) or the Wechsler Intelligence Scale for Children[®] (WISC[®]-IV) is completed by a school psychologist. Students whose IQ score is 130 (two standard deviations above the mean of 100) or higher, meet Plan A criteria. Students who score 115 (one standard deviation above the mean of 100) or higher and are either FRL or LEP meet Plan B criteria. It takes the school psychologist approximately one hour to administer the intelligence test. Thus, over-identifying students for referral creates a problem in that schools are not able to screen students quickly enough to ensure proper placement in third grade.

Students whose IQ scores meet Plan A criteria become eligible for gifted programming if they demonstrate the need for a special program and have the majority of characteristics of gifted students (learning, motivation, leadership, creativity, and adaptability) according to the Gifted Indicators Checklist (see Appendix B for a copy of the checklist). For Plan B, information from the Gifted Indicators Checklist is compiled in a Gifted Eligibility Matrix to determine eligibility. The Gifted Eligibility Matrix is included in Appendix C.

³ Some students are identified for gifted screening prior to taking the CogAT[®]. These students are typically referred for screening by their kindergarten or first grade teacher. Parents can also bring their children to an independent psychologist for an evaluation which BCPS will use to satisfy the IQ component of eligibility.

⁴ Percentile scores are determined by a 2005 standardization sample provided by Riverside Publishing, the publisher of the CogAT[®].

METHOD

For this analysis, scores from students enrolled in second grade during the 2014-15 school year were used since this was the most recent administration of the CogAT[®]. The CogAT[®] form 6, Level A was administered District-wide to second grade students in March 2015. Level A is geared towards third graders. However, BCPS students take the exam at the end of second grade. Testing at a higher level provides a finer discrimination among the top scoring students, which is ideal for the purposes of screening for gifted students. All traditional schools participated in the exam, as well as a small number of charter schools. All schools who participated are included in this analysis. Standard Age Scores (SAS) were used to calculate means by student sub-populations. The SAS are normalized standard scale scores that compare students within a one-month grouping to other same-age students from a national sample who took the CogAT[®] in 2005. The SAS have a mean of 100 and standard deviation of 16. However, local results for 2015 had lower means (presented below). The age percentile rank scores used to determine inclusion in Plan A and Plan B are also based on this normative sample. Students scoring in the 50th percentile are considered average.

For each battery of the CogAT[®], a graph illustrating the overall distribution of scores is presented as well as a graph showing the mean scores for students overall and by sub-population (gender, race/ethnicity, Students with Disabilities (SWD), English Language Learners, and Gifted. English Language Learners are presented in two ways, LEP consists of students who are enrolled in special classes (coded as LY in the data warehouse) and LEP2 consists of students who exited the program but have not yet completed a two-year follow-up (coded as LF in the data warehouse).

RESULTS

In school year 2014-15, 17,303 second grade students took the CogAT[®], but not every student took every battery. Means for the three batteries (Figures 1 – 6) are somewhat lower for this cohort in Broward County than for the 2005 national sample to which it is compared. Gaps between the means were highest for verbal reasoning (5.9 percentage points) and lowest for nonverbal reasoning (1.6 percentage points). This is consistent with the fact that BCPS has a larger percentage of FRL⁵ and LEP⁶ students than are found nationally since nonverbal reasoning is the ability which is least impacted by an impoverished or non-English speaking early environment.

⁵ The percent of FRL students nationally in 2005-06 was 42% compared to 64.9% of BCPS students taking the CogAT[®] in 2014-15 (National Center for Education Statistics, 2015a).

⁶ The percent of LEP students nationally in 2003-04 was 8.7% and in 2012-13 was 9.2% compared to 20.7% of BCPS students taking the CogAT[®] in 2014-15 (National Center for Education Statistics, 2015b).

Verbal Reasoning

Scores for the 15,886 students who took the verbal battery were distributed normally around the mean of 94.1 with a standard deviation of 14.0 (Figure 1). Mean scores by student sub-populations are presented in Figure 2.



Figure 1. Distribution of SAS for the verbal battery for 2^{nd} grade students taking the CogAT[®] in Spring 2015. N = 15,886, *Mean* = 94.1, *SD* = 14.



Figure 2. Means and Standard Deviations for SAS on the verbal battery for 2^{nd} grade students in Spring 2015, by student sub-population. Blue line indicates national mean score of 100. Overall N = 15,886; Male n = 7,870; Female n = 8,016; Black n = 5,805; Hispanic n = 5,229; White n = 3,760; Asian n = 656; FRL n = 10,412; LEP n = 3,274; LEP2 n = 4,031; SWD n = 1,632; Gifted n = 513.

Quantitative Reasoning

Scores for the 15,272 students who took the quantitative battery were distributed normally around the mean of 94.9 with a standard deviation of 12.0 (Figure 3). Mean scores by student sub-population are presented in Figure 4.



Quantitative Score Distribution

Figure 3. Distribution of SAS for the quantitative battery for 2^{nd} grade students in Spring 2015. N = 15,272, *Mean* = 94.9, *SD* = 12.



Quantitative Mean Scores by Sub-Population

Figure 4. Means and Standard Deviations for SAS on the quantitative battery for 2^{nd} grade students in Spring 2015, by student sub-population. Blue line indicates national mean score of 100. Overall N = 15,272; Male n = 7,680; Female n = 7,592; Black n = 5,599; Hispanic n = 5,001; White n = 3,633; Asian n = 628; FRL n = 9,987; LEP n = 3,143; LEP2 n = 3,874; SWD n = 1,644; Gifted n = 501.

Nonverbal Reasoning

Scores for the 16,531 students who took the nonverbal reasoning battery were distributed normally around the mean of 98.4 with a standard deviation of 14.0 (Figure 5). Mean scores by student sub-populations are presented in Figure 6.



Nonverbal Standard Age Score (SAS)

Figure 5. Distribution of SAS for the nonverbal battery for 2^{nd} grade students in Spring 2015. N = 16,531 *Mean* = 98.4, *SD* = 14.



Nonverbal Mean Standard Age Scores (SAS) by Student Sub-Population

Figure 6. Means and Standard Deviations for SAS on the nonverbal battery for 2^{nd} grade students in spring 2015, by student sub-populations. Blue line indicates national mean score of 100. Overall N = 16,531; Male n = 8,278; Female n = 8,253; Black n = 6,090; Hispanic n = 5,434; White n = 3,889; Asian n = 671; FRL n = 10,873; LEP n = 3,453; LEP2 n = 4,238; SWD n = 1,766; Gifted n = 504.

Gifted Screening - Plan A

Of the 13,993 students who took all three batteries of the CogAT[®], 175 (0.01%) achieved a composite score of the verbal, quantitative, and nonverbal batteries (VQN) that had an age percentile ranking of 97 or higher. Seventy-two (41%) of these students had previously been identified as gifted students. Thus, a total of 103 Plan A students were identified for gifted eligibility screening through the 2015 administration of the CogAT[®]. Figure 7 shows the distribution of Plan A students by racial/ethnic group, LEP, and FRL. These figures include all 175 students regardless of whether they had been previously identified as gifted.



Figure 7. Students meeting criteria for Plan A by student sub-population in school year 2014-15.

Gifted Screening - Plan B

Plan B students need to achieve a composite quantitative and nonverbal (QN) score in the 81st percentile or higher, and either have limited English proficiency or qualify for free or reducedprice lunch. The score component of this criteria was achieved by 1,492 (10%) of the 14,812 students who took both the quantitative and non-verbal batteries. Of those, 668 also met the LEP or FRL requirements. Ninety-eight (15%) of these students had previously been identified as gifted students. Thus, the 2015 administration of the CogAT[®] identified 570 Plan B students to be screened for gifted program eligibility. Figure 8 illustrates the students who met Plan B criteria by sub-population, including those already identified as gifted.



Figure 8. Students meeting criteria for Plan B by sub-population in school year 2014-15.

Gifted Screening – Combined

Combined, 788 students met criteria for either Plan A or Plan B. Fifty-five students met criteria for both, and are included in the final Plan A group (but excluded from the final Plan B group). In total, 788 students met criteria to be screened for gifted eligibility. Of those, 145 were already classified as gifted, leaving 643 students to be screened. Figure 9 illustrates the students who met Plan A and B criteria combined, by sub-population, including those already identified as gifted. Figure 10 shows the percentage of students meeting gifted screening criteria by student sub-population.



Figure 9. Students meeting criteria for Plan A and Plan B by student sub-population in school year 2014-15.



Percentage of Students Achieving Plan A and Plan B Scores on the CogAT[®] by Sub-Population

Figure 10. Percentage of students achieving Plan A or Plan B score on the 2015 CogAT[®] by student sub-population. This figure shows the percentage of a specific sub-population that met gifted screening criteria. For example, of all the students who took enough batteries of the CogAT[®] to have a composite score, 5% earned a high enough score to be eligible to be screened for the gifted program.

Performance by School

One-hundred and forty-three traditional schools (141 elementary and 2 centers) had CogAT[®] SAS QN scores. The percentage of students that met Plan A criteria (M = .024, SD = .017) ranged between 0% and 8% for each school. The percentage of students who met Plan B criteria (M = .043, SD = .027) ranged between 0% and 13% for each school. The percentage of students that met either Plan A or Plan B criteria (M = .052, SD = .033) ranged between 0% and 19%. Eight schools did not have any students successfully screen for Plan A or Plan B. See Appendix D for number of students meeting Plan A and Plan B criteria as well as mean SAS VQN and SAS QN scores by school. Appendix E illustrates the percentage of students meeting Plan A and/or Plan B criteria by school⁷, with schools in red having the lowest percentage of students and schools in dark blue the highest.

Appendix F differentiates school performance by demographics. This map compares individual school mean SAS QN (Plan B) scores to a weighted District sample matched to the individual school in terms of race, gender, FRL, LEP, and SWD. This was done in order to compare each school to what the District average would be if the District had the same distribution of these demographics. Schools in red have the lowest mean scores and schools in dark green have the highest.

⁷ Means are not presented for schools with less than 10 students participating in the exam to respect the privacy of individual students and avoid misinterpretation of results.

II. Predicting Achievement

The CogAT[®] and standardized tests such as the Florida Comprehensive Assessment Test (FCAT 2.0) and Florida Standards Assessment (FSA) measure two different aspects of cognitive development. The CogAT[®] measures the general abstract reasoning skills that serve as the foundation for the student's ability to learn and remember information, detect relationships, form concepts, adapt or invent strategies, and use previous experience to solve novel problems. These abilities are also known as fluid reasoning abilities. Standardized achievement tests measure knowledge and skills explicitly taught at school, also known as crystallized abilities. Together, measures of fluid and crystallized abilities provide a more complete picture of cognitive development than either one alone (Cattell, 1971). This can be compared to measuring physical development; knowing someone's height and weight provides a more complete picture than knowing just weight alone (Lohman & Hagen, 2003).

General reasoning ability underpins academic achievement. Thus, CogAT[®] scores are well correlated with standardized test scores. Dramatic deviations between CogAT[®] scores and FCAT 2.0 or FSA scores can help to identify students in need of extra support. These students exhibit an imbalance in cognitive development which can be the result of a number of factors.

Students whose fluid ability is greater than their crystalized achievement, as indicated by scoring substantially lower on the FCAT 2.0 or FSA than is predicted by their CogAT[®] score, demonstrate that they are better at solving novel problems than at academic tasks. There are a number of possible explanations for this imbalance. These students may not have the motivation to apply themselves in school, may not have had appropriate opportunities to learn in school, or may have a physical (i.e. vision or hearing) or learning disability (Lohman & Hagen, 2003).

Students whose crystalized achievement is greater than their fluid ability, as indicated by scoring substantially higher on the FCAT 2.0 or FSA than is predicted by their CogAT[®] score, demonstrate that they are learning in a contextually-bound manner and are having difficulty transferring what they learn in school to other situations. This could indicate that the students have worked exceptionally hard to learn their schoolwork, or it could mean that something about the way they learn or the way they are taught at school is inhibiting their ability to transfer what they have learned (Lohman & Hagen, 2003).

This section begins by examining the correlations between the CogAT[®] and FCAT 2.0 scores in BCPS (FSA scores for 2015 were not yet available at the time this report was prepared). Next, deviations between the two scores are examined and recommendations for how to use these data to help students who have a large gap between the two scores are made.

Метнор

This section contains two analyses. First, correlations are shown between CogAT[®] scores and standardized test scores. Next, deviations between CogAT[®] scores and predicted standardized test scores are shown. All CogAT[®] scores represent Spring administration of the CogAT[®] form 6, Level A. Each year all traditional schools and a small number of charter schools administer the CogAT[®]. All schools that participated are included in the analyses.

Correlations. All available CogAT[®] scores (2011 third graders and 2011, 2012, and 2013 second graders) for which FCAT 2.0 scores were also available were used for this analysis. Correlations were calculated for all of the standardized test scores available for each CogAT[®] score. Correlations were calculated using FCAT 2.0 developmental scale scores and CogAT[®] SAS composite scores. Plan A scores are a composite of the verbal, quantitative, and non-verbal batteries, and Plan B scores are a composite of the quantitative and non-verbal batteries. SAS scores range between 50 and 150. Students who had a SAS composite score greater than or equal to 50 were included in the analysis.

Deviations. For this analysis, the 2013 second grade cohort was used. This is the most recent cohort for which standardized test scores for reading and math are available. Measures of reading and math were obtained using results from the district-wide administration of the FCAT 2.0 for reading and math to third graders in Spring 2014. FCAT 2.0 scores were linked to CogAT[®] scores, and only students who had valid CogAT[®] and FCAT 2.0 scores were retained for the analysis. Deviations from predicted scores were calculated using CogAT[®] SAS scores for verbal, quantitative, and non-verbal reasoning (SAS VQN). Cut points for CogAT[®] scores were created at the score in which the majority of students at that score achieved a particular level on the FCAT 2.0.

RESULTS

In Broward County, correlations between students second grade CogAT[®] scores and their scores for the FCAT 2.0 in reading, math, and science taken in subsequent years were moderate to strong. A perfect correlation, meaning the CogAT[®] score exactly predicts the FCAT 2.0 score, would be 1. Correlations ranged between 0.60 and 0.75 for Plan A and 0.56 and 0.73 for Plan B (Table 1). The square of the correlation is the percent in which the CogAT[®] score predicted the FCAT 2.0 score. For example, a 0.60 correlation means that the CogAT[®] score accounted for 36% of the variance in predicting the FCAT 2.0 score. Thus, Plan A SAS scores accounted for between 36% and 56% of the variance in predicting FCAT 2.0 scores, and Plan B SAS scores accounted for between 31% and 53% of the variance.

Correlations were stronger for the 2011 cohort of 3rd grade students who took the CogAT[®], with correlations between Plan A scores and FCAT 2.0 scores ranging from 0.66 to .80

(accounting for 43% - 64% of the variance) for Plan A and 0.62 and 0.79 (accounting for 38% - 62% of the variance) for Plan B.

	3 rd 6	Grade	4 th 6	Grade		5 th Grade		6 th G	rade
	FCA	T 2.0	FCA	T 2.0		FCAT 2.0		FCA	Г 2.0
	Reading	Math	Reading	Math	Reading	Math	Science	Reading	Math
2011 a rd o									
2011 3 Grade	.74	.80	.72	.77	.70	.78	.66	.69	.76
CogAI [®] Plan A									
2011 3 Grade	.67	.79	.65	.75	.64	.76	.62	.63	.74
CogAT [®] Plan B									
2011 2 ¹¹⁴ Grade	.62	.69	.64	.65	.67	.64	.60		
CogAT [®] Plan A									
2011 2 nd Grade	.56	.68	.58	.64	.61	.63	.57		
CogAT [®] Plan B									
2012 2nd Grade	.73	.75	.69	.70					
CogAT [®] Plan A									
2012 2nd Grade	.65	.73	.65	.70					
CogAT [®] Plan B		-		-					
2013 2nd Grade	.71	.73							
CogAT [®] Plan A									
2013 2nd Grade	.64	.72							
CogAT [®] Plan B	•	—							

Table 1. Correlations between CogAT[®] scores and FCAT 2.0 scores for 2011 3rd graders and 2011, 2012, 2013, and 2014 2nd graders.

Note: All correlations are significant at the 0.01 level.

Across all cohorts, correlations between scores were moderate and relatively stable, suggesting that the second grade CogAT[®] SAS score offers important predictive information about later academic performance.

Deviations from Predicted Scores

This section presents a comparison between the 2013 second grade CogAT[®] scores and the 2014 FCAT 2.0 math and reading scores (Tables 2 and 3). To compile a list of students whose scores were substantially deviant, natural cut points were identified which delineated at what CogAT[®] score the majority of students achieved a particular FCAT 2.0 level. Students who scored at least two levels above or below the level at which the majority of the students fell were identified as having deviant scores. Green boxes indicate that the students' FCAT 2.0 achievement is congruent with their CogAT[®] performance. White boxes indicate the students' FCAT 2.0 achievement is one level above or below predicted achievement. The blue and red boxes indicate substantial differences between expected and actual FCAT 2.0 levels based on CogAT[®] scores. Blue boxes indicate they are performing worse than expected. The deviant scores suggest an imbalance in cognitive development and indicate the need to explore the reason for such differences in scores for these students.

		2014 Third Grade FCAT 2.0 Reading					
2013 CogAT [®] Score Range	Level 1	Level 2	Level 3	Level 4	Level 5	Total	
50-84	1025	554	203	48	3	1833	
	55.9%	30.2%	11.1%	2.6%	0.2%		
85-91	552	857	509	259	31	2208	
	25.0%	38.8%	23.1%	11.7%	1.4%		
92-99	254	862	1105	783	146	3150	
	8.1%	27.4%	35.1%	24.9%	4.6%		
100-118	50	382	1081	2101	1017	4631	
	1.1%	8.2%	23.3%	45.4%	22.0%		
119-150	1	3	26	236	425	691	
	0.1%	0.4%	3.8%	34.2%	61.5%		
Total by FCAT Level	1882	2658	2924	3427	1622	12513	
Total Under-performing					<i>n</i> = 716	5.7%	
Total Over-performing					<i>n</i> = 690	5.5%	

Table 2. 2013 second grade CogAT[®] SAS VQN Scores compared to 2014 third grade FCAT 2.0 reading scores.

Note: Green = congruent scores, white = one level above or below expected scores, red = lower than expected performance, blue = higher than expected performance.

Table 3. 2013 second grade CogAT® SAS VQN Scores compared to 2014 third grade FCAT 2.0 m	nath
scores.	

	2014 Third Grade ECAT 2.0 Math						
		2014 11110 (
2013 CogAT [®] Score Range	Level 1	Level 2	Level 3	Level 4	Level 5	Total	
50 - 84	1097	511	189	26	2	1825	
	60.1%	28.0%	10.4%	1.4%	0.1%		
85 -91	553	909	587	136	17	2202	
	25.1%	41.3%	26.7%	6.2%	0.8%		
92 - 107	239	1332	2635	1362	414	5982	
	4.0%	22.3%	44.0%	22.8%	6.9%		
					0.070		
108 - 114	3	57	407	561	348	1376	
	0.2%	4.1%	29.6%	40.8%	25.3%		
115 - 150	0	5	123	370	609	1107	
	0.0%	0.5%	11.1%	33.4%	55.0%		
Total by FCAT Level	1892	2814	3941	2455	1390	12492	
Total Under-performing					n = 427	3.4%	
Total Over-performing					n = 784	6.2%	

Note: Green = congruent scores, white = one level above or below expected scores, red = lower than expected performance, blue = higher than expected performance.

In this cohort, we identified 716 students with lower FCAT 2.0 reading scores and 427 students with lower math scores than would be reasonably expected given their CogAT[®] scores⁸. After combining lists, the total unduplicated number of students underperforming on either of the FCAT 2.0 exams is 1,042. Students with profile scores indicating a relative strength on the nonverbal battery may be underachieving. Students with profile scores that show a relative strength in either the verbal or quantitative batteries may be particularly good at transferring knowledge learned in these areas. It is likely that the student is experiencing a challenge which, if addressed, could help him or her to substantially increase his or her level of academic achievement. Multiple factors should be examined along with profile scores, including the student's motivation to learn, temperament, and the presence of physical and or learning disabilities. The school environment should also be examined to determine if the student has been given appropriate opportunities to learn.

We also identified 690 students who scored much higher than expected on the FCAT 2.0 in reading, and 784 who scored much higher than expected on the FCAT 2.0 in math. After combining and unduplicating the lists, there were a total of 1,380 students whose FCAT 2.0 performance far exceeded the score predicted by their prior year CogAT[®] score. Profile scores showing a relative weakness on the nonverbal battery indicate that the student is demonstrating unusually strong effort. Relative weaknesses on the verbal or quantitative batteries are more congruent with the idea that instruction does not focus on transfer of knowledge and skills. These students would benefit from instruction that emphasizes transfer.

III. Differentiated Instruction

In the previous section we identified students whose FCAT 2.0 scores were substantially different from that which was expected given their CogAT[®] score. It is important to note that students who fall in the typical range are not necessarily doing as well as they can. Each student has specific learning characteristics. Customizing instruction to these specific characteristics will help to maximize the student's gain in general reasoning ability as well as academic achievement.

The CogAT[®] is designed to provide teachers with information that is valuable in helping them to adapt their instruction to the specific learning characteristics of each student. In addition to SAS and overall percentile rank scores, students who take the CogAT[®] receive a profile score. These scores are reported in stanines,⁹ and indicate if the student has a relative strength or

⁸ When Riverside Publishing scores CogAT[®] and the Iowa Test of Basic Skills (ITBS) simultaneously, they flag students whose ITBS scores fall in the top and bottom 10% of the range for that particular CogAT[®] score. FCAT 2.0 levels were used here in order to simplify the calculation and better illustrate the deviant scores.

⁹ Stanine is a method of scaling test scores on a 9-point standard scale that has a mean of 5 and standard deviation of 2.

weakness in any of the three batteries. Scores can end in an A, indicating even performance across the three batteries, B, indicating a relative strength or weakness on one battery; C, indicating a relative strength on one battery and a relative weakness on another; or E, indicating an extreme relative strength or weakness between at least two batteries. Riverside Publishing has specific recommendations for each profile score that teachers can view on their website which is located at: http://www.riversidepublishing.com/products/group/cogat6/input.jsp. The site is interactive, allowing a teacher to type in the exact profile in order to receive specific recommendations.

In Riverside Publishing's Cognitive Abilities Test Interpretive Guide for Teachers and Counselors (Lohman & Hagen, 2003), profiles scores are collapsed into four broad groups. General descriptions and recommendations for these groups follow to provide a framework for understanding the different learning needs of students based upon the groups into which they fall (Figure 11 and Table 4). Group 1 is the lowest scoring group and consists of students with profile scores between 1 and 3. Group 2 is the average scoring group, and consists of students with profile scores between 4 and 6. Group 3 is above average, and consists of students with profile scores of 7 and 8. Group 4 is gifted, and is comprised of students with a profile score of 9. Of the students taking the CogAT[®] in 2015, 26% had scores within the range of Group 1, 63% within Group 2, 10% within Group 3, and 1% within Group 4.



Figure 11. Broad overview of instructional recommendations by group level.

Group	Characteristics	Recommendations
1	Process information slowly	Structured learning environment that provides
	Have trouble making meaning out of	direct guidance and support
	information and determining what is	Instruction more interactive than verbal alone
	relevant to learn and remember	(i.e. peer modeling, hands-on activities, multi-
	More likely to use trial and error than	media)
	strategies	Reduce load on working memory by off-loading
	Lower working memory capacity	lower-level tasks
	Forget abstract concents quickly	Teach to structure and organize material
		Give lots of opportunities to practice strategies
	Difficulty transferring information learned	Group with other ability levels, ensure they have
	in one context to another	opportunity to <i>teach</i> as well as learn
2	Adequate knowledge but difficulty recalling	Somewhat but not highly structured learning
	and using that knowledge	environment
	Do not analyze new tasks to find	Reduce load on working memory by providing
	relationships with previously learned tasks	visual materials, overlearning low-level tasks
	Learn strategies but have difficulty	Teach higher level reasoning skills such as
	selecting and implementing them	inferring, deducing, elaborating and making
		connections
		Teach strategies and allow time for practice
		Group to be teacher and learner; ensure
		participation
3	Good memory	Guided discovery environment
	Effective learning strategies	Group with older students or adults;
	See connections between new concepts	opportunities to <i>learn</i> as well as teach
	and previously learned knowledge	Challenge to think critically
		Teach different problem-solving strategies and
		have them keep track of how they work for them
4	Organize and store knowledge differently	Discovery learning best, highly structured worst
		Need to be appropriately challenged; which may
	Superior skill in solving problems and	mean instruction several years above peers
	thinking differently	Expose to strategies, but allow them to choose
	Possess effective strategies and use them	which works best for them
	encientiy	Support in managing negative emotions and
	Good at making meaning of new material	learning persistence
	Often experience negative affect and lack	Group for diversity of perspective to challenge
	of persistence	critical thinking

Table 4. Brief characteristics and instructional recommendations group level.

Common Recommendations

Regardless of the group, there are some things common to all students. They all benefit from participating in peer groups, from lessoning the load on working memory when working on higher level tasks, from being taught for transfer, and from learning meta-cognitive strategies and regulation. The key to effective implementation of these things to the different groups is sensitivity to the level of exposure and support they need.

Peer Group Work. Grouping different ability students together allows students to both teach and learn from their peers. In the case of Group 1 students, teaching peers can take the form of guided reading wherein each student takes a turn being the teacher (for a description see laquinta, 2006). In the case of Group 4 students, giving them the opportunity to learn from others is important but not likely to happen with their peers in typical classrooms. Diversity for this group may consist of older students, or students of a similar competence level but with a diversity of perspectives. Being exposed to different points of view gives students the opportunity to exercise their critical reasoning skills as they evaluate the merits of new ideas (Lohman & Hagen, 2003).

Although students in higher groups progressively benefit more from discovery learning, this does not imply solitary learning. All students benefit from working with other students who can model new ways to understand a problem. Successful grouping ensures that all students have the opportunity to learn, the opportunity to teach, and the opportunity to participate. This means supporting students who don't readily participate by giving them the skills to do so, or structuring groups such that all members have a clearly defined role (Lohman & Hagen, 2003).

Working Memory. Across all groups, working memory is likely to create a bottleneck in the amount of information a student can learn. All students benefit from reducing the burden on working memory by supporting or excusing lower level thinking and processes so that they are able to work on higher-order tasks. For example, students in group 1 who haven't mastered spelling or grammar should still be given the opportunity to work on higher-order tasks such as creative writing. Since it is difficult for these students to write creatively while also trying to apply the rules of spelling and grammar, allowing them to write without worrying about spelling and grammar, or even dictating their work, will give them exposure to higher level tasks. The consequence of requiring lower-level skills to be mastered before being given the opportunity to work on higher level tasks is to widen the gap that already exists between these and higher scoring students (Lohman & Hagen, 2003).

There are a number of methods that can reduce the load on working memory. In addition to being excused from components of a task (such as spelling and grammar), students can be given tools to assist (such as calculators), provided with reference materials such as diagrams, summaries, or maps in order to reduce the information that needs to be held in mind

simultaneously, or they can overlearn lower level tasks that are necessary to complete more complex tasks. Overlearning is when students continue to practice a skill that has already been mastered. Research has shown that skills continue to develop after a student has already demonstrated competence (Schneider, 1985).

Transfer. Transfer is the ability to take information that is learned about solving one problem and applying it to another problem. Students who take the information they learn in the classroom and apply it to real-world situations are demonstrating transfer (Bohlin, Durwin, Reese-Weber, 2012). Students do not typically demonstrate transfer unless teaching is specifically geared towards transfer (Marini & Genereux, 1995). Research indicates that students do not readily transfer what they have learned in school because they have not learned the information in a meaningful way (Bereiter, 1995). Examples of this type of learning are rote memorization and convergent thinking wherein there is only one correct answer to a problem (Adams et al., 1988; Bransford et al., 2000). Students are more likely to transfer when they are taught conceptual principals rather than simply procedures (Perry, 1991). Teaching for transfer also involves being shown how one concept or procedure can apply in different contexts, and making the concept of transfer explicit to students. Cueing, which is having students ask themselves what they have already learned that can apply to the current problem, can also help students to transfer (Salomon and Perkins, 1989). Another method is teaching one strategy in different domains, for example, teaching reading comprehension strategies in different subjects or using the scientific method in a variety of contexts (Bohlin et al, 2012). Instruction that teaches for transfer is important for all groups; the difference is the degree to which time needs to be dedicated to illustrating the variety of settings in which a particular type of knowledge can apply.

Meta-cognition. Meta-cognition is thinking about one's own thinking processes such as study skills, memory capabilities, and the ability to monitor one's own learning (Hertzog & Robinson, 2005; Metcalfe, 2000). Students can be taught strategies to help them with tasks (meta-cognitive knowledge) and can also be taught to try different strategies to determine which is the most effective for them (meta-cognitive regulation). For example, students can be taught a variety of strategies for memorizing information, including rehearsal strategies such as maintenance rehearsal, elaborative rehearsal, and chunking as well as mnemonic devices such as acronyms, chain mnemonic, the keyword method, and the method of loci, and can be asked to use them all and see which ones work best for them.

SUMMARY AND DISCUSSION

Each year the CogAT[®] is administered district-wide to second graders as a tool to screen for gifted students in under-represented populations and is successful in this area. The 2015 administration of the CogAT[®] identified 103 Plan A and 540 Plan B students to be screened for

gifted eligibility. At the time the CogAT[®] was administered, 41% of Plan A eligible students were already identified as gifted compared to 15% of Plan B. This illustrates that underrepresented populations are less likely to be identified without the use of a screening tool, and that the CogAT[®] is fulfilling this purpose. So far, data from the CogAT[®] has only been used for purposes of screening for gifted students. However, the CogAT[®] provides rich data that can be used to support all students.

Detecting Imbalances in Cognitive Development. Since the CogAT[®] is well correlated with standardized test performance, deviations between the two scores indicate an imbalance in cognitive development which is worthy of further exploration. Lower FCAT 2.0 or FSA scores than predicted indicate that a student is under-achieving, which can be a symptom of low motivation or lack of opportunity to learn, or may indicate a physical or learning disability. Higher FCAT 2.0 or FSA scores than predicted may indicate above-average effort, but may also indicate that the student is not learning to transfer knowledge learned in specific settings to other contexts.

Individualized Instruction. Customizing instruction to meet the needs of the student will help all students to enhance their academic achievement. Students have different characteristics and learning styles that can help inform teaching practices. For example, students with lower general reasoning abilities (and thus lower CogAT[®] scores) do better in highly structured environments while students with high general reasoning abilities thrive in discovery learning environments. Students with high profile scores tend to develop their own learning strategies and perform better when they are able to use their own strategy, while children with lower profile scores can do better if they are taught strategies and afforded extensive opportunities to practice them in different contexts. Just as one shoe size does not fit all feet, one type of instruction does not help all students to thrive. CogAT[®] scores can be used to help create an optimal learning environment for all students, which also helps to create a more positive school atmosphere since students are engaged and feel supported rather than frustrated or bored.

In order to facilitate the immediate use of this data to help inform instruction, CogAT[®] profile scores for current 3rd grade students (2015-16) were posted in the DWH reports folder and information packets were e-mailed to all elementary school principals in early September.

BCPS is committed to educating all students to reach their highest potential (BCPS, 2015a). BEST Practice #1 includes, "focus on student data to improve instructional practice (BCPS, 2015b)." Among the values listed on the BCPS website are, "All students will learn when their individual needs are met," "students must be prepared as innovative thinkers and responsible citizens to compete in a global economy," and "An equitable education provides all necessary resources to meet student needs (BCPS, 2015a)." CogAT[®] profile scores are a very powerful tool that can assist us in working towards these ideals. Enhancing students' cognitive development not only helps them to do better on the current year's standardized test, but also bolsters the foundation for their continued future success.

Research on cognitive development offers encouraging news. Low performing students may not develop their own strategies for solving problems and tackling academic tasks, but they can be taught to use strategies. Explicitly teaching students that a goal of learning is to transfer classroom-learned knowledge to real-life settings can help them to begin making those connections. Teaching students the idea of meta-cognition – thinking about their own thinking and learning – helps them to regulate their strategy use based on their learning needs and their own observation of what works for them. Developing these skills in students will help to achieve the District's vision of "Educating today's students to succeed in tomorrow's world (BCPS, 2015a)."

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APPENDIX A

Broward County Public Schools Gifted Education Goals and Information.

Gifted

By recognizing the special needs of gifted learners, the School Board of Broward County is committed to providing programs designed to meet their unique talents and abilities.

Definition of Gifted Students:

The State of Florida defines a gifted student as "one who has superior intellectual development and is capable of high performance." (Rule 6A-6.03019 of the Florida Administration Code)

Goals of Gifted Education

In meeting the need of gifted learners, the District's goals are:

- To provide a menu of gifted services which meet the unique needs of each individual student;
- To foster a district-wide climate which recognizes and appreciates giftedness in all racial ethnic groups and socio-economic strata;
- To provide gifted curriculum aligned with the Next Generation Sunshine State Standards that is standardized and qualitatively differentiated by content, process, product, and learning environment;
- To facilitate opportunities for students to become self-directed, independent learners who achieve at high levels commensurate with their ability and potential;
- To provide on-going staff development for both general education teachers and gifted teachers on effective strategies for meeting the needs of gifted learners; and
- To seek input from and work collaboratively with parents of gifted learners in order to provide a quality learning environment for students

Curriculum and Instruction

- Differentiated curriculum that facilitates the mastery of core academic skills at a pace and level appropriate to gifted learners and is consistent throughout the District.
- Differentiated curriculum that replaces, supplements, or modifies existing curriculum.
- Instructional program that is flexible, and consists of advanced content and appropriately different teaching and learning strategies.

Professional Development

- Teachers of the gifted must be appropriately endorsed or working on their endorsement.
- All teachers working with gifted students will be made aware of the nature and needs of gifted students.

APPENDIX A CONTINUED

Eligibility

Eligibility for gifted programming is determined by the State of Florida. According to Florida Administrative Code (Rule 6A-6.03019(2))A, a student is eligible for the gifted program if "the student demonstrates:

- Need for a special program
- A majority of the characteristics of gifted students according to a standard scale checklist
- Superior intellectual development measured by an intelligence quotient of two (2) standard deviations or more above the mean on an individually administered standardized test of intelligence."

Districts are also mandated by the State to develop alternative criteria to increase the representation of underrepresented groups in gifted programs (this is Plan B).

Student Identification

Schools have an obligation to identify their gifted students. The process used to identify students in need of gifted services must be ongoing, reliant on a variety of assessment measures, free of bias and non-exclusionary. Once identified, students must be provided appropriate services. Strategies must be employed to identify students from groups traditionally underrepresented in gifted populations.

Program Models

Services will be provided in the core content areas, depending on student's need. Gifted services, however, are not limited to curriculum and learning environment. Other services must be provided based on the individual needs of the students.

Gifted Indicators Checklist

Student Name:		
Date:		
School:		
Home Language:		
Grade Level:		
Person(s) completing this che	cklist:	
Name:		
Name:		
Use the following directions for scoring Plan A st	tudents:	
1 Count the number of checks in the "Consid	atoptly" hav far apph domain A	minimur

- 1. Count the number of checks in the "Consistently" box for each domain. A minimum of 6/10 would be considered a majority.
- 2. Count the number of domains in which a majority was reached. A minimum of 3/5 domains is required to meet this criterion for eligibility.
- Plan B students will continue to be scored according to the directions included in the body of this document.

APPENDIX B. GIFTED INDICATORS CHECKLIST, continued

GIFTED INDICATORS CHECKLIST

This student exhibits this behavior

	C	0	S	Ν
 The following characteristics may be observed in English or in the student's heritage language. This checklist is to be completed by the Gifted Eligibility Team. 	Consistently	Occasionally	Seldom	Never
LEARNING	3	2	1	0
 Has unusually advanced vocabulary for age or peer group and/or conversation reveals richness of expression, imagery, elaboration, and fluency in language. (May be a blend of standard English and ethnic dialect, or other language) 				
2. Possesses and shares a large storehouse of information, some beyond the interest of peer group				
3. Displays specialized knowledge based on life experiences. (Examples: knowledge of shopping responsibilities, ability to make change, safety, neighborhood environment and daily happenings)				
4. An elaborate thinker, able to produce embellishments to an idea, situation, or problem and/or asks many questions to determine why or how things happen, what will happen next, or how things work				
5. An original thinker, able to see relationships among seemingly unrelated objectives, ideas or facts				
6. Catches on quickly; retains and uses new ideas and information; may resist drill and repetition				
7. Has a facility for learning standard English, even though another language or ethnic dialect is used in the home. Ability to code-switch/translate from one language to another at a high level of accuracy				
8. Is a keen and alert observer and/or listener (e.g., usually "sees more" or "gets more" out of a story or film than others and/or reads a lot in interest areas and/or accelerated "cognitive" development relative to sociocultural and age peers)				
9. Likes to use big words (sometimes incorrectly) and/or may invent new words				
10. Always has an answer, even if incorrect				



	This stuc	dent exhi	bits this b	ehavior:
MOTIVATION	C	0	S	Ν
1. Evidences power of concentration, becomes absorbed in topics or tasks promptly and consistently				
2. Prefers to work independently with minimal direction from teachers; organizes self and materials				
3. Is concerned with right and wrong, good and bad, fair and unfair				
 Takes advantage of opportunities to learn; enjoys challenge and tasks which are not routine; is bored by routine tasks 				
5. Is self-critical and strives for perfection; may be critical of others				
6. Is persistent in task completion; may be unwilling to change tasks or moves from task to task without regard for completion				
7. Likes reasonable structure and order; may be frustrated by lack of organization or progress				
8. Is motivated by art, music, sports, participates enthusiastically, shows a high level of energy				
9. Exhibits intrinsic motivation to learn; self-motivated				
10. Not easily distracted when solving problems				

#in C	X 3 =
#in O	X 2 =
#in S	X 1 =

Total Points MOTIVATION:

APPENDIX B. GIFTED INDICATORS CHECKLIST continued

This student exhibits this behavior

	C	0	S	Ν
	Consistently	Occasionally	Seldom	Never
LEADERSHIP	3	2	1	0
1. Accepts or volunteers for responsibilities; follows through with tasks and usually does them well				
2. Is self-confident with adults and classmates; is usually well-liked and chosen as a leader				
3. Tends to dominate others and generally organizes and directs activities when involved in a group				
4. Seems to enjoy being with other people; sociable, empathetic, charismatic and/or sometimes may be a loner				
5. Is a leader, role model, trend setter in or out of school				
6. Has a strong sense of self, pride, and worth; has a strong self-concept				
7. Likes to be in charge/assertive/helps the teacher with the class responsibilities				
8. Explains things to other students/helps them finish assignments. (May neglect own work because helping others.)				
9. Has good reasoning ability				
10. Has a keen awareness of the group process and may have the ability to manipulate others				

in C X 3 = _____ # in O X 2 = _____ # in S X 1 = _____ Total Points LEADERSHIP:

This student exhibits this behavior:

CREATIVITY	С	0	S	Ν
1. Displays intellectual playfulness; imagines, elaborates, or modifies basic ideas to add interest or fun				
2. Is a high risk taker; adventurous and willing to deviate from standard procedures, answers, or behaviors; does not fear being different				
Displays a keen sense of humor reflective of own cultural background; sees the unusual or unexpected in everyday occurrences				
4. Displays a curiosity about many things; has many hobbies or one intense interest				
5. Generates a large number of ideas or solutions to problems and questions				
6. Becomes deeply involved in stories or films, identifies personally with characters and plots; may create own stories and plays				
 Is creative in finding ways to communicate and express ideas; (e.g., drawing, pantomime, body language, use of concrete objects, or other alternate means may replace limited facility with oral language) 				
 Demonstrates exceptional ability in some area of the arts or athletics. (Examples: dancing, drawing/painting, singing, playing an instrument, drama, gymnastics, crafts, etc.) 				
9. Is a fluent thinker, fluent in idea development, able to generate a large quantity of possibilities, consequences, or related ideas				
10. Improvises with commonplace materials; creates original and unusual products; invents things				

#in C	X 3 =
#in O	X 2 =
#in S	X 1 =

#in S X 1 = _____ Total Points CREATIVITY: _____

APPENDIX B. GIFTED INDICATORS CHECKLIST, continued

This student exhibits this behavior

	Ċ	0	S	N
	Consistently	Occasionally	Seldom	Never
ADAPTABILITY	3	2	1	0
1. Learns through experience and is flexible and resourceful in solving day-to-day problems				
2. Deals effectively with deprivations, problems, frustrations or obstacles caused by the complexities of living conditions		<u> </u>		
3. Copes well with frustration: may draw negative attention because unable to sit still, or no attention because so quiet				
4. Uses limited resources and materials to make products to share in school				
5. Displays maturity of judgment and decision-making beyond own age level				
6. Can transfer learning from one situation to another; applies what is learned to everyday situations				
7. Consistent ability to accept adult responsibilities in the family				
 Ability to cope with a variety of cultural settings, utilizing knowledge from a variety of traditions; integrating conflicting and discrepant cultural information 				
9. Adapts readily to new situations; is flexible in thought and actions and is not disturbed when normal routine is changed				
10. Attempts difficult tasks; does not give up easily				

#in C		X 3 =	
#in O		X 2 =	
#in S		X 1 =	
Total Points A	DAPTAB	ILITY:	

Select the 4 highest point totals from the 5 domains and record the total points generated in those 4 domains on the GEM to determine the student's score on the Gifted Characteristics section.

The student must score at least one (1) point on the Gifted Characteristics section of the GEM to be considered for eligibility.

LIST DOMAIN	TOTAL POINTS =	
LIST DOMAIN	TOTAL POINTS =	
LIST DOMAIN	TOTAL POINTS =	
LIST DOMAIN	TOTAL POINTS =	
	TOTAL POINTS ON THE 4 HIGHEST AREAS =	

Browar Gifted	d County I Eligibility Matri	School E ix (GEM), Plar	Board				
Date:	Completed Name:	Ву	Title:				
Student Name:		Student N	lumber:				
School:	Date of Birth:						
Current Grade:		Staffing D)ate:				
Student's Home Language:							
M	atrix Scoring Sy	stem					
Intellectual Abilities	4	3	2	1			
Eval. Instrument:	125-127+	122-124	119-121	115-118	Score		
Score:							
Academic Achievement	95+ %ile	90-94 %ile	85-89 %ile	80-84 %ile			
Instrument used (subtest or total)	FCAT level 5	FCAT level 4	FCAT level 3	FCAT level 2	Score		
Date: Reading Percentile: or FCAT level Math Percentile: or FCAT level							
Gifted Characteristics	Total Points	Total Points	Total Points	Total Points			
Gifted Indicators Checklist	100+	80-99	60-79	40-59	Score		
Select the 4 highest point totals from the 5 domains and record the total points generated in those 4 domains on the GEM to determine the student's score on the Gifted Characteristics section. Total Score:							
Environmental Indicators	Total Points	Total Points	Total Points	Total Points			
Student primary language(s) other than English (1pt)		3	2	I	Score		
Student from a low SES* family (1 pt)							
Student meets criteria on the Underrepresented Gifted Student Trait Indicators Checklist (1or2 pts)							
	I	1	Total Score	1			

Note: If the student scores a 130 or higher on the evaluation instrument for intellectual abilities, the student meets the IQ requirement and the eligibility process should proceed according to Plan A guidelines. <u>There is no need to continue with the Plan B Gifted Eligibility Matrix.</u>

A student must score at least one (1) in each of the Intellectual Abilities, the Gifted Characteristics, and Environmental Indicators sections. Eligibility requires a total score of 10 or higher.

The student meets initial eligibility requirements as per Broward County's Plan B Criteria?

Yes		No
-----	--	----

* Socio-economic status

APPENDIX C. GIFTED ELIGIBILITY MATRIX, PLAN B, continued

Gifted Underrepresented Student Trait Indicators (Maker, Schiever, Baldwin, Chamers, Udall, Torrance) For use by the Gifted Eligibility Team (GET)

Name of Student:			Date:
School:	C	Frade:	_Completed By:
Free or reduced lu	inch:		
English Language	e Learner (ELL) Languag	ge Classification:	
1.	Is curious		
2.	Offers ideas or solution	s to problems	
3.	Is uninhibited in express	sion of opinions	
4	Risks an incorrect answ	er	
5	Displays intellectual pla	yfulness (manipulate	es ideas; tries to adapt,
	improve or modify thing	gs to benefit self)	
6.	Displays a mature sense	of humor and at time	es may be inappropriate
	(use of puns, association	ns)	
7	_Shows emotional sensit	ivity	
8	_Has ability to add to ide	as, drawings, though	ts and words
9	_Has ability to grasp und	erlying ideas	
10	Is inventive		
11	Becomes absorbed and activities	very involved in certa	ain topics, problems or
12.	Stays with a task for a le	ong time, especially v	when interested.
13.	Has a need for freedom		
14.	Likes to learn some thir	igs alone.	
15.	Exhibits skilled body m	ovements	
16.	Shows mechanical sens	e; knows how to "fix	things" or "take things
	apart"		e e
17	Shows physical stamina	l	
18	Exhibits good hand-eye	coordination	
19	Displays a sense of sens	sory patterns	
20	_Carries responsibility w	ell	
21	Is self-confident with pe	eers and adults	
22	Is cooperative		
23	Is social; outgoing		
24	Is frank in the appraisal	of adults	
25	Frequently interrupts of	hers when they are ta	lking (even peers)
26	_Has a large amount of k	nowledge about a lot	of topics
27	Is a good guesser		
28	Is good at games of stra	tegy	
Total number of s	tudent indicators noted_		
To receive 1 point To receive 2 point	t on the eligibility matrix ts on the eligibility matri	x 15-21 indicators mu x 22-28 indicators m	st be checked. ust be checked.

Recommended based on student indicators _____YES ____NO

APPENDIX D: 2015 SECOND GRADE COGAT® SCORES

2015 Second Grade CogAT[®] Scores. Number of students meeting CogAT[®] score requirements for Plan A and Plan B eligibility by school and mean SAS VQN (Plan A) and QN (Plan B) by school

			Number of Students Eligible for		Mean School Score		
School Number	School Name	N	Plan A	Plan B	Plan A & B Combined	Plan A SAS (VQN)	Plan B SAS (QN)
2511	ATLANTIC WEST ELEMENTARY	103	0	6	6	89.32	91.55
2001	BANYAN ELEMENTARY	82	0	2	2	93.32	93.12
0641	BAYVIEW ELEMENTARY	91	3	7	10	105.45	106.11
2041	BEACHSIDE MONTESSORI VILLAGE	66	2	3	5	107.02	107.45
0201	BENNETT ELEMENTARY	50	0	2	2	92.06	92.94
0341	BETHUNE MARY M ELEMENTARY	83	0	0	0	89.39	90.25
0971	BOULEVARD HEIGHTS ELEMENTARY	101	0	6	6	93.31	95.00
0811	BROADVIEW ELEMENTARY	133	0	5	5	91.37	92.29
0501	BROWARD ESTATES ELEMENTARY	57	0	1	1	89.75	90.91
1461	CASTLE HILL ELEMENTARY	68	0	2	2	89.29	90.60
2641	CENTRAL PARK ELEMENTARY	144	3	7	10	102.69	103.05
3771	CHALLENGER ELEMENTARY	162	1	12	13	100.99	101.86
2961	CHAPEL TRAIL ELEMENTARY	95	0	4	4	98.84	98.75
1421	COCONUT CREEK ELEMENTARY	128	3	10	13	99.10	99.34
3741	COCONUT PALM ELEMENTARY	111	0	3	3	96.83	97.33
0231	COLBERT ELEMENTARY	80	0	2	2	91.31	91.94
0331	COLLINS ELEMENTARY	50	1	1	2	90.66	91.06
1211	COOPER CITY ELEMENTARY	101	1	0	1	99.97	100.28
2011	CORAL COVE ELEMENTARY	113	0	6	6	98.34	97.98
3041	CORAL PARK ELEMENTARY	83	0	3	3	98.43	98.80
2551	CORAL SPRINGS ELEMENTARY	81	0	6	6	92.26	93.72
3111	COUNTRY HILLS ELEMENTARY	116	5	1	6	99.04	99.05
2981	COUNTRY ISLES ELEMENTARY	116	1	2	3	97.44	96.78
0901	CRESTHAVEN ELEMENTARY	63	0	0	0	88.89	90.14
0221	CROISSANT PARK ELEMENTARY	87	0	10	10	92.27	95.01
1781	CYPRESS ELEMENTARY	113	1	4	5	90.37	92.39
0101	DANIA ELEMENTARY	72	0	5	5	93.00	93.42
2801	DAVIE ELEMENTARY	100	0	3	3	92.98	93.97
0011	DEERFIELD BEACH ELEMENTARY	98	1	3	4	92.99	94.90
0391	DEERFIELD PARK ELEMENTARY	102	0	3	3	89.35	90.63
0271	DILLARD ELEMENTARY	95	0	3	3	87.82	89.94
3962	DISCOVERY ELEMENTARY	127	3	4	7	98.47	98.45
3751	DOLPHIN BAY ELEMENTARY	108	5	14	19	102.28	104.44
3221	DREW CHARLES ELEMENTARY	61	0	1	1	93.04	93.25

APPENDIX D: 2015 SECOND GRADE COGAT® SCORES continued

			Nun	Number of Students Eligible for			ool Score
School Number	School Name	N	Plan A	Plan B	Plan A & B Combined	Plan A SAS (VQN)	Plan B SAS (QN)
0721	DRIFTWOOD ELEMENTARY	80	0	4	4	94.05	95.45
3461	EAGLE POINT ELEMENTARY	186	5	14	19	102.02	102.50
3441	EAGLE RIDGE ELEMENTARY	129	5	9	14	104.00	103.03
3191	EMBASSY CREEK ELEMENTARY	161	6	5	11	104.64	104.97
3301	ENDEAVOUR PRIMARY LEARNING CTR	57	0	0	0	88.35	88.49
2942	EVERGLADES ELEMENTARY	157	10	10	20	106.45	107.79
1641	FAIRWAY ELEMENTARY	78	0	5	5	92.51	93.67
2541	FLAMINGO ELEMENTARY	88	0	2	2	96.24	97.05
0851	FLORANADA ELEMENTARY	105	1	10	11	102.92	102.90
2631	FOREST HILLS ELEMENTARY	69	1	4	5	95.38	96.22
0921	FOSTER STEPHEN ELEMENTARY	68	0	2	2	93.66	93.38
3531	FOX TRAIL ELEMENTARY	165	3	11	14	99.66	100.38
3642	GATOR RUN ELEMENTARY	194	6	7	13	101.51	102.57
2851	GRIFFIN ELEMENTARY	68	1	2	3	99.45	99.21
0131	HALLANDALE ELEMENTARY	160	0	5	5	93.45	94.19
0491	HARBORDALE ELEMENTARY	73	0	1	1	96.33	96.92
3131	HAWKES BLUFF ELEMENTARY	98	1	2	3	100.11	99.99
3961	HERON HEIGHTS ELEMENTARY	74	0	3	3	104.57	105.43
0121	HOLLYWOOD CENTRAL ELEMENTARY	53	0	3	3	93.70	93.75
0111	HOLLYWOOD HILLS ELEMENTARY	114	1	5	6	99.49	99.89
1761	HOLLYWOOD PARK ELEMENTARY	53	0	2	2	92.96	93.66
2531	HORIZON ELEMENTARY	60	0	3	3	95.37	95.67
1971	HUNT JAMES S ELEMENTARY	120	0	2	2	90.42	91.28
3181	INDIAN TRACE ELEMENTARY	117	6	1	7	102.51	103.63
1611	KING MARTIN LUTHER ELEMENTARY	37	0	1	1	86.70	88.51
0831	LAKE FOREST ELEMENTARY	72	0	3	3	91.01	92.24
3591	LAKESIDE ELEMENTARY	89	1	4	5	98.79	100.58
0621	LARKDALE ELEMENTARY	32	0	0	0	89.07	90.72
1381	LAUDERHILL P. T. ELEMENTARY	96	0	1	1	88.46	89.74
3821	LIBERTY ELEMENTARY	131	1	6	7	93.51	94.38
1091	LLOYD ESTATES ELEMENTARY	91	0	2	2	90.52	92.25
3841	MANATEE BAY ELEMENTARY	181	6	5	11	100.39	100.88
2741	MAPLEWOOD ELEMENTARY	73	1	3	4	93.70	94.41
1161	MARGATE ELEMENTARY	105	1	3	4	96.47	96.50
1671	MARKHAM ROBERT C. ELEMENTARY	72	0	6	6	88.55	90.75
0841	MCNAB ELEMENTARY	88	0	3	3	96.83	97.05

APPENDIX D: 2015 SECOND GRADE COGAT® SCORES continued

			Num	nber of Studen ⁻	ts Eligible for	Mean School Score		
School Number	School Name	N	Plan A	Plan B	Plan A & B Combined	Plan A SAS (VQN)	Plan B SAS (QN)	
0761	MEADOWBROOK ELEMENTARY	98	1	0	1	90.52	91.79	
0531	MIRAMAR ELEMENTARY	128	2	16	18	96.79	99.13	
1841	MIRROR LAKE ELEMENTARY	61	0	4	4	95.32	96.10	
2691	MORROW ELEMENTARY	57	0	1	1	87.80	88.54	
2671	NOB HILL ELEMENTARY	87	3	3	6	96.54	98.07	
0561	NORCREST ELEMENTARY	109	0	2	2	93.93	95.63	
0521	NORTH ANDREWS GARDENS ELEM	134	0	4	4	96.05	96.51	
1191	NORTH FORK ELEMENTARY	69	0	0	0	86.61	88.06	
2231	NORTH LAUDERDALE ELEMENTARY	72	0	1	1	89.28	90.14	
0041	NORTH SIDE ELEMENTARY	53	0	1	1	90.35	90.70	
1282	NOVA BLANCHE FORMAN ELEMENTA	103	0	3	3	96.28	96.37	
1271	NOVA DWIGHT EISENHOWER ELEM	85	1	4	5	100.69	101.72	
0031	OAKLAND PARK ELEMENTARY	73	0	1	1	89.62	90.16	
0461	OAKRIDGE ELEMENTARY	72	0	2	2	91.22	91.85	
0711	ORANGE BROOK ELEMENTARY	79	0	4	4	89.55	91.49	
1831	ORIOLE ELEMENTARY	64	0	2	2	92.87	93.47	
3311	PALM COVE ELEMENTARY	111	0	4	4	93.86	94.72	
1131	PALMVIEW ELEMENTARY	90	0	2	2	91.06	90.73	
3571	PANTHER RUN ELEMENTARY	71	3	3	6	96.30	98.06	
3761	PARK LAKES ELEMENTARY	164	0	2	2	88.78	89.61	
1951	PARK RIDGE ELEMENTARY	54	0	1	1	87.22	89.33	
3171	PARK SPRINGS ELEMENTARY	119	6	1	7	99.67	99.84	
3781	PARK TRAILS ELEMENTARY	163	3	4	7	101.56	101.96	
3631	PARKSIDE ELEMENTARY	84	0	3	3	92.91	94.65	
2071	PASADENA LAKES ELEMENTARY	85	0	4	4	93.29	94.88	
2661	PEMBROKE LAKES ELEMENTARY	90	0	7	7	98.67	99.43	
1221	PEMBROKE PINES ELEMENTARY	87	2	2	4	94.74	95.99	
1631	PERRY ANNABEL C. ELEMENTARY	69	0	3	3	95.03	93.43	
0931	PETERS ELEMENTARY	87	0	2	2	94.97	96.01	
0653	PINE RIDGE EDUCATION CENTER	4	*	*	*	*	*	
2861	PINES LAKES ELEMENTARY	77	2	1	3	95.35	95.14	
2811	PINEWOOD ELEMENTARY	83	0	3	3	92.10	92.54	
0941	PLANTATION ELEMENTARY	60	0	1	1	86.34	88.48	
1251	PLANTATION PARK ELEMENTARY	76	0	3	3	97.56	97.45	
0751	POMPANO BEACH ELEMENTARY	70	0	3	3	89.78	89.71	
3121	QUIET WATERS ELEMENTARY	220	2	6	8	96.18	97.07	

APPENDIX D: 2015 SECOND GRADE COGAT® SCORES continued

			Number of Students Eligible for		Mean Scho	ool Score	
School Number	School Name	N	Plan A	Plan B	Plan A & B Combined	Plan A SAS (VQN)	Plan B SAS (QN)
2721	RAMBLEWOOD ELEMENTARY	104	0	7	7	96.18	97.18
2891	RIVERGLADES ELEMENTARY	94	5	4	9	106.38	105.95
0151	RIVERLAND ELEMENTARY	78	1	0	1	89.94	91.26
3031	RIVERSIDE ELEMENTARY	93	0	3	3	96.92	98.15
3701	ROCK ISLAND ELEMENTARY	63	0	0	0	87.56	88.89
1851	ROYAL PALM ELEMENTARY	64	0	3	3	88.04	88.50
0891	SANDERS PARK ELEMENTARY	59	0	1	1	89.36	90.32
3061	SANDPIPER ELEMENTARY	69	0	1	1	94.92	95.64
3401	SAWGRASS ELEMENTARY	130	0	1	1	97.09	96.86
2871	SEA CASTLE ELEMENTARY	126	0	4	4	93.98	95.60
1811	SHERIDAN HILLS ELEMENTARY	90	0	2	2	93.08	94.09
1321	SHERIDAN PARK ELEMENTARY	85	1	2	3	96.40	97.64
3371	SILVER LAKES ELEMENTARY	67	1	3	4	98.72	99.13
3491	SILVER PALMS ELEMENTARY	91	7	1	8	101.35	101.20
3081	SILVER RIDGE ELEMENTARY	157	2	6	8	100.70	101.39
3581	SILVER SHORES ELEMENTARY	63	4	8	12	101.42	102.54
0691	STIRLING ELEMENTARY	91	0	6	6	93.11	94.97
0611	SUNLAND EARLY LEARNING CENTER	63	0	0	0	89.03	89.08
3661	SUNSET LAKES	131	4	14	18	102.67	103.22
1171	SUNSHINE ELEMENTARY	90	0	6	6	93.58	93.44
2621	TAMARAC ELEMENTARY	102	1	6	7	94.76	95.00
0571	TEDDER ELEMENTARY	77	0	1	1	90.50	90.70
3291	THURGOOD MARSHALL ELEMENTARY	54	0	0	0	85.22	86.69
3481	TRADEWINDS ELEMENTARY	212	2	10	12	97.10	97.75
0731	TROPICAL ELEMENTARY	126	2	8	10	96.45	97.90
1621	VILLAGE ELEMENTARY	87	0	8	8	90.87	92.13
3321	VIRGINIA S. YOUNG ELEMENTARY	75	4	2	6	107.73	107.20
0321	WALKER ELEMENTARY	75	0	1	1	86.07	87.28
0511	WATKINS ELEMENTARY	93	0	5	5	95.78	94.74
2881	WELLEBY ELEMENTARY	106	1	7	8	97.71	98.25
0161	WEST HOLLYWOOD ELEMENTARY	77	0	3	3	90.01	91.43
2681	WESTCHESTER ELEMENTARY	186	3	5	8	98.16	98.40
0631	WESTWOOD HEIGHTS ELEMENTARY	51	0	2	2	87.34	87.96
1752	WHISPERING PINES	3	*	*	*	*	*
0191	WILTON MANORS ELEMENTARY	63	1	1	2	94.34	94.95
3091	WINSTON PARK ELEMENTARY	155	3	12	15	99.52	100.52

APPENDIX E. PERCENT OF STUDENTS MEETING COGAT® PLAN A AND PLAN B CRITERIA



APPENDIX F: COGAT® PLAN B AVERAGE SCORES BY SCHOOL COMPARED TO DISTRICT WEIGHTED AVERAGE, 2014-15

